Regional Culture, Corporate Strategy, and High Tech Innovation: Salt Lake City

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SUMMARY OF THE DISSERTATION

Over the last decade the relationship between private sector innovation and regional growth has become a central avenue of inquiry for geographers. However, while the formal institutional bases of innovative regional economies are relatively well theorised, we still do not fully understand their socio-cultural underpinnings. In contrast to the all-encompassing fuzzy notions of ‘culture’ commonly employed in the literature, I instead unpack regional culture in terms of a culture hierarchy, made up of: (i) individual corporate cultures; (ii) a regional industrial culture; and (iii) the wider regional culture in which these are both set. I argue that we can interpret firms’ cultural embedding in the region in terms of the overlaps between the different levels of this hierarchy and their material impacts on the firm.

I illustrate my theory with evidence from Utah’s industrial agglomeration of computer software firms, embedded in a highly visible and distinctive regional culture, Mormonism. First, I demonstrate how Mormon regional cultural values, conventions, norms and attitudes define firms’ own internal systems of organisational control, decision-making processes and hence patterns of observed behaviour. I also measure the degree (strength) of that cultural embedding across a series of visible ‘contents’. Second, I show how firms’ import of regional cultural values impacts upon both their abilities to access new sources of new knowledge and to use new knowledge once it enters the firm. Crucially, my results show that both enablers and constraints on firms’ abilities to innovate stem from the same regional culture in which they are embedded. Third, I develop a cleaner model of cultural embedding using critical realism, grounded in both the key causal mechanisms of embedding and the agents responsible for those. Finally, I outline the wider policy implications of my research, arguing that the limits of high tech policies are largely a function of the overly-narrow economic theory upon which they are premised, and which sidelines the key role of regional culture. Crucially, culture will continue to be ignored by policymakers until it is more adequately theorised in economic geography.
This dissertation is the result of my own unaided work and presents as original nothing which is the result of work undertaken in collaboration with others. The dissertation does not exceed 80 000 words.

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GLOSSARY

**Aaronic Priesthood** – The lower of the two Priesthoods within the LDS Church, given to worthy males aged 12 years and older.

**Active** – Mormons who maintain full activity in the LDS Church.

**Bearing Testimony** – The act of publicly declaring one’s spiritual beliefs.

**Bishop** – The office given to those who preside over the Ward. Roughly the equivalent to a pastor, minister, or priest in other denominations.

**Brigham Young** – The second President of the LDS Church, led the Mormon pioneers on the trek across the US to Utah.

**Calling** – Opportunities to perform service within the LDS Church, also known as jobs or positions. Examples include Bishops, Sunday School teachers.

**Convert** – A member of the LDS Church who was not born a member but joined later in life.

**CTR** – ‘Choose the Right’, the name for an age group of Primary children, and also a slogan popular on Mormon jewellery.

**Deseret** – Taken from the Book of Mormon, means ‘honey bee’; the beehive symbol remains the insignia for the state of Utah today, and represents the two virtues of work and community. Is a common name for LDS Church-related businesses.

**Bootstrapping** - creative ways of acquiring the use of resources without borrowing money or raising equity from traditional sources – e.g. working from home; reduced, foregone or delayed salary; advances from customers and free or subsidised access to machinery and access to equipment.

**Family home evening** – Church program designed to bring families together for one night a week for spiritual instruction, family council and other family activities.

**First Presidency** – Top leadership in the LDS Church, composed of the President and his two
counsellors.

**Garments** – The underclothing worn by Mormons who have received their temple endowments.

**General Authorities** – The leaders who preside over the entire body of the LDS Church, rather than just a Stake or Ward.

**Gentile** – Non-Mormon.

**Gordon B. Hinckley** – Current President of the LDS Church

**Institute** – A program sponsored by the LDS Church to provide religious education to Mormon students of college age at secular universities across the US.

**Joseph Smith** – Founder and first president of the LDS Church

**Melchizedek Priesthood** – The higher of the two priesthoods in the LDS Church.

**Primary** – The auxiliary organisation of the LDS Church responsible for teaching children ages 3 through 12.

**Quorum** – A group of Mormon males that meet together and all hold the same office in the priesthood.

**Quorum of the Twelve** – Composed of twelve **General Authorities**, who help the **First Presidency** to lead the LDS Church.

**Relief Society** – The ladies’ benevolent organisation within the church, concerned with the material and spiritual well-being of its members and of the members of the **Ward**.

**Seminary** – A program of daily gospel instruction for Mormons of high school age. Classes are usually taught early in the morning.

**Stake** – An aggregation of several **Wards**, 4000 to 5000 members on average, under a stake president. Similar to a diocese, are usually composed of six to ten wards (Cornwall and Cunningham, 1989).

**Sustain** – The process of allowing all **Ward** members to approve those who will lead them; symbolises unity and mutual support.

**Temple** – LDS place of worship where sacred rites and ceremonies are performed. Marriages
performed in the temple ‘seal’ husband and wife together for eternity. Only church members in good standing are allowed to enter. There are currently 103 LDS Temples around the world (LDS Church / Deseret News, 2000).

**Temple Recommend** - Those who wish to attend the temple must undergo an interview to assess their worthiness. If worthy, they are issued a recommend that gives them access to LDS temples for the next year.

**Tithing** – An annual financial donation to the LDS Church that represents one-tenth of a person’s income.

**Ward** – The basic congregational unit of the LDS church, each with 300-600 members (Moy, 2001). Each Ward has definite geographic boundaries, although these are often in flux given growth in church membership over time. For Mormons the Ward constitutes a primary religious and social centre.

**Wasatch Front** – The urban corridor that stretches along the base of the Wasatch Mountains to the east, and flanked by the Great Salt Lake to the west. Is home to 75% of Utah’s total population, and made up of four counties: Weber, Davis, Salt Lake and Utah Counties.

**Word of Wisdom** - A health code that is practiced by active Mormons. Prohibits the use of alcohol, tobacco, and caffeine. Strict adherence to the Word of Wisdom is required as a condition of entrance to the temples.

**Zion** – Defined in LDS scripture as the people who are ‘pure in heart’. LDS doctrine teaches that the church is the kingdom of Zion and the kingdom of God on earth.

**Zion Curtain** – The point of the mountain near Draper, separating Salt Lake County (64% LDS) from Utah County (89% LDS).
**ABBREVIATIONS**

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BEBR</td>
<td>Bureau of Economic and Business Research, at the University of Utah</td>
</tr>
<tr>
<td>BYU</td>
<td>Brigham Young University – the university of the LDS Church.</td>
</tr>
<tr>
<td>CEO</td>
<td>Chief Executive Officer</td>
</tr>
<tr>
<td>CES</td>
<td>Church Educational System</td>
</tr>
<tr>
<td>CFO</td>
<td>Chief Financial Officer</td>
</tr>
<tr>
<td>CIO</td>
<td>Chief Information Officer</td>
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<tr>
<td>COO</td>
<td>Chief Operations Officer</td>
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<tr>
<td>CTO</td>
<td>Chief Technology Officer</td>
</tr>
<tr>
<td>CTR</td>
<td>‘Choose the Right’</td>
</tr>
<tr>
<td>D&amp;C</td>
<td>Doctrine and Covenants</td>
</tr>
<tr>
<td>GREMI</td>
<td>Group de Recherche Européen sur les Milieux Innovateurs</td>
</tr>
<tr>
<td>HR</td>
<td>Human Resources</td>
</tr>
<tr>
<td>LDS</td>
<td>Latter-day Saint, i.e. Mormon</td>
</tr>
<tr>
<td>MBA</td>
<td>Masters in Business Administration</td>
</tr>
<tr>
<td>MTC</td>
<td>Missionary Training Center, BYU, Provo.</td>
</tr>
<tr>
<td>OECD</td>
<td>Organisation for Economic Co-operation and Development</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>Research and Development</td>
</tr>
<tr>
<td>SIC</td>
<td>Standard Industrial Classification</td>
</tr>
<tr>
<td>TMSA</td>
<td>Transformational Model of Social Activity (Bhaskar, 1989)</td>
</tr>
<tr>
<td>U of U</td>
<td>University of Utah</td>
</tr>
<tr>
<td>UITA</td>
<td>Utah Information Technologies Association</td>
</tr>
<tr>
<td>UTFC</td>
<td>Utah Technology Finance Corporation</td>
</tr>
<tr>
<td>UVEDA</td>
<td>Utah Valley Economic Development Association</td>
</tr>
<tr>
<td>VC</td>
<td>Venture Capital</td>
</tr>
</tbody>
</table>
CHAPTER 1

INTRODUCTION

‘Silicon Valley is the only place on earth not trying to figure out how to become Silicon Valley.’

R. Metcalfe (1998)

‘So much for Silicon Prairie, or for a dozen other Silicon Valley wannabes in the US and overseas. Time and again, other regions have failed to replicate the technological might – and wealth – of the world’s high tech capital. But it’s not for lack of trying.’

BusinessWeek (1997)

1.1 – SILICON ENVY AND THE FUZZY CULTURAL DUSTBIN

Over the last two decades, no place has been more intensely scrutinised by academics and economic development planners across the world than Silicon Valley (Gray et al., 1998). Widely regarded as the paradigmatic icon of economic and technological success in the global knowledge economy, Silicon Valley is consistently held up as a very visible example of what regions can do to distinguish themselves in a world of heightened spatial competition and of eroding regional policy (Markusen, 1999). Located south-east of California’s San Francisco Bay area, this thin strip of land covers 1500 square miles, spreading out from Palo Alto south into Santa Clara County. This is the archetypal American version of a new industrial district\(^1\) based on its heavily networked core industries of microelectronics, semiconductors, computer networking, hardware and software, and more recently biotechnology (Lam, 2002). Further, while the region represents only 1% of the US population it claims 11% of all US technology jobs (BusinessWeek, 1997). As such, Silicon Valley continues to be the envy of governments across the world who, at a whole range of scales from the OECD right down to the local, have become fixated with trying to recreate the conditions that engendered the region’s vitality and innovation, in order to grow their

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\(^1\) See e.g. Markusen, 1985; Saxenian, 1985, 1989, 1990, 1994; Castells, 1989; Florida and Kenney, 1994; Rogers and Larsen, 1984)
own high tech ‘clusters’. For policy makers, high technology industry seems to promise a rapid, clean and stable industrial development with high wage employment and propulsive potential (Gray and Parker, 1998; Lyons, 1995).

*Plate 1.1 – Silicon Valley, California – Looking North-West up to the San Francisco Bay*

The cluster league now includes a Silicon Plateau, Silicon Desert, Silicon Hollow, Silicon Alps, two Silicon Vineyards, five Silicon Islands, and the improbable Silicon Glacier and Silicon Sandbar. However, beyond clever names and promotional websites these deliberate policy attempts to replicate Silicon Valley’s success through a set-up of non-profit organisations to foster innovation and collective learning through interfirm co-operation have had limited success. Indeed, most have failed to ignite any meaningful long-run process of regional economic growth (Asheim and Cooke, 1999; Castells and Hall, 1994; Florida and Kenney, 1990; Piore, 1990; Lorenz, 1992; Sabel, 1992; Saxenian, 1989; Scott, 2000; Markusen, 1999; Malecki and Oinas, 1999). Critically, the ‘Silicon Valley recipe’ is more complex than has typically been acknowledged in the literature and hence in policy. Policy makers have sought to recreate the Valley’s success through installing the ‘right’ mix of formal institutions: sleek low rise glassy office buildings, broadband internet connections, a few multinational companies, a government-run research institute or two, a few venture capitalists, lower taxes, add in an appropriately skilled workforce, landscape the area in a campus-like atmosphere and stir! However, merely an abundance of formal institutions does not ‘automatically’ generate the crucial interactions between firms so central to high tech regional dynamism (Hudson, 1999; Johannisson et al., 1994; Malecki and Oinas, 1999; Massey et al., 1992). Rather, this is dependent on something more intangible, a crucial set of informal socio-cultural institutions that make regional bundles of formal ‘hard’ institutions work in innovative ways, often described in terms of some regional
cultural ‘glue’. However, while we recognise that ‘culture’ is central to the workings of innovative regional economies, it is still widely regarded within economic geography, and indeed policy circles, as a ‘dustbin category’ for anything we cannot explain (Sayer and Walker, 1992), indeed tantamount to an admission of ignorance. As such, there remain key gaps in our understanding of the specific cultural conditions that underpin innovative regions, and it is this key policy issue that forms the broad context for this dissertation.

1.2 - RESEARCH QUESTIONS

The exact nature of the links between regional culture and the workings of innovative regional economies therefore remain unspecified in typical accounts of regional industrial systems. While typically suggestive of something intangible that permits innovation to proceed in some places but not in others, accounts often fail to specify the exact nature of the mechanisms by which culture informs local corporate forms, actual firm behaviour and regional capacities for innovation. I argue that this central problem is hinged on fuzzy notions of embeddedness (Granovetter, 1985), the key concept through which economic geographers have consistently sought to explain the cultural underpinnings of innovative regional economies. The notion of embeddedness argues that economic actors are embedded in ongoing networks of concrete socio-cultural relationships outside of which their economic activities cannot be understood; however there remains considerable ambiguity and theoretical confusion surrounding the term, and the concept is heavily under-theorised (Martin, 2000; Oinas, 1997, 1999). I argue that if we are to derive a more rigorous and useful theoretical framework of firms’ cultural embedding in the region, it is imperative that we disaggregate culture into its simpler elements. Rather than some all-encompassing abstract notion of ‘culture’ as has been typically employed in these debates, I argue for an unpacking of culture, through the recognition of a culture hierarchy made up of: (i) individual corporate cultures; (ii) a regional industrial culture; and (iii) the broader regional culture in which these are set. Once we unpack culture in this way it allows us to conceptualise the cultural embedding of firms in the region in terms of the overlaps between the different levels of this culture hierarchy. My research therefore focuses on four key research questions:
My research adopts a broadly sociological institutionalist approach to unpack culture in terms of its attendant everyday social processes and practices. I examine how regional culture shapes local corporate forms, actual firm behaviour and hence regional capacities for innovation. I focus specifically on the mechanisms through which firms come to import *regional* cultural conventions, customs, norms and social routines into their internal structures and how that impacts on firms’ abilities to access new knowledge and to use new knowledge once it enters the firm. Further, I explicitly ground those mechanisms and processes in their causal agents, an attribution of responsibility upon which policy might then act. Crucially, my research therefore required an industrial agglomeration case study whose regional culture is highly visible and observable, and hence whose impacts on firms in the local economy are *measurable*. This dissertation therefore focuses on Utah’s high tech agglomeration centred on Salt Lake City which is embedded in a particularly strong and distinctive regional culture, Mormonism. This is a very cohesive regional culture, indeed a *religious* culture whose central tenets are both readily articulated by its members and very well documented. As such it provides a much more visible, and hence I argue measurable, case study than had I chosen a regional culture based on race, political allegiance or class for example.
1.3 – SALT LAKE CITY: HIGH TECH MEETS MORMONISM

‘In a state best known for skiing, Donnie and Marie, basketball and polygamy it would seem strange that technology…would loom so large’ (Boynton, 2000: 2).

Salt Lake City is the main concentration of population on Utah’s Wasatch Front, an urban corridor that runs north and south for 85 miles along the base of the Wasatch Range of the Rocky Mountains to the east of Salt Lake City. To the west it is bounded by the Great Salt Lake and the Oquirrh Mountains (see Figures 1.2 and 1.3). The four counties that make up the Wasatch Front (Weber, Davis, Salt Lake, and Utah Counties) collectively hold more than three quarters of Utah’s population and are also home to an industrial agglomeration made up of over 2100 high tech firms, 90% of Utah’s total high tech industry. In 2000, Utah’s high tech industry employed over 70 000 people in the state across a range of subsectors (Table 1.1), 6.5 % of Utah’s total non-agricultural employment. Utah’s lead high tech subsector in terms of both employment and number of establishments is Computer Software. As such this forms the case study industry upon which my research is based, because if we are to understand a regional economy then it is upon its lead firms that we should focus our analysis (Markusen, 1994).

Table 1.1 - Utah’s High Tech Subsector in 2000 (BEBR (2001) Definition of High Tech)

<table>
<thead>
<tr>
<th>SIC</th>
<th>Description</th>
<th>Establishments</th>
<th>Employed</th>
<th>% Utah High Tech Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>283</td>
<td>Drugs</td>
<td>53</td>
<td>3 998</td>
<td>5.7</td>
</tr>
<tr>
<td>357</td>
<td>Computer and office equipment</td>
<td>28</td>
<td>4 057</td>
<td>5.8</td>
</tr>
<tr>
<td>366</td>
<td>Communications equipment</td>
<td>25</td>
<td>2 953</td>
<td>4.2</td>
</tr>
<tr>
<td>367</td>
<td>Electronic components and accessories</td>
<td>58</td>
<td>3 993</td>
<td>5.7</td>
</tr>
<tr>
<td>371</td>
<td>Motor vehicles and equipment</td>
<td>40</td>
<td>7 904</td>
<td>11.3</td>
</tr>
<tr>
<td>372</td>
<td>Aircraft and parts</td>
<td>40</td>
<td>2 744</td>
<td>3.9</td>
</tr>
<tr>
<td>376</td>
<td>Guided missiles, space vehicles, &amp; parts</td>
<td>10</td>
<td>5 342</td>
<td>7.6</td>
</tr>
<tr>
<td>381</td>
<td>Search and navigation equipment</td>
<td>3</td>
<td>645</td>
<td>0.9</td>
</tr>
<tr>
<td>382</td>
<td>Measuring and controlling devices</td>
<td>39</td>
<td>1 028</td>
<td>1.5</td>
</tr>
<tr>
<td>384</td>
<td>Medical instruments and supplies</td>
<td>71</td>
<td>8 383</td>
<td>11.9</td>
</tr>
<tr>
<td>737</td>
<td>Computer software and data processing services</td>
<td>1438</td>
<td>23 042</td>
<td>32.8</td>
</tr>
<tr>
<td>873</td>
<td>Research and testing services</td>
<td>335</td>
<td>6 168</td>
<td>8.8</td>
</tr>
<tr>
<td>TOT</td>
<td></td>
<td>2 140</td>
<td>70 257</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Utah Dept of Workforce Services – Annual Report of Labor Market Information, 1999
Figure 1.2 – Utah State and the Four Counties of the Wasatch Front (Highlighted)
Figure 1.3 – Detailed Map of the Wasatch Front Urban Corridor, Centred on Salt Lake City
Crucially, Salt Lake City and the Wasatch Front also form the core of the Mormon cultural heartland, the regional culture in which Utah’s high tech industry has developed, and from which it is inseparable. Large numbers of Utah’s software firms are Mormon-founded, and Mormons populate both the management teams and general workforces of the majority of Utah’s lead software firms. Indeed, Utah’s most famous homegrown high tech companies include Iomega, WordPerfect Corporation, Novell, and Evans and Sutherland. All four of these are Mormon founded and continue to employ large numbers of Mormon employees. Mormonism is the distinctive culture associated with the ‘Mormon Church’, or more properly ‘The Church of Jesus Christ of Latter-day Saints’ (the LDS Church). Mormonism is especially strong within Utah reflecting the state’s position as the geographical, political, administrative and historical heart of the LDS Church. Indeed, Salt Lake City is unique as the only city in the US to have been founded as a religious haven, and it remains the worldwide headquarters of the LDS Church. Mormons make up over 75% of Utah’s total population of 2.13 million (LDS Church / Deseret News, 2001-2), and Utah is unique in having by far the largest denominational majority of any US state (Eliason, 2001: 12). Mormon culture is conservative by popular standards with strong family and community impulses (Cornwall, 2001; May, 2001; O’Dea, 1957).

Four key elements make Utah’s Mormon regional culture especially suited to my study. First, Mormonism is more than simply a creedal faith, but rather a whole way of life requiring an almost total commitment in customs, values, and lifestyle (Ballard, 1993; Palmer, 1983). Indeed, many commentators argue that Mormon culture is so strong that there also exists a Mormon ethnicity (Abramson, 1980; Kotkin, 1992; May, 2001; Mitchell, 2000). Second, the demographic dominance of Mormons in Utah creates the possibility of a denomination-specific religious domination of Utah’s general culture that is not as possible elsewhere (Young, 1996). Indeed, over 90% of all church members in Utah are LDS (ibid.). Third, Mormonism provides a regional culture whose central tenets are easily articulated and well-known, and whose ideologies are written down and easily accessible. Fourth, religious beliefs mean that certain behaviour patterns are regarded as more in harmony with the divine than other patterns, and as such religious cultures are especially visible through the distinctive patterns of behaviour that they sustain.

Overall, I argue that Utah’s high tech industrial agglomeration embedded in this highly visible Mormon regional culture has allowed me to observe firms’ import of regional cultural values into their internal operations, and to measure the impact of that cultural import on firms’ abilities to innovate. However, while this is a very visible case it is not a unique case. There are thousands of regional economies right across the globe that are also similarly premised on strong cohesive regional cultures. These include ethnic cultures, trade unions cultures, or work cultures based on
particular sectoral specialisation for example. Furthermore, some of the most well-known geographical examples of new industrial districts are also based on religious regional cultures, albeit key aspects that are often underplayed. First, the Third Italy is widely cited as being amongst the clearest and strongest example of the industrial district phenomena (e.g. Best, 1990; Goodman and Bamford, 1989; Piore and Sabel, 1984; Pyke and Sengenberger, 1990; Scott, 1988). This Central and North-Eastern (CEN) region of Italy experienced remarkable growth in employment and output in its design-intensive and craft-based industries through the 1960s and 1970s, at a rate which significantly outpaced that of Italy as a whole. It is widely recognised that the dynamism of this region is in large part dependent on dynamic networks of small flexibly specialised firms, supported by a set of regional institutions that include rural savings and other banks, agricultural organisations, co-operatives, friendly societies, charities, and extended family networks all of which provide access to community resources, mutual assistance mechanisms and funds for establishing new business (Trigilia, 1990). Critically however, this regional infrastructure is in turn inseparable from the region’s deeply-rooted Catholic religion (Becattini, 1978; Piore, 1990; Trigilia, 1990) which in turn supports a regional socio-political subculture that binds together entrepreneurs, workers, families and institutions around a common set of local social, cultural and economic aspirations, and hence motivates the distinctive patterns of behaviour regarded as key to the region’s dynamism.

Second, Saxenian’s (1994) work on Boston’s Route 128 highlights the role of New England’s Protestant regional culture in sustaining conservative business cultures in local large electronics firms. However in contrast to the Italian case, the embedding of local firms within this regional culture constrains economic growth, primarily in terms of its motivating corporate strategies of self-sufficiency and relatively integrated autarkic companies, reinforced by ethics of secrecy, company loyalty, and a strict separation of work and social life, cultural traits which constrain information diffusion and hence the potential for innovation. Saxenian further outlines how this conservative regional culture also maintains low risk investment strategies among the region’s financial community, which therefore hinders new firm formation. Third, Saxenian’s later work has also highlighted the role of ethnic networks in Silicon Valley, which are key to the region’s dynamism and also link it to dynamic growth regions in South-East Asia (e.g. Saxenian, 1999; Saxenian et al., 2002). These ethnic business networks are largely inseparable from a key religious cultural element premised on Buddhism, Hinduism and Shintoism. Thus in all three of these well-known and otherwise ‘conventional’ accounts, religion is a critical part of the regional cultures in which local firms are embedded. Utah’s distinctive Mormon regional culture has therefore allowed me to observe, measure and hence draw wider conclusions about the
1.4 - MAPPING OUT THE DISSERTATION STRUCTURE

Before outlining the structure of the dissertation, it is worth outlining what this research is not. First, this is not a study into the complete workings of Utah’s high tech economy in an attempt to cure all of its ills. Clearly this is far beyond the scope of a Ph.D. dissertation. Second, this is not a theological study of Mormonism. This research is an economic, sociological and geographical analysis and I make no attempt to evaluate the religious ‘truths’ of Mormonism, concerning God, the supernatural, doctrine or the moral standards of the LDS Church. My interest is not whether LDS beliefs are true or false in a religious sense but rather, what is the culture experienced by ordinary Mormons working in Utah’s computer software industry. I am concerned with humans and the firms they populate, not God. As such, I neither reject nor endorse any of the religious tenets upon which Mormon culture is based. I focus on the processes by which Mormon cultural values influence human behaviour; the mechanisms by which those values are in turn incorporated into the workings of local software firms; and how that influences the ability of those firms to innovate and hence compete. Third, this not an anti-Mormon work. While I highlight certain elements of Mormon culture, which when imported into the workings of local software firms constrain their abilities to innovate, my aim is to foster a better understanding of the processes of cultural embedding of firms in the region, not to deprecate the LDS Church, its beliefs, or doctrines. Figure 1.4 outlines the structure of the dissertation graphically.

Chapter 2 outlines the theoretical and policy context to the dissertation, and demonstrates much more explicitly how I derived my key research questions. First, I outline the broad evolution of new industrial district theory, setting that against the background of the broader cultural and institutional ‘turns’ that have occurred within economic geography over the past decade, through which conventional notions of ‘the economic’ have been broadened. I trace our understanding of the institutional bases of innovative regional economies through three main strands of institutionalist thought: (i) rational choice institutionalism; (ii) sociological institutionalism; and (iii) neo-Schumpetarian evolutionary institutionalism. I demonstrate that while we have a good understanding of the ‘hard’ formal institutional bases of innovative regional economies, we still do not fully understand their informal socio-cultural bases, and in particular the role of regional culture structures in shaping corporate forms, actual firm behaviour and regional innovative capacity. Finally, I outline the key policy relevance of my research in terms of high tech cluster policy, arguing that if economic geographers are to have a significant impact upon this policy
arena then it is essential that we unpack fuzzy institutionalist notions, such as ‘cultural embeddedness’, which at present have limited policy application.

*Figure 1.4 – Mapping Out the Structure of the Dissertation*

*Chapter 3* outlines my methodology, how I actually went about producing a sociological institutionalist economic geography of the firm in the region. While debates in the discipline have hinged on *why* we need to refigure the economic, the methodological practicalities of actually ‘doing’ new economic geographies remain underdeveloped. First, I briefly outline the
epistemological debate regarding the methods most commonly used to study the culture-economy dialectic. I then justify my choice of a realist multi-method approach, centred on a large-scale survey, open-ended interviews, direct observation, group discussions, and secondary data analysis, methods which I argue are far from competing alternatives. Second, I describe in depth my survey sampling and interview protocols, and the key steps taken in moving from region, to industry, to firm, to respondent. Third, I describe how I measured firms’ embeddedness in the Mormon regional culture by means of a five-part procedure, premised in large part on the internalisation of Mormon values by key culture carriers within the firm. Finally I describe the coding, analysis, hypothesis testing and theory-building approaches that I employed, and discuss the ethical issues encountered during fieldwork and the write-up, along with the main limits to my analysis.

Chapter 4 draws on my Utah empirical material to begin to examine the actual ‘contents’ of embedding; that is, of how we actually recognise cultural embeddedness when we see it. First, I describe the Mormon regional culture in which Utah’s high tech industrial agglomeration is embedded, grounding that in a brief history of the LDS Church. Second, I examine the intimate historical relationship between Mormon culture and the development of Utah’s computer software industry. Third, I move on to my own empirical analysis of the contemporary cultural embedding of computer software firms on the Wasatch Front, arguing that cultural embedding is only significant if it makes a difference to the way that firms operate. I outline a series of 12 self-identified Mormon cultural traits which I also found prevalent in the corporate cultures of many of Utah’s lead software firms, and which help define their corporate strategies, goals, ideologies, rules systems, systems of organisational control and external relations. Finally, I develop a broader discussion of firms’ cultural embedding within the region linking corporate culture, to regional culture, to a regional industrial culture. This is premised on notions of patterning, which is apparent not only within firms, but also across firms, both in turn consistent with regional cultural values.

Chapter 5 extends my analysis in Chapter 4 to examine how firms’ cultural embedding in the region impacts specifically on their abilities to innovate. I argue that these impacts are best understood as a series of sustained tensions, between a set of self-identified Mormon cultural traits versus key elements of corporate cultures that have been consistently shown in the regional learning literature as central to firms’ abilities to innovate. I demonstrate how firms’ import of Mormon cultural values impacts not only their abilities to access new knowledge and sources of strategic competencies beyond their boundaries, but also on their abilities to use new knowledge once it enters the firm. In some cases, firms’ import of Mormon cultural traits enhances and
reinforces their innovative capacities; in other cases, it potentially constrains them. Finally, I discuss the overall impact of cultural embedding on the firm, using a range of empirical indicators of firms’ success to determine the overall balance of benefits versus constraints on firms’ competitiveness that stem from their import of Mormon cultural values.

Chapter 6 focuses on the mechanisms through which firms come to import key values from the regional culture and I explicitly ground those in the agents responsible for them, an attribution of responsibility upon which policy-makers might then act. Moving progressively up from the micro to the regional and national scale, these mechanisms include: key individuals within the firm; strength in numbers at both an intra- and inter-firm level; labour market processes; and regional and national supporting mechanisms, with a particular focus on the legislative environment of the firm. Second, I examine how these mechanisms reinforce each other within the firm and how that is manifest in different firms as different degrees (strengths) of cultural embedding in the region, as measured in Chapters 4 and 5. Third, I draw out the Utah-specific from the generalisable mechanisms and use the latter to reconceptualise processes of cultural embedding using critical realism, which I argue offers a cleaner and more substantive model of embedding. I focus on three key sets of relations through which cultural embedding occurs, in terms of: (i) individuals and individuals; (ii) individuals and the firm; (iii) firms and their wider environments. Finally, I examine how these mechanisms vary in their relative significance over time since firm founding, as firms increase in size and develop a more extensive internal division of labour.

Chapter 7 forms the conclusion of the dissertation, and draws together my analysis to answer the research questions posed at the outset of the piece. I explicitly focus on the wider policy implications of the research, and its implications for possible programmes of organisational learning and targeted culture change, to realign and decouple entrenched corporate cultures as structures that inhibit innovation given their embedding in wider regional cultures.
CHAPTER 2

UNDERSTANDING THE SOCIO-INSTITUTIONAL BASES OF INNOVATIVE REGIONAL ECONOMIES

‘Increasingly the political and cultural dimension is critical for defining and understanding the dynamics of regions. Regional economies consist of more than just aggregations, or even networks of firms, and their employees; they are also constituted by the cultural traditions and institutional structures that facilitate and regulate economic behaviour and social activity.’

D.A. Wolfe (1997: 4)

2.1 - INTRODUCTION

It is now widely accepted that fundamental changes within the advanced capitalist economies are part of the transition to a new era of capitalist development. Variously conceptualized in terms of a shift to a post-Fordist regime of accumulation, the Fifth Kondratiev, or the New Economy, whatever the label, the emergent geography of this new order is characterised by a decisive reagglomeration of production (Sabel, 1989; Storper, 1995). Economic geographers have focused especially on the role of small high tech firms, organised as flexibly specialised networks in innovative regional production complexes. Characteristic in their high rates of technological dynamism, they are said to represent the new regional spearheads of economic growth in the post-Fordist space economy (e.g., Park and Markusen, 1995; Swygedouw, 1989). To explain the dynamism of these regions, economic geographers have drawn heavily on notions of agglomeration economies, as first developed by Alfred Marshall (1890, 1919) to theorise the evolution of industrial districts in the late nineteenth century. For Marshall, market success depends on increased specialisation and the development of more effective forms of industrial organisation, such as the concentration of production in particular areas which he termed ‘industrial districts’. Marshall (1890) argued that a more efficient use of resources results from the finer division of labour through which firms become increasingly mutually dependent and hence necessarily cooperative. Marshall outlined a triad of ‘localisation externalities’, sources of advantage that lie outside the boundaries of individual firms that derive from firms’ co-location in
industrial districts and its associated interfirm division of labour. These are outlined in Figure 2.1.

Figure 2.1 – Marshall’s Triad of External Economies of Industrial Localisation
(Martin and Sunley, 2001: 7 - Based on Marshall, 1890, Book Four, Ch. X)

Marshall argued that by many producers sharing the fixed costs of and access to common factors of production – land, labour, energy, transportation, and other infrastructures – the supply of such resources is enhanced. Thus, in the long run each individual user’s unit production costs will be lower than if each producer had to create such factor availabilities for itself (Harrison, 1992). This thereby allows small firms to enjoy the benefits of scale economies usually denied to them because of internal restrictions on growth. Crucially however, Marshall also stressed the inseparability of industry from local society, grounded in his notion of an ‘industrial atmosphere’, local traditions, social norms and values that are critical for economic coordination, and which arise spontaneously and unplanned (Scott, 2000: 107).

1 Capital and labour will migrate to such areas to take advantage of the larger markets for their services.

2 The benefits of localisation also include an increase in the degree and specialisation of skills, and their diffusion through the local community to create an abundant supply of appropriately qualified labour; the growth of subsidiary trades and specialised services; and increased use of highly specialised machinery made possible by the combined demand of many firms (Marshall, 1952).

3 Summed up in his famous reference to ‘the secrets of industry... in the air’
Over the last two decades, scholars have argued that contemporary dynamic regional economies display many of the characteristics and driving mechanisms of the old urban craft communities that Marshall wrote about at the turn of the century (Amin and Robins, 1991). This began with the ‘Italian School’, represented primarily by Becattini and his co-workers at the University of Florence, who reactivated the Marshallian idea of industrial districts to account for the dramatic rise of neo-artisanal manufacturing in Central and North-Eastern (CEN) Italy after the late 1970s (e.g. Amin, 1991; Brusco, 1982; Capecchi, 1989; Piore and Sabel, 1984). This research in turn sparked a whole wave of similar case studies across the world, in which scholars have drawn on various lines of institutionalist thought to update Marshallian notions of localization, agglomeration and ‘industrial atmosphere’ to accommodate contemporary economic conditions.

While a single type of new industrial district does not exist, authors nevertheless agree that these regions have several common features which include: increased specialisation of firms around a social division of labour; the formation of external economies of scale and scope; the dissolution of labour market rigidities; the growth of a local infrastructure of specialised services, distribution networks, and supply services; dense networks of co-operation and competition; the socialisation of costs and risks; and the pooling of technical expertise (Amin and Robins, 1990; Gertler and DiGiovanna, 1997). However, our understanding of the ‘industrial atmosphere’ of these Neo-Marshallian industrial districts, their messy socio-cultural intangible underpinnings, remains limited; reflected, I argue, in the limited success of deliberate policy strategies to emulate highly successful regional industrial agglomerations elsewhere.

This chapter therefore sets out the theoretical and policy contexts to my research. First, I examine the institutional and cultural ‘turns’ that have occurred within economic geography over the past decade, tracing the development of new industrial district theory through three main strands of institutionalist thought: (i) rational choice institutionalism; (ii) sociological institutionalism; and (iii) neo-Schumpetarian evolutionary institutionalism; showing how each has tried to improve on the shortcomings of previous approaches. Second, I outline how while we have a good understanding of the ‘hard’ formal institutional bases of innovative regional economies, we still have a limited understanding of their messy socio-cultural underpinnings.

4 Significant examples of contemporary industrial agglomerations include: Silicon Valley and Orange County in California; Colorado Springs; Baden-Württemburg in Germany; Boston’s Route 128; Dallas Fort Worth and Austin Texas; the Cambridge Reading-Bristol axis in the UK; the Scientific Community of the Southern Paris region; and also selected regions in the NICs (e.g. in Hong Kong, Singapore, South Korea, Taiwan, Brazil).

5 Other arguments have focused on first-mover advantages and localised external economies that accrue to the original case helping to crowd out late imitators (e.g. David, 1985; Scott, 1988). Also see Gray et al. (1998) on Silicon Valley’s many faces.
This discussion will demonstrate more explicitly how I theoretically derived my key research questions. Finally, I outline the policy relevance of my research in terms of high tech cluster policy, arguing that if economic geographers are to have a significant impact upon this policy arena then it is essential that we unpack pregnant but fuzzy institutionalist notions, such as cultural embeddedness, which at present have limited policy application.

2.2 – ECONOMIC GEOGRAPHY AND ITS FUNNY TURNS

‘The full complexity of modern economies only becomes apparent when we move outside what are often still considered to be the ‘normal’ territories of economic inquiry. Then a whole new world hoves into view.’


Traditionally, scholars have conceptualised the economy as a self-determining discrete entity, with economic motives such as profit-making and capital accumulation viewed as created by systemic functional efficiency, rather than by historical, social, and cultural agency (Peet, 1997). While few geographers would locate themselves firmly within this school, many have drawn heavily from the abstract logic of transactions. However, since the early 1990s we have witnessed the emergence of ‘new economic geographies’ (see Barnes, 1996; Lee and Wills, 1997; Yeung, 2002), a broadening of the discipline’s conceptual, methodological, and empirical scope, in which scholars have embraced the socio-cultural, institutional and relational dimensions of economic activity (Martin and Sunley, 2000). The very idea of the economy is being reformulated as porous and interdependent, bleeding into other spheres as they bleed into it (Harrington et al., 1999). Peet employs the following provocative metaphor:

‘This is not an isolated, purely ‘economic’ system of relationships played out in a separate realm called Econoland, a kind of austere Disney World, with cartoon characters dressed as Mr. Gross Profit and Ms Marginal Cost solemnly walking around, shaking hands and generally pretending to have a thoroughly bad time. Economy interacts not only internally but also with a broad array of sociocultural forces.’

R. Peet (1997: 45)

As such, scholars increasingly focus on so-called ‘background’ factors (Block, 1990), the ‘soft’ socio-cultural, relational and contextual aspects of economic behaviour previously ignored in conventional economic analyses but which crucially underpin the workings of the space economy. There has resulted in a more fluid and hybrid interpretation of the ‘economic’ premised on two
intimately related ‘turns’ within the discipline, through which conventional economic categories of analysis have been decentred and destabilised, and in the context of which theories of new industrial development have evolved.

First, there has been an ‘institutional turn’ within economic geography, centred on the recognition that the form and evolution of the economic landscape cannot be fully understood without giving due attention to the various social institutions on which economic activity depends and through which it is shaped (Martin, 2000: 77). These geographical analyses extend previous work by two key scholars. First, they build on the work of Thorstein Veblen, the late-nineteenth and early-twentieth century American economist who first conceptualised institutions as ‘settled habits of thought’ (Veblen, 1919: 239) which shape economic behaviour. ‘Institutions’ thus refer to systems of social, economic, and political rules, procedures, customs, and conventions that organise and constrain social and economic behaviour through the reproduction and transmission of accepted norms and values (Wolfe and Gertler, 2001). Institutions can be either formal (e.g. rules, laws and organizations) or informal (e.g. individual habits, group routines, or cultural norms and values).

Second, institutionalist economic geography also builds on the work of Karl Polanyi, who argued that all economic relationships are embedded in both economic and non-economic institutions which create distinctive patterns of constraints and incentives (Polanyi, 1944). In particular, geographers have especially drawn on re-presentations of Polanyi’s original notion by Marc Granovetter (1985). Granovetter contrasts embeddedness with the undersocialised view represented by neoclassical economics, which ‘assumes rational self-interested behaviour affected minimally by social relations’ (ibid., p. 481), and with the oversocialised approach represented by much of modern sociology, which conceives of social influences on economic action in a quasi mechanistic way, as once-and-for-all external forces that render ongoing social relations and structures irrelevant. Both have an atomised conception of economic action, in contrast to

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6 As such, firms are conceived as more than simply economic machines responding to external market and cost conditions; rather, the socio-cultural identities of key actors within the firm, differentiated by gender, ethnicity and culture, are argued as central to the way the firm operates.

7 Veblen challenged the methodological individualist premises of orthodox neoclassical economics, whilst simultaneously distancing himself from the Marxist over-emphases on class structures, instead developing an evolutionary institutionalist approach.


9 In the undersocialised account, atomisation results from the utilitarian pursuit of self-interest, whereas in the oversocialised account it results from behaviour patterns having been wholly internalised such that ongoing social relations therefore having only peripheral effects on behaviour (Granovetter, 1985: p. 485).
geographers’ arguments that economic action can only be understood as enmeshed in ongoing wider social, cultural and political structures. It is the role of these systems of rules, norms, procedures, customs and conventions (both informal and formal) within innovative regional economies that form the focus of institutionalist approaches to understanding Neo-Marshallian industrial district development.

Economic geographers’ analyses of regional innovative regional economies have also focused explicitly on the role of culture in these industrial systems, part of a broader ‘cultural turn’ within the discipline (see: Barnes, 1996; Crang, 1997; Thrift and Olds, 1996). Scholars argue that culture is not simply some ephemeral complement to economic behaviour, but lies at its very centre, shaping the nature of competition itself. Economic life is always socially and culturally inflected because ultimately it is carried out by human agents whose economic motives and logics derive from their own socio-cultural identities (Barnett, 1998; Crang, 1997; Lee, 1997; Massey, 1997; Peet, 1997; Sayer, 1997). As such, there is no way in which economic activities could be conducted independently of systems of cultural meanings and norms (Sayer, 1997: 17). Crucially, geographers have drawn on institutions as a vehicle to articulate their culturally-sensitive accounts (Barnes and Gertler, 1999), and in particular on the economists’ distinction between ‘institutional environments’ versus ‘institutional arrangements’ (e.g. North, 1990). The regional ‘institutional environment’ thus refers to systems of both informal socio-cultural conventions, customs, norms and routines and formal (usually legally enforced) systems of rules and regulations (e.g. laws relating to competition, employment, trade money, welfare, etc.) that constrain and control economic behaviour within the region. ‘Institutional arrangements’ refer to the particular organizational forms (e.g. firms) that arise as a consequence of, and whose construction and operation is governed by the institutional environment.

Theories of new industrial district development have thus evolved through three key institutionalist schools of thought: (i) rational choice institutionalism; (ii) sociological institutionalism; and (iii) evolutionary Schumpetarian institutionalism, as geographers have sought to examine the role of cultural institutions in governing and regulating innovative regional economies as well as the socio-institutional combinations that best support innovation. However, I argue that while we now have a good understanding of the ‘hard’ formal institutional bases of these industrial systems, we still do not fully understand how the embedding of firms in regional culture structures, part of the regional institutional environment, shapes their internal operations.

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10 Not to be confused with Cultural Geography as a subfield of the discipline.
and behaviour as specific institutional arrangements, and specifically how cultural embedding impacts on firms’ abilities to learn and innovate.

2.3 – THEORISING THE GROWTH REGIONS OF THE GLOBAL ECONOMY

2.3.1 – RATIONAL CHOICE INSTITUTIONALISM AND ITS CRITICS

The ‘Californian school’, represented primarily by Allen Scott, Michael Storper, and Richard Walker sought to explain the resilience and growth of highly competitive regional networks of firms across Western Europe and North America. Drawing on the rational choice institutionalism of Coase (1937) and more recent continuations of his work by Williamson (1975, 1981, 1985), scholars argued that the overall success of these industrial agglomerations is a function of the transaction cost reductions gained by firms as a function of their close proximity as they agglomerate in space. Their central thesis is based on a three-fold argument. First, instability of markets and an accelerated pace of technological change are met by a disintegration of the production process, and hence a deepening in the social division of labour between firms (Scott, 1986, 1988). This then allows firms to maximise the benefits of specialisation and to minimise exposure to risks of overcapacity, labour force hoarding, and dangers of technological lock-in, and hence to become more flexible (Storper, 1995). Second, as interfirm transactions become more important, so the costs of ‘transport, communication, information exchange, search, scanning, and so forth’, become more significant (Scott, 1988: 176). The increased costs associated with increased external transactions are argued to create a ‘spatial pull’; that firms will seek to agglomerate to minimise the costs of those transaction costs through external economies of scale. Third, spatial agglomeration is also argued to create specialised institutions which further lower transaction costs and hence increase economic efficiency, as labour and other factors of production are pooled among large numbers of specialist producers. These include a myriad of specialised consulting, market research, public relations and venture capital firms, which provide technical financial, and networking services which firms cannot afford individually.

However, this approach is problematic. Crucially, we cannot simply theorise the dynamism of innovative regional economies in terms of reductions in the unit costs of production within a given technology (see for example: Amin and Thrift, 2000; Martin and Sunley, 1996; Storper, 1995, 1998). First, to argue that the institutional forms that prevail within these regions are those that deal most efficiently with reducing transactions costs is far too functionalist. The existence of regional economic and social institutions is not predicated on the minimisation of transaction
costs *per se*. Rather transaction cost reductions should be better approximated as an *outcome* of economic institutions, because even the execution of the transaction cost logic of the firm requires specific social actors (Yeung, 2000). Second, to reduce the inner workings of the firm to a black box that processes inputs into outputs says little of *how* and *why* entrepreneurs create companies, enter markets, or take risks (Leadbeater, 1999). The firm is more than a mechanistic production function or an abstract capitalist imperative, and as such we need to analyse the multiple and competing motives and strategic logics that underlie firm behaviour that cannot be reduced to a purely economic calculus. Finally, external economies and cost-price benefits to producers as structures in themselves cannot explain the *ongoing* innovative capacity of particular high tech industrial districts, nor why some remain competitive whilst others do not. Dynamic regional industrial agglomerations are much more than simply networks of buyer-supplier links (Malecki and Oinas, 1999). Rather, distinctive regional competencies are based on a whole series of factors that go *beyond* the basic factors of production outlined by the Californian school. Saxenian’s (1994) work on the divergent regional economic trajectories of Silicon Valley and Boston’s Route 128 through the 1980s demonstrated this point most explicitly.

By the early 1980s, following periods of sustained growth both regions instead faced economic downturns, primarily due to the decentralisation of routine assembly operations to other regions and the loss of commodity chip markets to the Japanese (Saxenian, 1994). However through the 1980s, while Silicon Valley rebounded with many small start-ups, impressive technological performance, and stabilised world market shares in semiconductors, Route 128 floundered. Crucially, the rational choice institutionalist approach could not accommodate this divergence - why did these similar regional bundles of hard institutions, both theoretically gaining the transaction cost reductions that stem from firms’ agglomeration in space, produce advance in Silicon Valley but relative decline in Route 128? Indeed, Saxenian is able to control for industrial sector, products (in general terms), historical period, position in the business cycle, political events, and nation-state, since these are shared in common between the two regions (Gertler, 1995)\(^{11}\). Rather, their divergence is a function of the different regional cultures of these two agglomerations, which shape local corporate forms and regional capacities for innovation.

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\(^{11}\) Nor could Silicon Valley’s superior performance could be attributed to differentials in real estate costs, or wage levels. Land and office space were actually more expensive in most of Silicon Valley than in Route 128 during the 1980s (Saxenian, 1995), and the wages and salaries of production workers, engineers, and managers were also higher (Sherwood-Call, 1992). Nor were there any significant differences in tax rates between California and Massachusetts (Tannenwald, 1987). Nor could their differences in regional performance be traced to patterns of defense spending. While Route 128 has historically relied more heavily on military spending than has Silicon Valley, and hence made more vulnerable to defense cutbacks, Route 128’s downturn began in 1984 at a time when the value of prime defense contracts to the region was still on the increase (Saxenian, 1995: 4). Both have origins in postwar military spending and university based-research - during the Korean and Vietnam wars, both regions experienced massive infusions of defense-related funding.
(Saxenian, 1994; 6). ‘Soft’ socio-cultural influences are critical to the ways regional industrial systems function, and hence should not be assumed away in our analyses.

2.3.2 – SOCIOLOGICAL INSTITUTIONALIST APPROACHES

In response to critiques of the rational choice institutionalist approach, a new heterodoxy has evolved, based around the metaphor of regional economies as sets of relations. Whilst not denying the reality of transaction cost reductions that accrue to firms as a function of their co-location, we also need to recognise that innovative regional economies are integrated by a wider set of less tangible but crucially important ‘untraded interdependencies’ (Storper, 1995) which go beyond simple input-output links. Sociological institutionalist approaches thus reinterpret Marshall’s original speculations about ‘industrial atmosphere’ and emphasise the socio-cultural foundations of industrial organization and corporate behaviour that are critical to understanding the ways that regional economies function. Drawing on the ‘old institutionalism’ of Veblen, ‘institutions’ are interpreted as social repertoires, routines, and conventions that provide cognitive frameworks or templates of meaning through which economic identities and actions are legitimated (Martin, 2000: 82). Scholars have focused on how these institutions shape local production, employment relations, industrial adaptation and regional economic development (e.g. Gertler, 1993; Pyke and Sengenberger, 1990; Schoenberger, 1997).

Crucially, scholars within this broad school have focused on the cultural embeddedness of firms in the region (e.g. Malecki, 1995; Saxenian, 1994; Schoenberger, 1994). That is, how culture, in the form of collective beliefs, norms, understandings, ideologies, meanings, taken-for-granted assumptions, identities and lifestyles, sets limits to economic rationality, and how it shapes firms’ systems of organisational control, economic strategies and goals (Dacin et al., 1999; Zukin and DiMaggio, 1990). Indeed, it is difficult to explain the continuing competitive advantage of certain industrial districts over others if their cultural conventions, rules of behaviour, and explicit

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12 Indeed attempting to identify the ‘transaction costs’ of these intangible underpinnings of regional industrial agglomerations only served to highlight the limitations of the rational choice institutionalist approach used in isolation (Henry et al., 1996).

13 However, contemporary scholars place greater emphasis on the collectivist institutional bases of community and co-operation than did Marshall, who viewed collective action as blunting initiative and inhibiting competition (Keeble and Wilkinson, 1999: 298).

14 Arguments have therefore aligned themselves with the earlier flexible specialisation school accounts of successful industrial districts in North-Eastern Italy (Brusco, 1982; Piore and Sabel, 1984), which placed heavy emphases on trust, cooperation, and artisanal production, to develop a theory of economic co-operation, where old social ties and community relationships place strict limits on economic behaviour.
accord are not taken into account (Storper, 1992). Saxenian’s (1994) work on the divergence of California’s Silicon Valley and Boston’s Route 128 highlighted the crucial importance of local cultural determinants of industrial adaptation, only previously acknowledged as superficial disparities between ‘laid back’ California and the more ‘buttoned up’ East coast. Crucially, Silicon Valley’s distinctive regional culture underpins a regional network-based industrial system that promotes collective learning and flexible adjustment among producers of complex related products, imperative under current conditions of shrinking product life cycles, fragmenting markets and an intensification of global competition (Saxenian, 1991)\(^\text{15}\). This regional culture is characterised by willingness to take risks, going against the grain, and loyalties to the technology rather than the firm and contrasts with a very traditional East Coast business culture in Route 128, which instead sustains relatively integrated corporations, lesser interaction between firms, and reduced rates of innovation at the regional level.

Subsequent work has built on Saxenian’s insights to examine how regional industrial cultures are built up through repeated interaction over time, focusing on the role of local forums such as trade shows, conferences, seminars and social activities within that. Geographers have also explored how shared norms, conventions, customs, and traditions help to create a sense of community and trust (e.g. Gertler, 1995; Lorenz, 1988, 1990, 1992; You and Wilkinson, 1994) upon which interfirm co-operation is predicated, given the scope for opportunism offered by the necessary incompleteness of contracts in an uncertain post-Fordist climate of demand. These links and relationships are thus increasingly regarded as the intangible essence of the competitive firm and the competitive region (e.g. Malecki, 1999), a sociocultural ‘glue’ which holds these regions together beyond mere specialisation and interlinkage and which maintains their distinctive mix of competitive and co-operative interfirm relations (Brusco, 1990; Pyke and Sengenberger, 1992; You and Wilkinson, 1994).

\(^{15}\) Saxenian’s account has been contested by others – see e.g. Florida and Kenney, 1990; Harrison, 1994.
2.3.3 - NEO-SCHUMPETARIAN EVOLUTIONARY INSTITUTIONALIST APPROACHES

In this third institutionalist variant developed largely over the last decade, scholars have extended the sociological institutionalist school to focus more explicitly on the significance of knowledge, learning and innovation to understanding regional economic development. First, neo-Marshallian ideas have been married with a reformulation of the work of Joseph Schumpeter (1934)\(^{16}\), who argued that economic growth crucially requires innovation, that is, the generation of higher quality products at lower unit costs than had previously been available. Geographers have thus focused on the local determinants of entrepreneurship, how industrial districts foster or support conditions conducive to knowledge creation, inventiveness, information dissemination, and learning (Lawson, 1997). Crucially, the more specialised each firm becomes, the more it depends on the success of products complementing its own, and so firms become more interested in exchanging information with related producers. The advantages of agglomeration are thus argued to emerge from localised information flows, technological spillovers, collective learning and the creation of specialised pools of knowledge and skill (Lundvall and Johnson, 1994; Malmberg and Maskell, 1997). Second, explanatory weight is also given to the effects of formal and informal institutions that are subject to slow evolutionary change (Amin, 1999), drawing on insights from evolutionary economics\(^{17}\). Geographers have therefore argued that technologies in these innovative regional economies develop along particular pathways, because of significant technological spillovers within the region, given that knowing how to do one thing is frequently consequent upon knowing how to do another.

The regional innovation and learning literatures are vast, with much of it written in a highly abstract and inpenetrable way, however three main overlapping strands of work are discernible. First, the concept of the ‘innovative milieu’ has been developed by the GREMI group\(^{18}\) (e.g. Camagni, 1991, 1992; Maillat, 1995); defined as ‘the complex network of mainly informal social relationships on a limited geographical area, which enhance the local innovative capability through synergetic and collective learning processes’ (Camagni, 1991: 3). Innovation is thus grounded in intergenerational transfers of know-how, imitation of successful managerial

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\(^{16}\) Drawing on Schumpeter’s famous (1934) work ‘The Theory of Economic Development’. Similarly, Veblen also argued that technology is the driving force of economic change, and that its pace and direction are affected by the institutional framework in which it occurs (Wolfe and Gertler, 2001).

\(^{17}\) Evolutionary Economics pioneered by Nelson and Winter (1982) and later refined for the case of technology by Dosi, Arthur, and others (Dosi et al., 1990; Arthur, 1989).

\(^{18}\) Groupement de Recherche Européen sur les Milieux Innovateurs, an association of principally Franco-Italian-Swiss regional economists, centred in Paris.
practices, interpersonal face-to-face contacts, formal and informal co-operation between firm and the tacit circulation of knowledge (*ibid.*). Scholars also argue that these learning processes are enhanced by a shared social and cultural environment that supports interaction (e.g. Keeble and Wilkinson, 1999).

Second, notions of innovative milieux have many similarities to the Regional Innovation Systems (RIS) approach (e.g. Braczyk *et al.*, 1998; Cooke, 1992; Cooke and Morgan, 1993, 1994; Hudson, 1999; Maskell and Malmberg, 1999; Morgan, 1997) which takes theoretical inspiration from work on *national innovation systems* (Lundvall, 1992; Nelson, 1993). The main elements of RIS’s include: the internal organization of firms, the network of interfirm relationships, the role of the public sector, the institutional setup of the financial sector, and the nature of R&D organization. Scholars explicitly focus on the co-operative linkages between firms and these other regional institutions that serve as sources of knowledge dissemination and innovation within the region. Spatial proximity is argued to facilitate frequent, close, face-to-face interaction, both planned (formal) and unplanned (informal), which enable learning through interaction (Wolfe, 2001).

Third, notions of the ‘learning region’ are well established in the economic geography literature19 (e.g. Asheim, 1996; Cooke and Morgan, 1998; Florida, 1995; Maskell and Malmberg, 1999; Morgan, 1997). The learning region school draws explicitly on conventions theory to focus on the codes and ways of organising and co-ordinating behaviours that make learning possible within the region (e.g. Storper, 1992; Storper and Salais, 1997)20. It argues that tacit knowledge does not ‘travel’ easily, in part because its transmission is best shared through face-to-face interaction between partners, in turn aided by commonalities of language, codes of communication, conventions, norms, and personal knowledge of each other based on a past history of working together, which in turn builds trust, often constructed around a shared culture. Scholars have thus focused on the qualitative nature of the rules, conventions, and socio-cultural relations which allow actors to act in capable, innovative ways (Lawson *et al.*, 1997) and through which varied skills and competencies are combined to result in new knowledge in the firm (Dicken and Malmberg, 2001).

These three overlapping strands therefore place varying emphases on the role of non-firm institutions and organisations (e.g. government, training organisations, development agencies, universities) in shaping regional innovative capacity versus the role of networking and intensity of

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19 Indeed, notions of the learning region flow from the Regional Innovation System concept.

20 Extends Storper’s earlier work on untraded interdependencies, which are asserted as embodied in conventions, that is, ‘taken-for-granted mutually coherent expectations, routines, and practices (Storper, 1997: 38).
interaction between individual firms. However, all three strands are united in their conceptions of learning and innovation as fundamentally interactive and socio-cultural processes (Lundvall, 1992; Wolfe and Gertler, 2001). Innovation is therefore inseparable from the regional socio-cultural context in which it occurs (Asheim, 2001; Gertler et al., 2000; Malecki and Oinas, 1999).

2.4 - UNPACKING THE REGIONAL CULTURAL ‘GLUE’

However, even with the theoretical developments that have occurred in industrial district and regional learning theory over the last two decades, the exact nature of the links between regional culture and the workings of innovative regional economies are still not fully understood (see the red zone on Figure 2.2). Indeed, it is not for want of trying; a whole host of terminologies and concepts have been employed to try and unpack this messy regional cultural ‘glue’, including Marshall’s (1890) ‘industrial atmosphere’, Becattini’s (1978) ‘localised thickening’, Amin and Thrift’s (1995) ‘institutional thickness’, Storper’s (1995) ‘untraded interdependencies’ and ‘conventions’, and GREMI’s ‘innovative milieux’. Thus, while there is a growing consensus that distinctive regional ‘cultures’ play a vital role in facilitating social learning processes leading to innovation, the origins of these cultures remain somewhat obscure (Wolfe and Gertler, 2001: 16). Accounts return again and again to the cultural properties of these regions, yet rarely specify the exact nature of the mechanisms and processes by which regional culture structures promote innovative activity more successfully in some regions than in others (Asheim, 1996; Storper, 1997). There is often circularity; that innovation occurs because of the presence of certain cultural institutions, and those cultural institutions are what exist in regions where there is innovation. As such, what remains unspecific in these accounts of regional industrial systems is the precise nature of regional culture and its relationship to economic processes, and in particular to learning and innovation. Indeed while it is Saxenian who takes us furthest away from this unsatisfactory state of affairs, even she does not thoroughly establish the causal link between the competitive culture she describes and the success of Silicon Valley as a regional economy (Markusen, 1999: 879).
Figure 2.2 – Theorising New Industrial Districts.

**CONTEXT**
- Post Fordist uncertain climate of demand
- ‘New Information Age’
- Market uncertainty

**RATIONAL CHOICE INSTITUTIONALIST**

**AGGLOMERATION OF FIRMS**
Vertical disintegration of division of labour

**EXTERNALISED SYSTEM OF PRODUCTION**

**RESOURCE POOLING**
(capital, labour)

**DECREASED TRANSACTION COSTS**

**SOCIOLOGICAL / SCHUMPETERIAN EVOLUTIONARY INSTITUTIONALIST**

Facilitating development of...

**‘COMMON CULTURAL GLUE’**
- Customs, conventions, social norms.

**TRUST**
Facilitating...

**INTERFIRM NETWORKING & CO-OPERATION**

**INFORMATION DIFFUSION ACROSS FIRMS**
Information realigned in new ways in different firms

**HIGHER RATES OF INNOVATION**

**LEARNING WITHIN THE FIRM**

**REGIONAL GROWTH**

**ECONOMIC SUCCESS**
I argue that this central problem is hinged on fuzzy\textsuperscript{21} notions of embeddedness, the key concept upon which geographers have consistently drawn to theorise the cultural underpinnings of innovative regional economies. The metaphor of embeddedness is especially helpful in: (i) capturing those aspects of economic life that are not ‘purely economic’; (ii) unpacking the nature of the relation between the firm and its wider environment; and (iii) understanding the varied ways that firms are affected by their local and regional surroundings and vice versa. However, there remains considerable conceptual ambiguity and theoretical confusion surrounding the term, and its precise meaning remains cloudy and inconsistent (Martin, 2000; Oinas, 1997, 1999; Sunley, 1996). These problems stem in large part from Granovetter’s original (1985) formulation. First, while Granovetter made an excellent programmatic statement of the need for economic analyses to take socio-cultural factors more seriously, he nevertheless said very little about the actual ‘contents’ of embedding (Friedland and Alford, 1991). Second, Granovetter’s (1985) argument also lacks its own concrete account of how social relations affect economic exchange (Uzzi, 1997). Third, Granovetter also leaves open the question of whether actors may be individuals, organisations or firms. These overall ambiguities have in turn been compounded by differential uses of the term, as different disciplines have imported and drawn on Granovetter’s original notion. Indeed, highly varying uses of the term exist within the economic geography literature alone and these are shown in Table 2.1. Thus, although widely invoked by economic geographers, the metaphor of embeddedness still indicates more of a research programme than a well worked out set of propositions (Sunley, 1996), and the conceptual work and operationalisation of issues related to embeddedness are still half-way, a fact that has not really been acknowledged in the literature (Oinas, 1999). However, I do not wish to reject the notion of embeddedness altogether. The term is particularly valuable because it \textit{itself} invokes the idea of ‘soft’ aspects firms’ relations and their socio-spatial environments that impact on the way they operate (Oinas, 1997). Indeed, the term is also firmly established as part of economic geographers’ conceptual vocabulary (Martin and Sunley, 2001). However, it is imperative that theoretically vague notions of embeddedness be unpacked, reconceptualised and specified in a cleaner and more policy-workable way. This is especially the case for the notion of \textit{cultural} embeddedness which I argue is \textit{doubly} fuzzy.

\textsuperscript{21} A fuzzy concept is on which posits an entity, phenomenon or process which possesses two or more alternative meanings and therefore cannot be reliably identified or applied by different researchers (Markusen, 1999).
Table 2.1 – Competing Uses of the Term ‘Embeddedness’ in the Economic Geography Literature

<table>
<thead>
<tr>
<th>Useage</th>
<th>Literature</th>
<th>Key Arguments / Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overview</td>
<td>Granovetter, 1985; Oinas, 1997, 1999; Polanyi, 1944; Smelser and Swedberg, 1994; Zukin and DiMaggio, 1990.</td>
<td>Economic agents are enmeshed in ongoing systems of concrete interpersonal relationships outside of which their economic behaviour cannot be fully understood.</td>
</tr>
<tr>
<td>Socio-Relational</td>
<td>Dicken, 1994; Harrison, 1992; Yeung, 2002.</td>
<td>How economic events are embedded in spatial structures of social relations, which effect dynamic changes in the spatial organisation of economic activities.</td>
</tr>
<tr>
<td>Structural</td>
<td>Crewe, 1996; Park, 1996; Uzzi, 1996, 1997.</td>
<td>Focus on how the network architecture of material structures influence the activities of economic actors embedded within them.</td>
</tr>
<tr>
<td>Territorial</td>
<td>Amin and Thrift, 1994, 1997; Park, 1996; Storper, 1997; Tödtling, 1994.</td>
<td>Focus on the embeddedness of firms in territorial networks of linkages e.g. with other firms and formal regional institutions – especially with regard to new industrial districts.</td>
</tr>
<tr>
<td>Local</td>
<td>Best, 1990; Dicken et al., 1994; Harrison, 1992; Markusen, 1994; Phelps et al., 1998; Turok, 1993.</td>
<td>Focus on the degree to which firms are embedded in local economies, through relationships with competitors, customers, suppliers, regional business organisations and public sector forums; and hence on the degree to which firms are committed to the locality.</td>
</tr>
</tbody>
</table>

Crucially, the notion of ‘culture’ itself in economic geography is typically regarded as a ‘dustbin category’ for anything we cannot explain (Sayer and Walker, 1992), as appealing to a ‘mystery’ of forces, even tantamount to an admission of ignorance (Gertler, 1997). These problems have been further confused because this relatively recent interest in economic cultures by geographers draws upon a long tradition in other disciplines, including anthropology, management studies, sociology, political science, political economy, economic sociology, business and organisational studies, political science, and cognitive psychology (MacLeod, 2001). Each has a different conception of ‘culture’ upon which geographers have variously drawn, adding in their own nuances and interpretations to further confuse the issue. The problem with culture is therefore
that it is not just one concept but a family of concepts\textsuperscript{22}, meaning different things to different people in different disciplines (O’Reilly and Chatman, 1996: 159). This then amplifies the fuzzy notions of embeddedness as outlined above, to sustain cultural embeddedness as a doubly fuzzy notion. Crucially therefore, how do we actually recognise cultural embedding when we see it?

2.4.1 – UNPACKING THE FUZZY CULTURAL DUSTBIN: DERIVATION OF RESEARCH QUESTIONS

If we are to derive a more rigorous and useful theoretical framework of cultural embedding, and hence disentangle the specific cultural conditions which underpin innovative firms in the region, it is imperative that we disaggregate culture into its simpler elements. There are four key points of departure. First, explanations have tended to reify culture, giving it causal powers outside of the individuals whose interactions sustain it as a pluralistic set of social practices (McDowell, 1994; Mitchell, 1995). Rather, we need to examine the processes by which industrial cultures, whether at the level of the workplace or the region, are themselves constructed and reconstructed by everyday social interaction. Thus, rather than black box a region’s labour force as simply a ‘pool’ that firms dip into, I ground my focus in key individual agents, because ultimately all interactions between firms are between people. To abstract culture from these key agents, only obscures the relationship between firms, interfirm associations, and regional innovation, in which individuals are key given their multiple identities and simultaneous existence at a range of scales (Harvey, 1996).

Second, whilst the organizational studies literature tends to view corporate culture as operating independently of a wider socio-cultural context (Gertler, 2001), in contrast, the bulk of the industrial district and regional learning literature does not adequately relate regional culture to the internal workings of the firm, that is to firms’ individual corporate cultures. However, neither culture exists independently of the other. Thus, rather than some all-encompassing abstract notion of ‘culture’ as has been typically employed in these debates\textsuperscript{23} I argue for an unpacking of culture, through the recognition of an explicit culture hierarchy, made up of: (i) individual corporate cultures; (ii) a regional industrial culture; and (iii) the broader regional culture in which these are set. This is outlined in Figure 2.3.

\textsuperscript{22} Indeed, one early contribution on organisational culture offers 164 different definitions of culture! (Kroeber and Kluckhon, 1952 – quoted in Furnham and Gunter, 1993).

\textsuperscript{23} e.g. ‘the shared understandings and practices that unify a community and define everything from labour market behaviour to attitudes towards risk taking’ (Saxenian, 1994: 4).
Once we unpack regional culture in this way, it allows us to conceptualise the cultural embedding of firms in the region in terms of the overlaps between different levels of this culture hierarchy; that is, in terms of firms’ import of regional cultural traits. Third, whilst much of the more popular work in the business press speaks of culture in a normative fashion (see Glasmeier et al., 1993), suggesting the role that it should play in the firm, I am more interested in the role that culture does play in the firm; how firms come to import regional cultural values; how those are disseminated, reinforced and managed within the firm on a day-to-day basis; and how those mechanisms vary over time. Finally, whilst scholars have typically highlighted the role of traditions and aspects of social life that positively impact on firms’ and regions’ economic performance, we also need to examine regional cultural attributes which constrain firms’ economic performance. Based on these four key points, my dissertation is therefore centred on the following research questions:
Figure 2.4 - Key Research Questions

1. How far, and through what mechanisms, do high tech corporate cultures come to embody the wider regional culture in which they are embedded, in terms of its associated values, traditions and ways of thinking?

2. How does the incorporation of regional cultural imperatives into the firm both promote and constrain its ability to learn and hence innovate?

3. How does the cultural embeddedness of the firm in the region change over time?

4. What are the implications of these mechanisms for realigning corporate cultures that inhibit regional dynamism, given their embedding in the wider regional culture?

My research adopts a broadly sociological institutionalist approach to examine how firms, as specific institutional arrangements, are governed by their informal institutional environment, that is, regional systems of informal cultural conventions, customs, norms and social routines. In this dissertation I unpack culture in terms of its attendant social practices, to examine how the embedding of firms in wider regional culture structures impacts upon their internal and external relations. Specifically, I examine how regional systems of cultural conventions, customs, norms and social routines shape firms’ systems of organisational control, ideologies, rule systems, decision-making processes, and corporate strategies, and hence their innovative capacities and abilities to compete. These issues have central policy relevance and it is to this that I now turn.
2.5 – TOWARDS A MORE POLICY RELEVANT ECONOMIC GEOGRAPHY

2.5.1 – CLUSTER POLICY AND THE ‘NEW ECONOMIC GEOGRAPHY’

The past two decades have witnessed increased academic and political appeal to the regional scale as policy makers across the globe have become fixated with industrial clusters as an important tool for stimulating economic growth (Maskell and Malmberg, 2002). While clusters are argued to occur in many types of industries, high tech clusters in particular have attracted most policy attention (Keeble and Wilkinson, 2000; Norton, 2001; OECD, 1999; Swann et al., 1998), viewed as offering a clean and high-wage mode of economic development capable of high rates of regional growth. Thus, under the banners of ‘national competitiveness’ and ‘flexibility’, governments have sought to recreate the conditions that engendered Silicon Valley’s vitality and innovation, in order to grow their own high tech ‘clusters’ of specialised, internationally competitive industries. However while ‘clusters’ have long been researched by geographers in the form of ‘industrial districts’, ‘new industrial spaces’, ‘regional complexes’, and ‘high tech milieux’ as I have already outlined, the impact of economic geography on this policy realm has thus far been limited. Ironically, it is the ‘new economic geography’ - notably of Michael Porter and Paul Krugman who claim to have ‘rediscovered’ geography in economics - that has attracted the attention of policy-makers. Crucially, policy-makers prefer its apparently clean and workable solutions over those of economic geographers’ messy detail (Clark, 1997). Thus, while economists remain clustered at the formulation end of the policy-making cycle, widely regarded as the key source of policy expertise for ‘evidence-led’ government research (Henry et al., 2001), economic geographers tend to be found only at the implementation and evaluation end (Peck, 1999).

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24 Competitiveness can be defined as the ability of an economy to maintain stable or increasing market shares in an economic activity while sustaining stable or increasing standards of living for those who participate in it (Cohen et al., 1984).

25 ‘New industrial spaces’ and ‘industrial districts’ (e.g. Asheim, 1994; Goodman and Bamford, 1989; Harrison, 1992; Scott, 1988, 1998); ‘regional innovation systems’ and ‘innovative milieux’ (e.g. Braczyk et al., 1998; Cooke and Morgan, 1994); ‘learning regions’ (e.g. Asheim, 1996, 2001; Florida, 1995; Malmberg and Maskell, 1997; Morgan, 1997); ‘industry agglomerations’ (e.g. Malmberg and Maskell, 1997), ‘industrial districts’ (e.g. Becattini, 1990), ‘innovative milieux’ (e.g. Maillet, 1995); and ‘neo-Marshallian nodes’ (e.g. Amin and Thrift, 1992).

26 Krugman refers to his own work as the ‘New Economic Geography’. Others (e.g. Pinch, 2000; Olsen, 2002) refer to the work of Porter, Krugman, Arthur et al., within economics as ‘Geographical Economics’, ‘the New Geographical Economics’, or ‘the geographical turn in Economics’. This contrasts with ‘new economic geographies’, as the general work of economic geographers proper concerned with broadening conventional notions of the economic to encompass a broader socio-cultural, relational, and institutional focus.

27 Indeed, economics however defined is still widely regarded as the lynchpin of the social sciences, standing for a certain rigour and confidence.
Specifically, it is the non-mathematical models of local industrial development articulated and popularized by Porter that have been most widely adopted in policy (see e.g. Porter 1990, 1994, 1996, 1998). While Porter’s descriptive approach contrasts sharply with the formal mathematical models of spatial agglomeration advanced by Krugman (1991, 1995, 1998) and others, these latter models are often invoked as providing scientific credentials to the cluster argument (Martin, 1999). The cluster notion is essentially neo-Marshallian, and there are clear parallels between Porter’s ‘competitive diamond’ model (*Figure 2.5*) and Marshall’s triad of agglomeration externalities outlined at the start of this chapter (*Figure 2.1*).

*Figure 2.5 – Porter’s Competitive Diamond Model of Local Clustering*

Porter argues that industrial clustering is not only a key source of international competitive advantage for the industries concerned, but also fosters economic growth in the regions in which clusters occur. Cluster policy emphasises the benefits of cooperation between firms, and between firms and other institutions through which knowledge and information are exchanged. Cluster policies also typically invoke other successful high tech clusters as role models to follow;
especially Silicon Valley in California, Route 128 in Massachusetts and biotech in the San Francisco Bay area and the New York tri-state area.

The cluster concept is highly attractive to policy makers for three key reasons. First, Porter has rooted the notion within a broader focus on the determinants of competitiveness, productivity and innovation (Porter, 1996; 1998; 2000), all of which have central public policy relevance (Martin and Sunley, 2001). Second, the cluster concept sits well with the policy preoccupation with micro-economic supply-side intervention, with the growing trend towards decentralisation of policy responsibility and with an associated emphasis on developing the indigenous potential of localities and regions (ibid.). Third, Porter’s model has a very clear role for government in stimulating and supporting the growth of clusters; that government can be an active player in the cluster process. Porter has thus been highly instrumental in the UK Competitiveness White Paper, *Our Competitive Future: Building The Knowledge-Driven Economy* (DTI, 1998), which in turn heavily emulates the US initiative, *Technology for America’s Growth: A New Direction to Build Economic Strength* (1993)\(^{28}\), the Clinton-Gore technology policy programme coordinated by the US National Science and Technology Council. Both policies assert the need to build networked ‘clusters of excellence’ of industry for national competitive advantage and explicitly set out frameworks of action to create the conditions that encourage cluster formation and growth. Both have also been followed by a whole host of other documents. Notably a (1999) report of a steering group led by Lord Sainsbury sought to identify barriers to the growth and development of clusters in the UK. This highlighted a key set of formal institutional ‘ingredients’ deemed critical to cluster development and I have outlined these in Table 2.2. The US initiative is premised on a similar list.

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Table 2.2 – UK Cluster Policy Shopping List of Institutions

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strong science base</strong></td>
<td>Leading research organisations: e.g. university departments, govt labs, hospitals / medical schools and charities. Critical mass of researchers, world leading scientist(s)</td>
</tr>
<tr>
<td><strong>Entrepreneurial culture</strong></td>
<td>Commercial awareness and entrepreneurship in universities and research institutes. Role models and recognition of entrepreneurs. Second generation entrepreneurs</td>
</tr>
<tr>
<td><strong>Growing company base</strong></td>
<td>Thriving spin-out and start-up companies. More mature ‘role model’ companies (exporting and with global presence)</td>
</tr>
<tr>
<td><strong>Ability to attract key talent</strong></td>
<td>Critical mass of employment opportunities. Image/reputation as a (biotechnology) cluster. Attractive place to live</td>
</tr>
<tr>
<td><strong>Availability of finance</strong></td>
<td>Venture capitalists, business angels</td>
</tr>
<tr>
<td><strong>Premises and infrastructure</strong></td>
<td>Incubators available close to research organisations. Premises with labs and flexible leasing arrangements. Space to expand. Good transport links: motorways, rail, international airport</td>
</tr>
<tr>
<td><strong>Business support services</strong></td>
<td>Specialist business, legal, patent, recruitment, property advisers. Large companies in related sectors</td>
</tr>
<tr>
<td><strong>Skilled workforce</strong></td>
<td>High quality skilled workforce, training courses at all levels</td>
</tr>
<tr>
<td><strong>Effective networking</strong></td>
<td>Interfirm networks of suppliers and customers. Extensive forward and backward linkages. Regional trade associations. Shared equipment and infrastructure. Frequent collaborations between government, business and the independent sector</td>
</tr>
<tr>
<td><strong>Supportive policy environment</strong></td>
<td>National and sectoral innovation support policies. Support from RDAs and other economic development agencies. Sympathetic planning authorities</td>
</tr>
</tbody>
</table>

Modified from *Biotechnology Clusters*, Department of Trade and Industry, 1999 (Section 3.2)

N.B. - US innovation policy recognises the following components of innovation systems: Governance, Legitimation, Technology Standards, Scientific Research, Financing, Human Resources, Technology Development, Networks and Linkages, Markets

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29 c.f. ‘We do not believe there is any single recipe for cluster development’ (DTI, 1999: 24).
Central to these policy initiatives therefore is the notion that governments can underwrite the building blocks of the learning economy through acting as catalysts or *animateurs* (Morgan, 1996) through the state set-up of business organisations, to help private sector firms partner with other firms with complementary skills and technologies, and hence develop and profit from innovation. To this end, Regional Development Agencies (‘Regional Technology Alliances’ in the US) have been put in place in relevant locales to help promote the commercialisation and application of critical technologies and to encourage firms and institutions to exchange information and develop new products. Further, the Chancellor announced in the 2000 Budget a £50 million Innovative Clusters Fund, designed to facilitate RDAs co-financing business incubation and small-scale infrastructure, and hence support cluster development through networks of business. Additional funds were allocated to boost the funding for 2001-02 to £54 million.

### 2.5.2 – ADD INSITUTIONS AND STIR: THE LIMITS OF CLUSTER POLICY

However, while many governments have attempted to mimic the experience of Silicon Valley *et al.* through the provision venture capital, additional spending for education, incubator space, prestigious addresses in local university-based science parks and technical assistance, the vast majority of these policy efforts have failed to ignite any meaningful long-run processes of regional economic growth (Florida and Kenney, 1990; Lorenz, 1992; Malecki and Oinas, 1999; Markusen, 1999; Piore, 1990; Sabel, 1992; Saxenian, 1989; Scott, 2000). Thus, for all this international ‘policy trade’, it has become increasingly clear that many policies do not travel well, that innovative regional economies may not simply be ‘cloned’ elsewhere. The cluster league now includes a Silicon Plateau, Silicon Desert, Silicon Hollow, Silicon Alps, two Silicon Vineyards, five Silicon Islands, and the improbable Silicon Glacier and Silicon Sandbar (see *Table 2.3*). However, the majority of these Silicon wannabes have little more behind them than a promotional website and a clever name (Rosenberg, 2002: 5).
Table 2.3 — Silicon Envy Cluster League

<table>
<thead>
<tr>
<th>Silicon Alley</th>
<th>New York City, NY – along Broadway</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silicon Alps</td>
<td>Carinthia, Austria</td>
</tr>
<tr>
<td>Silicon Bayou</td>
<td>Louisiana, USA; and Boca Raton, Florida</td>
</tr>
<tr>
<td>Silicon Beach</td>
<td>Santa Barbara, California; and Florida, USA</td>
</tr>
<tr>
<td>Silicon Bog</td>
<td>Midlands of Ireland</td>
</tr>
<tr>
<td>Silicon City</td>
<td>Chicago, USA</td>
</tr>
<tr>
<td>Silicon Desert</td>
<td>Phoenix, Arizona; and The Wasatch Front, UT</td>
</tr>
<tr>
<td>Silicon Ditch</td>
<td>M4 Corridor, UK</td>
</tr>
<tr>
<td>Silicon Dominion</td>
<td>Virginia, USA</td>
</tr>
<tr>
<td>Silicon Fen</td>
<td>Cambridge, UK</td>
</tr>
<tr>
<td>Silicon Freeway</td>
<td>Southern California</td>
</tr>
<tr>
<td>Silicon Forest</td>
<td>Seattle, Washington; and Portland, Oregon</td>
</tr>
<tr>
<td>Silicon Forest Australia</td>
<td>Eastern Australia</td>
</tr>
<tr>
<td>Silicon Glacier</td>
<td>Kalispel, Montana</td>
</tr>
<tr>
<td>Silicon Glen</td>
<td>Livingston, Scotland</td>
</tr>
<tr>
<td>Silicon Gulch</td>
<td>San Jose, California; and Austin, Texas</td>
</tr>
<tr>
<td>Silicon Hill</td>
<td>Hudson, Mass.</td>
</tr>
<tr>
<td>Silicon Hills</td>
<td>Austin, Texas</td>
</tr>
<tr>
<td>Silicon Hollow</td>
<td>Oak Ridge, Tennessee</td>
</tr>
<tr>
<td>Silicon Holler</td>
<td>Northern Virginia; and Washington DC suburbs</td>
</tr>
<tr>
<td>Silicon Island</td>
<td>St John, Virgin Islands; Long Island, NY; Ireland</td>
</tr>
<tr>
<td>Silicon Isle</td>
<td>Alameda, CA; Taiwan; and Whidbey Island, WA Ireland</td>
</tr>
<tr>
<td>Silicon Mesa</td>
<td>North Albuquerque / Rio Rancho, New Mexico</td>
</tr>
<tr>
<td>Silicon Mountain</td>
<td>Mountaintop, Pennsylvania; Colorado Springs, CO; Hudson, MA.</td>
</tr>
<tr>
<td>Silicon Necklace</td>
<td>Boston, MA</td>
</tr>
<tr>
<td>Silicon Orchard</td>
<td>Wenatchee Valley, WA; Garden State Parkway, NJ; and Merritt Parkway, CT</td>
</tr>
<tr>
<td>Silicon Plain</td>
<td>Kempele, Finland</td>
</tr>
<tr>
<td>Silicon Plains</td>
<td>Lincoln, NE; and Tel Aviv, Israel</td>
</tr>
<tr>
<td>Silicon Plantation</td>
<td>Virginia, USA</td>
</tr>
<tr>
<td>Silicon Plateau</td>
<td>Bangalore, India</td>
</tr>
<tr>
<td>Silicon Polder</td>
<td>The Netherlands</td>
</tr>
<tr>
<td>Silicon Prairie</td>
<td>Lincoln, NE; Kansas City, Missouri; Payne County, Oklahoma; Minneapolis St Paul, MN; Chicago, IL; Richardson, TX; Urbana, IL; Sioux Falls, S Dakota; Fairfield, Iowa; Austin, TX</td>
</tr>
<tr>
<td>Silicon Rain Forest</td>
<td>Seattle, WA</td>
</tr>
<tr>
<td>Silicon River</td>
<td>Kansas City-St Louis corridor, Missouri</td>
</tr>
<tr>
<td>Silicon Sandbar</td>
<td>Cape Cod, MA</td>
</tr>
<tr>
<td>Silicon Saxony</td>
<td>Saxony, Germany</td>
</tr>
<tr>
<td>Silicon Seaboard</td>
<td>Richmond, Virginia</td>
</tr>
<tr>
<td>Silicon Snowbank</td>
<td>Minneapolis St Paul, MN</td>
</tr>
<tr>
<td>Silicon Spires</td>
<td>Oxford, UK</td>
</tr>
<tr>
<td>Silicon Swamp</td>
<td>Indiantown, FL; and Perry, FL</td>
</tr>
<tr>
<td>Silicon Triangle</td>
<td>Raleigh / Durham, N Carolina</td>
</tr>
<tr>
<td>Silicon Tundra</td>
<td>Ottowa, Canada</td>
</tr>
<tr>
<td>Silicon Valais</td>
<td>Valais, Switzerland</td>
</tr>
<tr>
<td>Silicon Valley of the East</td>
<td>Penang State, Malaysia</td>
</tr>
<tr>
<td>Silicon Valley Forge</td>
<td>Philadelphia, Pennsylvania</td>
</tr>
<tr>
<td>Silicon Village</td>
<td>North Adams, MA; Scots Valley, CA</td>
</tr>
<tr>
<td>Silicon Vineyard</td>
<td>Okanagan Valley, British Columbia; Petaluma, CA</td>
</tr>
<tr>
<td>SilicoRn Valley</td>
<td>Fairfield, Iowa</td>
</tr>
<tr>
<td>Silicon Wadi</td>
<td>Israel</td>
</tr>
</tbody>
</table>

Selected from http://www.tbtf.com/siliconia.html (site accessed 18 January 2003)- site lists 105 in total
- Appropriations of names beginning with ‘Silicon’ by areas outside Silicon Valley – are either promoted by local boosters or assigned to an area in a press account
I argue that the limits of cluster policy are in large part a function of the overly-narrow economic theory upon which these policies are premised. Porter’s analyses seek to build regional scientific models of the space economy based on ‘stylized facts’ (Clark, 1997), in which socio-cultural institutions are sidelined as ‘soft’ factors which the new economic geography considers best left to sociologists. The new economic geographers’ analyses therefore focus on the ‘hard’ formal institutional underpinnings of high tech regional economies, factors that are tangible and measurable. Thus, as policy makers have drawn on these theories, their resultant cluster policies have sought to create the ‘right’ mix of hard institutions, a policy ‘shopping list’ of key institutions deemed necessary to add together to make an innovative regional economy (also see Wolfe, 2001). The whole project seems to be one of ‘add institutions and stir’ in some assumed inevitable linear process, however there are three intimately related limits to such an approach.

First, merely an abundance of ‘hard’ regional institutions is not sufficient to ‘create’ an innovative regional economy. Proximity of institutions, the first usual indicator of a cluster, does not guarantee interaction or ‘automatically’ generate interaction between firms (Johannisson et al., 1994; Malecki and Oinas, 1999; Massey et al., 1992); hence nor is it sufficient to produce a high rate of technological innovation and the generation of new knowledge (Storper, 1997; Sunley, 2000). Indeed, Saxenian’s (1994) work showed that even similar regional bundles of hard institutions may produce a self-reinforcing growth dynamic in one place yet relatively limited growth in another because of the different regional cultures in which those institutional bundles are embedded.

Second, in an ironic contradiction to the institutionalist stress on context-specificity, the dominant tendency within cluster policy has been to copy from the most successful regions or from some ‘expert’ manual (Amin, 1999). I argue that this is largely a function of Porter having commodified the cultural context of the firm in the region. While his model does have a limited role for culture, his treatment is highly descriptive rather than analytical. Culture is treated in an ad hoc manner, a bolt-on addition to orthodox analysis, and problematically categorised as a stand-alone variable. However, I argue that culture is not simply another item to add to the high tech cluster shopping list, but rather a factor that underlies the functioning of all the other factors that we are trying to install elsewhere. It is therefore highly problematic to simply strip the firm’s regional cultural context into an assumed independent variable in this manner. Indeed, this

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30 For a broader critique of Porter’s cluster concept see Martin and Sunley (2001).

31 Indeed, Porter’s own cluster mapping project across the US is aimed at identifying ‘best practice’ in successful clusters as a ‘blueprint’ for promoting innovation and competitiveness across regional America as a whole (Martin and Sunley, 2001).
problem is further exacerbated by the increased appetite for importing ‘off-the-peg’ policy solutions at the international scale (also see Peck, 1999). Policy measures developed within the US national cultural context have been directly applied to the UK, which not only has a different national culture, but also within that its own unique mosaic of regional industrial cultures.

Third, the common cluster policy approach – employed in both the US and UK initiatives – has been simply to exhort firms doing business within a national jurisdiction to modify their own behaviour (Gertler, 1997: 56). Specifically, in assuming the role of animateurs (Morgan, 1996), Regional Development Agencies aim to modify the behaviour of firms, managers and workers in their respective regions so that cooperation becomes more commonplace, or financial investment strategies become more embracing of risk (see also Gertler, 2001). However, such structural proscriptions I argue are naïve in terms of their ignorance of a required shift in firms’ corporate cultures to support those mechanisms. These crucially require that firms and their members bend, or indeed break out of, accepted ways of thinking and acting to develop new frames of understanding (Harrison, 1994). It is therefore insufficient to construct institutions that promote openness, co-operation, and collaboration, but which do not address questions of transforming firm’s internal structures (Gertler, 1995), that is their corporate cultures. Yet Porter’s cluster approach lacks any serious analysis or theory of the internal organization of business enterprises (Best and Forrant, 1996; Martin and Sunley, 2001). Instead it emphasises the importance of factors only external to the firm, and even then sidelines the role of regional culture.

It is therefore essential that we seek to understand better the cultural bases of innovative regional economies, influences that serve to make development locally variable, and hence difficult to replicate in other places (Malecki, 1995). We need to examine the everyday social interactions that sustain that culture and move beyond notions of some regional industrial culture which helps firms innovate, to examine how regional cultures penetrate the internal workings firms. We also need to examine how that cultural embedding of firms in the region may also constrain their dynamism as well as promote it. Further, if we are to understand how to realign corporate cultures, first we need to understand how such cultural imperatives come to inform firms’ activities in the first place.

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32 Indeed, even then there remains the problem that new growth cannot necessarily sweep aside local cultural traditions which might resist such change.
2.5.3 - ECONOMIC GEOGRAPHY PROPER AND A CULTURAL TURN TOO FAR

However, while I argue that cluster policies are problematic because of their neglect of the socio-cultural, ironically it is a ‘cultural turn’ within economic geography that significantly maintains its policy distance. There are two main issues. First, the problem with the ‘cultural turn’ in economic geography is not a focus on culture per se, but rather a focus on culture to the exclusion of the economic. The central role of socio-cultural processes in understanding the economic landscape and its evolution is incontestable (see Amin, 1999; Martin, 1999, 2000; Martin and Sunley, 2000; Peet, 1997; Sayer, 1997), however this is not to imply that culture is the explanation or that political economy should be squeezed out. ‘Economic forces continue to dominate contemporary life, and thus, however unfashionable, economic analysis cannot be sidelined’ (Sayer, 1997: 16). Indeed, certain geographers have come close to arguing for a wholesale retreat from economics in economic geography (e.g. Amin and Thrift, 2000; Thrift and Olds, 1996) as they look to refigure economic geography around the cultural. This is clearly antithetical to policy relevance, and hence to economic geography’s own legitimacy as a discipline. The question is therefore not whether to rediscover economics or to go with the cultural, but how to do both at the same time (Lee, 2002: 335). We need to ground our analyses of the cultural embedding of firms in the region in terms of firms’ basic economic assumptions; that is, in their costs, revenue and profitability, and hence in the innovative processes that allow firms to outrun competitors and remain competitive over time.

Second, the ‘cultural turn’ is inseparable from a broader tendency within the discipline towards thin empirics, vaguely articulated theoretical accounts, and a proliferation of fuzzy concepts; that is, concepts which posit an entity, phenomenon or process which possesses two or more alternative meanings and which therefore cannot be reliably identified or applied by different researchers (Markusen, 1999). Thus where economic geographers have theorised the socio-cultural bases of innovative regional economies, I argue that their notions have typically been very fuzzy, jargonised, waffly, esoteric, overly-abstract and hence of limited policy relevance. Fuzzy concepts are also typically accompanied by characterisations in which agents disappear, and in which causal connections are not made, with the use of process language obscuring the attribution of responsibility or possibility for change in a given situation, again limiting their policy relevance. It is a circular state of affairs:

‘Insulation from policy pressures invites fuzzier concepts. Fuzzy concepts make the job of coming up with evidence more difficult. Poverty of evidence results in the tolerance of fuzzy concepts and misguided policy’

A. Markusen (1999: 880)
If we are to break this cycle, then fuzzy institutionalist notions such as cultural embeddedness, which at present have only potential policy relevance, need to be clearly unpacked, de-reified, and grounded in terms of the agents responsible for those processes in order that they be made more workable for policy. Further, notions of cultural embedding also need to be firmly rooted within a broader focus on the determinants of firms’ performance, productivity, and competitiveness, core policy issues. The policy relevance of my research therefore lies in its concern with the specific mechanisms by which regional culture comes to inform firms’ internal and external relations, their strategic decision making processes and hence their capacities for innovation. I seek to ground those mechanisms in the agents responsible for them, an attribution of responsibility upon which policy makers might then act. I also examine the implications of those mechanisms for realigning corporate cultures which currently inhibit innovation, given their embedding in wider regional culture structures. Fundamentally, culture will continue to be ignored in policy circles as long as it remains inadequately theorised in the economic geography literature.

2.6 - SUMMARY

In this chapter I have outlined the broad evolution of Neo-Marshallian theory in economic geography, locating that within a wider ‘institutional turn’ and the three broad schools of institutionalist thought upon which geographers have consistently drawn to theorise the growth regions of the global economy. I have outlined the gaps in our understanding of the regional cultural ‘glue’, which we understand to be critical to the functioning of innovative regional economies but which nevertheless remains poorly understood. These issues in turn also have central policy relevance. However, I do not wish to position culture as the sole cause or explanatory context, nor do I wish to argue that regional institutions are the only scale of institutions important in sustaining conditions conducive to innovation in the firm. They are however the focus of this dissertation because we still do not fully understand them. In the next chapter I outline the nature of my research methodology; that is, how I actually went about investigating the impact of regional culture structures upon the firm.

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33 In fact in Chapter 6 I do explain the significance of national institutional structures, as mechanisms that reinforce firms’ import of regional cultural values, and hence cultural embedding in the region.
CHAPTER 3

PRODUCING AN INSTITUTIONALIST ECONOMIC GEOGRAPHY
OF THE FIRM IN THE REGION

‘The point is to contextualise rather than to undermine the economic, by locating it within the cultural, social and political relations through which it takes on meaning and direction’.


3.1 – INTRODUCTION

Recent debates in economic geography have hinged around a whole series of ‘turns’ within the discipline, through which conventional notions of the ‘economic’, and their implications for policy, have been unpacked and reassessed. Geographers have argued that what we think of as ‘the economic’ is itself expressive of other aspects of culture and society (Massey, 1997; Yeung, 2000b), and have sought to decentre it as the sole logic for understanding economic action. On a conceptual level, this is said to represent a move away from wholly structural accounts of economic change (Hughes, 1999), particularly ideas from Marxian political economy, Regulation Theory, the Flexible Specialisation thesis, and Neoclassical Economics which have dominated the discipline since the early 1970s. While all have different philosophical and theoretical roots, they are all nevertheless argued to have framed particular metanarratives of the economy, that industrial change is determined by some kind of deep-rooted (political) economic logic (Hughes, 1999). In contrast, the ‘new economic geographies’ literature invokes an increasingly broad range of socio-cultural (‘soft’) factors in explaining the performance of economic actors, industrial organisation, and economic change (e.g. Dicken and Thrift, 1992; Lee and Wills, 1997; Hughes, 1999; Martin, 1994; Storper, 1997). In particular, there has been a reassessment and rethinking of the relationships between traditional economic concerns of production, labour and capital on the one hand, and cultural practices of identity, meaning and signification on the other (Crang, 1997: 5). It is in this context that geographers have argued that corporate behaviour is not wholly governed by a singular logic of profit maximisation, but rather that firms are
influenced by a multiplicity of identities and logics (e.g. O’Neill et al., 1999; Schoenberger, 1994, 1997). In particular, the influence of culture on corporate economic action has been a key research focus, through notions of corporate strategy, recognising a dialectical relationship between the firm as both an economic and social institution (Yeung, 2000).

But while debates in economic geography have centred on why we need to refigure the economic, the practicalities of what it actually means to ‘do’ new economic geographies are still unclear and remain underdeveloped (Yeung, 2000). That is, the thematic institutionalist turn has gone ahead of a methodological institutionalist turn. Hence, while the case for recognising the importance of messy social, cultural and institutional processes in understanding the economic landscape and its evolution is incontestable (see Amin, 1999; Martin, 1999, 2000; Peet, 1997; Sayer, 1997), there remain considerable difficulties involved in actually measuring the impact of those institutional variables on the firm. Such ‘soft’ items tend to escape direct measurement, and are difficult to grasp even in qualitative analysis because they are often taken-for-granted by actors and thus feature only indirectly in actors' own accounts. Notably, the conceptual work and operationalisation of issues related to embeddedness is still only partially developed, although this has not really been acknowledged in the literature. One exception is Paivi Oinas’s (1999) work on ‘measuring’ the embeddedness of firms and their employees using the notion of Bhaktian dialogues. She argues that corporate actors adopt different voices depending on what embeddedness position they are speaking from, and that as researchers we can then differentiate between those different voices to analyse the embeddedness of the firm. I am however not impressed nor convinced with this method, since it does not allow for mechanisms beyond the individual.

Thus it is no surprise that policy studies have tended to focus on the ‘hard’ economic aspects of high tech economic development, because it is these variables that are most easily measured. However, I argue that the difficulties of measuring soft intangible variables that escape quantitative measurement should not become an argument for sidelines them all together in our analyses. In this chapter I outline the nature of the methodology that I followed during my research. This was highly pragmatic, evolving to suit the requirements of my study as the research progressed. First, I outline a brief epistemological debate regarding the methods most commonly used to examine the links between culture and economy. I use this debate to justify theoretically my choice of a realist multi-method approach, following Yeung’s (1997) call for the need to go beyond traditional research methodologies in economic geography in order to capture ‘soft’ (socio-cultural) institutional impacts upon the firm. Second, I describe in depth the survey sampling and interview protocols, and in particular, the key steps taken in moving from region, to
industry, to firm, to respondent. Third, I describe how I measured the embeddedness of firms in
the wider regional Mormon culture by means of a five-part procedure, premised in large part on
the internalization of Mormon values by key culture carriers within the firm. Fourth, I describe
the coding, analysis, hypothesis testing and theory building approaches employed. Finally I
discuss the ethical issues encountered during fieldwork and the write-up, along with the main
limits to my analysis. It has been my intention throughout to keep the methodology as
transparent and rigorous as possible, hence its status as a full chapter, rather than being tucked
away as an appendix.

3.2 – RESEARCHING THE ECONOMY-CULTURE DIALECTIC

The influence of the so-called cultural ‘turn’ has added significantly to the use of qualitative
methods within economic geography. Economic geographers have increasingly focused on
building explanations ‘from below’, relying on close dialogue with individuals and organisations,
and linking this ‘local’ knowledge with wider, larger stylised facts and conceptual frameworks
(Clark, 1997; Martin, 1997). Indeed, where research has focused on the intertwining of the
economic with the cultural, corporate interviewing has increasingly been employed as the central
research method (e.g. Crewe, 1996; Crang, 1997; Gertler, 1997; Hughes, 1999; McDowell, 1997;
McDowell and Court, 1994; Oinas, 1999; Schoenberger, 1994, 1997). Their most common form
appears to be semi-structured interviews, in which the interviewer goes into the interview with a
set of themes for discussion which can be addressed in any order, and whose wording can be
modified to suit the respondent in question (Cook and Crang, 1995; Schoenberger, 1991). In this
way, both the researcher’s broad questions can be answered, along with any new and interesting
points raised by the respondent during the course of a more fluid conversation. The overall goal
is a two-way conversation with both interviewer and respondent shaping the content of the
discussion without controlling it. Interviews are therefore structured and directed, yet neither
inflexible nor passive.

The collection of data from interviews with key players in the corporate business world is argued
to have three key advantages. First, open-ended interviews are more sensitive than other survey
methods to historical, institutional, and strategic complexity, given the embedded nature of firms
and individuals in ongoing corporate strategies, the complex rationales of which are not amenable
to structured questionnaires. Interviews are particularly effective for theorising business
behaviour motivations and their shifting underlying logics (Schoenberger, 1991). Second, open-
ended interviews allow us to illuminate economic geographies as seen by the real world-institutional actors within it and to encompass the issues that they perceive to be important
(Yeung, 2000). They allow the acquisition of ‘insider knowledge’ (Eyles, 1988) of everyday life work experiences and also allow existing theories of the economy and its geographies to be continually reworked in light of conversations with the people who actively transform what it means to be involved in ‘the economic’ (Hughes, 1999: 365). Third, open-ended interviews are argued to encourage respondents to really think through their responses, in contrast to a fixed-choice tick box type questionnaire; an interactive dialogue therefore encouraging a higher accuracy and validity of interviewee response (Schoenberger, 1991: 183). Fourth, open-ended interviews allow researchers to get at what was not done, and allow access to the assumptions and motives underlying non-decisions which are not visible in written documents or broad survey data. Overall, corporate interviews therefore help produce more nuanced understandings of the organisation of the firm and are sensitive to the role of inter-personal relationships, corporate culture, and to the nature of firms and industries as constantly moving targets. Further, given the time and access constraints typically imposed on the in-depth study of corporate actors, interviews are often the closest we can get to our research subjects and their corporate worlds (Hughes, 1999; McDowell, 1998).

The open-ended interview method is typically contrasted with the standardised questionnaire, comprised of a fixed sequence of predominantly closed-ended or fixed-alternative questions, characteristic of large-scale survey instruments (Schoenberger, 1991). Since the mid-1980s, and particularly with the cultural ‘turn’, this method has diminished in popularity in economic geography because it is viewed as incapable of providing an adequate explanation for the structures and processes that influence corporate strategy and behaviour (Mullings, 1999). The method is also problematic in that the meaning of particular questions is not equally transparent to all respondents, and that subjects as complex as religion and culture are largely not amenable to fixed-response closed questions. Thus, while this method is able to reveal regularities in actions, it is not able to uncover the complexity of the motivations behind those actions (ibid.). Firms are institutional agents, embedded in a complex network of internal and external relationships, and populated by individuals who are continually faced with a myriad of constraints and possibilities which are very difficult to entangle (Schoenberger, 1991: 181). As such there is a loss of statistical generalisability.
However, there are also several advantages to the standardised questionnaire method: (i) they generate data that is amenable to quantification and summary; (ii) they are often the quickest and easiest way to gather new information and are especially useful for large samples, repeated measures and where comparisons between units are required; (iii) they allow for many firms to be covered even with limited resources, given that do not necessarily have to administer the questionnaire in person; and (iv) they also generate data that is amenable to statistical testing.

Similarly, while open-ended corporate interviewing is the method that has been most consistently employed in research on the culture-economy dialectic, it also has limitations. First, the narratives gained from such interviews are produced through the reflections and memories of the corporate actors themselves, and as such are not necessarily the best representations of the business practices in which the researcher is interested (Unseem, 1995). Second, the method relies on the memories of fallible people, and also runs the risk of providing information which the interviewee thinks the interviewer would most like to hear. Finally, there is the further potential for distortion offered by the double hermeneutic inherent within corporate interviewing: the necessary reliance on participants’ own interpretations of their experiences, in turn (re)interpreted by the researcher.
3.2.1 – A REALIST MULTIPLE METHOD APPROACH

Schoenberger (1991) argues that statistical generalisability may usefully be sacrificed for the sake of an explanation that encompasses such factors as strategic manoeuvrings, conflicts, and trade-offs, or historical contingencies that may be rendered opaque by aggregate statistical manipulations (p.181). However, I argue that these methods are not competing mutually exclusive alternatives. Indeed, the swing towards intensive case study and ethnographic inquiry at the expense of extensive modes of inquiry is one of the negative aspects of the cultural turn within economic geography (Martin, 1999). Crucially, without broader statistical data to contextualise in-depth corporate interviews, we run the risk of producing an account based on idiosyncratic phenomena of limited wider relevance and generalisability. Conversely, while extensive research – of the type commonly based on the identification of descriptive patterns through large-scale data analysis – is useful in the initial identification of empirical regularities and patterns, it rarely meets the criteria of real explanatory power (McDowell, 1992: 213). As such, I argue that we need to go beyond both stylised facts and close dialogue and adopt a multi-method approach in order that we recognise the full complexity of economic life. Extensive and intensive methods work best in combination, each informing, reflecting back on, and complementing the other. My research method therefore recognises the role of general mechanisms, their contingency of impact in space, and also the need for a pragmatic combination of different methods based on the research context at hand. The key methods I have employed are shown in Table 3.2.
<table>
<thead>
<tr>
<th>Method of data collection</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Questionnaire</strong> – fixed choices</td>
<td>Easy to quantify and summarise results</td>
<td>Hard to obtain data on behaviour and structure</td>
</tr>
<tr>
<td></td>
<td>Quickest and easiest way to gather new data rigorously</td>
<td>Little information on the contexts shaping behaviour</td>
</tr>
<tr>
<td></td>
<td>Useful for large samples, repeated measures, comparisons between units or to norms</td>
<td>Not suited to subtle / sensitive issues – e.g. religion, culture</td>
</tr>
<tr>
<td></td>
<td>Ability to cover a large number of firms even with limited resources</td>
<td>Impersonal</td>
</tr>
<tr>
<td></td>
<td>Generates data amenable to statistical testing</td>
<td>Risks non-response, biased/invalid answers, over-reliance on standardised measures</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Meaning of questions not equally transparent to all respondents</td>
</tr>
<tr>
<td><strong>Open-ended Interviews</strong></td>
<td>Readily cover many topics</td>
<td>Expensive [time consuming]</td>
</tr>
<tr>
<td></td>
<td>Can be modified before or during interview</td>
<td>Sampling problems in large organisations</td>
</tr>
<tr>
<td></td>
<td>Can convey empathy and build trust</td>
<td>Respondent and interviewer bias</td>
</tr>
<tr>
<td></td>
<td>Rich data generated</td>
<td>Hard to analyse and interpret responses</td>
</tr>
<tr>
<td></td>
<td>[Data phrased in respondents’ own words]</td>
<td>Retrospective opinions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Distortion due to personal feelings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Self-consciousness</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Unreliability of memory</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Excessive discretion / deliberate falsification</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Distortion of respondent’s role</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Influence of hindsight</td>
</tr>
<tr>
<td><strong>Observations</strong> - of people, work settings</td>
<td>Behavioural data independent of self-descriptions, feelings, opinions, etc.</td>
<td>Constraints on access</td>
</tr>
<tr>
<td></td>
<td>Data on situational contextual effects</td>
<td>Costly and time-consuming</td>
</tr>
<tr>
<td></td>
<td>Rich data on hard-to-measure topics – e.g. actual practices, <strong>culture</strong> **</td>
<td>Observer bias</td>
</tr>
<tr>
<td></td>
<td>Data yield new insights, hypotheses</td>
<td>Presence of researcher may affect behaviour of people observed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hard to analyse, interpret and report data</td>
</tr>
<tr>
<td></td>
<td></td>
<td>May seem unscientific</td>
</tr>
<tr>
<td><strong>Analysing secondary data</strong> – reports, records, files, documents, etc.</td>
<td>Non-reactive</td>
<td>Access, retrieval and analysis problems, generate costs of time and money</td>
</tr>
<tr>
<td></td>
<td>Often quantifiable</td>
<td>Validity and credibility of sources and measures can be low</td>
</tr>
<tr>
<td></td>
<td>Repeated measures show change</td>
<td>Need to analyse data in context – purpose for which data was originally collected my be different from own use</td>
</tr>
<tr>
<td></td>
<td>Members of an organisation can help analyse</td>
<td>Limited data on many topics</td>
</tr>
<tr>
<td></td>
<td>Credibility of familiar measures</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Often cheaper and faster c.f. gathering new data</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Independent sources</td>
<td></td>
</tr>
<tr>
<td><strong>Group discussion</strong></td>
<td>Useful data on complex subtle processes</td>
<td>Biases due to group processes, history, leader’s influence</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Not rigorous</td>
</tr>
</tbody>
</table>

Modified from Harrison (1994: 25)
Each method used therefore produced a different type of knowledge (see Sayer and Morgan, 1985). In realist terminology, an initial broad survey allows broad patterns of empirical regularities (EVENTS) to be uncovered. However, the number of times something happens says nothing about why it happens. Rather, in-depth-interviews, group discussions, and direct observation allow direct access to the participants whose interactions and decisions shape any statistical outcomes in survey data. That is, they help reveal the causal MECHANISMS and STRUCTURES, in turn manifest at the EMPIRICAL level as EVENTS. My overall approach has therefore been to build up a picture both from above based on the broad survey, and from below based on the detail gleaned from dialogue and the knowledge of actors taking part within Utah’s high tech economy, triangulated with secondary data where appropriate at a range of levels. Overall, the research methodology outlined in the rest of this chapter evolved over the course of the fieldwork process, heavily informed by and modified in light of an initial pilot study in the field.

### 3.3 – SALT LAKE CITY CASE STUDY: RESEARCH STRATEGY

I undertook my fieldwork on Utah’s Wasatch Front from February to September 2001, to maximise the amount of time I could realistically spend in the field given my financial limits. This urban corridor consists of a 20-by-85 mile strip of land running north and south along the east side of the Great Salt Lake and Utah Lake and consists of a string of communities that run along the base of the Wasatch Mountains to the west. The area comprises four counties (Weber,
The region is home to 1.7 million people, 78% of Utah’s total workforce. The Wasatch Front is also home to over 90% of Utah’s high tech industry, which employs over 70,000 people (2000) in Utah, across a range of subsectors, as outlined in Table 3.5. It was an explicit aim to keep the research strategy as systematic and rigorous as possible, in line with recent critiques of the thin empirics prevalent in much recent economic geography research (see Martin, 1999; Markusen, 1999). The overall research strategy is split into four main parts as outlined in Table 3.4.

As a crucial first stage I undertook a pilot of both the survey and in-depth interview questions with three ‘throw-away’ firms, chosen because they were particularly open and accessible to study, and they were geographically convenient. I explained to them the purpose of this stage of the research and invited them to challenge any questions that did not work or were flawed in their assumptions. These pilot interviews were invaluable in clarifying the subsequent phrasing of in-depth interview and survey questions, my self-presentation, the relative importance of areas for discussion, and topics that could be dropped through limits on time. I had also sought to undertake as a fifth stage periods of observation in several firms, but none were willing for me to do this. I was however given tours of the companies in 10 cases.
Table 3.4 – Periodisation of the Fieldwork on Utah’s Wasatch Front

<table>
<thead>
<tr>
<th>PHASE</th>
<th>ACTOR FOCUS</th>
<th>TIME PERIOD (2002)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pilot of survey and</td>
<td>3 throw-away firms</td>
<td>February - March</td>
</tr>
<tr>
<td>interview questions and technique</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Survey</td>
<td>105 firms</td>
<td>March – May</td>
</tr>
<tr>
<td>(i) In-depth interviews</td>
<td>20 case study firms</td>
<td>May-September</td>
</tr>
<tr>
<td>(ii) Follow-up interviews</td>
<td>30 industry watchers, academics, VCists, media, church officials, etc.</td>
<td>Some in October / November by phone from UK</td>
</tr>
<tr>
<td>Ward Visits and discussion of</td>
<td>Typical LDS Ward House(^1)</td>
<td>August</td>
</tr>
<tr>
<td>ideas with cultural insiders</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Overall, I followed Markusen’s (1994) method of inferring regional economic structure from key informant interviews, in which certain assumptions are made and steps taken in moving from individuals to firms, to industry, to regional aggregations. I wanted to understand how processes of cultural embedding operate, viewing them through the lens of the lives and careers of individual men and women who live and work in Utah’s high tech agglomeration and the wider regional Mormon culture, to develop a theory grounded in the perspectives of those who participated in the research process. In the remainder of this chapter I outline each of the four key research phases in detail, including the assumptions made regarding representativeness and generalisability as I moved from one level of inquiry to the next.

3.3.1 – MOVING FROM REGION TO INDUSTRY

My research focuses on the impact of culture on the ability of firms to learn and innovate, and hence I have focused on high technology as a knowledge-intensive sector. Further, Markusen (1994) argues that if we are to understand the dynamics of a regional economy then we must focus on its lead industry. As such, I focused on Computer Software (SIC 737), as Utah’s lead high tech subsector (see Table 3.5). This was verified through a data check on the sectoral

\(^1\) Wards are the primary organizational unit of the LDS Church, and the religious, social, and cultural foci of Mormon communities.
structure and size of Utah’s high tech industry which, as revealed in employment shares and location quotients, confirmed that software is the largest component of Utah’s high tech economy. Computer Software is also an example of highly innovative industry sustained by rapid rates of product innovation, and embodying flexible specialisation (Gray and Parker, 1998; Lawson and Lorenz, 1999), and one of the defining industries of the knowledge economy (Castells, 1989).

Table 3.5 - Utah’s High Tech Sector in 2000 (BEBR, 2001 Definition of High Tech)

<table>
<thead>
<tr>
<th>SIC</th>
<th>Description</th>
<th>Establishments</th>
<th>Employed</th>
<th>% UT High Tech Emp</th>
<th>LQ ²</th>
</tr>
</thead>
<tbody>
<tr>
<td>283</td>
<td>Drugs</td>
<td>53</td>
<td>3 998</td>
<td>5.7</td>
<td>0.18</td>
</tr>
<tr>
<td>357</td>
<td>Computer and office equipment</td>
<td>28</td>
<td>4 057</td>
<td>5.8</td>
<td>1.51</td>
</tr>
<tr>
<td>366</td>
<td>Communications equipment</td>
<td>25</td>
<td>2 953</td>
<td>4.2</td>
<td>1.50</td>
</tr>
<tr>
<td>367</td>
<td>Electronic components and accessories</td>
<td>58</td>
<td>3 993</td>
<td>5.7</td>
<td>0.83</td>
</tr>
<tr>
<td>371</td>
<td>Motor vehicles and equipment</td>
<td>40</td>
<td>7 904</td>
<td>11.3</td>
<td>1.08</td>
</tr>
<tr>
<td>372</td>
<td>Aircraft and parts</td>
<td>40</td>
<td>2 744</td>
<td>3.9</td>
<td>0.83</td>
</tr>
<tr>
<td>376</td>
<td>Guided missiles, space vehicles, &amp; parts</td>
<td>10</td>
<td>5 342</td>
<td>7.6</td>
<td>0.84</td>
</tr>
<tr>
<td>381</td>
<td>Search and navigation equipment</td>
<td>3</td>
<td>645</td>
<td>0.9</td>
<td>0.56</td>
</tr>
<tr>
<td>382</td>
<td>Measuring and controlling devices</td>
<td>39</td>
<td>1 028</td>
<td>1.5</td>
<td>0.49</td>
</tr>
<tr>
<td>384</td>
<td>Medical instruments and supplies</td>
<td>71</td>
<td>8 383</td>
<td>11.9</td>
<td>4.07</td>
</tr>
<tr>
<td>737</td>
<td>Computer software and data processing services</td>
<td>1438</td>
<td>23 042</td>
<td>32.8</td>
<td>5.76</td>
</tr>
<tr>
<td>873</td>
<td>Research and testing services</td>
<td>335</td>
<td>6 168</td>
<td>8.8</td>
<td>0.25</td>
</tr>
<tr>
<td>TOT</td>
<td></td>
<td>2 140</td>
<td>70 257</td>
<td>100</td>
<td>--</td>
</tr>
</tbody>
</table>

Source: Utah Dept of Workforce Services – Annual Report of Labor Market Information, 1999

Indeed, computer software is not only Utah’s lead high tech subsector, but also its lead growth high tech subsector over the last decade, as shown in Figure 3.2.

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2 A location quotient is a measure of spatial concentration: a ratio of ratios. The numerator is the total employment for a particular industry in Utah divided by total state employment. The denominator is the US employment for that industry divided by total US employment. Any location quotient over 1 signifies a concentration above the expected state average, e.g. if is 3, means that there are three times more jobs in a particular industry than there would have been if Utah had had a proportional share of national employment in that sector.
The patterns shown in Figure 3.2 continue along the same broad trend lines. Notably, 2000 witnessed further growth in Utah’s computer software and data processing services sector (SIC 737), with 374 new establishments and 7,173 new jobs (a 31% increase) statewide (Council of Economic Advisers to the Utah Governor, 2001). Thus, Utah’s computer software industry contributes over 45% of the state’s total high tech payroll of $1.4 billion (Utah Department of Workforce Services, 2001).

3.3.2 – MOVING FROM INDUSTRY TO FIRM – PART I

3.3.2.1 – BROAD SURVEY

Before attempting any in-depth interviews, I undertook a broad survey, to provide data to contextualise my subsequent in-depth firm case studies. This survey focused on the lead 105 firms (a 10% sample) within Utah’s Computer Software industry, again premised on Markusen’s

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3 This pattern of software growth continues into 2002, however a mismatch in measurement between the BEBR dataset shown and County Business Patterns prevents a stitching together of their two datasets across 1995.

4 Computer software is a set of directions or instructions that exist in the form of machine-readable or human-readable code, which are recorded on physical or electronic medium and which directs the operation of a computer system or other machinery and/or equipment. Computer software includes the associated documentation which
(1994) assertion that if we are to understand the dynamics of a regional economy then we should focus on its *lead* firms. The aim of the survey was to determine any broad relationships between basic firm economic characteristics, competitive position, innovative capacity, funding history, interaction with other firms and the embeddedness of those firms in the Mormon regional culture. The survey employed fixed response questions – useful for large samples where repeated measures and comparisons between units are used – and covered five main themes as outlined in *Table 3.6*.

From the questionnaire, I was therefore able to generate data to describe five key areas of the firm: (i) basic characteristics in terms of employment, age, location, etc.; (ii) relationships with other firms and external orientation; (iii) financing histories, and hence in part external orientation; (iv) in-house technological capabilities and innovative processes, in terms of occupational structure, R&D employment and expenditure, and R&D intensity\(^5\); and (v) competitive ‘performance’, in terms of revenue, rates of revenue growth since start-up, and employment (following Scott, 2000: 75).

\(^5\) R&D intensity, in terms of: (i) R&D expenditure as a % of total revenue; and (ii) R&D employment as a % of total employment (following Gertler, 2001)
Table 3.6 – Areas of Focus on the Firm in the Broad Survey

<table>
<thead>
<tr>
<th>(i) Basic Firm Characteristics</th>
<th>(ii) Firm’s Competitive Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Product description</td>
</tr>
<tr>
<td>HQ location</td>
<td>UT establishment 2000 revenue</td>
</tr>
<tr>
<td>Employees in Utah</td>
<td>Competitors in Utah</td>
</tr>
<tr>
<td>Private / Public Ownership</td>
<td></td>
</tr>
<tr>
<td>Out-of-state operations</td>
<td></td>
</tr>
</tbody>
</table>

(iii) Firm as Mormon versus non-Mormon

- Commercialisation of technology developed at Brigham Young University (BYU)\(^6\)
- Company founder/s
- Number of founders who were active Mormon / BYU alumni
- CEO active Mormon / BYU alumni
- Size of Utah leadership and management team
- Members of that team who are active Mormon / BYU alumni

(iv) Innovation in the Firm

- (2000) R&D expenditure in UT operations
- No. of UT employees in technology devt

(v) Financing History

- Source of start-up funding
- Source of subsequent growth funding
- Difficulties in accessing finance in Utah
- Funding sought beyond Utah

(vi) Interaction with other firms

- Parent company\(^7\)
- New firm spin-offs
- Strategic partner firms in Utah
- Joint product devt with other Utah firms

(vii) Other Indicators

- Pioneer Day granted as holiday
- Work Sundays
- Proportion Utah employees female
- Females in leadership/management positions

---

\(^6\) Brigham Young University is wholly owned and managed by the LDS Church and is over 99% Mormon in its student body.

\(^7\) Spin-offs were defined as the start-up of a new business by an agent previously belonging to another local firm, or the derivation of a business idea leading to the formation of a new firm from the previous employment of the founder (Capello, 1999). Hence ‘parent firms’ and ‘spin-off firms’.
3.3.2.2 – SURVEY SAMPLING PROTOCOL

Table 3.7 shows the breakdown of Utah’s computer software industry by four-figure SIC code. My sampling protocol was based on three key criteria. First, given my focus on innovation, I chose to exclude non-knowledge-intensive firms from my survey sample, as highlighted in Table 3.7.

Table 3.7 – Utah’s Computer Software Industry (Statewide) - 1999 1st quarter

<table>
<thead>
<tr>
<th>SIC</th>
<th>Industry</th>
<th>Estabs</th>
<th>Emp.</th>
<th>Total Wages ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>737</td>
<td>Computer and Data Processing Services</td>
<td>1438</td>
<td>23 042</td>
<td>1 236 447 472</td>
</tr>
<tr>
<td>7371</td>
<td>Computer Programming Services</td>
<td>480</td>
<td>4739</td>
<td>277 796 874</td>
</tr>
<tr>
<td>7372</td>
<td>Prepackaged Software</td>
<td>141</td>
<td>6598</td>
<td>515 741 061</td>
</tr>
<tr>
<td>7373</td>
<td>Computer Integrated Systems Design</td>
<td>70</td>
<td>1961</td>
<td>106 304 723</td>
</tr>
<tr>
<td>7374</td>
<td>Data Processing and Preparation</td>
<td>73</td>
<td>3739</td>
<td>81 263 486</td>
</tr>
<tr>
<td>7375</td>
<td>Information Retrieval Services</td>
<td>152</td>
<td>3255</td>
<td>123 134 236</td>
</tr>
<tr>
<td>7376</td>
<td>Computer Facilities Management</td>
<td>NONE</td>
<td>NONE</td>
<td>NONE</td>
</tr>
<tr>
<td>7377</td>
<td>Computer Rental and Leasing</td>
<td>12</td>
<td>35</td>
<td>1 391 284</td>
</tr>
<tr>
<td>7378</td>
<td>Computer Maintenance and Repair</td>
<td>66</td>
<td>354</td>
<td>16 211 298</td>
</tr>
<tr>
<td>7379</td>
<td>Computer Related Services, not elsewhere</td>
<td>444</td>
<td>2361</td>
<td>114 604 510</td>
</tr>
</tbody>
</table>

Source: Annual Report of Labor Market Information, 1999,
Utah Department of Workforce Services, 2000.

Firms in SIC 7379 were included, as this disparate category includes a range of innovative software firms operating in new market niches that the Utah Department of Workforce Services (DWS) has been so far unable to classify elsewhere within the SIC system (see Table 3.8).
### Table 3.8 – Standard Industrial Classification Code Descriptions for Computer Software Firms

**SIC 737 – Computer Programming, Data Processing and...**

<table>
<thead>
<tr>
<th>SIC Code</th>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>7371</td>
<td>COMPUTER PROGRAMMING SERVICES</td>
<td>On a contract or fee basis. Additional services may also include software design and analysis, modifications of / training in the use of custom software(^8). Applications software programming, custom Computer code authors.</td>
</tr>
<tr>
<td>7372</td>
<td>PREPACKAGED (CANNED) SOFTWARE</td>
<td>Design, development and production of prepackaged software(^9). Additional services may also include preparation of software documentation for user-installation, and user training in use of the software. Includes application software, computer games, utility software.</td>
</tr>
<tr>
<td>7373</td>
<td>COMPUTER INTEGRATED SYSTEMS DESIGN</td>
<td>Development or modification of existing software and bundling it with purchased hardware to create an integrated system for a specific application. Firms are involved in all phases of system development from design through installation. Includes computer-aided design / engineering / manufacturing (CAD / CAE / CAM) systems services, local area networks (LAN) systems integrators, office automation and system integration.</td>
</tr>
<tr>
<td>7374</td>
<td>DATA PREPARATION AND PROCESSING SERVICES</td>
<td>The service may consist of complete processing and preparation of reports from data supplied by the customer, or a specialised service, e.g data entry. Includes optical scanning data services.</td>
</tr>
<tr>
<td>7375</td>
<td>INFORMATION RETRIEVAL SERVICES</td>
<td>Provision of online information retrieval services on a contract or fee basis. Database information retrieval services, both online and remote.</td>
</tr>
<tr>
<td>7377</td>
<td>COMPUTER RENTAL AND LEASING</td>
<td>Renting or leasing computers &amp; related data processing equipment on the customers’ site - may also provide maintenance or support services. Includes rental of hardware and computer peripherals.</td>
</tr>
<tr>
<td>7378</td>
<td>COMPUTER MAINTENANCE AND REPAIR</td>
<td>Of computers and computer peripheral equipment.</td>
</tr>
<tr>
<td>7379</td>
<td>COMPUTER RELATED SERVICES, NOT ELSEWHERE CLASSIFIED</td>
<td>Includes computer consultants, database developers, data processing consultants, and requirements analysis.</td>
</tr>
</tbody>
</table>

---

\(^8\) CUSTOM SOFTWARE - software specially designed for a single or a small group of persons’ specific needs. Custom software includes modifications to prepackaged software.

\(^9\) PREPACKAGED SOFTWARE - software that is designed and distributed ‘as is’ for multiple persons who can use it without modifying its code and which is not otherwise considered custom software.

EMBEDDED SOFTWARE - software that resides permanently on some internal memory device in a computer system or other machinery and equipment, that is not removable in the ordinary course of operation and that is of a type necessary for the routine operation of the computer system or other machinery and equipment. Embedded software can be either canned or custom software.

Source: Occupational Safety and Health Administration, US Department of Labor: March, 2001 (www.osha.gov)
As the data in Table 3.9 show, the exclusion of these non-knowledge-intensive firms left around 90% of Utah’s software firms within the survey frame, who account for 73.4% of Utah’s total employment in SIC 737, yet contribute 93% of Utah’s total annual wages in this sector.

**Table 3.9 - Relative Contributions of Survey-Included & -Excluded Firms to Utah’s Software Industry (1999)**

<table>
<thead>
<tr>
<th>SIC</th>
<th>ESTABS</th>
<th>EMPLOYMENT</th>
<th>TOTAL WAGES ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TOT % 737</td>
<td>TOT % 737</td>
<td>TOT % 737</td>
</tr>
<tr>
<td><strong>INCLUDED</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7371</td>
<td>1287</td>
<td>16 907</td>
<td>1 147 581 404</td>
</tr>
<tr>
<td>7372</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7373</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7375</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7379</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>EXCLUDED</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7374</td>
<td>151</td>
<td>6 135</td>
<td>88 866 068</td>
</tr>
<tr>
<td>7377</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7378</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Second, for firms in the 5 four-figure SIC codes included in my survey frame as outlined in Table 3.9, I was subsequently able to obtain more detailed secondary data. Also included in these data were 539 firms that maintain only a nominal presence in Utah - often only one or two freelance representatives or else sales representatives. I therefore also excluded these other non-knowledge-intensive firms (‘reps’) in my survey. Third, I also excluded firms located outside the four counties that make up the Wasatch Front (Weber, Salt Lake, Davis and Utah Counties). This had only a negligible effect on the data given that around 90% of these firms are located along the Wasatch Front anyway, as shown in Table 3.9.

---

10 See e.g. Burton-Jones, 1999
Consistent with these three criteria, I sought to create a 10% sample of Utah’s lead software firms on the Wasatch Front for administration of the survey questionnaire. This sample was purposive, focused on Utah’s lead software firms, and stratified in proportion to the relative contribution of each of the 5 SIC types of firm, as shown in Table 3.10.

Table 3.10 – Utah’s Knowledge-Intensive Software Firms as at 30 December, 2000

<table>
<thead>
<tr>
<th>SIC</th>
<th>Definition</th>
<th>No. in Utah</th>
<th>No. excluding reps</th>
<th>% on Wasatch Front</th>
<th>Sample size (top 10% firms)</th>
</tr>
</thead>
<tbody>
<tr>
<td>7371</td>
<td>Computer Programming Services</td>
<td>611</td>
<td>423</td>
<td>88.8%</td>
<td>37</td>
</tr>
<tr>
<td>7372</td>
<td>Prepackaged Software</td>
<td>154</td>
<td>115</td>
<td>90.0%</td>
<td>10</td>
</tr>
<tr>
<td>7373</td>
<td>Computer Integrated Systems Design</td>
<td>97</td>
<td>73</td>
<td>94.7%</td>
<td>7</td>
</tr>
<tr>
<td>7375</td>
<td>Information retrieval services</td>
<td>321</td>
<td>215</td>
<td>86.9%</td>
<td>18</td>
</tr>
<tr>
<td>7379</td>
<td>Computer related services, not elsewhere classified</td>
<td>553</td>
<td>371</td>
<td>89.1%</td>
<td>33</td>
</tr>
<tr>
<td>TOT</td>
<td></td>
<td>1736</td>
<td>1197</td>
<td>--</td>
<td>105 firms</td>
</tr>
</tbody>
</table>

Source: Utah Department of Workforce Services, March 2001
(firms reporting economic data for 4th quarter of 2000)

Initially this ‘lead’ group was to have been defined in terms of revenue, however corporate revenue data was not available at this level. However, the Utah Department of Workforce Services was able to supply me with datasets for each of the five knowledge intensive SIC codes (see Table 3.10) which ranked firms by employment size. This I used as a proxy for revenue.

3.3.2.3 – TARGETING FIRMS

Using the Utah DWS datasets I targeted firms via telephone and e-mail, moving progressively lower down the rankings until the sample quota for each of the five types of software firm had been met. I cross-referenced a range of different information sources to determine the contact details for potential respondents within each firm (Figure 3.3). Contacting firms by telephone proved unsuccessful (15% response rate) so I switched to e-mail, allowing me to by-pass receptionists and office managers. I was able to guess the e-mail address for key contacts, by mimicking the e-mail format for the firm (typically shown on websites for general media contacts) for the names of key respondent targets. This gave a very high hit rate (around 90%), getting the e-mail straight into the inbox of the key person in the majority of cases. In my initial
e-mail I introduced myself as a researcher from Cambridge University and gave a short outline of the nature and purpose of the research, emphasising its academic nature, that I had no interest in specific details of new products in development, and that respondents should ignore any questions that they wished. Typically, I was further quizzed by corporate respondents about my intentions in relation to the publication of material, and any agenda for or against the LDS Church.

**Figure 3.3 – Information Sources Used to Target Firms and Respondents**

- Utah Department of Workforce Services online FirmFind database
- Bureau of Economic and Business Research (BEBR, University of Utah) High Technology Directory - lists all high tech companies in Utah according to the US Bureau of Labour Statistics (SIC) definition of high tech.
- Utah Department of Commerce – online database of over 2100 IT business operations in Utah
- Utah Information Technologies Association (UITA) - online membership database (2500 firms)
- Utah Valley Entrepreneurial Forum (UVEF) online membership database
- Utah Silicon Valley Alliance (SVA) committee membership database
- Wasatch Front Digital iQ (local trade magazine) directory of Utah high tech companies
- Several online Utah yellow pages business search engines
- Individual firm corporate websites
- Utah general and business press article searches – especially The Deseret News and The Salt Lake Tribune

Typical respondents in the small firms included CEOs, founders, vice-presidents, and managers. In the larger firms, public relations officers and marketing managers were especially responsive. Where necessary, I contacted several respondents in each firm in order that all the relevant information was obtained. As such, the survey proved highly labour intensive (over 3 months work) but generated an excellent dataset. I obtained an overall response rate of just over 50%, and as such the final survey dataset covers the top 20% of software firms along the Wasatch Front (see Figure 3.4). This response rate was also a function of some firms having since been bought out; others had moved out of state or else were simply untraceable. The firms that responded to my survey employ 7 585 people in Utah, and in 2000 generated a combined revenue of $1031 million from their Utah operations.

11 Although that figure excludes 17 firms in the survey sample who kept their revenue data confidential, so is in reality larger.
Figure 3.4 – Map Plot of the 105 Survey Firms
From an initial analysis of these data, there seemed to be few differences between the firms that responded to the survey and those that did not, in terms of size, ownership or location. Of the 105 survey firms, 89% were founded in the State of Utah, and the remaining 11% typically branch offices of computer software firms headquartered in other US states, especially California. Because I had focused explicitly on Utah’s lead software firms (a purposive sample), the firms in the survey sample are somewhat skewed away from the smallest size category (1-19 employees) compared to the total SIC 737 population:

*Figure 3.5 – Consistency of (i) Survey Sample Firm Size Distribution with (ii) Wasatch Front Parent Population (SIC 737- Knowledge Intensive)*

![Figure 3.5](image)

Source: County Business Patterns (1997)

However, the county location distribution of the survey sample is broadly consistent with the Wasatch Front (SIC 737) parent population, as shown in *Figure 3.6.*

*Figure 3.6 – Consistency of County Distributions of (i) Survey Sample and (ii) Wasatch Front Parent Population (SIC 737 - Knowledge Intensive)*

![Figure 3.6](image)
I carried out basic statistical analysis on the survey dataset to highlight any broad patterns, then using those to focus subsequent in-depth interviews with key firms, industry watchers, and culture watchers, in order that those patterns might be qualitatively explained.

3.3.3 - MOVING FROM INDUSTRY TO FIRM – PART II

3.3.4.1 - CHOICE OF IN-DEPTH CASE STUDY FIRM SAMPLE

This third part of the research was based on Markusen’s (1994) framework of inferring regional economic structure from key informant interviews. I sought a purposeful sample, the size of which was determined by the need to involve as many firm and respondent experiences as possible in the development of my conceptual framework and theory, balanced against limits on time and resources. Limiting the number of case study firms to 20 made the investigation more manageable. In order to keep these firms as similar as possible, I limited my in-depth interviews to firms in SIC 7371 (Computer Programming Services), as this subset of the survey had given the highest response rate (70%) in the survey. I also sought to keep the sizes and ages of firms as similar as possible, choosing to ignore the very large software firms (e.g. Novell), as these are too few in number and far from peas in a pod - each has own unique history, specialised product lines, and a different multinational nexus of operations. All of the firms in the in-depth case study sample therefore have 20-100 employees, the dominant size category in the survey sample. In total, 20 broadly similar firms12 were eventually chosen in order that they equally fill the spectrum of Mormon and non-Mormon founding and management, as outlined in Table 3.11. The relative proportions of firms across this matrix largely reflects the Mormon founding and management breakdown of the whole SIC 7371 survey dataset, and to a minor extent access also. The non-Mormon firms were critical as a means of control, a basis for comparison.

12 In 2000 my combined 20 case study firms employed 1 009 people in Utah and whose Utah operations generated a combined revenue of over $111.3 million.
Table 3.11 – Basic distribution of in-depth case study sample by Mormon founding and management

<table>
<thead>
<tr>
<th>FOUNDING</th>
<th></th>
<th>MANAGEMENT</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Majority Mormon</td>
<td>Majority NON-Mormon</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FOUNDING</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Majority Mormon</td>
<td>6 firms</td>
<td>4 firms (Intermediate Type I)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Majority NON-Mormon</td>
<td>4 firms (Intermediate Type II)</td>
<td>6 firms (CONTROL)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

I also ensured that the firms chosen to fill each matrix cell were approximately evenly split between Salt Lake County and Utah County, to provide a basis for comparison between two different strengths of Mormon regional culture. Utah County is the focal point of the area known as ‘Happy Valley’, so-called because the Mormon cultural influence in the local community is so strong, while Salt Lake County is locally regarded as more culturally diverse. Indeed, secondary data on county populations confirms this; while Salt Lake County has a Mormon population of 64%, Utah County has an equivalent figure of 90%. Further, the cultural division between the two counties is also physically marked, by a mountain outcrop known locally as the ‘Zion Curtain’ 13.

3.3.4 – MOVING FROM FIRM TO INFORMANTS

3.3.4.1 – IN-DEPTH INTERVIEWS WITH KEY PLAYERS

I generated qualitative data on the case study firms through a series of in-depth interviews with a range of employees over a 5-month period (May-September 2001). I paid great attention to the appropriate selection of informants. Again I used the e-mail-format-guessing method to target key potential respondents. I actively avoided the snowballing method, in which respondents are

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13 ‘Zion’ refers to the Mormon cultural homeland within LDS theology.
asked to give the names of eligible individuals in other firms who might then be approached and interviewed, the snowball being allowed to grow until each respondent generates a list of further respondents who have already been identified (Dixon and Leach, 1977). This method is problematic in that it tends to overstate firm success, membership in firm networks, degrees of cooperation, and the positive evaluation of such relationships (Markusen, 1999: 879). I also avoided convenience sampling as far as possible, in which interviews are undertaken with those respondents easiest to access; these are not necessarily the most informative contacts. The extra hassle of targeting hard-to-reach respondents generated a higher quality of interview data.

Following McDowell (1992) and Parry (1998) I expected to find myself in the role of ‘supplicant’ requesting time and expertise from the powerful with little to offer in return. However, the influence of Mormonism in Utah is a contentious topic, and parties on all sides were very keen to be interviewed; indeed, as one respondent put it, ‘the Mormon issue is more of a business topic here that it is from a religious stand-point’. Local interest in my research was in turn aided by few studies of this kind ever having been undertaken in the region before. I also emphasised the personal relevance of each respondent to my research, specifically that I had travelled several thousand miles to talk with them. I was typically quizzed by respondents with regard to the publication of material and any political or religious agenda, but once assurances had been made people were typically very candid in their responses. However, surprisingly few attempts were made to ascertain my own religion (only 3 out of all 100 respondents inquired), and only 2 people tried to convert me in the whole 9 months of my living and working in the Mormon culture core region.

First, I sought to conduct interviews with people working in Utah’s software industry, people on the ‘front line’ of their organizations, targeting in the first instance firms’ top management, those with the executive power and management fiat. An advantage of interviewing highly placed managers is that they are involved in all key aspects of the business and consequently have firsthand knowledge of the firm’s strategy and administrative activities, and typically set the cultural tone for the company. They were also often able to put me in touch with other people in the firm, and I doubt that would have worked so well if I had begun lower down in the organisation and then tried to move up. To gain a more balanced and credible account, I interviewed multiple people in each firm in both technical and non-technical positions and at a range of levels within the job hierarchy: from programmers and analysts involved directly in designing and writing programmes, to managers and team leaders responsible for the day-to-day operation and management of whole software projects. I also sought to interview a mix of Mormon and non-Mormon employees, and both males and females in each firm. However in
many of the heavily Mormon or non-Mormon firms this was just not possible. I also sought to interview a ‘corporate historian’ (Glasmeier, 1988) in each firm, someone who had been with the company at least 10 years, or from start-up in the case of younger firms. This was usually the CEO or founder and proved relatively easy to achieve given the small size of the majority of firms. Often occupational title did not signify the most relevant person in each firm\textsuperscript{14}. An excellent source were former employees in other firms who were able to comment on their previous firm, and also able to comment on their previous firm’s history, as well as assess its current performance. Vice Presidents of Finance and Chief Financial Officers were also a very useful source, given their role in convincing potential investors of the viability of firms’ strategies. In total, I interviewed 65 different people, working in 20 different firms in Utah’s computer software industry, and generated 77 hours of interview material. Table 3.12 summarises the distribution of my industry interviews:

\textit{Table 3.12 – Summary of In-depth Industry Respondent Interviews}

<table>
<thead>
<tr>
<th>Type of firm</th>
<th>HQ county</th>
<th>Positions interviewed</th>
<th>No. interviews</th>
<th>Total Hrs</th>
</tr>
</thead>
</table>
| GGO UT       | Director of Human Resources  
Director of Software Quality  
V P of Strategic Customer Relations | 2 3.5 | |
| BWB SL       | Chief Financial Officer  
Co-Founder | 2 2 | |
| FOY UT       | Director of Marketing | 2 3.5 | |
| EDT SL       | CEO and President | 1 2 | |
| MSO SL       | Director of Corporate Research  
Director of Software Quality  
Director of Software Development  
V P of Strategic Customer Relations | 4 6 | |
| UID SL       | VP of Corporate Development  
Director of Human Resources  
Chief Technology Officer | 3 3 | |
| LEL SL       | CEO  
Studio Art Director  
Software Programmer  
Project Director | 4 3 | |
| QXU UT       | Manager of Corporate Affairs  
VP of Human Resources  
Software Engineer  
Director of International Marketing | 4 4.5 | |

\textsuperscript{14} For example key executives who had only been brought in to the firm recently had a limited local knowledge.
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Type</th>
<th>PositionDesc</th>
<th>Coaches</th>
<th>Tutors</th>
</tr>
</thead>
<tbody>
<tr>
<td>UOG</td>
<td>SL</td>
<td>VP of Human Resources, Director of Public Relations, Senior VP / Legal Counsel, Director of New Business Devt</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>ECY</td>
<td>SL</td>
<td>President and CEO, VP of Sales, CFO, VP Engineering</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>FOW</td>
<td>SL</td>
<td>Director of Marketing</td>
<td>1</td>
<td>2.5</td>
</tr>
<tr>
<td>PSO</td>
<td>UT</td>
<td>Director of Brand Management, VP of Technology, Chair of the Board</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>GOY</td>
<td>SL</td>
<td>Director of Corporate Communications, VP of Marketing, VP of Technology</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>UNY</td>
<td>SL</td>
<td>VP of Marketing</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>WSU</td>
<td>UT</td>
<td>President and CEO, Head of Software Development, Lead Applications Developer</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>NLN</td>
<td>SL</td>
<td>VP of Marketing / Co-Founder, CEO / Co-Founder, Senior Vice President</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>XTH</td>
<td>SL</td>
<td>President / Co-Founder, Finance Manager, Director of Software Development</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>IEH</td>
<td>UT</td>
<td>President / Co-Founder, Software Developer, Graphic Designer</td>
<td>3</td>
<td>2.5</td>
</tr>
<tr>
<td>JET</td>
<td>SL</td>
<td>President and CEO, Senior VP of Engineering, National Sales Director, Finance Manager</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>NMU</td>
<td>UT</td>
<td>President and CEO, Director of Business Development, Director of Operations</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>ANH</td>
<td>UT</td>
<td>CEO / Founder, Production Manager, Computer Programmer, Lead Artist</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>QDD</td>
<td>UT</td>
<td>CEO / Founder, Customer Services Director, Manager of Software Development, Director of Marketing</td>
<td>4</td>
<td>3.5</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>--</td>
<td>--</td>
<td>65</td>
<td>77</td>
</tr>
</tbody>
</table>

Second, I also interviewed a range of industry and culture watchers and other officials whose insights might offer important evidence or counter-evidence for hypothesis testing. These included local economic development experts, trade association representatives, university
researchers, venture capital leveragers, media, technology association officers, government workers, economic development associations, academics, university alumni relations managers, economic consultants, LDS Church officials, other religious leaders. I conducted 51 interviews with 35 different industry and culture watchers, generating another 55 hours of interview material (see Table 3.13).

Table 3.13 – Summary of In-depth Non-industry Interviews

<table>
<thead>
<tr>
<th>Type</th>
<th>Institution</th>
<th>Interviews</th>
<th>Hrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Venture Capital Leveragers</td>
<td>The Wayne Brown Institute</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Utah Technology Finance Corporation</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Technology Associations</td>
<td>Utah Valley Economic Devt Corporation</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Utah Information Technology Association</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Utah Women in Technology Group</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Utah Valley Entrepreneurs Association</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Industry Watchers</td>
<td>MONITOR Company (Utah)</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Dan Jones and Associates</td>
<td>2</td>
<td>1.5</td>
</tr>
<tr>
<td>Government</td>
<td>Economic Devt Corporation of Utah</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Utah Silicon Valley Alliance</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Utah State Division of Administrative Rules</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Utah Governor’s Office of Planning and Budget</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Utah State Legislature I.T. Commission</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Academics</td>
<td>Political Science Dept (University of Utah)</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Bureau of Economic &amp; Business Research (U of U)</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Alumni Placement Services (Brigham Young Univ.)</td>
<td>2</td>
<td>1.5</td>
</tr>
<tr>
<td></td>
<td>Sociology Dept (BYU)</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Computer Science Dept (BYU)</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Marriott School of Management (BYU)</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Dept of Electrical and Computer Engineering (BYU)</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Media</td>
<td>The Salt Lake Tribune</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>LDS Church</td>
<td>First Quorum of the Seventy</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Other religious groups</td>
<td>Salt Lake Evangelical Seminary</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Utah Lighthouse Ministry</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>51</td>
<td>55</td>
</tr>
</tbody>
</table>
The overall gender and Mormon distributions of my total in-depth interview respondent sample are shown in Table 3.14 and Figure 3.7 respectively.\textsuperscript{15}

\textit{Table 3.14 – Basic Distribution of In-depth Interview Respondents}

<table>
<thead>
<tr>
<th>Industry watchers and cultural commentators</th>
<th>High Tech (SIC 7371) employees</th>
<th>Utah Women in Technology Forum discussants (see later)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MALE</td>
<td>29</td>
<td>4</td>
</tr>
<tr>
<td>FEMALE</td>
<td>8</td>
<td>26</td>
</tr>
<tr>
<td>TOTAL</td>
<td>37</td>
<td>(30)</td>
</tr>
</tbody>
</table>

\[\text{TOTAL} = \boxed{100} \text{ (75 males + 25 females)}\]

\[130 \text{ hours of interview}\]

\textit{Figure 3.7 – Mormon / Non-Mormon Breakdown of All 100 In-depth Interview Respondents}

All of the interviews were semi-structured, lasted between 1 and 3 hours, and were usually carried out in person at the interviewee’s place of work wherever possible. Usually I interviewed only a single respondent, but in a number of cases up to four people sat in. Following my initial main interview, subsequent interviews were often done by telephone. I used these later interviews to

\textsuperscript{15} Appendix 1 shows the full list of the 100 in-depth (industry and non-industry) respondents, including their job title, and cultural background.
cover new ground where appropriate but also to confirm my own interpretations of the firm based on previous interviews. Given heavy time pressures respondents were sometimes only able to give me 20 minutes, although in aggregate these brief windows of opportunity proved valuable and forced me to strip my questions down to the essential core. The events of September 11, 2001 also meant that most of my interviews planned for September were postponed and conducted via telephone from the UK. Recruitment of respondents occurred in each firm until ‘saturation’, that is, until no new themes of constructs emerged (following Baxter and Eyles, 1997). As such the credibility of the research was not necessarily threatened by low sample sizes of respondents in some firms. Typically I managed to collect between 3 and 6 hours interview material for each case study firm for subsequent analysis.

To maximize the quality of the interviews, I allocated specific question areas to different respondents in each firm according to their job role. Consistency was addressed by means of an interview checklist, a list of topics to be covered with all respondents, whilst allowing them freedom to describe their own experiences in their own terms. This then facilitated subsequent thematic analysis across interview transcripts. Appendix 2 expands that interview guide around a range of sample questions used. I tape-recorded the interviews and also took notes during and directly after the interviews, often asking for concrete example wherever possible and looking out for contradictions of response. These notes helped the transcription process, which I chose to do on my return to the UK to maximize the number of interviews I could carry out in the field. While this suffered through the interviews not being as fresh in my mind when I came to transcribe them, the higher volume of interviews made this a valid sacrifice.

Each case study was further developed using a number of secondary data sources (annual reports, memos, etc) as part of a source triangulation strategy to verify interview responses. I also presented my research to the Utah Women in Technology Group, around which a subsequent in-depth discussion and analysis of my evolving results were based. I had also planned to study four firms in greater depth, through a week’s observation in each. However, none of the firms were able to grant me access for this, nor to more formal types of corporate interaction such as recruitment meetings and training sessions. Nevertheless in ten cases I was invited to tour the firm, chat freely with other employees and to observe general goings-on.

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16 Many of my firms had employees on location in New York at the time and Salt Lake City is also home to many of the call centres of the New York banks and financial firms involved.

17 A single interview of under two hours requires an additional 10 hours to initiate, prepare for, transcribe, analyse and write-up (Markusen, 1994).
3.3.5 – MORMON WARD HOUSE VISITS

On several separate occasions I visited Sunday services in a typical Mormon Ward House in Salt Lake City (Salt Lake LDS 8th Ward University Stake) to observe the youth socialization process and to discuss observations and evolving theories with Mormon cultural insiders within the Ward setting. These three-hour Sunday meeting blocks involve teaching, instruction and worship. Mormon Wards worldwide are almost identical; they study the same church classes, as also taught throughout the world, to the same schedule, and meetinghouses even have the same architecture (May, 2001). As such, my choice of Ward was quite arbitrary and based on proximity and ease of access. These visits helped clarify much of my theorising in the field, and also rubbish some of my original ideas which were misconstrued.

Plate 3.1 – Typical Mormon Ward House in Salt Lake City (August, 2001)

Overall, this four-part protocol evolved over the course of the fieldwork, and allowed me to unpack and determine the main processes and mechanisms of cultural embedding. Through an explicit geographical approach I moved progressively down through finer spatial scales, linking broad patterns across the Wasatch Front, to patterns at the county and MSA levels, and eventually

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18 Although I did not partake in any worship.
to micro-level accounts at the level of individuals within these firms on the ground. I paid careful attention throughout in moving from one level of inquiry to another (region to industry to firm to individuals) in order that I would later be able to make valid inferences to the regional industrial level based on the in-depth sample and its relationship to the broad survey data. In the next section, I expand in more depth the central aspect of the whole fieldwork process: how I actually sought to measure the cultural embedding of firms in the regional Mormon culture at each of the four fieldwork phases as outlined above.

### 3.4 - Measuring the Cultural Embeddedness of the Firm

In the initial broad survey, I defined ‘Mormon’ firms in terms of the proportion of a firm’s leadership and management team who were active Mormons. These included the company founder/s, CEO, and various Vice Presidents, premised on the notion that it is these key individuals who occupy positions of power within the firm, and hence have disproportionate sway over its culture (Schein, 1992). This preliminary classification of the cultural embeddedness of the firm was ideally suited to the survey in that it required only a determination of whether or not a (typical) maximum of twelve people within the firm (i.e. its founding and management team) were members of the LDS Church. Indeed, this was often proudly displayed in the executive biographies on company websites, and Brigham Young University (BYU) alumni status was a convenient surrogate measure - over 99% of BYU students are active members of the LDS Church and a BYU education has been consistently shown to have a strong positive impact upon LDS commitment in later life. However, clearly this definition is limited. For the in-depth case study firm sample, I therefore expanded my definition to include the proportion of total Utah employees in the firm that are active Mormons. While an unfeasible measure for the survey, for my in-depth interview sample (20 firms) I was able to employ this mode of classification. What follows in the next five sections is a more elaborate methodology designed to then measure the strength or penetration of firms’ embedding in the regional culture, following their initial classification as described above. The whole process is represented diagrammatically in Figure 3.8.

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19 Management team as defined on firms’ websites – slight variation in definitions of positions classed as part of the management team, but proportions of management teams that were Mormon were typically invariant to modifications in positions included.

20 Brigham Young University is the university of the LDS Church, wholly financed and managed by it.
3.4.1 - Determining Relevant Mormon Teachings and Values

This part of the methodology centred on an analysis of Mormonism’s fundamental religious texts and their relevant commentaries, as outlined in Table 3.15, to determine Mormon teachings on themes relevant to my study: e.g. education, self-sufficiency, success, work, respect for authority, learning, family, gender roles and ethics. Many of these themes I had deduced in advance from the industrial district and regional learning literatures; others emerged during the course of my interviews in the field. I also researched recent content in The Ensign, the LDS Church’s main official periodical which contains church news, announcements, directives, advice and sermons by church leaders. The LDS Church’s General Authorities\(^\text{21}\) approve The Ensign’s contents prior to publication and its statements can therefore be interpreted as reflections of the church’s explicit and implicit position on a range of subjects (Iannaccone and Miles, 1994). The Deseret News was similarly embedded in this part of the methodology. This is the oldest daily newspaper in

\(^{21}\) General Authorities – those elderly men at the very top of the LDS Church hierarchy.
Utah, founded in 1850 it is still wholly owned by the LDS Church and its editorials are approved by church officials prior to press.

Table 3.15 – The Recognized Scriptures of the LDS Church

<table>
<thead>
<tr>
<th>Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Book of Mormon</td>
<td>Similar in style and themes to the Old Testament, recounts the history of a group of Hebrews who migrated from Jerusalem to America around 600 BC. Mormons consider it equal in significance to the Bible.</td>
</tr>
<tr>
<td>The Bible</td>
<td>Central scripture of Christianity – consists of the Old and New Testaments</td>
</tr>
<tr>
<td>Doctrines and Covenants</td>
<td>A compilation of revelations given to Joseph Smith and other presidents of the church</td>
</tr>
<tr>
<td>The Pearl of Great Price</td>
<td>Contains other prophetic translations and historical records a selection of revelations, translations, and writings of Joseph Smith the founder of the church</td>
</tr>
</tbody>
</table>

The LDS Church’s headquarters in Salt Lake City was especially useful for this part of the research. Its archival collection holds essentially all publications of the church from 1830 to the present including books, pamphlets, tracts, and letters of instruction (Arrington and Bitton, 1992), housed in the east wing of the twenty-eight story church office building. I also relied heavily on Mormon special collection in the Marriott Library at the University of Utah.

3.4.2 - MEASURING THE INTERNALISATION OF MORMON VALUES BY KEY INDIVIDUALS WITHIN THE FIRM

The key individuals upon which this section of the methodology focused included CEOs, Vice Presidents, CTOs, and CFOs as already outlined. I explicitly sought to measure the strength of their commitment to the LDS Church and hence its culture. The literature contains a range of indicators of Mormon religiosity; while simple LDS Church membership acts as a good preliminary guide, it says little of how religiously active a person or what they believe. Indeed, while a ‘good’ Mormon is expected to cultivate certain beliefs and values, impose a religiously-defined discipline on their lives, regularly attend group meetings and hold lay positions in the church (Shepherd and Shepherd, 1994), the reality typically falls short of these ideals. Mormons thus define themselves in behavioural terms (White and White, 1996), and as such Mormon dietary practices, participation in church activities, payment of tithes, attendance at the Temple, and loyalty to the Church authorities are the real signifiers of an individual’s identification with Mormonism, suggesting to both the individual and others that this person is an ‘active Mormon’
I therefore distinguished between active and inactive Mormons using the indicators outlined in Table 3.16.

Table 3.16 - Indicators for Defining Active Versus Inactive Mormons (following Brooks, 1968)

<table>
<thead>
<tr>
<th>ACTIVE MORMON</th>
<th>INACTIVE MORMON</th>
</tr>
</thead>
<tbody>
<tr>
<td>- pay a full tithe</td>
<td>- do not tithe</td>
</tr>
<tr>
<td>- hold the priesthood</td>
<td>- may hold the priesthood</td>
</tr>
<tr>
<td>(religious authority given to members)</td>
<td>(but do not participate in the meetings)</td>
</tr>
<tr>
<td>- attend church services more than once a week</td>
<td>- attend church seldom if ever</td>
</tr>
<tr>
<td>- adhere to the Word of Wisdom, hence…</td>
<td>- do not adhere to the Word of Wisdom, hence</td>
</tr>
<tr>
<td>- do not use coffee, alcohol, or tobacco.</td>
<td>- do use coffee, alcohol, or tobacco.</td>
</tr>
</tbody>
</table>

However, in some cases I did not feel comfortable asking these questions and so relied on both self-classification and also classification by work colleagues. Indeed, as one respondent put it:

‘If you’ve lived in Utah all your life and if you’ve been part of the Mormon culture, it isn’t difficult to identify the activity status of a fellow Mormon’.

Subsequent in-depth discussion with Mormon friends and colleagues showed a high correspondence between self-definitions of church activity and subsequent classification of activity levels using the above indicators. Figure 3.9 shows the Mormon / non-Mormon breakdown of the 65 in-depth industry respondents using those measures of Mormon religiosity:

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22 Active Mormons are those who observe a full religious lifestyle of attendance, devotion, service, and learning (Cunningham, 1992, quoted in Davies, 1996).
3.4.3 - MEASURING THE CORPORATE CULTURE OF THE FIRM

While there still remains no consensus about the definition of ‘corporate culture’, it broadly refers to the basic assumptions, patterns of thought, beliefs, feelings, and values that are shared by members of an organisation, that operate unconsciously and result from shared experience and common learning. However, in order that corporate culture (and hence the role of Mormon values within that) becomes measurable through empirical investigation, it was necessary to move beyond conceptions of culture as an unconscious and largely invisible entity. As such, I merged Schein’s (1985, 1990) conception of culture with that of Williamson et al. (1993), who tie the deeper attitudes and values as outlined above, to unconscious beliefs, and in turn to behaviour patterns and artifacts within the firm. That is, to observable manifestations of that deeper cultural essence (Figure 3.10). In this way, culture becomes measurable.
Schein (1985, 1992) argues that to understand corporate culture we need to analyse the values that govern people’s behaviour in the firm and disclose the underlying assumptions, which although typically unconscious, determine how members perceive, think and feel. Schein also argues that the behaviour of firms and the individuals within those firms can be rightly labeled as ‘cultural’ if there is patterning: (i) that many people in the organisation behave in the same way; (ii) that others in that work setting treat that behaviour as normal and expected; and (iii) that the behaviour is not random nor unmotivated but purposive, and hence patterned. In my fieldwork I therefore searched for behavioural regularities of firms and their employees, as the observable manifestations of a deeper cultural essence or core, composed of the beliefs, attitudes and values of individual members of the firm from which corporate culture develops (Williams et al, 1993). In each case study firm I sought to record all visible potential cultural artifacts; the processes of socialisation of new members into the firm; responses to critical incidents in the firm’s history; the assumptions, beliefs, and values of key culture creators and carriers within the firm; and I jointly explored with insiders puzzling features of the firm discovered through interview. I then pushed respondents to explain the cultural values implied by those artifacts, strategies and processes, and hence to surface their own cultural assumptions. This part of the research strategy...
was therefore premised on the assumption that observable artifacts and creations within the firm can be taken as indicators of its underlying cultural core. These are listed in Table 3.17. Indeed most of my respondents were able to list the norms and assumptions operating in their work groups (confirming Kilmann et al., 1986), and thus I was able to bring those to the surface at interview in order to piece together the corporate culture that flows from those.

Table 3.17 – Observable Artifacts Within the Firm that Reflect its Deeper Corporate Culture

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>MANIFESTATION IN THE FIRM</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYSICAL ARTEFACT AND SYMBOL</td>
<td>Logo, architecture, interior design, use of work setting</td>
</tr>
<tr>
<td></td>
<td>Style of documentation, end products</td>
</tr>
<tr>
<td></td>
<td>Typical and expected clothing</td>
</tr>
<tr>
<td></td>
<td>Status symbols – e.g. company cars, reserved parking, furniture</td>
</tr>
<tr>
<td></td>
<td>Slogans, advertising campaigns</td>
</tr>
<tr>
<td></td>
<td>Physical appearance of buildings</td>
</tr>
<tr>
<td></td>
<td>Values reflected in company charters, annual reports</td>
</tr>
<tr>
<td>COLLECTIVE VERBAL BEHAVIOUR</td>
<td>Language in general</td>
</tr>
<tr>
<td></td>
<td>Speeches, jargon</td>
</tr>
<tr>
<td></td>
<td>Stories, legends, myths</td>
</tr>
<tr>
<td>COLLECTIVE NON-VERBAL BEHAVIOUR</td>
<td>Typical ways of approaching each other (shaking hands, hugging)</td>
</tr>
<tr>
<td></td>
<td>Relationships between high and low ranking members</td>
</tr>
<tr>
<td></td>
<td>Gestures, dress codes, rites, ritual, ceremonies, congratulations, parties</td>
</tr>
<tr>
<td></td>
<td>Work styles – taking work home? working overtime?</td>
</tr>
</tbody>
</table>

3.4.4 - MEASURING THE ROLE OF MORMON VALUES IN THAT CORPORATE CULTURE

Having pushed respondents to explain the cultural values implied by the artifacts, strategies and processes outlined in Section 3.4.3, this fourth stage involved pushing them further, to determine the extent to which those corporate values reflect Mormon values, and hence how Mormon cultural values translate into corporate behaviour. I focused in particular on the key Mormon values as outlined in Section 3.4.1, but also employed a range of preliminary observable indicators of the religious-cultural embedding of the firm gained from a review of the rapidly expanding ‘religion and spirituality at work’ literature (see Table 3.18). Other key indicators of firms’ import of Mormon regional cultural values evolved over the course of the research.
### Table 3.18 – Examples of Indicators of the Religious-Cultural Embedding of High Tech Workplaces Used in Various Key Studies

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporate prayer groups</td>
<td>Prayer breakfasts, Interfirm networks of prayer groups; Corporate decisions extensively prayed over Work problems bounced off religious leaders</td>
</tr>
<tr>
<td>Corporate religious study groups</td>
<td>Individuals meeting regularly to make the connection between faith and work</td>
</tr>
<tr>
<td>Displaying religious symbols at work</td>
<td>Use of religious names for e-mail addresses Use of portions of religious scripture as screen savers</td>
</tr>
<tr>
<td>Provision of corporate space for religious observance</td>
<td>Prayer rooms</td>
</tr>
<tr>
<td>Corporate observance of weekly religious time</td>
<td>Sunday closing even during crunch times and despite Utah’s lack of a blue law Corporate observance of LDS church’s weekly ‘family home evening’ (Monday)</td>
</tr>
<tr>
<td>Accommodating religious holidays</td>
<td>Not working on the Sabbath (employer and employee) Flexible arrival and departure times, flexible work breaks Granting optional or floating ‘personal days’ Staggered work schedules Important religious holidays for Mormons include: Christmas Day – December 25 Easter - moveable Pioneer Day – July 24 – when Brigham Young and his followers arrived in Salt Lake Valley – marked by parades and rodeos</td>
</tr>
</tbody>
</table>
Finally, I compared levels of innovation, competitive position, external orientation, and overall strategy for Mormon versus non-Mormon firms (defined as in Section 3.4). While I had already undertaken a preliminary analysis of these patterns as manifest in the survey data, this was only based on an initial classification of firms as ‘Mormon’ versus ‘non-Mormon’ based on the proportion of their leadership and management teams that are Mormon. In this second analysis, I was able to strengthen the definition of firms’ ‘Mormonness’ by incorporating the proportion of firms’ total employees who were Mormon. I was also able to employ a number of other indicators which, although amenable to in-depth discussion, were inappropriate for the fixed-choice survey. Table 3.19 shows the indicators used, some of which were gathered originally through the broad survey, and others I expanded upon during the in-depth interviews.

**Table 3.19 – Measuring the Impacts of Cultural Embedding on the Firm – Specific Indicators**

<table>
<thead>
<tr>
<th>Trait</th>
<th>Specific Indicators</th>
</tr>
</thead>
</table>
| Competitive position | Employees in Utah  
                         | Private / Public Ownership  
                         | Out-of-state operations  
                         | 2000 revenue – revenue per employee  
                         | Market share  
                         | Reputation within the industry |
| Innovation       | R&D expenditure  
                         | No. employees in technology devt  
                         | R&D intensity (employment)  
                         | R&D intensity (investment) |
| External orientation | Strategic partner firms in Utah  
                         | Joint product devt with other Utah firms  
                         | Licensing and franchise agreements  
                         | Total revenue per employee  
                         | Source of start-up funding  
                         | Source of subsequent growth funding  
                         | Funding sought beyond Utah |
| Overall strategy | Mission statements, stated strategic objectives  
                         | Investment priorities  
                         | General observed behaviour. |
Overall, using this four-part methodology, I was able to measure the strength of the embedding of my 20 in-depth case study firms in the wider regional culture. My overall results, analysis and discussion are contained in Chapters 4, 5, and 6, with the latter chapter focusing specifically on the mechanisms through which firms’ cultural embedding in the region occurs.

### 3.5 – ETHICAL ISSUES DURING DATA COLLECTION

I faced three key ethical issues during data collection. First, the discussion of religion and spirituality continues to be uncomfortable for many, even those with a strong religious grounding (Porth, 1997). Crucially, religion is often a very private and personal affair. Second, religious business people are often reluctant to discuss the issue, partly through fears of religion being an inappropriate mode of expression in the workplace, inviting stereotyping, defensiveness and debates about political correctness, not to mention the legal implications (Julian, 2001). Further, the very suggestion of conflict between religion and business is also often seen as somehow contradicting a strong faith. Third, it is difficult to probe for the validity and accuracy of someone’s religious claims without appearing to be attacking their fundamental beliefs or ethical character (Nash, 1994). Indeed, these three issues were even more pertinent given that my research highlights several aspects of Mormon culture that negatively impact on regional levels of innovation and business success. I therefore phrased my questions in recognition of this sensitivity. Following Shupe (1992), I stated my commitment not to depreciate the characters of either the LDS Church’s founder Joseph Smith, any present church leader nor the Book of Mormon in any way. I also made very clear the purpose and extent of the research to those participating; that it was independent of the company’s management; that no commercial secrets were being sought; and that respondents should feel free to ignore any questions they wished. I also asked participants if they were willing to be included in my appendix of interviewees, and also assured them that their responses would remain anonymous in the actual write-up. Once these assurances had been made, I typically received very open and candid responses from the majority of participants.

### 3.6 - POSITIONALITY

It is often assumed that researchers who conduct interviews with members of different nationalities are automatically at a disadvantage because they can never hope to understand the cultural complexities of that which they are not a part. In other words, the validity of one’s
research is seen to be a reflection of one’s positionality\(^{23}\) (Herod, 1999: 314). However, my own positionality did not appear to be a constraint during the research, indeed I viewed my status as a cultural outsider as a definite advantage in the Utah Mormon cultural context. In Nash’s (1994) study of Evangelical CEO’s, she encountered difficulties in that business leaders are generally ‘doers’ rather than philosophers, typically not used to developing full-scale explanations of how their faith motivates or affects their everyday decisions. However in contrast, because I was neither American nor Mormon, respondents often went to great lengths to explain Mormon and US cultural complexities to me. Further, the majority of my Mormon respondents had also been on Missions for the church, experiences that have been shown to ensure a deep understanding of LDS doctrine in intellectual terms (Stark, 2001). Respondents were thus not only keen to outline the basic tenets of Mormonism but were also very articulate in explaining Mormonism in everyday terms, along with the ways in which their faith affects their everyday business experiences. Also, I was a young white Western male as were the majority of my respondents. Like them, I also dressed smart casual, and was of a similar age. Though in some cases I was a lot younger than some of my respondents, I’m sure my own association with Cambridge also helped overcome some of the status differentials, which therefore did not greatly hinder my research.

3.7- ANALYSIS AND WRITE-UP

3.7.1 – CODING THE DATA, TESTING HYPOTHESES, BUILDING THEORY

Although some basic statistics were essential for identifying broad patterns in the survey data, the bulk of the raw material collected during fieldwork was not amenable to statistical analysis. Subjects as complex as culture and strategy are difficult to disentangle and so there results a loss of statistical generalisability (Schoenberger, 1991). However, the qualitative interview data was amenable to progressive qualitative hypothesis testing, through processes of coding whereby the data is broken down, conceptualised, and put back together in new ways. Emergent tendencies in the raw qualitative data can be identified through this process of abstraction, forming the basis for subsequent theorisation. First, I transcribed the tape-recorded interviews, verbatim for essential quotes, but otherwise in note form as if in a lecture. This very labour-intensive process took four months on returning to the UK. Second, I undertook as systematic analysis of the interview

\(^{23}\) Positionality refers to the personal, physical, or social characteristics of the interviewer and interviewee (class, race, gender, nationality, age, etc).
transcripts as I could. While I disagree with the total notion of grounded theory\textsuperscript{24}, I was nevertheless able to employ some of its component methods of theory construction to analyse the interview data. Notably, coding the data, to break it down, recategorise it, to examine the links between groups, and then develop hypotheses with regard to the mechanisms and patterns that best fit the data and help explain it. This process of progressive qualitative hypothesis testing through iterative abstraction involved four main stages.

First, I fractured the data through a process of open coding, annotating it and making notes about notes, as a means of opening it up to prepare it for a more systematic analysis. I analysed the interview transcripts phrase by phrase, taking apart individual observations, sentences, and paragraphs and giving each discrete incident, idea, or event a name that stands for or represents a phenomenon. Here I also asked a series of questions of the data, in terms of the actors involved, their motives and positionality. Second, I lumped into categories key phenomena identified in the data by the initial open codes, to decrease the number of units that I had to work with. I then gave these categories conceptual labels, or \textit{in vivo} codes (Glaeser, 1978; Strauss, 1987: 33), explicitly borrowing words and phrases used by the respondents themselves to use as category labels to name concepts. There are no clear bounds in the literature as to what constitutes a valid observation to include, so I focused on the most commonly and spontaneously cited themes raised in my interviews. In these two initial stages, preliminary theories first develop as provisional concepts. Theoretical memos formed a running record of insights and hypotheses about the data and helped me to move from a mass of raw data to a more analytical realm. Third, I put the data back together in new ways by making connections between the categories and subcategories identified above through a process of axial coding (Strauss and Corbin, 1990), examining categories in terms of their relationships with each other. This process was critical in that it helped identify the mechanisms that those relationships represented within the data. Finally, I progressively integrated the categories to help move towards preliminary theories, taking the coded data and scrutinising ideas and hypotheses in an iterative process, moving back and forth between research questions and evidence until a series of theories developed that best fit the data (following Tesch, 1990). Further, I constantly compared data both within categories to establish consistency and across categories to establish clear boundaries. I constantly revised my hypotheses by comparing them with all interview transcripts until they were able to account for as many known cases as possible.

\textsuperscript{24} Grounded Theory (Glaeser and Strauss, 1967) argues that we should approach data with no \textit{a priori} ideas or theories that might help explain that data, and that our theories only be grounded in ideas that emerge from analysis of the data we collect. However, I argue that it is fundamentally impossible to have read around a particular subject for a year in advance, yet approach the data with no pre-conceptions of the processes and mechanisms shaping it. Indeed, our pre-conceptions \textit{unavoidably} influence the type of data we search for in the first place.
This four-part method, whilst highly time-consuming, allowed me to produce final theories grounded in the empirical evidence I had collected and which seem to fit the data well. Following Dey (1993) I also focused on exceptions, extremes and negative examples to counter inclinations to only include evidence that confirms my various theories, and so qualify my theories. In order to make my analysis more robust, I also employed ‘member checking’; that is, checking the credibility of my analytic categories, constructs, and hypotheses with members of the group from which I originally obtained the data. I am grateful to my friends and contacts back in Salt Lake with whom I was able to discuss ideas as they developed in the field and also as they emerged in subsequent analysis in the UK. Whilst these respondents do not have privileged access to the truth, they do have privileged access to their own opinions and meanings (Baxter and Eyles, 1997), and it is upon these experiences that my research has been primarily based - if people define their circumstances as real then they are real in their consequences (Merton, 1957: 421-436).

3.7.2 – WRITING UP AND PRESENTING DATA

Although this study is clearly not an ethnography (i.e. long-term participant observation), many of the problems of writing about ethnographic data are very similar to the problems I faced during my research. This was especially the case in terms of processes of generalisation, through which specifics in the data would become generalities, and parts would come to stand for a whole. I was particularly concerned not to lose the complexity and the richness of the narratives I obtained through interview (indeed this is their greatest strength), by squeezing and trimming them to fit generalisations. As such, I have structured the material around the content themes that were most frequently, consistently, and spontaneously mentioned in interviews. I have also incorporated the voices of the respondents themselves into the text where appropriate, to illustrate relevant processes and mechanisms, and to reveal how meanings are expressed in my respondents’ own words. I have also often pitched those against each other, to highlight the complexities and contradictions that are driven by the embedding of firms in the Mormon regional culture; that is, by the complex intertwining of the economic with the socio-cultural. I have selected material on the basis of its relationships to other theoretical and empirical analyses of socio-cultural relations in the workplace, and the cultural embeddedness literature, focusing on relationships and traits stressed as important and extra-ordinary by my interviewees. While it is true that the finest nuances of individual interviews are lost in the aggregation of results, I am not however studying individual attitudes per se; rather, the broader processes and mechanisms of firms’ cultural embedding in the region.
Overall, the core of my argument is built up from the initial broad survey data, over 100 in-depth interviews with local entrepreneurs, industry and culture watchers, and triangulated with secondary data where available. In each section I move from a focused review of the relevant literature areas, to an analysis of the broad patterns manifest in the survey data, to a detailed assessment of the narratives produced by my respondents through in-depth interviews. While I do not share the beliefs of those I am writing about, I have sought to portray these religious-cultural convictions as reasonable to those that hold them, and as a legitimate and serious part of human business experience that informs how people and firms interact with each other in the Utah high tech business environment. I have also tried to present Mormon culture as closely to how it was described to me by the respondents I interviewed and by other Mormons with whom I formed close personal relationships in Utah. Indeed, much of the information upon which this thesis is based has been gleaned through personal, albeit formalised, exchanges. My respondents often disclosed sensitive information and I have therefore not named names in the write-up itself, instead maintaining rigour by describing the relevant respondent’s positionality as far as possible within the boundaries of anonymity. Where the gender of a respondent is not attached to a particular quotation, they are male. I also refer to firms by pseudonyms to protect the confidentiality of my sources.

3.7.3 – GENERALISING

Building theory from case studies runs the risk of generating a narrow and idiosyncratic theory with limited wider applicability. However, while case studies are not generalisable to populations or universes like experiments, they are generalisable to theoretical propositions (Yin, 1994). Thus, while my interview material cannot be regarded as representative in a strict statistical sense (McDowell, 1997), my sample of respondents and firms was instead highly purposive in order to reveal in the most visible way as possible the processes of firms’ cultural embedding in the region. Further, following Markusen (1994), my use of the responses of individual informants as data points in an empirical test of corporate strategy is valid, because of the key steps I have taken in moving from region, to industry, to firm, to respondent and then back again, as outlined in detail in the previous sections. My use of qualifications and counter examples where appropriate in each part of the analysis further minimises any tendencies towards over-generalisation. I have also been careful not to assume that individual informants represent the firm’s point of view, that they may be just one voice within it. Also, while I have tried not to

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25 Indeed, for many of my Mormon respondents, issues of confidentiality centred less on disclosing corporate information and more on giving their own personal interpretations of Mormon doctrine or teachings, that were out of line with official teachings, and that might find their way back to their Ward Bishops.
paint all of these firms with the same brush as some monolithic entity, nevertheless there are many commonalities among them in terms of common manifestations or ‘contents’ of embedding (outlined in Chapters 4 and 5). Thus, while any one of these ‘contents’ may be challenged in and of itself, overall there is patterning, a function of the embedding of these firms in the Mormon regional culture, albeit to differing extents.

3.8 – (OVERCOMING) LIMITATIONS OF METHODS AND DATA

3.8.1 - LACK OF PRE-EXISTING DATA

This research was difficult in that no study of its kind had ever been done in Utah before. No secondary data exists on the Mormon breakdown of firms at the county, region or state level. Indeed, while my interest is wholly in Mormon culture, this is necessarily premised upon and inseparable from Mormonism as a formal religion, and it is illegal for institutions to track employees by religious background. As such, I encountered significant difficulties in trying to obtain secondary data that illustrates the key trends outlined to me in interviews, most notably for employee turnover by cultural background. I have therefore had to mainly rely on qualitative interview data in selected parts of the analysis, although enough respondents in different firms highlighted such trends for me to consider them significant. I was also able to use a number of proxies, the visible patterns of which were consistent with some of the trends described at interview.

3.8.2 – ACCESSING CLOSED CULTURAL NETWORKS

The closed nature of the wider Mormon community was a potential difficulty given that I would be entering Utah as a cultural outsider, at the levels of both religious and national background. However, Sabot (1999) has argued that foreign researchers are more likely to gain access more quickly to sensitive information and also able to circumvent local cultural taboos than a local researcher and this was also my experience in Utah. The novelty of an English researcher from Cambridge wanting to discuss business and religion, a hot topic in Utah, typically sparked the interest of firms’ founders and CEOs in most cases. Indeed, the small sizes of the majority of firms involved meant that respondents often wore many hats and so could comment on a whole range of the business networks in which firms are involved. Relatively few individuals, firms, or organisations declined to participate, although several of the very small firms with limited resources never returned my calls. However, I could not identify any discernible pattern or bias
resulting from the refusals. The majority of firms only agreed to be interviewed if they were not directly identified in the write-up, and in two cases I also had to sign Non Disclosure Agreements before firms’ management agreed to take part.

3.8.3 – BIAS AND DISTORTION

My analysis has therefore been largely dependent on indirect and surrogate measures for assessing beliefs, feelings and attitudes, since these can only be inferred from observed behaviour, including verbal behaviour and hence responses to questions in interviews. However, charges are often leveled at in-depth interviews, in terms of their being vulnerable to systematic and random ‘errors’, relying as they do on respondents telling the truth about themselves and their industry (Clark, 1997: 79). There is thus a problem of the correspondence among attitudes, the verbal expression of those attitudes, and the actual behaviour connected to those attitudes. Fundamentally, as researchers we do not know whether respondents will tell us how they really feel about sensitive issues. I was therefore very aware of respondents not wanting me as an outsider to get an unfavourable impression of Mormonism by calling attention to ethical lapses among some members of the Church, or to the negative impacts of Mormon culture on certain areas of Utah’s high tech business environment. Indeed, when outlining its negative features respondents typically bore their testimony, acknowledging that while humans are not perfect, Mormonism nevertheless is:

‘I owe it to tell you that this faith is a wonderful thing and we really believe that it’s true, and whatever observations you make about it culturally, and whatever imperfections are created by the culture are the imperfections of feeble men and women, not the God behind us’.

However in the main, after assurances of confidentiality, the majority of respondents were pretty candid about Mormon culture and its influence in their own firms and beyond. I was also aware of some respondents exaggerating the importance of their own position and function, and I have taken care not to assume that the respondent is representative or illustrative of their firm. Indeed it was not uncommon to talk to respondents who took the opportunity to criticise the firm and dispute other senior managers’ versions of events, the firm, its culture, or the industry more widely. As such I spoke to several respondents in each firm to give a more balanced account, and have included the cultural background of the respondent where quotes are given. I have not

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26 A statement of one’s LDS faith, ‘the verbal expression of what a person knows to be true about the divinity of Jesus Christ’ (Ludlow, 1992: 1470).
accepted any of my respondents’ accounts uncritically, and always sought to triangulate them with secondary data where available.

3.8.4 - TEMPORALLY-BOUND DATA (?)

My objects of study, firms and regions, are in reality constantly moving targets. A key problem therefore with an interview approach to studying firms is that it tends to generate data that are temporally bound, probing corporate behaviour and structure at only a single point in time. Indeed, it was only feasible to conduct interviews this intensively once, and hence it is difficult to determine if hypotheses borne out for the current period of time (2000) were also true in a previous period. Nevertheless, I was able to ask firms to reconstruct data points in the past, questioning them about their previous strategies since start-up. I also sought former employees where appropriate to help illuminate firms’ previous activities. I probed firms across three types of key historical event: (i) exogenous to the industry changes in the economy of the region; (ii) structural changes in the software industry itself; and (iii) changes in firm management or strategy that represent a discontinuity with the past. As such, much of the interview data does cover the period since firm founding, also aided by targeting the firm’s founders and others who had been with the case study firms from their inception. These constraints also offer opportunities for follow-up research with my case study firms over the next three years, and many firms are keen to be part of that.

3.8.5 – PROBLEMS OF USING STANDARD INDUSTRIAL CLASSIFICATION (SIC) CODES (AND ALSO NAICS CODES)

Finally, at both the national and state levels the US government uses various systems of industrial classification codes to classify businesses by industry and to calculate the economic activity of these industries within the US economy. Up until 1997 the US Bureau of Labor Statistics employed the Standard Industrial Classification (SIC) system, officially replacing that with the North American Industrial Classification System (NAICS). There are four interrelated difficulties that arise from deficiencies in these systems. First, the SIC system tracks only a firm’s primary products, which means that in the Utah Department of Workforce Services (DWS) data, some of Utah’s lead software developers (e.g. Iomega) are classified in other SIC codes. In some cases I therefore included firms in my SIC 737 sample frame which had been classified elsewhere by the DWS but which nevertheless maintain a significant software production component. These judgement calls were confirmed by colleagues at the Bureau of Economic and
Business research at the University of Utah, who had worked with Utah’s SIC data for many years.

Second, the SIC codes, originally published in 1941 and most recently refined in 1987, fail to capture many of the growth industries of the last two decades, particularly in the high technology sector. For example, the 1987 SIC codes do not isolate the internet services industry. With regard to Utah’s software industry, many firms in new technology growth areas are lumped together under SIC 7379. As such I included this, albeit slightly disparate, group of firms in my survey.

Third, the 1997 switch to the North American Industrial Classification System (NAICS) – indeed prompted by the inability of the SIC system to keep up with new technology growth areas – means that there are limits to comparing historical data over time, especially in industries whose boundaries continually change and are redefined. However, I have been able to use a SIC-NAICS bridge (see Table 3.20) to construct secondary data across the 1997 divide where appropriate. Indeed, the Utah DWS itself was also able to supply me with post-1997 Utah computer software industry data in the SIC format.

A fourth related problem is the added confusion of how we actually define high tech. Definitions of high tech industries by Standard Industrial Classification (SIC) codes vary widely, creating difficulties of direct comparison with other studies, and of delimiting the industrial boundaries of high tech regional agglomerations, and hence of their significance to the state economy in terms of employment and revenue. Table 3.21 shows the varying definitions of high tech as found in several key recent studies. I largely employed the BEBR\textsuperscript{27} definition in order that I would be able to use their secondary datasets on Utah’s high tech economy. Further my specific focus is the computer software and services industry (SIC 737) which as Table 3.21 shows, is consistently defined as high tech.

\textsuperscript{27} Bureau of Economic and Business Research, David Eccles School of Business, University of Utah.
Table 3.20 – Bridge Between SIC and NAICS for Computer Software Firms

<table>
<thead>
<tr>
<th>SIC</th>
<th>NAICS</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>737</td>
<td></td>
<td><strong>Computer programming, data processing, and other computer related services</strong></td>
</tr>
<tr>
<td>7371</td>
<td>541511</td>
<td><strong>Computer programming services</strong> Custom computer programming services</td>
</tr>
<tr>
<td>7372</td>
<td>511210</td>
<td><strong>Software publishers</strong> Software publishers</td>
</tr>
<tr>
<td>7373</td>
<td>541512</td>
<td><strong>Computer Systems Integrators</strong> Computer systems integrators</td>
</tr>
<tr>
<td>7374</td>
<td>514210</td>
<td><strong>Data Processing Services</strong> Data processing services</td>
</tr>
<tr>
<td>7375</td>
<td>514191</td>
<td><strong>Online information services</strong> Online information systems</td>
</tr>
<tr>
<td>7377</td>
<td>532420</td>
<td><strong>Computer Rental and Leasing</strong> Computer rental and leasing</td>
</tr>
<tr>
<td>7378</td>
<td>811212</td>
<td><strong>Computer maintenance and repair</strong> Computer maintenance and repair</td>
</tr>
<tr>
<td>7379</td>
<td></td>
<td><strong>Computer Related Services, not elsewhere classified.</strong></td>
</tr>
<tr>
<td></td>
<td>334611</td>
<td>Software reproducing</td>
</tr>
<tr>
<td></td>
<td>31% of 541512</td>
<td>Computer systems consultants (except systems integrators)</td>
</tr>
<tr>
<td></td>
<td>100% of 541519</td>
<td>Other computer related services</td>
</tr>
<tr>
<td></td>
<td>541519</td>
<td>Computer consultants (except computer systems consultants)</td>
</tr>
<tr>
<td></td>
<td>541519</td>
<td>All other computer related services</td>
</tr>
</tbody>
</table>

Note – In 2000 Utah had no firms in SIC 7376
<table>
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<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>131</td>
<td>Crude Petroleum and Natural Gas</td>
<td>X</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>148</td>
<td>Nometallic Minerals Services (except fuels)</td>
<td>X</td>
<td></td>
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</tr>
<tr>
<td>211</td>
<td>Cigarettes</td>
<td>X</td>
<td></td>
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</tr>
<tr>
<td>281</td>
<td>Industrial Inorganic Chemicals</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>282</td>
<td>Plastics Materials and Synthetic Resins</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>283</td>
<td>Drugs</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>286</td>
<td>Industrial Organic Chemicals</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>348</td>
<td>Ordnance and Accessories</td>
<td>X</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>351</td>
<td>Engines and Turbines</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>355</td>
<td>Special Industry Machinery (except metalworking)</td>
<td>X</td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>357</td>
<td>Computer and Office Equipment</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>365</td>
<td>Household Audio and Video Equipment</td>
<td>X</td>
<td></td>
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</tr>
<tr>
<td>366</td>
<td>Communications Equipment</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>367</td>
<td>Electronic Components and Accessories</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>371</td>
<td>Motor Vehicles and Parts</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>372</td>
<td>Aircraft and Parts</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>376</td>
<td>Guided Missiles, Space Vehicles and Parts</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>381</td>
<td>Search, Detection, Navigation, Guidance</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>382</td>
<td>Laboratory Apparatus and Analytical, Optical</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>384</td>
<td>Surgical, Medical and Dental Instruments</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
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<tr>
<td>386</td>
<td>Photographic Equipment and Supplies</td>
<td>X</td>
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<tr>
<td>482</td>
<td>Telegraph and Other Message Communications</td>
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<td></td>
<td></td>
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<tr>
<td>489</td>
<td>Communications Services (not elsewhere classified)</td>
<td>X</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>493</td>
<td>Combination Electric and Gas, and Other Utility</td>
<td>X</td>
<td></td>
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<td></td>
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<tr>
<td>601</td>
<td>Central Reserve Depository Institutions</td>
<td>X</td>
<td></td>
<td></td>
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<tr>
<td>631</td>
<td>Life Insurances</td>
<td>X</td>
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<td></td>
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<tr>
<td>671</td>
<td>Holding Offices</td>
<td>X</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>737</td>
<td>Computer Programming and Data Processing</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>738</td>
<td>Miscellaneous Business Services</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>823</td>
<td>Libraries</td>
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<td></td>
<td></td>
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<tr>
<td>871</td>
<td>Engineering, Architectural and Surveying</td>
<td>X</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>873</td>
<td>Research, Development and Testing Services</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>874</td>
<td>Management and Public Relations Services</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>899</td>
<td>Other Business Services</td>
<td>X</td>
<td>X</td>
<td></td>
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</tr>
</tbody>
</table>
3.9 – SUMMARY

The reality of empirical research is therefore not as neat as typically proposed in journals. Rather, methodological opportunism and pragmatism were the two key research methods that I employed most, and I wholly acknowledge the role of luck and chance in determining the final direction and outcome of the research. This is neither a technical study of Utah’s software industry, nor a theological study of the LDS Church *per se*. I am not concerned with the technical niceties of logarithms or programming in Java, nor with the truth of Mormonism’s religious claims. Rather, I am concerned with the everyday experiences of men and women who work in Utah’s high tech industry; how everyday practices of social interaction act to embed the firm in the wider regional culture; and what the material impacts of that are upon the firm. However, getting at the latter three elements often meant being subjected to lengthy discussions on the former! In the next three chapters I outline the key material findings of my research. *Chapter 4* focuses on the broad manifestations of the embedding of these firms in the wider regional Mormon culture; *Chapter 5* on the material impacts of that cultural embedding on the firm, specifically in terms of firms’ abilities to innovate; and *Chapter 6* on the actual mechanisms through which that embedding takes place.
CHAPTER 4

UNPACKING THE CULTURAL EMBEDDING OF COMPUTER SOFTWARE FIRMS
ON UTAH’S WASATCH FRONT

‘The idea of embeddedness is an attempt to better understand those aspects in firms’
external relations that cannot be captured by traditional concepts. They tend to be the
‘soft’ items... difficult to grasp... because they are often taken-for-granted by actors.
Nevertheless they may affect the competitiveness of firms and the development of regions
... issues that are not very well conceptualised to date.’

P. Oinas (1999: 30)

4.1 - INTRODUCTION

In recent years notions of corporate culture and its production in the firm have received increased
attention in both the business management and economic geography literatures¹, yet nevertheless
culture remains an incredibly slippery term (McDowell, 1994; Mitchell, 1995). Specifically, we
have yet to gain a full understanding of the relationships between corporate culture, corporate
strategy and firms’ competitive performance. Corporate cultures are generally viewed as sets of
social conventions, embracing behavioural norms, standards, customs, and the ‘rules of the game’
that underlie social interactions within the firm. These conventions are in turn linked to a deeper
set of underlying core values (also called philosophies or ideologies) that provide more general
guidance in shaping behaviour patterns within the firm (Deal and Kennedy, 2000; Hampden-
Turner, 1990; Kotter and Heskett, 1992; Schein, 1992). In this ‘onion model’ of corporate
culture, the surface layers of culture (visible patterns of behaviour and artifacts) are
conceptualized as reflecting deeper cultural layers (norms, attitudes, values and beliefs), as
outlined in Figure 4.1. Corporate cultures are thus seen as coherent and unifying systems that
ensure stability and the smooth running of organisations through their defining appropriate ways

¹ Business management e.g. Hampden-Turner, 1990, 1992; Kanter, 1993; Kotter and Heskett, 1992; Martin, 1992;
Schoenberger, 1994; 1997, McDowell, 1997; Shackleton, 1998; Glasmeier, 2000
of behaving, attitudes, and ways of thinking. Or put more simply, corporate cultures are ‘the way we do things around here’ (Deal and Kennedy, 2000: 4).

Figure 4.1 - An ‘Onion’ Model of Culture - Integrating Schein (1985), Williams et al. (1993), Trompenaars and Hampden-Turner (1997), and Schoenberger (1994, 1997)

However, Schoenberger (1994, 1997) has critiqued the notions of corporate culture within this general literature as overly-narrow, and in particular their conceptualisation of culture as a set of norms and values that simply produce behaviours. This view, she argues, has tended to foster notions of custom and tradition as the primary barriers to culture change within the firm. Rather, it is not a case of change simply being resisted through traditions and habit, but that certain types of change are resisted while others are embraced (ibid.). We therefore need to understand why certain types of tradition are selected even in the face of overwhelming evidence of their inadequacy in particular circumstances. To answer this key question, Schoenberger instead outlines a messier conception of corporate culture as standing at the intersection between material practices, social relations, and ways of thinking within the firm. Drawing on notions of social identity and culturally-inflected knowledge use within the firm, crucially she links corporate

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2 Material practices are how work is actually done, what work is done, and why it is done.
culture to corporate strategy, demonstrating more explicitly how corporate culture makes a real difference to the way the firm operates.

Schoenberger argues that culture and strategy are two mutually constitutive categories, based on the key premise that social position and social identity shape our interpretations of the information available to us and hence our ability to act on that knowledge. As such, corporate strategy is **unavoidably** culturally-influenced, because it is only in and through culture that the firm constructs interpretations of the world and understands itself (*ibid.*, 1997: 152). Schoenberger further argues that it is the firm’s *leader’s* values, which produce initial hypotheses about the way the world works and which over time become transformed into deeply-held, shared assumptions within the firm concerning appropriate behaviour, attitudes and ways of thinking. As such, managerial identities are fundamentally tied up with cultural conceptions about how the firm operates, including understandings about firms’ internal and external relations (Schoenberger, 1997: 145). Managerial identities are therefore intimately involved in determining what kinds of corporate strategy will be accepted and which refused, through definitions of what has value, and what does not. Indeed, Schoenberger highlights corporate preferences for strategies that maintain and confirm managers’ own social positions and sense of identity. Thus, as knowledge within the firm is transformed into strategy these cultural constraints narrow the available terrain for action and particular initiatives, despite considerable evidence in their favour, are foreclosed. As such, corporate culture is critical to understanding the way the firm operates, indeed the two are reciprocal over time; culture is constantly reproduced, *producing* strategy in the firm at the same time as it is shaped by the strategic trajectory of the firm.

However, in prioritising senior managerial identity Schoenberger sidelines the role of *regionally*-specific attributes, as well as the role of other key culture carriers within the firm (Sadler and Thompson, 1999). Thus while Schoenberger takes us further than conventional analyses in demonstrating how corporate culture makes a real difference to the ways firms operate, I suggest that we need to link notions of corporate culture and strategic decision making *within* the firm much more explicitly to the broader culture of the regions in which firms are located. Indeed conversely, most of the industrial district and regional learning literature does not adequately relate regional culture to the *internal* workings of firms, that is, to their individual corporate cultures. I argue that we may best link regional culture, to corporate culture and hence strategic decision making in the firm through notions of cultural embeddedness. However, this key concept is currently under-theorised in economic geography and therefore of limited policy relevance. If we are to move beyond this impasse, rather than some all-encompassing abstract
notion of 'regional culture' as has been typically employed in these debates\(^3\), I argue that we need to unpack regional culture in terms of a culture hierarchy, made up of: (i) individual corporate cultures; (ii) a regional industrial culture; and (iii) the broader regional culture in which these are set (Figure 4.2).

**Figure 4.2 – Conceptualising the Cultural Embedding of Firms in Terms of a Culture Hierarchy**

Once we unpack regional culture in this way, it allows us to conceptualise the cultural embedding of firms in the region in terms of the overlaps between the different levels of this culture hierarchy. In this chapter I focus on the actual ‘contents’ of these overlaps; that is, of how we actually recognise cultural embeddedness when we see it. I focus on firms’ import of wider regional cultural values, traditions and ways of thinking into their own corporate cultures, and how that informs both the nature of their internal relations; that is, their ideologies, rules systems, accepted ways of working and systems of organisational control. First, I describe the Mormon regional culture in which Utah’s high tech industrial agglomeration is embedded, grounding this in a brief history of the Church of Jesus Christ of Latter-day Saints (see Table 4.1), the key institution upon which Mormonism is based. Second, I examine the intimate *historical* relationship between the development of Utah’s computer software industry along the Wasatch Front and the region’s Mormon culture. Crucially, computer software is also Utah’s lead high tech subsector and as such I argue that it provides an ideal case study to examine the relationships between regional culture, corporate strategy and high tech innovation. In my third section, I begin to unpack the specific ‘contents’ of the *contemporary* cultural embedding of Utah’s

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\(^3\) e.g. Saxenian (1994: 4) defines regional culture as ‘the shared understandings and practices that unify a community and define everything from labour market behaviour to attitudes towards risk taking’
computer software industry, focusing on a series of self-identified Mormon cultural traits which I also found prevalent in the corporate cultures of many of Utah’s lead software firms. I focus specifically upon imported regional cultural traits that have material impacts upon the firm, in terms of their informing firms’ internal structures and decision-making processes. Finally, I develop a broader discussion of firms’ cultural embedding in the region, based on notions of patterning.

4.2 –MORMONISM: THE REGIONAL CULTURE OF THE WASATCH FRONT

‘The first thing that everyone in Salt Lake assures a visitor is that Mormonism isn’t a big factor in daily life here, which is a sure sign that it is’

R. Boynton (2000: 2)

Mormonism is the distinctive culture associated with the ‘Mormon Church’, or more properly ‘The Church of Jesus Christ of Latter-day Saints’ (the LDS Church). Mormon culture is especially strong within Utah, reflecting the state’s position as the geographical, political, administrative and historical heart of the church. Of the world’s 11 million Mormons, Utah is home to 1.6 million of them (15%), the highest concentration of Mormons in the world. Indeed, for its entire history as a political entity, Utah has been ‘Mormon Country’ (Poll, 2001: 164). However, the LDS Church was actually founded in upstate New York in 1823, during a period of intense religious revivalism. Confused by the conflicting claims of the various faiths Joseph Smith, a 14 year-old farmer’s son, prayed for guidance. He alleged that God and Jesus Christ appeared to him, giving him instructions not to join any of the available churches, but that God would restore to the earth the church originally organised by Jesus Christ. Smith also claimed that an angel named Moroni then gave him golden plates whose engraved records Smith translated into English as the Book of Mormon. Following a series of revelations and visitations, the LDS Church was organised on April 6, 1830 in Fayette, New York, and proclaimed a restoration of the ‘true’ Christian church, viewing various other denominations as having strayed from the true faith. Mounting suspicion and anxiety within neighbouring communities forced the Mormons, many of whom practiced polygamy, to emigrate westward from New York to Ohio, then to

4 Named after the ancient American prophet, Mormon, who had made an abridgement of previous plates. These are purported to have been a history and religious record of three groups of Middle Easterners who travelled to the Western Hemisphere over a fifteen-hundred year period and who played an important role in establishing ancient American civilization (Arrington and Bitton, 1992).
Table 4.1 – Broad Chronology of Early LDS Church History

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1820</td>
<td>Prophet Joseph Smith’s First Vision, Palmyra, NY – God and Jesus Christ appear to him in a wood near his home, telling him to join none of the other churches but to await the restoration of the Church of Jesus Christ</td>
</tr>
<tr>
<td>1823</td>
<td>Smith visited by angel Moroni and told of gold plates buried in a nearby hill from which the Book of Mormon was translated.</td>
</tr>
<tr>
<td>1827</td>
<td>Smith finishes translation of the golden plates into the Book of Mormon.</td>
</tr>
<tr>
<td>1829</td>
<td>LDS Church organised in Fayette township, NY</td>
</tr>
<tr>
<td>1830</td>
<td>The Saints move to Kirtland, Ohio, as commanded through revelation</td>
</tr>
<tr>
<td>1831</td>
<td>Saints begin fleeing from mobs in Jackson County, Missouri across the Missouri River</td>
</tr>
<tr>
<td>1833</td>
<td>Joseph Smith leaves Kirtland, Ohio for Missouri to bring relief to expelled Saints - The Saints fled Jackson County, Mo. in response to mob threats and attacks, and took refuge in neighbouring counties, esp. Clay County.</td>
</tr>
<tr>
<td>1834</td>
<td>Mid-winter expulsion of the entire Mormon community from Ohio – moves to Illinois</td>
</tr>
<tr>
<td>1838</td>
<td>Exodus from Kirtland, Ohio begins – camp moves to Far West, Mo.</td>
</tr>
<tr>
<td>1839</td>
<td>The Mormons leave Far West, Mo. expelled from their homes on account of their religion; Nauvoo, Illinois is selected as the next gathering place</td>
</tr>
<tr>
<td>1844</td>
<td>Joseph Smith and his brother Hyrum are killed by an angry mob in Illinois</td>
</tr>
<tr>
<td></td>
<td>Brigham Young becomes the second President of the LDS Church.</td>
</tr>
<tr>
<td>1847</td>
<td>Brigham Young’s pioneer company march from the Missouri River &amp; journey west to discover Zion</td>
</tr>
<tr>
<td>- April</td>
<td></td>
</tr>
<tr>
<td>- July</td>
<td>Brigham Young enters Salt Lake Valley and announces ‘This is the place’</td>
</tr>
<tr>
<td>1849</td>
<td>A provisional State of Deseret was established and appeals made to federal government for self-government</td>
</tr>
<tr>
<td>1857</td>
<td>Under instructions from US President James Buchanon, the US War Dept sends an army to march on Utah, assuming the Utah Mormons were in rebellion against the US – This is the beginning of the ‘Utah War’</td>
</tr>
<tr>
<td>1862</td>
<td>Abraham Lincoln passes a federal law declaring plural marriage a crime – Mormons refuse to honour it.</td>
</tr>
<tr>
<td>1887</td>
<td>Edmunds-Tucker Act is passed – allowed the disincorporation of the LDS Church, and the confiscation of practically all church property.</td>
</tr>
<tr>
<td>1893</td>
<td>Salt Lake Temple dedicated (40 years in construction)</td>
</tr>
<tr>
<td>1869</td>
<td>Utah admitted to the Union as the 45th US state.</td>
</tr>
</tbody>
</table>

Compiled from The Deseret News LDS Church Almanac, 2001-2: pp. 508-574
Missouri, Illinois, Iowa, and Nebraska. At the height of the turmoil in 1844, Joseph Smith was martyred by an armed mob, and succeeded by Brigham Young as the second President of the church. Young subsequently led the church’s surviving members on an arduous trek to the Rocky Mountains, 1300 miles to the west to discover a Zion\(^5\) where they could worship free from persecution. The first Mormon pioneer party arrived in the Great Salt Lake valley on July 24, 1847 in what they named the State of Deseret, but which subsequently became the State of Utah.

\textit{Plate 4.1 – Pioneer Day Procession (July, 2001) Celebrating the Entry of the First Mormon Pioneers Into the Great Salt Lake Valley in 1847.}

In the 170 years since its founding, the LDS Church has sustained the most rapid growth rate of any new faith group in American history and continues to be one of the world’s fastest-growing religions (Stark, 2001). Today, there are over 11 million Mormons worldwide (5.2 million in the US) and Mormons constitute the first or second largest church in nine western US states, indeed the fifth largest religious denomination in the US as a whole (Quinn, 1997). The cultural make-up of Utah’s population reflects the state’s unique position as the heart of Mormonism: Utah has by far the largest denominational majority of any US state, and is one of only two US states with a simple majority of any religion (Eliason, 2001). According to the church’s official membership records, at year-end 1999 there were over 1.6 million Mormons living in Utah, over 75% of Utah’s total population of 2.13 million (Deseret News LDS Church Almanac, 2001-2). Table 4.2 and Figure 4.3 show county-level Mormon population figures for the Wasatch Front\(^6\).

\(^5\) The Mormons trace their origins from Hebrews who allegedly migrated to North America. Hence, having escaped their persecutors to Salt Lake Valley, the Mormons named their theological center Zion, after the Jewish homeland (Kotkin, 1992).

\(^6\) The Wasatch Front is home to over 77% of Utah’s total population.
Table 4.2 - Mormon Populations Across the Wasatch Front Counties, 2000

<table>
<thead>
<tr>
<th>Area</th>
<th>Total Population * (2000)</th>
<th>% Mormon **</th>
<th>Total Mormon Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weber County</td>
<td>186 987</td>
<td>64.5%</td>
<td>120 607</td>
</tr>
<tr>
<td>Davis County</td>
<td>240 460</td>
<td>74.2%</td>
<td>178 421</td>
</tr>
<tr>
<td>Salt Lake County</td>
<td>848 083</td>
<td>64.3%</td>
<td>545 317</td>
</tr>
<tr>
<td>Utah County</td>
<td>361 213</td>
<td>89.9%</td>
<td>324 730</td>
</tr>
<tr>
<td>Wasatch Front</td>
<td>1 636 743</td>
<td>73.3%</td>
<td>1 169 075</td>
</tr>
</tbody>
</table>

Source: * Economic Report to the Utah Governor; ** Young, 1996

However, it is not the Mormon religion *per se* in which I am interested, but rather the regional culture that flows from people living within the tenets of that religion (see e.g. Cornwall, 2001; O’Dea, 1957). I am defining ‘culture’ as the expression of collective beliefs, attitudes, values, skills, and institutions of the people in a particular place (following Malecki, 1995). As such, in areas where a particular religion is dominant, it forms an integral part of the culture of that society, generating strong pressures to think and act in a particular way. Mormon culture is conservative by popular standards with strong family and community impulses (Cornwall, 2001; May, 2001; O’Dea, 1957). It includes prohibitions against the drinking of alcohol or the use of drugs, a commitment to fasting and prayer, modesty in dress, an emphasis on family and obedience to parents, a concern for the elderly and the poor and many other social concerns (Palmer, 1983). The church also opposes abortion, divorce and premarital sex, whilst also emphasizing the Protestant ethic of diligence, education and the attainment of skills (Kotkin, 1993).
Figure 4.3 – Mormon Populations Across the Wasatch Front, 2001

WASATCH FRONT
Population 1.6 million
74% Mormon
Mormon culture is also centred on a number of distinctive practices and traditions, many of which are often perceived as a little bizarre by outsiders, and these are outlined in Table 4.3.

Table 4.3 – Selected Key Cultural Practices Within Mormonism

<table>
<thead>
<tr>
<th>Practice</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Polygamy (plural marriage)</strong></td>
<td>One of the most well-known Mormon practices. However, the LDS Church officially relinquished it in 1890 as a condition of Utah’s admission into the US. Today, the practice is still prevalent among fundamentalist ex-communicated Mormon groups</td>
</tr>
<tr>
<td><strong>Missionaries</strong></td>
<td>The most visible face of Mormonism around the world. Each year, over 30,000 Mormons serve on self-supporting voluntary missions, typically young men between 19 and 36 years old (although increasingly young women). Missions last for 2 years (18 months for females), during which Mormons spread the Gospel, win converts and participate in other community service projects.</td>
</tr>
<tr>
<td><strong>Word of Wisdom</strong></td>
<td>A divinely inspired health code. Urges Mormons not to smoke, drink alcohol, or consume caffeine. Strict adherence is required as a condition of entry to the Temple.</td>
</tr>
<tr>
<td><strong>Tithing</strong></td>
<td>The basic contribution by which Mormons fund the activities of the church - donate one-tenth of one’s annual income</td>
</tr>
<tr>
<td><strong>Genealogy &amp; Baptisms for the Dead</strong></td>
<td>Mormons are urged to identify their ancestors and to undertake various ordinances for the dead in the Temple, including baptism by proxy in which people who died before the founding of the LDS Church may be baptized into its membership.</td>
</tr>
<tr>
<td><strong>Stocking and rotation of year’s worth of supplies</strong></td>
<td>Mormons (as millenialists) believe in the Second Coming of Jesus Christ, and that the LDS Church will be called upon to govern humankind. Each Mormon family is asked to stock a year’s worth of food in the pantry, along with clothes and fuel which are regularly rotated, as a store for the expected turmoil.</td>
</tr>
</tbody>
</table>

As such, Mormonism requires a considerable commitment of time and energy beyond simple attendance at Sunday worship services and religious education classes. It also includes donating an annual tithe and other financial contributions, service in a variety of lay positions, performance of temple ordinances on behalf of the dead, personal and family prayer, scripture study, adherence to moral standards of personal honesty and integrity, genealogical research and service in the community. Mormonism is therefore not merely a creedal faith but rather a whole way of life, requiring an almost total commitment in customs, values, and lifestyle (Ballard, 1993; Palmer, 1983). Indeed, some commentators argue that Mormon culture is so strong that there also exists a Mormon *ethnicity* (Abramson, 1980; Ostling and Ostling, 1999).
This distinctive Mormon regional culture is manifest in a whole range of secondary data at the state level. First, the conservative orientation of Mormonism is manifest in Utah voting patterns. Utah has been a Republican political stronghold since the 1960s, consistent with the time when LDS Church leaders began outspokenly to favour conservative positions on key social issues (Burbank et al., 2001). Indeed, studies using public opinion data to summarise the ideological and partisan orientations of citizens by state have identified Utah as the most conservative and Republican state in the US on average (Erickson et al., 1993: 14-19; Wright et al., 2000: 41). Republicans have controlled the state legislature, the governorship, and the state’s congressional delegation since the mid-1980s (Burbank et al., 2001). Further, while the LDS Church itself rarely gets directly involved in state politics, the church nevertheless has systemic power in Utah’s legislature. Crucially, political decisions are often made as if the LDS Church were involved, a function of over 85% of the Utah state legislature being Mormon (Hrebenar et al., 1987: 115). This then reinforces the visibility of Mormon culture in Utah politics.

Second, Utah’s demography is unique among the US states in terms of its high birth rate and young population (Perlich, 1996). In 1990, Utah’s fertility rate was 91.6 births per 1000 women (age 14-55), one third higher than the US national rate, a function of both Utah having more babies per woman (c.f. US average) and a higher proportion of Utah’s female population being in child-bearing years compared with females nationally (Perlich, 1996). Both are consistent with Mormon family values which encourage marriage followed by childbearing (Cornwall, 1996; Smith and Shipman, 1996). Intimately related to this, Utah also has different marriage patterns compared to the US national pattern, consistent with Mormonism’s discouragement of divorce and bearing children out of wedlock (Smith and Shipman, 1996). For both genders, Utahns are more likely to be married than individuals in the US at any age, the difference being most dramatic for adults in their early 20s and 30s (ibid.).

As such, I argue that Utah’s ‘heartland Mormons’ (May, 2001) provide a very visible and distinctive regional culture, and one that is ideally suited to my study. Further, Utah’s social, cultural, political and religious environment as described is also intimately intertwined with the state’s economy. The LDS Church has historically always had an intimate relationship with the ‘temporal’ (economic), indeed economic growth is an integral part of Mormon theology (Shupe, 1992). Of some 122 revelations received by Joseph Smith, the founder of the LDS Church, 88 explicitly address fiscal matters (Van Biema, 1997). Many of Mormonism’s positive attitudes towards business are also rooted in the church’s frontier heritage. As the Mormons developed

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7 Over 90% of Utah’s total population live on the Wasatch Front.
settlements in Ohio, Missouri, Illinois and then finally the Salt Lake Basin, church-sponsored economic initiatives were required for projects that could not be mounted by individual entrepreneurs alone. However, this intimate historical association of Mormon religious culture with economic activity in Utah continues into the present day and crucially, Mormonism is inseparable from the development of Utah’s high technology industry, notably its computer software subsector. It is to this historical development that I now turn.

4.3 - THE MORMON ROOTS OF UTAH'S COMPUTER SOFTWARE INDUSTRY

Mormonism never shared the anti-rationalism of many new religions (see Kotkin, 1993), but instead developed a positive view of technology as ‘the tools the Lord has provided’, the embodiment of new ideas and inspiration, and therefore evidence of continuing revelation. Indeed, the LDS Church itself has undertaken a wholesale appropriation of computer technology since the early 1960s to help further its mission (Mauss, 1994). Crucially though, the development of Utah’s computer software industry more widely is historically inseparable from Mormonism via five key institutions. The first is the University of Utah (The U of U), a secular institution but with a high proportion of Mormons at both the student and faculty levels. In 1966 Dr. James Fletcher, an active Mormon and then President of the university recruited David Evans, a devout Mormon from the University of California at Berkeley to head their new computer science faculty. In addition, Fletcher lobbied for federal research funds to enable academics to spin off firms based on their academic research. In 1969 he formalised the arrangement through the establishment of the University of Utah Research Park, on a former military reservation adjacent to the University and which has since been critical in incubating high tech start-up firms. The second key Mormon institutional origin of Utah’s software industry is Evans and Sutherland, a computer graphics company founded in 1968 by David Evans and one of his students Ivan Sutherland. This highly successful Mormon founded firm, indeed the pioneer firm on the U of U Research Park, has since provided a key source of software talent and a role model for other start-up firms in the region.

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8 Indeed, in the first century of Mormonism, the church’s leaders were partners, officer or directors in more than 900 Utah-area businesses (Van Biema, 1997).

9 The LDS Church’s Information Systems Department is responsible for all computer and software development for the church. Computers are extensively employed in tracking membership and finance, drafting plans for new buildings, indexing the 70 million names in the LDS genealogical index, producing and translating magazines and teaching material into 72 languages for Mormons worldwide, and in administrating the church’s welfare system.

10 The University of Utah’s student population is approximately 60% Mormon.
The third key institution is Brigham Young University, located 45 miles south of Salt Lake City in Provo. BYU is wholly owned and managed by the LDS Church and Mormons comprise over 99% of its student body and faculty. Specifically, BYU’s computer science department provides an annual source of Mormon software talent to the region, established in 1972 by Alan Ashton, a devout Mormon and former student of David Evans at the U of U. Indeed, one of the by-products of Ashton’s research at BYU was the use of a musical notation data structure for a word-processing system, around which he founded WordPerfect Corporation in 1979 with one of his (Mormon) students, Bruce Bastion. Provo-based WordPerfect was catapulted into prominence by the launch of IBM’s personal computer, hitting sales of $52.2 million by 1986. Crucially, this Mormon software success story, the fourth key institution in the development of Utah’s computer software industry, has since given rise to an extended series of software firm spin-offs along the Wasatch Front and provided a role model for other Mormon-founded software firms in the region.

Finally, Novell Corporation, another Mormon software success story, comprises the fifth key institutional origin of Utah’s computer software industry. In 1982 Novell investors asked Ray Noorda, a devout Mormon and also a former student of David Evans at the U of U, to take over as CEO and commercialise a piece of networking software designed by three Mormon engineers from BYU. This ‘SuperSet’ enabled the hooking together of computers running CP/M and DOS, the PC world’s then leading, but also previously incompatible, operating systems. Based on this technology, Noorda subsequently grew Novell to a $1 billion-a-year leader in personal computer networking and internet directory software and services by the early 1990s. Novell continues to be a key global player in computer networking, and has also given rise to a whole series of spin-off companies along the Wasatch Front.

Via this series of educational and corporate institutions therefore, the historical development of Utah’s computer software industry is inseparable from Mormonism. These key institutions have acted as key sources of Mormon software entrepreneurs and skilled labour, as well as providing role models for a plethora of subsequent start-up firms to develop along the Wasatch Front (see Figure 4.4). As such I argue that it provides an ideal case study from which to draw wider conclusions about the relationships between regional culture, corporate strategy and high tech innovation. The validity of this case study also lies in computer software’s status as Utah’s lead high subsector.
Figure 4.4 - The Mormon Roots of Utah’s Computer Software Industry

University of Utah Computer Science Dept

- David Evans, Mormon elder and U of U Professor
- Ivan Sutherland, Alan Ashton, and Ray Noorda as graduate students of Evans

Evans and Sutherland
Salt Lake City.
(founded 1968)

Evans and Sutherland found...

BYU Computer Science Dept (founded 1968)

- Alan Ashton (Mormon) leaves to found...
- Bruce Bastion – Mormon graduate student of Ashton’s

Alan C. Ashton – Professor of Computer science, 1972-

Beehive Computer

Collapses and in 1979 spawns...

3 BYU graduates develop PC networking software technology Superset, later commercialised as Netware by...

Satellite Software Corporation

1982 renamed: WordPerfect,
Orem

Ray Noorda (Mormon), in 1982 takes over as CEO...

Ashton and Bastion found (1979)...

Novell, Provo

By 1995, 45 of Utah’s total 465 high tech firms can trace their roots to technologies developed at either BYU or the University of Utah

NOVELL SPIN-OFF

- Caldera Systems
- EmWare

1996 is bought out by...
Utah’s computer software industry experienced its most rapid growth period in the late 1980s and early 1990s as shown in Figure 4.5:

**Figure 4.5 – The Growth of Utah’s Computer Software Industry Relative to Other Key Sectors During its Key Growth Period, 1985-1991**

![Diagram showing industry job growth, cumulative %, 1985-91](image)

Source: Utah State Board of Business and Economic Development, 1992

Software displaced aerospace as Utah’s lead high tech subsector in 1992 (see Graph 4.1). Further, by 1995 Novell and WordPerfect’s combined software employment alone accounted for 40% of Utah’s total software employment (Crispin-Little, 1996). However, in response to mounting national competition, primarily from Microsoft, these two Mormon firms merged, with

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**Footnotes:**

11 Largely following the introduction of IBM’s personal computer, which in 1981 spearheaded a revolution in the computer software industry, increasing demand for software application products and networking capabilities (Crispin-Little, 1996).

12 In 1986 employment in Utah’s aerospace sector accounted for 38% of all high tech employment. Each year between 1986 and 1988 aerospace based employment exceeded 14,000, reflecting large defense contracts and NASA research contracts being performed by Utah companies including Hercules, Thiokol Corporation, Unisys, Williams International, and Litton (Crispin-Little, 1993). But beginning in 1989 cuts in defense expenditures with the end of the Cold War took their toll and employment in the aerospace sector began to decline. By 1992 aerospace employment was 9,343, a loss of over 5,000 jobs in 6 years. Aerospace continued to steadily decline through the 1990s, and by the year-end 1997 employed less than 6,500 people.
subsequent consolidation and restructuring contributing to a significant decline in employment within Utah’s computer software industry (Crispin-Little, 1996)\textsuperscript{13}. However, Utah employment in SIC 737 as a whole has remained strong through the 1990s, reaching 22,672 by mid-1999, in part due to Novell’s recovery, but more significantly due to growth in programming consulting (SIC 7371). Job losses in the wake of the Novell-WP merger also fuelled an already established trend of spin-off of new software companies by former employees (Figure 4.4).

\textit{Figure 4.6 – The Changing Composition of Utah’s High Technology Industry, 1986-1995}\textsuperscript{14}.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{chart.png}
\caption{The Changing Composition of Utah’s High Technology Industry, 1986-1995}
\end{figure}

Source: Crispin-Little, 1993, 1996 – Bureau of Economic and Business Research, University of Utah.

The validity of Utah’s computer software industry as my research case study is therefore twofold. First, its development is \textit{historically} grounded in the Mormon regional culture via the series of educational, training and corporate institutions outlined. Second, computer software is Utah’s \textit{lead} high tech subsector in terms of both employment and establishments (Figure 4.6). Crucially, if we are to understand a regional economy, then we need to focus our analysis on its lead firms (Markusen, 1994). In the remainder of this chapter I begin to unpack the actual manifestations and ‘contents’ of the \textit{contemporary} embedding of Utah’s computer software firms in Mormon culture. That is, how regional systems of cultural conventions, norms, and social routines, part of

\textsuperscript{13} The subsequent sale of WordPerfect’s operations to Corel in 1995 later resulted in the loss of all WP-related jobs with the transfer of operations from Utah to Canada.

\textsuperscript{14} This pattern of software growth continues into 2002, however a mismatch in measurement between the BEBR dataset shown and County Business Patterns prevents a stitching together of these two datasets across 1995.
firms’ informal institutional environment, impact upon the workings of local firms as specific examples of formal institutional arrangements.

4.4 – HIGH TECH ZION – THE CONTEMPORARY EMBEDDING OF UTAH’S COMPUTER SOFTWARE INDUSTRY IN MORMON CULTURE

Plate 4.2 – Salt Lake Valley, Looking South from the University of Utah (July, 2001).

Mormon culture continues to play a key role in the contemporary development of Utah’s computer software industry, as evidenced in both my broad survey of Utah’s 105 lead software firms on the Wasatch Front, and the 20 in-depth case studies drawn from that survey sample. Analysis of state labour market data shows that employment in Utah’s computer software industry is split across 8 four-figure SIC codes, as shown in Table 4.4.
Table 4.4 – Utah’s Computer Software Industry (Statewide) - 1999 1st quarter

<table>
<thead>
<tr>
<th>SIC</th>
<th>Industry</th>
<th>Estab.s</th>
<th>Employment</th>
<th>Total Wages ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>737</td>
<td>Computer and Data Processing Services</td>
<td>1438</td>
<td>23 042</td>
<td>1 236 447 472</td>
</tr>
<tr>
<td>7371</td>
<td>Computer Programming Services</td>
<td>480</td>
<td>4739</td>
<td>277 796 874</td>
</tr>
<tr>
<td>7372</td>
<td>Prepackaged Software</td>
<td>141</td>
<td>6598</td>
<td>515 741 061</td>
</tr>
<tr>
<td>7373</td>
<td>Computer Integrated Systems Design</td>
<td>70</td>
<td>1961</td>
<td>106 304 723</td>
</tr>
<tr>
<td>7374</td>
<td>Data Processing and Preparation</td>
<td>73</td>
<td>3739</td>
<td>81 263 486</td>
</tr>
<tr>
<td>7375</td>
<td>Information Retrieval Services</td>
<td>152</td>
<td>3255</td>
<td>123 134 236</td>
</tr>
<tr>
<td>7376</td>
<td>Computer Facilities Management Services</td>
<td>NONE</td>
<td>NONE</td>
<td>NONE</td>
</tr>
<tr>
<td>7377</td>
<td>Computer Rental and Leasing</td>
<td>12</td>
<td>35</td>
<td>1 391 284</td>
</tr>
<tr>
<td>7378</td>
<td>Computer Maintenance and Repair</td>
<td>66</td>
<td>354</td>
<td>16 211 298</td>
</tr>
<tr>
<td>7379</td>
<td>Computer Related Services, not elsewhere classified</td>
<td>444</td>
<td>2361</td>
<td>114 604 510</td>
</tr>
</tbody>
</table>

Knowledge Intensive firms as % of total 737 93%


My survey excluded non-knowledge-intensive firms (SIC 7374, 7377 and 7378); i.e., firms that maintain only a nominal presence in Utah (‘reps’). I also excluded from the survey firms located outside the four counties of Wasatch Front\(^\text{15}\). As outlined in Chapter 3, my final survey sample is a 20% sample\(^\text{16}\) of Utah’s lead software firms based on the above criteria, and stratified in proportion to the relative contributions of each of the 5 SIC types of firm highlighted in green (Table 4.4). Based on this survey sample, the significance of Mormon culture at the broadest level within Utah’s software industry is first shown in Table 4.5, in terms of Mormons founding and managing firms.

\(^{15}\) Made up four counties: Weber, Salt Lake, Davis and Utah Counties; and 2 Metropolitan Statistical Areas (MSAs): Salt Lake City-Ogden and Provo-Orem.

\(^{16}\) I had intended to focus on the top 10% of firms; however, a 50% response rate in the survey meant that the survey sample covers the lead 20% of Utah’s software firms by employment, in turn correlated with revenue.
Table 4.5 – The Embedding of Utah’s Software Industry in Mormon Culture at the Broadest Level

<table>
<thead>
<tr>
<th></th>
<th>Total survey firms</th>
<th>% of total survey</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mormon founded</strong></td>
<td>68</td>
<td>69.4</td>
</tr>
<tr>
<td><strong>Mormon managed</strong></td>
<td>65</td>
<td>67.7</td>
</tr>
<tr>
<td><strong>Mormon founded and Mormon managed</strong></td>
<td>55</td>
<td>57.9</td>
</tr>
<tr>
<td>Non-Mormon founded</td>
<td>30</td>
<td>30.6</td>
</tr>
<tr>
<td>Non-Mormon managed</td>
<td>31</td>
<td>32.3</td>
</tr>
<tr>
<td>Non-Mormon founded and Non-Mormon managed</td>
<td>21</td>
<td>22.1</td>
</tr>
<tr>
<td>INTERMEDIATES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mormon founded but Non-Mormon managed</td>
<td>10</td>
<td>10.5</td>
</tr>
<tr>
<td>Non-Mormon founded but Mormon managed</td>
<td>9</td>
<td>9.5</td>
</tr>
</tbody>
</table>

It is significant that of the lead 20% software firms on the Wasatch Front, almost three-quarters (69%) are Mormon founded; 68% have a Mormon majority management team; and 58% are both Mormon founded and managed (see Table 4.5). Further, one fifth of the firms are intermediate Mormon, that is they have a Mormon / non-Mormon mix in their founding and management teams. Thus of the total 105 firms in the survey sample, only one fifth (22%) are non-Mormon majority founded and managed, as shown in Figure 4.7. As such, Mormonism remains a critical factor in the development of Utah’s computer software industry, through Mormons founding and managing the majority (78%) of Utah’s lead computer software firms.

Figure 4.7 – Mormon Breakdown of the Total Survey Firms (105) by Founding and Management

Second, the significance of Mormonism to the contemporary development of Utah’s computer software industry also centres on the prevalence of Mormons in firms’ total workforces. Official LDS Church statistics on Mormon populations by county on the Wasatch Front are shown in Table 4.8. However, the official Mormon group boundary is defined by baptism not by
participation (Cornwall and Cunningham, 1989), and so unless an inactive member specifically requests that their membership be terminated, then their name remains on the church membership rolls. Indeed, this is a lengthy process so many inactive Mormons do not bother and hence remain included in the church official figures. However, Utah pollster Dan Jones has developed detailed statistics on the activity status of Utah’s Mormon population based on church tithing receipts. His figures suggest that while 69% of all Utahns are officially Mormon, in reality only 55% of that number are ‘very active’, 20% ‘somewhat active’, and 25% ‘inactive’ (see Ure, 1999). Indeed, Brigham Young University’s own sociology department has independently confirmed Jones’s figures. Thus for Utah’s 2.13 million population, approximately 1.4 million are officially Mormon, of which 770 000 (55%) are very active, 280 000 (20%) are somewhat active, and 350 000 (25%) inactive (Ure, 1999). Using subsets of these figures at the county level (Young, 1996), I have estimated the theoretical active Mormon non-agricultural workforce for the Wasatch Front (Tables 4.7 and 4.8), the workforce from which employees in Utah’s computer software industry are drawn.

Table 4.6 – Wasatch Front Populations and Workforce, 2001

<table>
<thead>
<tr>
<th>Area</th>
<th>Population</th>
<th>Total employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Utah State</td>
<td>2 233 169</td>
<td>1 295 540</td>
</tr>
<tr>
<td>Salt Lake City / Ogden MSA</td>
<td>1 333 914</td>
<td>838 879</td>
</tr>
<tr>
<td>Salt Lake County</td>
<td>898 387</td>
<td>625 119</td>
</tr>
<tr>
<td>Davis County</td>
<td>238 994</td>
<td>105 031</td>
</tr>
<tr>
<td>Weber County</td>
<td>196 533</td>
<td>108 729</td>
</tr>
<tr>
<td>Provo / Orem MSA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Utah County</td>
<td>368 536</td>
<td>176 156</td>
</tr>
</tbody>
</table>

Source: US Census Bureau, 2000

Table 4.7 - Estimated Mormon Workforce Across the Wasatch Front, 2000

<table>
<thead>
<tr>
<th>Area</th>
<th>Non-agricultural employment*</th>
<th>% Mormon (A) (official figures)**</th>
<th>% active Mormon ((55% + 25%) x A)</th>
<th>Estimated active Mormon non-agricultural labor force</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weber County</td>
<td>88 230</td>
<td>64.5%</td>
<td>48.4%</td>
<td>42 703</td>
</tr>
<tr>
<td>Davis County</td>
<td>82 234</td>
<td>74.2%</td>
<td>55.7%</td>
<td>45 804</td>
</tr>
<tr>
<td>Salt Lake County</td>
<td>581 329</td>
<td>64.3%</td>
<td>48.3%</td>
<td>280 781</td>
</tr>
<tr>
<td>Utah County</td>
<td>146 724</td>
<td>89.9%</td>
<td>67.4%</td>
<td>98 892</td>
</tr>
<tr>
<td>Wasatch Front</td>
<td>898 517</td>
<td>73.3%</td>
<td>55.0%</td>
<td>494 184</td>
</tr>
</tbody>
</table>

Source: * Utah State and County Profiles, Governor’s Office of Planning and Budget, 2001; ** Young, 1996
Just over 73% of the Wasatch Front’s non-agricultural labour force therefore is officially LDS, but one quarter of those people are inactive. Incorporating that qualification and assuming a similar breakdown for Utah’s high tech workforce, of Utah’s 70,000 total high tech workers, the vast majority (90%) of which live and work on the Wasatch Front, around 55% are active Mormons (i.e. ‘very active’ or ‘somewhat active’). Crucially, these theoretical estimates are consistent with my own empirical results, as shown in Tables 4.8(a) and 4.8(b).

Table 4.8 (a) - Match Between Theoretical and Observed Mormon Workforces  
- Survey Sample (105 Firms)

<table>
<thead>
<tr>
<th></th>
<th>Estimated Mormon Workforce (from Secondary data)</th>
<th>SURVEY % management team Mormon</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Official Mormon County Population (I)</td>
<td>Active Mormon County Population Only (II)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(very active + somewhat active)</td>
</tr>
<tr>
<td></td>
<td>Total Firms</td>
<td>1-19 emp</td>
</tr>
<tr>
<td>Davis</td>
<td>74.2%</td>
<td>55.7%</td>
</tr>
<tr>
<td>Weber</td>
<td>64.5%</td>
<td>48.4%</td>
</tr>
<tr>
<td>Salt Lake</td>
<td>64.3%</td>
<td>48.3%</td>
</tr>
<tr>
<td>Utah</td>
<td>89.9%</td>
<td>67.4%</td>
</tr>
</tbody>
</table>

The data in Table 4.8 (a) show that at the survey level, the observed proportions of firms’ management teams that are Mormon corresponds with the predicted figures based on the county-wide official Mormon population figures. Typically the observed figures are somewhere in between the official figures and the active figures (i.e. in between the figures in columns I and II), potentially due to slight variations in my respondents’ own definitions of Mormon colleagues’ activity status. The patterns also remain when the survey firms are divided into their different size categories. Weber County is the only significant mismatch, but this can be ignored as a function of the very small number of firms within the survey sample located in Weber County (N = 3).
It is further significant that the patterns at the survey level for the proportion of firms’ management teams that are Mormon are in turn consistent with those at the case study level for the proportion of firms’ total workforces that are Mormon (also see Figure 4.8 for a spatial representation of this). The case study firm sample shown in Table 4.8 (b) consists of 20 firms in SIC 7371 (Computer Programming Services), all of which have 20-99 employees (the dominant firm size category in the survey), and half of which are located in Salt Lake County and half in Utah County.

Table 4.8 (b) - Match Between Theoretical and Observed Mormon Total Workforces
- Case Study Firm Sample (20 Firms)

<table>
<thead>
<tr>
<th></th>
<th>Estimated Mormon Workforce (from Secondary data)</th>
<th>In-depth case studies</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Official Mormon County Population Figures (I)</td>
<td>Active Mormon County Population Only (very active + somewhat active) (II)</td>
</tr>
<tr>
<td>Salt Lake County</td>
<td>64.3%</td>
<td>48.3%</td>
</tr>
<tr>
<td>Utah County</td>
<td>89.9%</td>
<td>67.4%</td>
</tr>
</tbody>
</table>

These data show that the observed figures for the proportions of firms’ total workforces that are Mormon are somewhere in between the official Mormon population figures and the active Mormon population figures at the county level (i.e. columns I and II). Thus overall, while I have focused on Utah’s lead software firms, my analysis is nevertheless not based on an unrepresentative overly-Mormon sample of firms or workforces. This has important implications for the wider relevance of my analyses at the Wasatch Front regional level (see Section 4.6).
Figure 4.8 – Consistency of Official Mormon (LDS) Populations and the Mormon Workforces of the Total Survey Sample and the Case Study Firm Samples (County Level)
Thus, Mormonism continues to play a significant role in the contemporary development of Utah’s computer software industry, in terms of Mormons founding Utah’s lead software firms, and large numbers of Mormons populating both their management teams and general workforces. These I argue are the broadest indicators of firms’ embedding in the Mormon regional culture. However, we then need to measure the impact of that cultural embedding on the firm. That is, how much difference do Mormon founders, Mormon management teams and Mormon majority workforces actually make to the ways these firms operate? Schein (1992) argues that the behaviour of firms and the individuals within firms can be rightly labelled ‘cultural’ if there is patterning, in terms of: (i) many people in the organisation behaving in the same way; (ii) work colleagues treating that behaviour as normal and expected; and (iii) that behaviour not being random nor unmotivated but purposive. With regard to the Utah case, I found patterning not only across firms’ corporate cultures, but patterning in turn consistent with the wider regional culture. In this chapter, I begin to unpack the cultural embedding of these firms as revealed in my survey and interview data, arguing that the embedding of computer software firms in the regional Mormon culture is best conceptualised in terms of firms’ import of a series of Mormon regional cultural traits, whose import into firms’ own corporate cultures has material impacts on their internal structures and decision-making processes (see Table 4.9).

Table 4.9 – Unpacking the Contents of Firms’ Cultural Embedding in the Region

<table>
<thead>
<tr>
<th>REGIONAL MORMON CULTURE (SELF-IDENTIFIED)</th>
<th>CORPORATE CULTURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>BELIEF IN REVELATION AND GOD’S HAND THROUGH ALL THINGS</td>
<td>BELIEF IN DIVINE INTERVENTION IN THE FIRM</td>
</tr>
<tr>
<td>MONEY AS SIMPLY A MEANS TO A HIGHER END</td>
<td>MORMON VALUES OVERRIDE PROFIT MAXIMISING STRATEGIES</td>
</tr>
<tr>
<td>LAY SYSTEM OF CALLINGS</td>
<td>CALLING MENTALITY IMPORT</td>
</tr>
<tr>
<td>BUILDING THE KINGDOM</td>
<td>MORMON SOFTWARE PRODUCT AND SERVICE ORIENTATION</td>
</tr>
<tr>
<td>GOD-GIVEN GENDER ROLES</td>
<td>PATRIARCHAL ORIENTATION</td>
</tr>
<tr>
<td>FAMILY ABOVE ALL</td>
<td>EXPLICIT FAMILY ORIENTATION</td>
</tr>
</tbody>
</table>

17 In Chapter 5 I expand my analysis to include a further 6 imported Mormon cultural traits, and focus specifically on how that cultural import impacts on firms’ abilities to innovate, and hence to compete.
In the following sections I systematically unpack these six cultural traits by outlining their prevalence in Mormon culture generally, demonstrating their import into the workings of local software firms, and the manifestations of that embedding in both my survey data and in-depth interview data. The in-depth interview data was especially important given the difficulties of deriving secondary data for some ‘contents’ of firms’ embedding in Mormon culture. Further, the use of such data is valid because my respondents do have privileged access to their own experiences (Baxter and Eyles, 1997). Further, if respondents define their circumstances as real, then they are real in their consequences (Merton, 1957: 421-436).

4.4.1 - BELIEF IN DIVINE INTERVENTION IN THE FIRM

Conventional wisdom holds that religious matters, and spiritual matters more widely, have nothing to do with the day-to-day demands of work, and even less to do with corporate affairs (Mitroff and Denton, 1999). However, results from my in-depth case study sample of Utah’s lead computer software firms undermine this conventional wisdom. One of the most striking elements of firms’ import of Mormon regional cultural traits concerns beliefs in divine intervention in the firm. This key ‘content’ of firms’ cultural embedding in the region has three key manifestations: (i) prayer as part of employees’ and firms’ decision making processes, and hence strategy; (ii) fasting for the company, and in some cases allowing that to influence decision making processes; and (iii) going to the Temple to seek revelation and comfort regarding the company and other key work issues. I will address each of these in turn.

First, Mormon culture heavily encourages its members to seek personal revelation through prayer as a way to commune with god and receive revelation, based on the notion that all the Commandments are subject to personal confirmation. Mormons are counseled to pray daily and to seek divine revelation for meeting personal challenges, to ask for help in difficult circumstances and to ask for blessings and direction (Ludlow, 1992). My results suggest that this mandate overflows into personal challenges in the business world. First, almost two thirds (64%) of my 47 active Mormon interview respondents regularly pray over everyday business decisions that they face, as well as about their companies more generally. These respondents are spread across the whole spectrum of Mormon and non-Mormon firms (see Table 4.10), regardless of whether the firm’s founding or management team is predominantly Mormon or not. In contrast, only 2 of the non-Mormon respondents ever pray in this way (both Evangelical Christian), compared with none of the inactive Mormon respondents.
Table 4.10 – Basic Distribution of Case Study Firm Sample by Mormon Founding and Management

<table>
<thead>
<tr>
<th>FOUNDING</th>
<th>MAJORITY MORMON</th>
<th>MAJORITY NON-MORMON</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAJORITY MORMON</td>
<td>MORMON</td>
<td>INTERMEDIATE I</td>
</tr>
<tr>
<td></td>
<td>6 firms</td>
<td>4 firms</td>
</tr>
<tr>
<td></td>
<td>all with Mormon majority workforce</td>
<td>all with Mormon majority workforce (except one)</td>
</tr>
<tr>
<td>MAJORITY NON-MORMON</td>
<td>INTERMEDIATE II</td>
<td>NON-MORMON</td>
</tr>
<tr>
<td></td>
<td>4 firms</td>
<td>6 firms</td>
</tr>
<tr>
<td></td>
<td>all with Mormon majority workforce</td>
<td>all with NON-Mormon majority workforce</td>
</tr>
</tbody>
</table>

Second, at the firm level, in 5 firms (25% of the total case study sample) prayer is acknowledged as a valid basis for decision-making at the management level. Of these firms, 80% are located in Utah County, all 5 have majority Mormon workforces and Mormon management teams, and all but one are Mormon founded. Significantly, two thirds of the wholly Mormon firms in my case study sample accept prayer as a valid basis for action at the management level. However, it is not a case of firms’ management teams publicly praying in management meetings (although some firms do often open business meetings or bless food taken together as a firm with a prayer); rather, prayers occur on a private individual basis, but then are subsequently acknowledged and drawn on in decision-making meetings and often accepted as a valid basis for action:

‘Our CEO is always praying about the company and the direction it should take, and he’ll come in and say ‘I’ve had a confirmation from God and I think we should go this way’, and we’ll all sit there and think about it and then say ‘OK, we’re going that way’. Director of Brand Management, PSO, active Mormon.

These firms all have small management teams (typically less than 5), and all admitted that the ability for prayer to be a key part of their decision making process is dependent on the
management team being wholly Mormon. In the firms with majority non-Mormon management teams and workforces, Mormons tend to remove the prayer label and hence the stigma that comes with that in business:

‘Outside the church you’ll have CEOs, CFOs and executives saying ‘I’ve got this gut feeling, we’re gonna go with it’, and nobody questions a gut feeling. So it’s odd that people outside the church would question a prayer, because both of them seem fairly intangible you know. Similar things happen in the secular business community, they’re just labeled differently’. Director of Brand Management and User Experience, PSO, active Mormon.

All of these respondents further anticipated that once their firms grow to employ a wider skill-base, and hence inevitably more non-Mormon employees, the use of prayer in this way would have to end, to avoid making non-Mormon employees feel uncomfortable. Prayer is typically regarded as a guiding lens, rather than as providing pat answers:

‘Prayer helps me to see, helps me to understand, not necessarily give me the answers, but help me to have a mind that’s clear enough to make that business decision. It’s just in the same way that you’d pray about any big life decision; business is a big part of your life. And sometimes it matters to God, and other times I don’t think it does’. CEO and Founder, ECY, active Mormon.

Respondents gave a whole range of examples of the way in which prayer and revelation makes a difference to the way their firms operate. These include praying over financial decisions, employee management issues, and overall corporate direction; praying over the right direction to take and getting the confidence to do it:

‘In 1999 we went through hard times where we lost some of our client base, and it was very tough financially. And at that point we made a conscious decision to seek god’s help. We all prayed and then took a cut in pay rather than lay people off, and we’ve since prospered. We’re now more financially stable that we’ve ever been’. Director of Business Development, NMH, active Mormon.

‘There was a particular technical problem that I was wrestling with a year ago, and it was fairly critical to the success of the product, and I just couldn’t solve it. And after a particularly frustrating night, I sat down and prayed about this problem, got up, had an idea, tried it and it worked! I’d spent months looking for a solution, and after praying it came almost instantly. And as the company has overcome all the obstacles that it’s faced,
it’s typically been in ways like that where faith happens. We’ll all pray about problems we go through’. Director of Technology and Co-Founder, PSO, active Mormon.

The second ‘content’ of firms’ import of Mormon beliefs in divine intervention centres on practices of employees fasting for their respective firms. In Mormon culture, fasting\(^{18}\) occurs twelve times a year, usually on the first Sunday of each month. At these times, Mormons are counseled to give up food and drink for the space of two consecutive meals, with the money saved from the meals not taken given to a charity, and the time used for reflection and prayer. However, Mormons are also encouraged to fast for other worthwhile and spiritual causes as they see fit, to seek answers to difficult questions. Given that fasting is regarded as allowing Mormons to get ‘closer to the Lord than prayer alone’ (Kidd and Kidd, 1998: 217), it is therefore significant that my own results highlight Mormon employees actively fasting for their software companies. This I argue is a stronger indicator of firms’ embedding in Mormon culture than prayer alone. People are literally asking God to bless their companies, and therefore consider their firms spiritually important enough to be worth fasting for. Practices of employees fasting for their respective companies are apparent in three firms in my survey sample (15%), all of which are located in Utah County. Significantly, of the 6 wholly Mormon firms in my case study sample, fasting for the company is a common practice in one third of them. Indeed, in two of these companies fasting is actively encouraged by the management among their workforces:

‘That’s [fasting] often on an individual basis but we have encouraged those types of religious worship to our company employees, to look for God to help them make certain daily decisions within the workplace. There’s no denying that you can do a better job with the Lord at your side than if you try and go it alone’. Director of Business Development, NMH, active Mormon.

‘On a number of occasions we have all fasted for the company. Any Latter-day Saint worth their salt, if they fast for something it has to be for something worthwhile. So if we’re gonna fast for the company and ask God to bless the company, we’d better be doing something that’s worth blessing. So our software enables people to surf the Web privately. By natural extension of that, a lot of people want to use our software for nefarious ends, whether that’s defrauding people or surfing porn. So we’re constantly looking for ways to make our software as robust and powerful as possible, whilst discouraging inappropriate behaviour. I wouldn’t pray for Microsoft, I wouldn’t pray for Sun, but I have no problems praying for this company because I know where we’re going’. Director of Brand Management and User Experience, PSO, active Mormon.
Beliefs in divine intervention in the firm therefore also impact on the nature of firms’ software products, and I discuss this at length in Section 4.4.5.

The third ‘content’ of firms’ import of beliefs in divine intervention centres on Mormon employees visiting the Temple to seek revelation and comfort regarding their respective companies. Almost one third (32%) of the 47 active Mormon industry respondents regularly seek revelation in the Temple regarding their company or other general work problems. In the majority of cases these are firms’ founders or CEOs, key employees with an especial personal interest in their firm. These practices, as a manifestation of the embedding of firms in Mormon culture, are more significant than prayer alone because of the greater spiritual significance attached to LDS Temples over Wards. While Wards are open to all members of the church and their guests, only worthy Mormons may enter the Temple, based on their receiving a Temple Recommend based on their maintenance of full activity in the church\textsuperscript{19}. Temples are thus revered as the most sacred ground within the LDS Church, and herein therefore lies the significance of these practices as a content of firms’ Mormon cultural embedding in the region.

Overall, these three key ‘contents’ are highly visible manifestations of the embedding of firms’ founders, managers and general workforces in Mormon culture, but which also have material impacts upon firms’ internal decision-making structures, primarily in terms of their use as a means of justification for particular corporate strategies over others. Indeed, these three contents are mutually reinforcing within particular firms in my case study sample, as shown in Table 4.11.

\textsuperscript{18} Fasting – the act of praying and going without food for spiritual reasons.

\textsuperscript{19} In terms of holding the Priesthood, paying a full tithe, regular church service attendance, and adherence to the Word of Wisdom with its restrictions on alcohol, tobacco and caffeine consumption (see Section 3.4.2).
Table 4.11 – Manifestations of Beliefs in Divine Intervention in the Firm – Mormon and Non-Mormon Firms Compared (Case Study Sample – 20 firms)

<table>
<thead>
<tr>
<th>CONTENT OF CULTURAL EMBEDDING</th>
<th>MORMON (founded AND managed)</th>
<th>INTERMED I</th>
<th>INTERMED II</th>
<th>NON-MORMON (founded AND managed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(MORMON MAJORITY WORKFORCE)</td>
<td>AN</td>
<td>QD</td>
<td>EC</td>
<td>JE</td>
</tr>
<tr>
<td>(i) PRAYING</td>
<td><img src="PRAYING.png" alt="PRAYING" /></td>
<td><img src="PRAYING.png" alt="PRAYING" /></td>
<td><img src="PRAYING.png" alt="PRAYING" /></td>
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<td>Accepted at management level as valid basis for action</td>
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<td>(ii) FASTING</td>
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<td>Encouraged by management</td>
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<td>(iii) TEMPLE TO SEEK REVELATION</td>
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Intermediate I – non-Mormon founded but Mormon managed
Intermediate II – Mormon founded but non-Mormon managed
Significantly, these key contents of embedding in Mormon culture are also regarded as conferring a strategic advantage on the firm. At the employee level, all 30 of my active Mormon respondents\textsuperscript{20} who regularly pray, fast or seek revelation in the Temple regarding their firms view those practices as yielding a business advantage. Similarly, in all five of the firms in which prayer is accepted as a valid basis for action at the management level (25% of my total case study sample), divine intervention is also regarded as a strategic advantage. Respondents often made references to being ‘blessed’ in business; of feelings of an ‘undeniable outside strength’ guiding the firm; and typically made an affirmative connection between their personal career, the success of the company, and their Mormon faith:

‘It’s a strategic advantage because you get blessed for keeping the Commandments. God can prosper a business only as long as it’s a moral business. So have we seen the blessings of heaven in the business itself? Yes, absolutely. And would we have seen those same blessings had we not been living the Commandments? No. So, divine intervention \textbf{has} been part of our strategic advantage. In meetings, people at certain times just kinda out of the blue and for no apparent reason, seem to suggest things directly tied to inspiration or revelation. But these sorts of blessings only come when you’re keeping the Commandments. So we have seen those blessings from heaven in our profits’. Director of Technology and Co-Founder, PSO, active Mormon.

‘So that’s part of the mindset of this company too, that if we’re wholesome good people and if we produce a wholesome product then the Lord will take care of the manifest destiny of our software. And that may sound kinda weird to you, but round here we’re not alone in that at all’. Director of Corporate Research, MSO, active Mormon (convert).

These corporate practices of prayer, fasting, and seeking revelation regarding the firm at the Temple are therefore three key manifestations of firms’ import of Mormon beliefs in divine intervention, the first key facet, I argue, of firms’ cultural embedding within the region.

\textsuperscript{20} 64\% of my total active Mormon respondent sample.
4.4.2 - MORMON VALUES OVERRIDING PROFIT-MAXIMISING STRATEGIES

Block (1990) argues that embeddedness diminishes the relative importance of price signals to firms. The existence of non-opportunistic behaviour can therefore be used as evidence of firms’ embedding in wider social relationships and highlights the power of non-economic variables to enter firms’ decision-making processes. As such, the second key ‘content’ of firms’ cultural embedding in the region centres on their import of Mormon cultural emphases that constrain profit-maximising strategies within the firm. There are three key Mormon cultural components which my results suggest are being imported into firms and impacting upon their strategies in this way. First, Mormonism teaches that money is not evil in itself, but that the pursuit of wealth at the expense of all else is evil. Second, Mormonism emphasises the principle of stewardship; that all resources, including one’s talents, belong to God, and that ultimately we will be held accountable for our use of the resources entrusted to us on earth. Third, Mormonism places large emphasis on how one achieves business success:

‘As Latter-day Saints we believe that we inhabit a world created by a God who has given us everything, and has given us a learning experience and an opportunity to grow and would never require any level of performance that would entail a sacrifice of our spiritual convictions. So we are not here to advance our own ends at all costs because God will hold us accountable for doing that, and will hold me accountable if I sacrifice my ethics’.
Director NCB, CZV, active Mormon.

‘So there isn’t much incentive in the LDS culture to become super-successful, there’s a lot of concern about how one achieves success, and if one is perceived to have achieved success in not a very admirable way, there’s a lack of support, and a disappointment’.
Head, EFDF, CZV, active Mormon.

My results suggest that these Mormon cultural traits have four key manifestations with regard to the employees and firms in my case study sample. First, over half (53%) of my total (47) active Mormon industry respondents asserted that there is a higher purpose to their own daily work, beyond simply making money. Further, over one third (38%) of my active Mormon respondents asserted that the firm as a money-making entity is less important than its role as a vehicle for doing social good. This figure includes 6 of the 8 active Mormon CEOs in my industry respondent sample, along with key members of their own management teams. Crucially, these are the key individuals ultimately responsible for firms’ strategic directions:

‘We kinda have the attitude that the business is not necessarily here to make us all rich, but to make the world a better place. You look at what it will do to generate an
improvement of community life, improvement in individual accomplishment, and be a great asset to your employees’. Vice President of Strategic Customer Relations, MSO, active Mormon.

Second, firms’ import of Mormon cultural emphases on stewardship and of how one achieves business success is manifest in the firm in terms of issues of software content. This occurs on two levels: (i) Mormon employees being unwilling to work on particular types of software content; and (ii) Mormon firms as a whole refusing to work on particular types of software content. Almost two thirds (64%) of my active Mormon industry respondents are unwilling to work on software content that goes against Mormon values. This centres primarily on sexual, violent and gambling content. Respondents are instead keen to produce a product that does some social good, and are spread across the full spectrum of Mormon and non-Mormon firms (see Table 4.10). However, an unwillingness to work on software content of this type is not only restricted to the Mormon respondents; one third of my non-Mormon respondents were also unwilling to work on such content. The point is that the non-Mormon respondents did so without recourse to religious teachings or doctrine.

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21 Pornography is viewed as creating an unhealthy extramarital sexual interest in individuals, and contributing to a weakening of the marital relationship, a relationship which Mormonism holds central in terms of its maintaining nuclear families, the fundamental unit of society. Violence and gambling are also strictly forbidden in LDS doctrine.
I also found similar patterns at the firm level, with particular firms also refusing to work on these same types of software content which are regarded as contradicting Mormon values (Figure 4.9).

**Figure 4.9 – Firms Turning Down Work of ‘Questionable Content’**

*Mormon and Non-Mormon Firms Compared (Case Study Firm Sample – 20 Firms)*

My results show that of the 6 wholly Mormon firms in my case study sample, 100% of them have turned down work that contradicts Mormon values. This compares with only half of the Mormon intermediate firms, and 65% of the non-Mormon firms offered similar work. However, in none of the non-Mormon firms was the rejection of such work ever justified with recourse to Mormon teachings or values. The Mormon firms were particularly concerned to provide employment that is helpful and does social good, often arguing that God can prosper a business only as long as it is a moral business:

*‘We try to turn down work which we feel is not gonna benefit society. For instance, HBO wanted us to do a series of sexually provocative models for a series they were doing; we said ‘no thanks’! So we’ll turn down work even though we’re hungry, if we don’t feel it’s something that meets our moral standards as far as an end product. It’s not exclusive to LDS people, but Mormons are just a lot more in your face about that sort of thing’. CEO and Founder, ANH, active Mormon.*
‘Oh there’s no question that there’s more to our work than just making money, there has to be a higher purpose. So we hold our partner companies to very high standards ethically and morally, we are very selective of who we do business with, and we have turned down business with other companies and we’ve also turned down some clients, because we just didn’t feel comfortable with the way they were operating and doing business’. CEO and Co-Founder, QDD, active Mormon.

It is also significant that of the two software games companies in my case study sample whose products do involve some sexual and violent content, both are non-Mormon founded and managed, and have non-Mormon majority workforces. Further, Mormons are heavily under-represented in the workforces of these firms relative to the total case study sample, and survey samples (LEL has only an 18% Mormon workforce, and BQB a 40% Mormon workforce, compared with a case study sample average of 64%).

Third, my respondents also drew consistently from employee relations to give their most concrete examples of how their import of Mormon cultural values influences the way their firms operate as profit-making entities. Significantly, over one third (35%) of the firms in my case study sample maintain explicit corporate policies of pay-cuts across the firm over lay-offs. Significantly, two thirds of the wholly Mormon firms in the case study sample have explicit policies of pay-cuts over lay-offs. In contrast, none of the wholly non-Mormon firms operate such policies. These strategies were largely explained to me in terms of firms’ import of Mormon cultural emphases on the primacy of social responsibility over profit at all costs as well as notions of stewardship:

‘My belief is that the work we do to make money is far less significant in the grand scheme of things than that as individuals we’re growing, becoming better people, and worrying about other people more than ourselves’. President and Founder, IEH, active Mormon

‘The church teaches that becoming a better person in this life advantages you in the next life. That the time we use now is to be used to make ourselves better people and to help other people become better people, and to make their lives become more comfortable. So while we do need to pay the bills, I try to use the firm also as a mechanism that can make us all better people. And I don’t cram the doctrine part down anybody’s throat here but the teachings are in there underneath’. President and Founder, IEH, active Mormon.

As such the firm is not only viewed as a vehicle for making money, but also as a vehicle to provide personally fulfilling employment and moral growth among its employees. We can
therefore interpret corporate strategies of company-wide pay-cuts over lay-offs and their justification through key LDS teachings, as evidence of firms’ cultural embedding in the region.

The fourth ‘content’ of Mormon cultural values overriding profit-maximising strategies in the firm concerns issues of business ethics and honesty; specifically with regard to the validity and accuracy of firms’ marketing claims and other representations to potential customers and partners. LDS Church leaders have consistently counseled members to maintain high standards of ethics in their business and professional activities, and giving value for value received is scripturally required within Mormonism (Ludlow, 1992; Nadauld, 1992)22. Honesty in business also forms a specific part of every Mormon’s interview for a Temple Recommend, in which their worthiness to enter the Temple is judged. Half of the firms in my case study sample spontaneously outlined at interview how in contrast to high tech marketing norms of inflating firms’ competencies, they instead seek to portray the firm as honestly as possible to potential clients and partners, even if that might limit the firm’s ability to attract new business. While this figure includes only one third of the non-Mormon firms, it includes 83% of the wholly Mormon firms:

‘With our marketing releases in particular, at my last company we regularly proclaimed ourselves as a ‘world leader’, and also claimed to have carried out implementations that they just hadn’t done. Now it’s industry standard to embellish marketing claims but a lot of us felt that it just wasn’t an honest statement to make. So you keep the Commandments first, and then worry about business within the constraints of that framework, it’s a big cross-over point. And if you push me, the business is so much less important to me than keeping the Commandments that I will leave my job over it’. Director of Technology and Co-Founder, PSO, active Mormon.

The goals of Mormon firms are therefore realigned relative to non-Mormon firms as a function of their embedding in the Mormon regional culture. Beyond securing personal wealth, success is typically redefined in terms of service to the common good, and providing work that is personally enriching from both a moral and religious standpoint, and which generates an improvement of community life. However, this is not to suggest that the non-Mormon executives and employees do not believe in forms of right or wrong in a business setting, or that issues of honesty, fairness and respect for others are exclusive to Mormons. Rather, that only the Mormon respondents justified this set of business ethics with explicit recourse to religious teachings:

22 Indeed, during my own visits to the Mormon Ward House (see Section 3.3.5), the implications of the lessons were often explicitly discussed in terms of their implications for people’s daily worklives.
‘We always give every customer the best end of the deal. When we look at a contract we look at what the customer needs, and what we need. When I’ve done that I then shave my profits and give it to him. So then how do we stay in business? - because we never lose a customer. We get a lot of repeat business. And that philosophy of doing what you can to help the other person, even at your own expense a little, that’s a teaching within the Gospel of the LDS Church. So it does affect the economy of what you’re doing. You may make less on a given deal you make it up over the long-term’. Vice President of Strategic Customer Relations, MSO, active Mormon.

‘We don’t worry about how much money we can get out of people, we feel it’s more of a service, as we concentrate our efforts and use out talents for God’s purposes, which is ultimately what makes us happiest here at work’. Computer Programmer, ANH, active Mormon.

I typically found considerable pride among my respondents regarding their LDS ethical business approach. However, several respondents also qualified their position:

‘Obviously the one driving factor that will cause me as a Mormon in business to do things that I would not usually be comfortable with is how badly do I need that money? Although, there is a still a line that I am not willing to cross’. Studio Art Director, LEL, active Mormon.

Overall, my results suggest that the embedding of firms in the Mormon regional culture means that the parameters of business competition are redefined, undermining the typical American business values of having it one’s own way and winner-takes-all. Further, while I have framed my analysis in terms of a tension between Mormon cultural values versus profit-maximising strategies, the majority of my Mormon respondents instead view the two as mutually reinforcing; that moral decisions create a strategic profit advantage in the long-term:

‘If we are doing what is right and making sure we do not accept contracts that are against out religious beliefs, then God will bless us with work, and give us enough to provide for our families. So long as we do what we know is best and try our hardest then God will provide’. Computer Programmer, ANH, active Mormon23.

Thus in contrast to the chronic short-term time horizons of American managers (see Harrison, 1994), Mormon firms are instead often focused on the long-term moral picture over short-term

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23 These key contents of firms’ embedding in Mormon culture therefore tie into beliefs in divine intervention in the firm as discussed in Section 4.5.1.
profit, and actively seek to create ‘people over profits’ corporate cultures. However, firms were unwilling to grant me access to their profit data to measure the impact of these Mormon-informed corporate cultural traits on profits. Nevertheless, I have been able to analyse revenue growth data for Mormon versus non-Mormon firms, and this is included in Chapter 5 (Section 5.8.1)\(^\text{24}\). Further, the fact that these types of non-profit-maximising strategies within the firm are justified with recourse to Mormon religious teachings underpins their significance as key contents of firms’ cultural embedding in the region.

### 4.4.3 - IMPORT OF LDS CHURCH CALLING MENTALITY W.R.T. EMPLOYEE MANAGEMENT

Intimately related to firms’ import of Mormon values that curb profit-maximising strategies is the import of a distinctive set of cultural attitudes and norms that surround the LDS Church’s system of ‘callings’. The LDS Church has no paid clergy, except at its very highest levels, and is instead maintained by a lay system of organization. Mormons are ‘called’ by their leaders to contribute in various capacities, which include administrative, teaching and service-orientated positions. Professional training is not required for each calling; rather, members are called into these positions through revelation, in which they act as trustees for God, not out of personal ownership (Kidd and Kidd, 1998; Ludlow, 1992). Further, people do not resign from their callings but instead serve until they are released from them, again by revelation. As such, the notion of firing people who are ineffective in a particular role is invalid; only when people are called by God to a different calling in the church can they move on. This then fosters considerable emphases on personal development and of training people to fulfill specific callings that they might not be particularly good at. Significantly, my own results suggest that this distinctive set of Mormon attitudes and norms which surround the LDS calling system are being imported into the corporate cultures of computer software firms on the Wasatch Front, reinforced by broader Mormon emphases on mutual commitment and loyalty (see Section 5.2):

> ‘In the church, because the position has come by revelation, the notion of ‘firing’ is defunct. You don’t fire a volunteer, and God has put this person in this place so it is not my call whether or not that person should stay, I just have to help them do a better job than they’re currently doing. And that mentality then leaks over into business relations. So you’re not very good at your job, I’m more interested in helping you grow and develop

\(^{24}\) This is part of my analysis of the overall impact of firms’ cultural embedding across all 12 contents outlined in this chapter and in Chapter 5.
and stretch yourself, to help you stay in that position and give you the help and resources and training necessary to help you do your job better rather than firing you. The business structure is much more lenient in that sense, and that’s a direct cross-over from the church.’ Director of Technology and Co-Founder, PSO, active Mormon.

This Mormon cultural import is the third key content, I argue, of firms’ cultural embedding within the region. It is significant that of my case study sample of (20) firms, 40% are perceived by their own employees as having corporate cultures premised on an import of the LDS Church’s calling mentality. This figure includes 83% of the (6) wholly Mormon firms, 25% of the Mormon intermediate firms, yet none of the non-Mormon firms. This key content of firms’ cultural embedding within the region centres on a redrawing of the employee-employer relationship. Crucially there is an aversion to firing employees that are underperforming:

‘We don’t consider a person to not have the capacity for the job they are not performing well in, just that that capacity needs to be developed in them. We prefer to move them over to an area where they can be successful and can feel good about what they are accomplishing. We want employees to feel that they are succeeding. Because if they’re not feeling good about themselves, they can end up carrying it home and extending it into their families. If the breadwinner’s not feeling good about himself, then that could spill over into his family and cause problems there. So that definitely is part of our thinking here’. Director of Software Development, MSO, active Mormon.

As this last quote shows, these attitudes are also linked to firms’ wider import of Mormon cultural emphases on traditional gender roles, outlined in more detail in Section 4.4.6.

Firms’ import of the Mormon calling mentality is also manifest in terms of their external relationships, primarily in terms of the same ethic of an aversion to firing ineffective employees also operating with regard to firms’ suppliers:

‘My direct superior at work is on LDS High Council with one of the company’s printers and this printer has done absolutely so much horrible work for us many times, that he shouldn’t really be on my list of printers at all. But my boss says to me, Tom’s a really good man, and you gotta throw a little business Tom’s way. And I laugh! He’s the worst printer for miles around, and I say I’m not gonna give him business just because you’re on the High Council with him. But the fact of the matter is, people do seem to have a thread on which vendors are LDS and which vendors aren’t. And if the decision maker is Mormon, they will let it sway them. He knows this guy isn’t giving me good work yet still
encourages me to use him’. Vice President of Marketing Co-ordinator, UNY, inactive Mormon female.

‘Because they see each other all the time, they work with each other, go to church with each other, and so they’re friends. So it’s a little bit harder to draw the line between customer and supplier. Many times somebody is an LDS Bishop, which means that they will work through personal problems with people and understand all the struggles they go through, and then at work they’re working with the same people in a business environment. So if their firm’s not doing too well, there’s an even greater motivation to help them out so they can prosper’. Human Resources Director, QXU, active Mormon female.

The perceived advantages of this Mormon cultural import centre on the more friendly and supportive corporate environment that is sustained, in terms of building up one’s employees and colleagues, not climbing over others to get to the top, and mutual support networks. However, there are also a number of disadvantages that stem from this same facet of firms’ cultural embedding, constraints of which both my non-Mormon and Mormon respondents were aware. These centre on the lesser ability of Mormon employees to manage fellow church members, and an unwillingness to fire ineffective employees. My interviews further suggested that Mormon-informed corporate cultural traits in turn foster some resentment among non-Mormon employees and colleagues who perceive such attitudes as nepotistic and unfair:

‘There’s a desire, a tacit agreement to kind of protect those people for whatever reason, maybe they’re in their Ward or have lots of kids, or maybe they have some other problem. It’s not overt. People wouldn’t say ‘well Joe isn’t working well but he’s got a lot of problems so we’ll try to ignore that because it’s the right thing to do’, it’s more like ‘Oh no, he’s a good man, Joe’s a good man’. In other states I’ve worked they’re just more dog-eat-dog about protecting someone who is incompetent’. CEO and Co-Founder, NLN, inactive Mormon female.

‘Mormon managers and leaders are as aware of where their peers are in the LDS strata as where they are in the corporate hierarchy, so that data is always included in their strategic considerations. This guy may be an idiot at work but he is active in church programs and so they temper their treatment of him at work’. Senior Product Manager, GOG, non-Mormon female.
Firm’s (self-identified) import of the distinctive set of Mormon cultural attitudes and norms that surround the LDS system of callings is therefore key to understanding the way that these firms operate. Crucially, firms’ import of this set of Mormon cultural traits results in a redrawing of the employer-employee relationship within these firms relative to their non-Mormon counterparts, the third key content I argue of their cultural embedding in the region.

4.4.4 – MORMON VALUES MANIFEST IN FIRMS’ SOFTWARE PRODUCTS

Keniston (1998) argues that software contains built-in cultural assumptions and views about the nature of reality and the social world. As such, I argue that we can interpret the alignment of firms’ software products (in terms of their content and function) with key Mormon cultural priorities as the fourth manifestation of their cultural embedding within the region. This is directly related to the desire to do work that provides some social good and furthers the overall Mormon mission. To measure the alignment of firms’ software products with positive Mormon values, I employed a method of peer debriefing with Mormon culture and software industry insiders. Of the total 105 firms in the survey sample, 18 have software products perceived by my active Mormon respondents as aligned with Mormon values (Table 4.12); almost three quarters (72%) of these firms are Mormon founded and/or managed, and half of them are Mormon founded and managed.

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25 Specifically I asked 10 key Mormon culture and software industry insiders to highlight products of firms in my survey and case study samples which to them had an obvious link with Mormon cultural values and the LDS Church’s overall mission.
Table 4.12 – Perceived Alignment of (Survey) Firms’ Products with Mormon Values

<table>
<thead>
<tr>
<th>Firm Type (founding &amp; management)</th>
<th>Name</th>
<th>Product type</th>
<th>Perceived Mormon value alignment</th>
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<tbody>
<tr>
<td>MORMON</td>
<td>ECY</td>
<td>Web filtering</td>
<td>Children (also anti-porn, non-violence, wholesome content)</td>
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<td>NZD</td>
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<td></td>
<td>ZSC</td>
<td>Educational software</td>
<td>‘The glory of god is intelligence’</td>
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<td></td>
<td>DNQ</td>
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<td>QPX</td>
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<td></td>
<td>UDW</td>
<td>Translation</td>
<td>Spreading the Gospel</td>
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<td></td>
<td>BOD</td>
<td>Genealogical software</td>
<td>Genealogy and family history</td>
</tr>
<tr>
<td>INTERMEDI I</td>
<td>MSO</td>
<td>Educational software</td>
<td>‘The glory of god is intelligence’</td>
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<tr>
<td></td>
<td>FQY</td>
<td>Library and archive management</td>
<td>Genealogy and family history</td>
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<tr>
<td></td>
<td>NMU</td>
<td>Translation</td>
<td>Spreading the Gospel</td>
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<tr>
<td></td>
<td>BWB</td>
<td>Children’s games</td>
<td>Children</td>
</tr>
<tr>
<td>NON-MORMON</td>
<td>LEL</td>
<td>Children’s games</td>
<td>Children</td>
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<td>IEH</td>
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<td></td>
<td>SEN</td>
<td>Genealogy software</td>
<td>Genealogy and family history</td>
</tr>
</tbody>
</table>

There are four key elements of Mormon culture that are most apparent within the content and function of these software products (see Table 4.12). First, half of these firms’ products are for children, including web-filtering and internet security software, children’s educational packages, and computer games. The LDS Church has consistently taught that children are a blessing (May, 2001), and that bearing children is life’s primary aim. The web-filtering products are also regarded by my culture- and industry-insiders as consistent with LDS teachings on children, fused with the Mormon stance against pornography. The second key Mormon cultural emphasis prevalent in Table 4.12 is education, the vital role of which in the spiritual, moral and intellectual development of humans is consistently emphasised in Mormon culture and theology (Ludlow,
Education is also consistent with Mormon emphases on self-improvement based on individual effort. Of the 18 firms in my survey sample whose products have a perceived Mormon cultural value alignment, over one fifth of these (22%) produce educational products.

Third, over one fifth (22%) of the firms in Table 4.12 with a perceived Mormon aligned software products produce genealogy software. The Mormon interest in genealogy is based on LDS doctrines of salvation; that all persons, including those who died before the LDS Church was founded, should have the opportunity to receive the LDS Gospel (Ludlow, 1992). Mormons are therefore urged to identify their ancestors and to undertake various ordinances for the dead in the Temple, including baptism by proxy in which Mormons’ ancestors are baptised into the church. The LDS Church therefore has a keen interest in programs that facilitate the automation of family history databases, name extraction software programs and other search engines.

The fourth key Mormon value prevalent in the software products shown in Table 4.12 concerns translation. Of the 18 firms in my survey sample whose products are perceived as aligned with Mormon values, 11% produce translation software. The LDS Church has a keen interest in translation. It regularly translates its extensive teaching materials, magazines, periodicals and other communications into 82 different languages for its membership worldwide, and does much of that by computer (Ludlow, 1992). Language barriers are also one of the most significant barriers to spreading the Mormon Gospel worldwide.

However, whilst these firms’ products are perceived, albeit by cultural and industry insiders, as aligned with key Mormon values, there are two qualifications: (i) the values identified above are not exclusively Mormon; and (ii) firms may not have explicitly aligned their products with those values. Crucially, the alignment of firms’ products with Mormon values is only significant as evidence of their regional cultural embedding if it is an explicit strategy within the firm. My in-depth interviews allowed me to access the rationales behind these perceived Mormon product alignments. Thus while 8 firms (40%) of my case study sample have products perceived as aligned with positive Mormon cultural values (see Table 4.13), only in four of those firms has this alignment been an explicit strategy26.

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26 Specifically, to align firms’ products with the Mormon personal values of their founders and management team.
### Table 4.13 – Unpacking the Explicit Versus Coincidental Alignment of Firms’ Products with Mormon Values (Case Study Sample)

<table>
<thead>
<tr>
<th>Firm Type</th>
<th>Name</th>
<th>Product</th>
<th>Explicit alignment with Mormon values</th>
<th>Alignment to tap UT Mormon market</th>
<th>Coincidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>MORMON</td>
<td>ECY</td>
<td>Web filtering</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PSO</td>
<td>Web filtering</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTERMED II</td>
<td>FQY</td>
<td>Library and archive management</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>MSO</td>
<td>Educational</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTERMED I</td>
<td>NMU</td>
<td>Translation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NON-MORMON</td>
<td>BWB</td>
<td>Children’s games</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>LEL</td>
<td>Children’s games</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>IEH</td>
<td>Children’s games</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Significantly, one third of the wholly Mormon firms in my case study sample have software products that are explicitly aligned with positive Mormon values. This compares with one quarter of the Mormon intermediate firms, but none of the non-Mormon firms. We can therefore interpret this explicit Mormon value product alignment as evidence of firms’ cultural embedding within the region:

‘One of the major things we look at here is how this company can do things to help further the work of the [LDS] Church. So there’s a very direct correlation between what we’re offering as a product and what the Church teaches’. Vice President of Sales, ECY, active Mormon.

‘The [LDS] church does have an influence on our product, it has to. One of the many things you talk about in church circles is that cannot have two lives. So inevitably we’re gonna look at our software product and say ‘Are we doing something good, is it worthy?’’. So if it seems to fly in the face of our religious morals then we have to bring that into question. Our software enables children to surf the web privately and safely, but by natural extension of that, a lot of people want to use our software for nefarious ends,
whether that’s defrauding people or surfing porn. So we’re constantly looking for ways to make our software as robust and powerful as possible, whilst discouraging inappropriate behaviour. But our direct competitors, they’re going straight for the underbelly; that’s their campaign, ‘Surf porn at work!’.

Director of Brand Management and User Experience, PSO, active Mormon.

A surprisingly frequent phrase used to justify firms’ strategic direction was ‘Building the Kingdom’. This relates to the Mormon belief in millenialism, that Christ will return to earth and usher in a thousand year period of peace under his rule. As such, Mormons are charged with establishing the moral, social, and political conditions necessary before Christ’s return to earth can occur (Arrington and Bitton, 1992). It is therefore significant that respondents view their own firms in this manner. Indeed, around one third of my (47) active Mormon respondents used this phrase when describing their motivation for working in their firm:

‘Translation is a good thing; it helps commerce, it helps people communicate, it helps industry to sell to different countries, it’s just positive for everyone. And so does it help build the Kingdom? – yes it does. If we had a major breakthrough in the translation process, then the Church of Jesus Christ would benefit from that. And we benefit the Kingdom in the sense that we provide employment, and it is meaningful and helpful employment, it does good’. CEO and Founder, NMU, active Mormon.

‘There is a definite need among a lot of Latter-day Saints to give back to the church somehow, whether that’s through the company or through the wealth they get afterwards. One of my biggest dreams is to help build a temple for the church, and that’s $30 or 40 million. So that’s one of my goals, I wanna be successful so I can help build the Kingdom’. Director of Brand Management and User Experience, PSO, active Mormon.

However, my data also show that in around half of the case study firms with perceived Mormon cultural product alignments, that alignment is also a function of strategies to tap the large Mormon market in Utah, as much as any altruistic desire on behalf of the firm’s management team to produce a product in line with their own personal Mormon values (see Table 4.13). Further, of the three non-Mormon firms in Table 4.13, all three asserted that any perceived alignment of their product with Mormon values is merely a coincidence, that valuing children is not exclusive to Mormon culture. However even in these firms, while not an explicit strategy on the part of the firm’s founding and management team to align products with Mormon values, the perceived alignment has nevertheless been a key factor in why Mormon employees have chosen to work there. For 43% of my (47) active Mormon industry respondents, a perceived product link with
Mormon values was a key factor in their choice to work for that company. These respondents are found across all the firms in Tables 4.12 and 4.13.

Applying this tri-partite breakdown of firms in my case study sample (Table 4.13) back to firms in the survey sample (Table 4.12), suggest that in half of the 18 survey firms with perceived Mormon product alignments this is an explicit strategy. This explicit alignment of firms’ products with positive Mormon cultural values is the fourth key ‘content’, I argue, of their cultural embedding in the region.

### 4.4.5 – PATRIARCHAL CORPORATE CULTURES

The fifth key content of firms’ embedding in Mormon culture centres on Mormonism’s explicitly patriarchal orientation, which I also found prevalent in the corporate cultures of Utah’s lead software firms on the Wasatch Front. In Mormon culture, patriarchal authority is set forth in church doctrine (Christopherson, 1974), with children viewed as a blessing and parenthood an essential lesson in Christian giving (May, 2001). Mormon culture thus encourages marriage followed by childbearing, with women expected to be the primary childcare providers and males the primary source of income (Smith and Shipman, 1996; Heaton, 2001). Further, twentieth century LDS Church leaders, observing changes in societal values that they regard as destructive to the family, have increasingly advised women to make nurturing children and building a family their primary responsibilities in life (May, 2001). LDS Church leaders have viewed the women’s liberation movement and the US Equal Rights Amendment (ERA) in particular as causes that undermine women’s ‘God-given roles’ as full-time mothers and homemakers (May, 2001)\(^27\). However, the LDS Church has increasingly recognised that some mothers are forced to work through necessity, and has begun to condone this as long as it is for living ‘essentials’ rather than luxuries.

The pro-family orientation of Mormonism is manifest in Utah state data across five key areas. First, Utah leads all the US states with a (2000) fertility rate of 2.7 children per woman of childbearing age compared with a US national average of 2.1 (Economic Report to the Utah Governor, 2001). Indeed, Utah’s high birth rate has been higher than the US average for a century (Poll, 2001). Second, Utah families have on average more children than US families –

\(^{27}\) In the 1970s the LDS Church actively sought to block the ratification of the ERA through grass-roots mobilisation of Mormon women instructed to vote it down at conferences across the US, and through high pressure lobbying of Mormons in Congress (Poll, 2001). One legacy of this campaign is a widespread lack of credibility for the LDS Church as an advocate for women (Quinn, 1997).
2.51 children to married couples for Utah compared with 1.81 children for the US (Hirschl, 1996b). Third, a far higher percentage of Utah children (83%) belong to married-couple families compared with the US as a whole (70%) (ibid.: 234). Further, only 12% of Utah children belong to single-parent families compared to 20% for the US as a whole (ibid.: 235). Fourth, Utah women are more likely to be married than individuals throughout the US at any age (Smith and Shipman, 1996), the difference being most dramatic for adult women in their early 20s and early 30s:

*Table 4.14 - Marriage Rates Between Utah and US women Compared*  
*(Smith and Shipman, 1996: 94)*

<table>
<thead>
<tr>
<th>Age</th>
<th>% UT females married</th>
<th>% US females married</th>
</tr>
</thead>
<tbody>
<tr>
<td>18 - 19</td>
<td>10.5</td>
<td>9.3</td>
</tr>
<tr>
<td>20 - 24</td>
<td>46.4</td>
<td>32.0</td>
</tr>
<tr>
<td>25 - 29</td>
<td>68.9</td>
<td>58.5</td>
</tr>
<tr>
<td>30 - 34</td>
<td>76.7</td>
<td>69.8</td>
</tr>
<tr>
<td>35 - 39</td>
<td>78.0</td>
<td>73.7</td>
</tr>
<tr>
<td>40 - 44</td>
<td>77.9</td>
<td>74.3</td>
</tr>
<tr>
<td>45 - 54</td>
<td>77.8</td>
<td>73.6</td>
</tr>
</tbody>
</table>

Crucially, Utah’s adherence to the traditional husband-wife family model vis-à-vis broader US society is certainly based on Mormon cultural factors, since both Utah’s family income levels and economy are similar to those for the US as a whole (Hirschl, 1996b: 236). Finally, while Utah’s female labour participation rate\(^{28}\) does not significantly differ from that for the US as a whole (62.5% for Utah compared with a US average of 59.5% (US Bureau of the Census, 1999)), the range of jobs in which Utah women are employed is much narrower than for US women as a whole (Cornwall and Degn, 1996)\(^{29}\), consistent with Mormon cultural constructions of ‘appropriate’ female jobs.

My results suggest that many of Utah’s lead software firms in turn import this patriarchal orientation of Mormon culture, the fifth key content I argue of their cultural embedding within the region. There are two main areas in which imported Mormon patriarchal values affect the

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\(^{28}\) Labour participation rates as the % of civilian non-institutional population of each specified group in the civilian labour force; source: US Bureau of the Census, Statistical Abstract of the United States, 1999).
internal structures of firms on the Wasatch Front, in terms of: (i) the proportions of firms’ total employees that are female; and (ii) the types of positions (and hence power) that Mormon and non-Mormon women hold within the firm.

### 4.4.5.1 - SURVEY SAMPLE

While men have traditionally dominated the high tech industry (Wachs-Book, 2000), my results suggest that the embedding of software firms within Mormon culture exaggerates this pattern. I have disaggregated the survey data across three categories of firm size: micro (1-19 employees), medium (20-99 employees), medium-large (100-499 employees), consistent with the classifications used by the Utah Department of Workforce Services and County Business Patterns\(^{30}\).

The survey data for the micro, medium and medium-large firm size categories are shown in Figures 4.10, 4.11 and 4.12 respectively. There are three significant patterns. First, for all three firm size categories, the proportions of firms’ total workforces that are female are consistently lower for the Mormon firms (however defined) than for their non-Mormon counterparts. The most significant difference occurs in the micro size category, where the females comprise only 13.7% of Mormon (founded and managed) firms’ total workforces, a figure less than half that for their non-Mormon counter-parts (29.8% female employees). Indeed, of the 7 firms in the survey sample that have 0% female workforces, 71% of those firms are Mormon founded and managed. However, these patterns are least stark for the medium-large firm size category, suggesting that as firms grow in size, their workforces become more diverse\(^{31}\).

---

\(^{29}\) Cornwall and Degn (1996) show how two thirds of Utah women are concentrated in only four traditionally-female occupational categories: clerical and administrative support (30%); service occupations such as waitressing, food preparation or hairdressing (13%); sales (11%); and elementary and secondary school teachers (10%) (ibid.: 13).

\(^{30}\) c.f. ESRC Centre for Business Research classification: micro 1-9, small 10-19, medium 50-249, and large 250+ (e.g. Keeble, 1997).

\(^{31}\) See Chapter 6 on the mechanisms of cultural embedding.
Females as Proportions of Firms’ *Total Workforces and Management Teams*
-Mormon and Non-Mormon Computer Software Firms Compared (Survey Sample)

**Figure 4.10**
MICRO Firm Size Category
(1-19 Employees)

**Figure 4.11**
MEDIUM Firm Size Category
(20-99 Employees)

**Figure 4.12**
MED-LARGE Firm Size Category
(100-499 Employees)
Second, for all three size categories, the proportions of the Mormon firms’ total workforces that are female are consistently less than the US national average. Females make up 27.3% of the total US computer science workforce (National Science Foundation, 2000\textsuperscript{32}), a figure with which the non-Mormon firms in my survey sample in all three size categories are consistent, or indeed exceed. This deficit is again most explicit for firms in the micro size category, in which females comprise only 13.7% of firms’ total workforces, less than half the US national average. However, Mormon firms in the medium-large firm size category (20-99 employees) are an exception (Figure 4.12); they are the only Mormon firm category whose average female workforce figures are consistent with the US national average.

Third, for all three firm size categories, the proportion of females in firms’ management teams is consistently lower for the Mormon firms than for their non-Mormon counterparts. Control of the Mormon companies also seems to be kept along stricter patriarchal lines than in their non-Mormon counterparts. Indeed, 44 firms in the survey sample had no women in their management teams and of those firms, almost two thirds (64%) are Mormon founded and managed. The pattern is most stark for firms in the medium size category, in which women comprise only 3.4% of the Mormon firms’ management teams on average, less than a fifth of the equivalent figure for their non-Mormon counterparts (18.0% female). Thus while my results suggest that Mormon firms do become more diverse over time and hence employ a greater proportion of women in their workforces, this is not necessarily matched by a penetration of those women into firms’ management teams.

This latter conclusion is consistent with quotients that measure females’ representation in firms’ management teams based on their prevalence in firms’ total workforces. I calculated female representation quotients using the formula \( \frac{O-E}{E} \), where \( O \) is the OBSERVED proportion of a firm’s management team that is female, and \( E \) is the EXPECTED proportion based on the prevalence of females in the firm’s total workforce\textsuperscript{33}. Hence:

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\textsuperscript{32} Women, Minorities and Persons with Disabilities in Science and Engineering, National Science Foundation 2000: US computer science workforce (1997): men = 766 600 (72.7%); women = 287 500 (27.3%)

\textsuperscript{33} Initially I had planned to use the chi-squared formula for this, and hence derive a statistical significance for female under-representation in Mormon versus non-Mormon firms. However management team sizes vary between firms and so to standardise the figures I used percentages - using chi-squared on percentages gives distorted results.
The female management representation quotients for the Mormon and non-Mormon survey firms across the three firm size categories are shown in Table 4.15. A negative figure means that females are under-represented in a firm’s management team, given their prevalence in a firm’s total workforce. Also, the higher the magnitude of the quotient, the more under-represented (or over-represented in the case of positive figures) females are in a firm’s management team.

<table>
<thead>
<tr>
<th>SURVEY</th>
<th>Representation quotient (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1-19</td>
</tr>
<tr>
<td>Mormon founded</td>
<td>-16</td>
</tr>
<tr>
<td>Mormon managed</td>
<td>-11</td>
</tr>
<tr>
<td>Mormon founded and managed</td>
<td>-14</td>
</tr>
<tr>
<td>Non-Mormon founded</td>
<td>-33</td>
</tr>
<tr>
<td>Non-Mormon managed</td>
<td>-22</td>
</tr>
<tr>
<td>Non-Mormon founded and managed</td>
<td>-27</td>
</tr>
<tr>
<td>INTERMEDIATES</td>
<td>Mormon founded but non-Mormon managed</td>
</tr>
<tr>
<td></td>
<td>Non-Mormon founded but Mormon managed</td>
</tr>
</tbody>
</table>

Thus, while firms’ female workforces are consistently lower for Mormon firms (however defined) than for their non-Mormon counterparts, women are however no more under-represented at the management level in Mormon firms. Indeed, in the micro category women are better represented in the management teams of Mormon firms than in those of their non-Mormon counter-parts. However, Mormon firms in the 100-499 employees category are the exception, where women are almost 90% under-represented at the management level. This compares with an equivalent figure of -40% for the non-Mormon firms.
4.4.5.2 - IN-DEPTH CASE STUDY SAMPLE

The broad patterns outlined for the survey sample are mirrored in the in-depth case study sample, that is, when the effect of a Mormon majority workforce is into the analysis (see Figures 4.14 and 4.15). All of the case study firms are in the medium size category (20-99 employees).

Figure 4.14 – Females as Proportions of Firms’ Total Workforces and Management Teams
- Mormon Computer Software Firms (Case Study Sample)

Figure 4.15 – Females as Proportions of Firms’ Total Workforces and Management Teams
- Non-Mormon Computer Software Firms (Case Study Sample)
It is significant that in the case study sample, females comprise only 7% of the workforces of the wholly Mormon firms, one quarter of those of their non-Mormon counter-parts and the US national average (27.3%). Further, only two firms have 0% female workforces, and these are both wholly Mormon. This pattern is exaggerated at the management level: while the wholly Mormon firms have no females at the management level, women make up 25% of employees at the management level in the non-Mormon firms. These patterns at the case study level are also confirmed by the female management representation quotients (Table 4.16). These show that when we factor in a Mormon majority workforce into the analysis (i.e. move from the survey to the in-depth case study level) women are still more under-represented in the management teams of the Mormon firms (-100%) than in those of their non-Mormon counterparts (-7%) (Table 4.16).

Table 4.16 – Female Representation at the Management Level
Mormon and non-Mormon Software Firms Compared – Case Study Sample

<table>
<thead>
<tr>
<th>IN-DEPTH CASES (all 20-99 employees)</th>
<th>Representation quotient (%) *</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MORMON</strong></td>
<td></td>
</tr>
<tr>
<td>Mormon founded</td>
<td>-57</td>
</tr>
<tr>
<td>Mormon managed</td>
<td>-46</td>
</tr>
<tr>
<td>Mormon majority workforce</td>
<td>-41</td>
</tr>
<tr>
<td>Mormon founded AND managed</td>
<td></td>
</tr>
<tr>
<td>Mormon founded, managed AND majority workforce</td>
<td>-100</td>
</tr>
<tr>
<td><strong>NON-MORMON</strong></td>
<td></td>
</tr>
<tr>
<td>Non-Mormon founded</td>
<td>-15</td>
</tr>
<tr>
<td>Non-Mormon managed</td>
<td>-25</td>
</tr>
<tr>
<td>Non-Mormon majority workforce</td>
<td>-11</td>
</tr>
<tr>
<td>Non-Mormon founded AND managed</td>
<td>-11</td>
</tr>
<tr>
<td>Non-Mormon founded, managed AND majority workforce</td>
<td>-7</td>
</tr>
<tr>
<td><strong>INTERMEDIATES</strong></td>
<td></td>
</tr>
<tr>
<td>Mormon founded, Non-Mormon managed, majority Mormon workforce</td>
<td>-26</td>
</tr>
<tr>
<td>Non-Mormon founded, Mormon managed, majority Mormon workforce</td>
<td>-46</td>
</tr>
</tbody>
</table>

* There were eight intermediates in theory (various combinations of founder / management / workforce), but in practice the intermediate firms fell only across two categories.
Of the total case study sample (20 firms), 45% of firms have no women in their management teams at all. Significantly, 83% of the wholly Mormon case study firms have no women in their management teams compared with only 33% of the wholly non-Mormon firms. Further, only two firms (10%) in the case study sample are female-founded. Interestingly, both are also non-Mormon founded and located in Salt Lake County. Further, females make up 59.5% of these firms’ workforces, twice the US average, and over 8 times the Mormon male-founded firm average of 7%.

These highly visible manifestations of firms’ import of Mormon patriarchal cultural traits are consistent with the experiences of female employees working in these firms, as evidenced in my interviews. My female respondents consistently asserted that Mormon male colleagues and employees are particularly careful in the ways they interact with females in the company, in contrast to their non-Mormon male colleagues. Significantly, 82% of my total (17) female industry respondents consistently experience a hesitation among their Mormon male colleagues to interact with them in a work setting. Further, over one third (35%) have attended business meetings with a Mormon male colleague who has brought a chaperone with them because they deem it inappropriate to be seen alone with a female even in such a public setting. My female respondents also outlined some of the work attitudes of Mormon male managers towards females in the firm. Examples include Mormon males treating female colleagues as secretaries; pervasive Mormon gender stereotypes within the firm; and the use of sexist language. While non-Mormon male colleagues are not immune to these critiques, my female respondents agreed that in their experiences of working in Utah’s software industry, such attitudes are more prevalent amongst their Mormon male colleagues:

‘I’ve had problems with LDS male colleagues where he’ll have me do his faxes and stuff like that and treat me like a secretary. And I’ll be like really angry at first and then just realise that he doesn’t know what he’s doing’. CEO and Co-Founder, NLN, inactive Mormon female.

‘I never had this in New York but when I moved to Utah I ran into several men that were surprised that I had a degree in business. And one even said ‘Oh I thought you were a housewife’! There’s just a very sexist way of viewing things here, and all of a sudden I was starting over again’. Vice President and Co-Founder, NLN, non-Mormon female.

Indeed, I was often given examples of some of these attitudes from my own male interview respondents:
'It’s all down to the emotional and mental make-up of males and females. Men are just more logical and women are more emotional in their thinking and their decision-making. So women have a harder time doing technology coding because it does not come so naturally to them’. Manager of Software Development, QDD, active Mormon.

A final area consistently highlighted by my female respondents centres on the stigmas attached to females working\textsuperscript{34}, a direct carry-over from the Mormon regional culture in which there are significant peer pressures on males to be the sole breadwinner in their families:

‘They won’t come right out and say that because I’m married I ought not to be there, but that’s how they come across, that women as humans are really not doing what they ought to be doing, which is raising kids. And there’s also that feeling that you’re a less serious employee if you are a woman. In Utah there’s a way in which still your wanting to do that kind of puts you in a ghetto. It’s a nice pink and soft and lovely ghetto, but it’s still a ghetto’. CEO and Co-Founder, NLN, inactive Mormon female.

‘There definitely is a way in which you as a woman with ideas are gonna on some level be seen as threatening. In other states they’d call you a ‘ball buster’ but they’re not really threatened. But in Utah it’s beyond that because Mormon male managers will themselves often have wives who stay at home all day with their children, and it is not very often that they see a woman in a product development meeting. So I often sit in on development meetings where out of a group of 35 I am the only woman, and so I have to end up acting like a man so I can deal with them’. Director of International Marketing, QXU, active Mormon female.

Overall, of the four wholly Mormon firms with females in their workforces, all four were perceived from within as incorporating a traditional Mormon family structure, based on paternalistic corporate cultures and the ‘rule of the father’ (McDowell, 2001), a function of corporate control being kept along strict patriarchal lines as I have outlined:

‘They either pat you on the head and belittle you in a paternalistic fatherly way, or else are just really dismissive. That’s still part of the culture in Utah and I’m not sure when that’s gonna stop. It all has to do with being a woman. Whereas out of state I just didn’t feel my womanness all over me, here I really do’. CEO and Co-Founder, NLN, inactive Mormon female.

\textsuperscript{34} My female respondents were however divided with regard to whether Mormon and non-Mormon employees are equally stigmatised within the firm.
‘There is a lot of the Good ‘Ole Boys attitude around here. Like the little honey, let’s get her some flowers, that’ll fix it type of thing. We’ll give her a hug, sweet little thing, she’s not gonna be here long anyway, she’ll be off having babies soon. There’s this Mormon expectation that they’re married by the age of 25 and if not then it’s gonna be a rough dating prayer from then on! It’s just part of the culture here, a lot worse than any place else I’ve worked in the US. People just can’t help it’. Director of Human Resources, UIE, non-Mormon female.

Both female and male respondents alike also highlighted the under-representation of female employees in software development positions, although I was unable to access secondary data on this at the firm level. Firms’ management teams were typically very self-conscious of their companies being all white male domains and were not keen to supply me with hard data that would support that. However, my results provide significant evidence of the import of Mormon cultural emphases on family and traditional gender roles by Utah’s lead computer software firms into their internal structures, the fifth key ‘content’ I argue of their cultural embedding in the region.

4.4.6 – EXPLICIT FAMILY ORIENTATION IN THE FIRM

Closely related to Mormon teachings on gender roles are those on family, the fundamental concept which lies at the heart of Mormonism. Mormon culture regards family as the fundamental unit of society centred on the belief that families are designed to provide an earthly home for God’s children (Heaton, 2001). Consistent with these beliefs, Mormon families have historically been larger than the US average. Indeed, there has been an increased emphasis on family life in official LDS Church rhetoric in recent years (Heaton, 2001), as church leaders, observing changes in societal values that they believe to be destructive to the family, have increasingly advised women to make nurturing children and building a family their first responsibilities in life (Moy, 2001). Notably the church’s (1995) ‘Proclamation on the Family’ reaffirmed Mormon teachings on the importance of marriage, procreation, and traditional gender roles, and further asserted the relationship between good family life and social stability. These cultural emphases on family are in turn highly visible in secondary data at the state level, as outlined in Section 4.4.6. However, my own results suggest that Mormon cultural emphases on family are also being imported into the workings of computer software firms on Utah’s Wasatch Front, the sixth key ‘content’ of their cultural embedding within the region. There are three key components to this.
The first manifestation of firms’ import of Mormon cultural emphases on family centres on the manipulation of employee pay levels *explicitly* to enable the maintenance of traditional Mormon family units among firms’ employees (single male breadwinner, female homemaker and mother). One quarter of all the firms in my case study sample have explicit policies in this vein. Significantly, this includes two thirds of the (6) wholly Mormon firms in my case study sample, yet none of the non-Mormon firms:

‘I have always felt it is important that all staff are compensated to a level that if their wife chose to stay home with the kids and not work, then they get a good enough wage that they are able to do that if they choose to’. CEO and Co-Founder, QDD, active Mormon.

‘When the company was smaller, our founder and owner (who is LDS), would constantly make reference to how he wants this to be a place where all the employees and all of their children can work and support their families and have a quality of life that is in concert with their family values. And so that has always included paying the breadwinner enough to that he can support his whole family. It’s a very Mormon stand-point’. Human Resources Director, QXU, active Mormon female.

The second manifestation of firms’ import of Mormon cultural emphases on family centres on two specific family-orientated corporate policies. First, one quarter of the firms in my case study sample operate family-friendly hotel and car-hire company policies. That is, firms will only book their employees into hotels or use car hire companies that have an explicit ‘family-friendly’ mandate – e.g. television channels in hotel rooms filtered for wholesome content, or all cars fitted with children’s safety seats. The significance of firms adopting these policies centres on employees’ families rarely ever accompanying them on business trips. Of the 5 firms who maintain these corporate policies, 3 are wholly Mormon, that is, half of all the wholly Mormon firms in my case study sample. None of the non-Mormon firms in my sample operate such policies. Second, two firms (10% of the case study sample) operate ‘travelling husband policies’, in which the company limits the number of nights employees are away from home (most notably on installations out of state), sending the employee’s wife flowers if their husband is away for more than two nights:

‘It’s not so much the money, it just shows them that the company cares enough to recognise the suffering wives have to go for when the breadwinner is out of town on an install’. Manager of Software Development, QDD, active Mormon.
Interestingly, both firms operating this second type of policy are again wholly Mormon, and both located in Utah County. Thus one third of all the wholly Mormon firms in the case study sample operate ‘travelling husband policies’. Further, in both firms these policies were never outlined to me in terms of ‘travelling wives’, consistent with Mormon cultural constructions of appropriate gender roles. And once again none of the non-Mormon firms operate policies in this vein.

The third manifestation of firms’ import of Mormon family values into their own corporate cultures centres on explicitly family-orientated corporate social events. In total, half of the firms in the case study sample have explicitly family-orientated corporate social events that always involve children. This includes two thirds of the wholly Mormon firms and one half of the Mormon intermediate firms in my case study sample. These events were described to me in terms of corporate family picnics, barbecues, races, ducking stools for the executives, as well as regular children’s days in which employees are encouraged to bring their children to work to learn about that their parents’ jobs:

‘People more than any place else I’ve worked will bring their children into work for a few hours if the sitter is sick, or for lunch. In fact it’s pretty rare not to run into children in the lunchroom or in people’s offices, and that’s accepted by the management, representative I think of their own Mormon backgrounds’. Manager of Corporate Affairs, QXU, non-Mormon female.

While corporate social events in the non-Mormon firms also often consist of barbecues and company outings, in contrast these events are always adult-orientated, and bringing children to these events seen as a strange thing to do:

‘Our Christmas party is supposed to be for adults only, but the ticket specifies ‘for you and a guest’. So many of the Mormon employees brought their very young children with them. And I’d just never ever seen that ever before at any party I’d previously attended, it was a total shock! So I commented on it and others were just like ‘yeah, so what’s the problem?’’ Manager of Corporate Affairs, QXU, non-Mormon female.

Significantly, these three key manifestations of firms’ import of Mormon cultural emphases on family are mutually reinforcing within the Mormon firms in my case study sample, whilst almost non-existent in the non-Mormon firms (Table 4.17). I have also included in Table 4.17 a further minor indicator of this key content of firms’ cultural embedding in the region, an explicit and spontaneous vocalisation of firms’ regard for competitor firms as other people with families.
Significantly, 8 firms raised this issue, a figure which includes two thirds of the wholly Mormon firms, one quarter of the Mormon intermediate firms, but only one non-Mormon firm.

We can therefore interpret these corporate practices of: (i) manipulating pay levels within the firm with the explicit aim of maintaining traditional LDS family units among firms’ employees; (ii) exclusive use of family-friendly hotel and car firms on corporate business trips; and (iii) explicitly family-orientated corporate social events, as three key manifestations of firms’ import of Mormon cultural emphases on family. These I argue comprise the sixth key content of firms’ embedding within the Mormon culture region.
Table 4.17 – Manifestations with the Firm of an Explicit Family Orientation – Mormon and Non-Mormon Firms Compared (Case Study Firm Sample)

<table>
<thead>
<tr>
<th>MORMON</th>
<th>INTERMED I</th>
<th>INTERMED II</th>
<th>NON-MORMON</th>
</tr>
</thead>
<tbody>
<tr>
<td>(founded AND managed)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

AN  QD  EC  JE  PS  IE  UI  NM  WS  GG  GO  FY  MS  ED  UO  LE  BW  NL  FW  XT

**MORMON MAJORITY WORKFORCE**

(i) Manipulation of pay levels to maintain traditional Mormon family units among employees

(ii) Firms aware of competitors as other people with families

(iii) Family-orientated corporate social events

(iv) 'Travelling Husband' policies

(v) Family-friendly hotel / car hire policies

Intermediate I – non-Mormon founded but Mormon managed

Intermediate II – Mormon founded but non-Mormon managed
4.5 – DISCUSSION - LINKING REGIONAL CULTURE TO CORPORATE CULTURE TO REGIONAL INDUSTRIAL CULTURE

We can therefore conceptualise the cultural embedding of firms in the region in terms of the overlaps between the different levels of a culture hierarchy, made up of firms’ own corporate cultures, a regional industrial culture, and the broader regional culture in which these are set. Based on the key premise that cultural embedding is only significant if it makes a real difference to the way firms operate, I have shown how the cultural embedding of software firms on Utah’s Wasatch Front first centres on their import of a series of six self-identified Mormon cultural traits, as outlined in Table 4.18, which have material impacts on firms’ internal structures and decision making processes. Schein (1992) argues that the behaviour of firms and the individuals within those firms can rightly be labelled ‘cultural’ if there is patterning, in terms of: (i) many people in the firm behaving in the same way; (ii) others treating that behaviour as normal and expected; and (iii) the behaviour not being random nor unmotivated but purposive. My own results show patterning at three levels. First, patterning is apparent within firms across the different cultural traits outlined in Table 4.18, which are mutually reinforcing within particular firms (see Table 4.19). Second, this patterning is in turn consistent with the Mormon cultural traits. Crucially, the observable manifestations of firms’ corporate cultures that I have highlighted are tied to deeper values, norms and attitudes within the firm which are themselves informed by the values, norms and attitudes associated with the wider regional culture. Here then is the link between regional culture and firm’s corporate cultures (see Figure 4.16). Third, this patterning is in turn consistent across different firms’ corporate cultures, sustaining I argue a regional industrial culture, the third link in the culture hierarchy triangle.

Figure 4.16 – Conceptualising the Cultural Embedding of Firms in Terms of a Culture Hierarchy
### Table 4.18 – Conceptualising Firms’ Cultural Embedding in Terms of the Overlaps Between Regional Culture and Corporate Cultures

<table>
<thead>
<tr>
<th>REGIONAL MORMON CULTURE (SELF-IDENTIFIED)</th>
<th>CORPORATE CULTURE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BELIEF IN DIVINE REVELATION</strong></td>
<td><strong>BELIEF IN DIVINE INTERVENTION IN THE FIRM</strong></td>
</tr>
<tr>
<td>God’s hand is through all things</td>
<td>Praying over direction</td>
</tr>
<tr>
<td>Fasting</td>
<td>Seeking revelation at the Temple w.r.t. the firm</td>
</tr>
<tr>
<td></td>
<td>Fasting for the company</td>
</tr>
<tr>
<td><strong>MONEY AS SIMPLY A MEANS TO A HIGHER END</strong></td>
<td><strong>LDS VALUES OVERRIDE PROFIT MAXIMISING STRATEGIES</strong></td>
</tr>
<tr>
<td>Concern for achieving success in admirable ways</td>
<td>Concern about how achieve business success</td>
</tr>
<tr>
<td></td>
<td>Higher purpose to work</td>
</tr>
<tr>
<td></td>
<td>Turning down immoral work even when hungry</td>
</tr>
<tr>
<td></td>
<td>Employee growth as well as company growth</td>
</tr>
<tr>
<td></td>
<td>Across-the-board pay-cuts over lay-offs</td>
</tr>
<tr>
<td><strong>LDS CHURCH ‘CALLINGS’ SYSTEM</strong></td>
<td><strong>‘CALLING’ MENTALITY</strong></td>
</tr>
<tr>
<td>Notion of firing defunct</td>
<td>Constrained ability to manage ineffective employees</td>
</tr>
<tr>
<td></td>
<td>Human Resources management practices tempered</td>
</tr>
<tr>
<td><strong>BUILDING THE KINGDOM</strong></td>
<td><strong>MORMON ORIENTATED SOFTWARE PRODUCT</strong></td>
</tr>
<tr>
<td>Technology as a blessing</td>
<td>Education</td>
</tr>
<tr>
<td>Church mission</td>
<td>Internet privacy software, etc</td>
</tr>
<tr>
<td>Education and learning</td>
<td>Translation software</td>
</tr>
<tr>
<td>Service</td>
<td>Wholesome product that benefits wider society</td>
</tr>
<tr>
<td><strong>GOD-GIVEN GENDER ROLES</strong></td>
<td><strong>PATRIARCHAL ORIENTATION</strong></td>
</tr>
<tr>
<td>Encouragement of marriage and childbearing</td>
<td>Fewer women in management and technical roles</td>
</tr>
<tr>
<td>Females as mothers, males as breadwinners</td>
<td>Lower proportions of women in total workforce</td>
</tr>
<tr>
<td>Stigma of females working</td>
<td>Corporate control along patriarchal lines</td>
</tr>
<tr>
<td></td>
<td>Pink velvet ghettos</td>
</tr>
<tr>
<td><strong>FAMILY ABOVE ALL</strong></td>
<td><strong>EXPLICIT FAMILY ORIENTATION</strong></td>
</tr>
<tr>
<td>Family as fundamental unit of society</td>
<td>Pay levels to maintain traditional Mormon family units among employees</td>
</tr>
<tr>
<td>Children as a blessing</td>
<td>Family-friendly hotel policies / car hire policies</td>
</tr>
<tr>
<td>Relatively low ages of marriage</td>
<td>Traveling husband policies</td>
</tr>
<tr>
<td>Relatively large Mormon families</td>
<td>Firms aware of competitors as people with families</td>
</tr>
<tr>
<td></td>
<td>Family-orientated corporate social events</td>
</tr>
<tr>
<td></td>
<td>MORMON (founded AND managed)</td>
</tr>
<tr>
<td>------------------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td><strong>MORMON MAJORITY WORKFORCE</strong></td>
<td></td>
</tr>
<tr>
<td><strong>100% MORMON WORKFORCE</strong></td>
<td></td>
</tr>
<tr>
<td><strong>BELIEF IN DIVINE INTERVENTION IN THE FIRM</strong></td>
<td></td>
</tr>
<tr>
<td>Praying over corporate strategic direction - individual</td>
<td></td>
</tr>
<tr>
<td>- firm</td>
<td></td>
</tr>
<tr>
<td>Fasting for the company - individual</td>
<td></td>
</tr>
<tr>
<td>- firm</td>
<td></td>
</tr>
<tr>
<td>Seeking revelation at the Temple w.r.t. the company - individual</td>
<td></td>
</tr>
<tr>
<td><strong>LDS VALUES OVERRIDING PROFIT MAXIMISING STRATEGIES</strong></td>
<td></td>
</tr>
<tr>
<td>Firms unwilling to work on unwholesome content</td>
<td></td>
</tr>
<tr>
<td>Vocalised as LDS issue</td>
<td></td>
</tr>
<tr>
<td>Firm as money-making entity less important than as vehicle for good</td>
<td></td>
</tr>
<tr>
<td>Policies of across-the-board pay-cuts over lay-offs</td>
<td></td>
</tr>
<tr>
<td><strong>PERCEIVED IMPORT OF CALLING MENTALITY</strong></td>
<td></td>
</tr>
<tr>
<td><strong>MORMON ORIENTATED SOFTWARE PRODUCT</strong></td>
<td></td>
</tr>
<tr>
<td>As a deliberate active corporate strategy</td>
<td></td>
</tr>
<tr>
<td><strong>PATRIARCHAL ORIENTATION</strong></td>
<td></td>
</tr>
<tr>
<td>Women under-represented in the firm c.f. US ave</td>
<td></td>
</tr>
<tr>
<td>No women in total workforce</td>
<td></td>
</tr>
<tr>
<td>No women at management level</td>
<td></td>
</tr>
<tr>
<td><strong>EXPLICIT FAMILY ORIENTATION</strong></td>
<td></td>
</tr>
<tr>
<td>Pay levels to maintain traditional LDS families among employees</td>
<td></td>
</tr>
<tr>
<td>Family-friendly hotel / care hire policies</td>
<td></td>
</tr>
<tr>
<td>Traveling husband policies</td>
<td></td>
</tr>
<tr>
<td>Firms aware of competitors as people with families</td>
<td></td>
</tr>
<tr>
<td>Family-orientated corporate social events</td>
<td></td>
</tr>
</tbody>
</table>
It is important to note however that the overflow of Mormonism into these firms is not premised upon LDS doctrine *per se*, but rather upon the cultural *values* that those doctrinal teachings sustain, and which are in turn drawn on to help define decision-making priorities in the firm. However, while my respondents often defined their firms’ corporate cultures to be in line with Gospel principles, typically they remove the church *label* because of the stigma that brings in business. For the majority of respondents, the application of their religious values within the high tech workplace is not only acceptable, but a *natural* thing for them to do, and it is usually not a deliberate strategy, but rather a function of respondents finding it impossible to separate off their corporate involvements from their religious convictions:

‘While it’s not been a passive thing, it’s not been an active decision to keep the company’s culture in line with Mormon values either. As a Latter-day Saint you’re not actually thinking of any ‘cultural values’, it’s just personal values, which in turn manifest themselves in that culture. It’s just like no-one in England starts a company and say’s everyone’s gonna be a little reserved and stiff upper-lipped. It’s just the English way of doing things. Equally, this is just the Mormon way of doing things’. Director of Brand Management and User Experience, PSO, active Mormon
Further, I argue that the various ‘contents’ of firms’ cultural embedding in the region as identified in this chapter (i.e. the overlaps between the Mormon regional culture and firms’ individual corporate cultures) are more significant at the regional industrial level. Crucially, the data in Table 4.19 show that the Mormon and Mormon intermediate firms (defined in terms of Mormon founding, management and majority workforce) have a greater number of contents of embedding than do their non-Mormon counterparts. Crucially, while Mormon founded or managed firms make up 50% of firms at the in-depth case study level, they are even more numerous at the regional level, making up almost 70% of firms at that scale (Table 4.20). Further, the embedding of firms is strongest (see Table 4.19) for the Mormon founded and managed firms, and while these make up 30% of the in-depth case study sample, they are almost twice as prevalent at the regional level (56%):

Table 4.20 – Using the Case Study Sample to Make Inferences Back to the Regional Level

<table>
<thead>
<tr>
<th></th>
<th>IN-DEPTH CASES</th>
<th>SURVEY (Regional)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MORMON</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Founded</td>
<td>50%</td>
<td>69%</td>
</tr>
<tr>
<td>Managed</td>
<td>50%</td>
<td>68%</td>
</tr>
<tr>
<td>Majority workforce</td>
<td>(65%)</td>
<td></td>
</tr>
<tr>
<td>Founded AND Mormon managed</td>
<td>30%</td>
<td>56%</td>
</tr>
<tr>
<td>Founded, managed AND majority workforce</td>
<td>(30%)</td>
<td></td>
</tr>
<tr>
<td><strong>NON-MORMON</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Founded</td>
<td>50%</td>
<td>31%</td>
</tr>
<tr>
<td>Managed</td>
<td>50%</td>
<td>32%</td>
</tr>
<tr>
<td>Majority workforce</td>
<td>(35%)</td>
<td></td>
</tr>
<tr>
<td>Founded AND managed</td>
<td>30%</td>
<td>21%</td>
</tr>
<tr>
<td>Founded, managed AND majority workforce</td>
<td>(30%)</td>
<td></td>
</tr>
<tr>
<td><strong>INTERMEDIATES</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type I - NON-Mormon founded, Mormon managed</td>
<td>20%</td>
<td>9%</td>
</tr>
<tr>
<td>Type II - Mormon founded, NON-Mormon managed</td>
<td>20%</td>
<td>9%</td>
</tr>
</tbody>
</table>

Further, of the total SIC 737 population at the Wasatch Front regional level, over 90% of firms are in the 1-99 employee size category. Similarly, my in-depth sample focuses on the 20-99 employees size category, largely mirroring the dominant firm size at the survey level.
In this chapter I have therefore outlined how both the historical and contemporary development of Utah’s computer software industry is inseparable from Mormonism. I have shown how a series of self-identified Mormon cultural traits are being imported into the workings of local computer software firms, and how each of those key ‘contents’ of firms’ cultural embedding in the region has visible manifestations. Specifically, these are manifest in terms of: beliefs in divine intervention in the firm, through prayer and fasting; corporate cultures that emphasise people over profits; an aversion to firing ineffective employees; software products actively aligned with positive Mormon values; and a patriarchal management orientation. As such, I have begun to demonstrate how the informal regional institutional environment, in terms of cultural values, norms, conventions and social routines, crucially penetrates and informs the operations of local firms as examples of specific formal institutional arrangements. Some might argue that the behaviour of these firms is not culturally driven, but subject to only corporate idiosyncracies largely independent of socio-cultural determinants. However, I argue that such a view is flawed, given patterning at three levels: (i) cultural traits are mutually reinforcing within firms; (ii) those corporate cultural traits are in turn consistent with the regional culture; and (iii) those regionally-informed corporate cultural traits are consistent across firms, sustaining I argue a regional industrial culture. In Chapter 5 I expand my analysis to show how this cultural embedding of firms in the region impacts on their competitiveness, specifically in terms of their abilities to innovate. Crucially, both enablers and constraints on firms’ innovate capacities stem from the same regional culture in which they are embedded.
CHAPTER 5

THE IMPACTS OF CULTURAL EMBEDDING ON FIRMS’ COMPETITIVENESS

‘Constructing a contextual economics and economic geography, in which socio-spatial embeddedness is moved centre-stage rather than demoted to a secondary contingent role, remains a key task’

R.L. Martin (1994: 42)

‘Far from being a fully developed concept, ‘embeddedness’ remains a vague and undeveloped notion. ... We need to understand the various ways in which firms as collective actors and various individuals or groups of them are embedded, and the ways in which these different embeddednesses are related to each other and to economic outcomes, both at the level of firms and their spatial environments’.

P. Oinas (1997: 30)

5.1 – INTRODUCTION

Over the last decade the connection between private sector innovation and regional growth has become a central avenue of inquiry for geographers. In certain markets, the terms of capitalist competition are said to have undergone a fundamental shift in favour of quality, innovativeness, responsiveness to market trends and timeliness (Best 1990; Leadbeater, 1999). That is, that the most important type of competitiveness is sustained only by becoming a moving target, through technological learning and innovation to anticipate and outrun attempts at imitation by competitors (Castells, 1996; Porter, 1990; Storper, 1996a). Innovation may involve new-product development based on research and development, or new-process development based on the application of new technologies for continuous incremental improvements in the production process (Gray and Parker, 1998). Either way, those firms, sectors, and regions that can learn and innovate faster become more competitive because their knowledge is scarce and therefore cannot be immediately imitated or transferred to new entrants (Lundvall, 1992). Firms that innovate more consistently and rapidly thus employ more workers, demand higher skills, pay higher wages,
and offer more stable prospects for their workforce (OECD, 1996). As such, the socio-cultural underpinnings of innovative firms and regional economies have central policy relevance.

However, while the *formal* institutions that underpin innovative regional economies are relatively well theorised (see *Chapter 2*), there is little agreement on what exactly constitutes or creates a distinctive regional industrial culture, let alone the mechanisms by which that culture might contribute to learning and innovation processes, and hence economic performance (Sadler and Thompson, 1999). Indeed while it is Saxenian who moves us furthest away from this unsatisfactory state of affairs, even she does not thoroughly establish the causal link between the competitive culture she describes and the success of Silicon Valley as a regional economy (Markusen, 1999: 879). Nor does she actually *measure* it. Further, whilst authors have typically highlighted the role of regional cultural traditions and aspects of social life that *positively* impact on firms’ economic performance, we also need to examine cultural attributes which stem from the *same* regional cultures but which *negatively* impact upon firms’ abilities to innovate.

Crucially we need to examine the ways in which firms’ informal regional institutional environments, in terms of shared systems of cultural conventions, customs, norms and social routines impact upon firms’ abilities both to *access* external sources of information, expertise and competencies and to *use* those to generate new knowledge in the firm. Rather than some all-encompassing abstract notion of 'culture' as has been typically employed in these debates, I argue for an unpacking of culture in terms of a culture hierarchy, made up of: (i) individual corporate cultures; (ii) a regional industrial culture; and (iii) the broader regional culture in which these are set:

*Figure 5.1 – Conceptualising the Cultural Embedding of Firms in Terms of a Culture Hierarchy*
Once we unpack regional culture in this way, it allows us to conceptualise the cultural embedding of firms in the region in terms of the *overlaps* between the different levels of this culture hierarchy. In this chapter I seek to extend my analysis in *Chapter 4* and so provide a more comprehensive answer to the key question of how we actually recognise the cultural embedding of firms when we see it. Even though I found that there is no *one* type of ‘Mormon software programmer’ or ‘Mormon firm’, there are nevertheless many commonalities among the respondents and firms I interviewed, in terms of perceptions, attitudes, experiences and corporate strategies. As such, I argue that the impact of the cultural embedding of software firms on Utah’s Wasatch Front is best understood in terms of a series of sustained tensions, between self-identified Mormon cultural traits imported into the firm versus key elements of corporate and industrial cultures that have been consistently shown in the regional learning literature as central to firms’ abilities to innovate. These are outlined in *Table 5.1*.

*Table 5.1 – Unpacking the Cultural Embedding of Computer Software Firms on the Wasatch Front in Terms of its Impacts on Innovative Capacity.*

<table>
<thead>
<tr>
<th>MORMON CULTURE (SELF-IDENTIFIED)</th>
<th>REGIONAL INDUSTRIAL / CORPORATE CULTURE (PROMOTING SUCCESS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO-OPERATION AND MUTUAL TRUST</td>
<td>INTERFIRM CO-OPERATION AND TRUST</td>
</tr>
<tr>
<td>SELF-SUFFICIENCY AND AUTONOMY</td>
<td>USE OF COMPARATIVE ADVANTAGE</td>
</tr>
<tr>
<td>DEBT AVOIDANCE</td>
<td>VENTURE CAPITAL SOUGHT</td>
</tr>
<tr>
<td>FAMILY (THEN CHURCH) ABOVE ALL</td>
<td>I - SLEEPING BAGS UNDER THE DESK</td>
</tr>
<tr>
<td></td>
<td>II - AFTERWORK SOCIALISING</td>
</tr>
<tr>
<td>RESPECT FOR ESTABLISHED IDEAS AND AUTHORITY</td>
<td>CREATIVE DISSENT, MULTIPLE ADVOCACY, CONSTANT QUESTIONING</td>
</tr>
</tbody>
</table>
In the following six sections I demonstrate the ways in which these regional Mormon cultural traits are being imported into the internal workings of Utah’s lead software firms, and how that impacts upon their patterns of work behaviour, systems of organisational control, decision-making processes, corporate strategies and hence abilities to innovate. In some cases, this cultural import enhances and reinforces firms’ innovative capacities; in other cases it potentially constrains them. However, I want to stress from the outset that this is not an anti-Mormon work. Rather, my aim is to foster a better understanding of the processes of cultural embedding of firms in the region, not to deprecate the LDS Church, its beliefs, or doctrines. In the final section of this chapter I develop a broader discussion of the impacts of cultural embedding on firms’ abilities to innovate, relating this series of tensions to four empirical measures of firms’ success. As such, I measure the overall balance of benefits versus constraints on firms’ abilities to innovate that stem from their embedding in Mormon culture.

5.2 – MORMON CO-OPERATION AND MUTUAL TRUST
Vs Interfirm Networking and Trust Through Repeated Interaction Over Time

The regional learning and innovation literature has consistently shown that firms’ dynamic flexibility depends on their rapid development and utilisation of new ideas (Block, 1990), and hence on wider networks of association and interaction (e.g., Lawson and Lorenz, 1999; Leadbeater, 1999; Saxenian, 1990, 1994; Scott, 1988). Indeed, interfirm networks of collaboration have been identified as the most important channel of information exchange between firms (Capello, 1999; Hotz-Hart, 2000; OECD, 1999: 53). When individuals with diverse and partially overlapping knowledges come together and collectively seek to articulate their ideas about a new product or technology, they are forced to clarify those ideas and to derive more adequate concepts and models about the technology they are trying to develop (Lawson and Lorenz, 1999: 312). This interaction allows ambiguities in the perceptions and orientations of the individual partners to surface, and provides a basis for comparison of evolving ideas with other practices that are not internally generated. As such, there is an increased potential for new and unexpected ideas, interpretations, and synergies to develop (Grabher, 1993; Oinas and Malecki, 1999; Malecki, 1991). Cooperative interfirm relations also help firms to monitor changes in their regulatory and technological environments, sense new opportunities, and move more quickly into new markets (e.g. Fountain, 1997; Hotz-Hart, 2000; Hutt et al., 2000).

The Mormon regional culture centred on Utah’s Wasatch Front is itself characterised by a strong ethic of co-operation, a cultural trait which I argue is being imported into the workings of local computer software firms. The LDS Church has always emphasised principles of unity,
cooperation, mutual assistance, and reciprocity among its members, symbolised in the Mormon beehive motif which represents the twin virtues of work and community (Ludlow, 1992). Indeed, strong ties of extended Mormon kinship are explicitly cultivated by the LDS Church leadership (O’Dea, 1957; Poll, 2001). This group spirit is induced not only by the belief that unity is a Christian virtue, but also by the trying times that the Mormon pioneers experienced (Arrington, 1992). The settlement of the barren, harsh desert environment of the Salt Lake Valley necessitated a co-operative irrigation effort in an environment that would not have yielded to more individualistic efforts (Toth, 1974). Thus, ‘at the largest level the [LDS] church as a whole is a family, and as members of this family Mormons give to others without expectations of recompense, even to those that they do not know’ (Dunn, 1996: 36).

One way to examine the extent to which firms import these regional cultural ethics of cooperation and mutual commitment is to track the extent to which Mormon ownership and management affect firms’ choices of strategic partners. If Mormon ownership and management does affect the choice of partners then we should see Mormon firms choosing Mormon strategic partners over non-Mormon firms. The results for the self-identified strategic partners of my case study firm sample are shown in Figures 5.2 and 5.3 (see also Table 5.2)¹:

![Figure 5.2](image)

**Figure 5.2 – Mormonness of Firms’ Strategic Partners (In Terms of Founding and Management)**

*Case Study Sample (20 Firms) - Utah Partners Only*

¹ To derive this data on the Mormonness of firms’ self-identified strategic partners I employed the BYU alumni proxy method to determine whether the founders and managers of firms’ self-identified strategic partners were Mormon, typically displayed in the executive biographies on firms’ websites. To fill in the gaps, I worked with some of my keener industry respondents to ascertain whether the founders and managers of their partner firms were Mormon. Although this is a very labour intensive method (hence unsuitable for the survey sample), it produced very interesting results as shown above.
Figure 5.3 – Mormonness of Firms’ Strategic Partners (In Terms of Founding and Management)
Case Study Sample (20 Firms) – Non-Utah Partners Only

![Bar chart showing the percentage of non-Utah strategic partners by Mormonness of firms' founding and management.]

Table 5.2 – Basic Distribution of Case Study Firm Sample
by Mormon Founding and Management

<table>
<thead>
<tr>
<th>Founding</th>
<th>Majority Mormon</th>
<th>Majority NON-Mormon</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MORMON</td>
<td>INTERMEDIATE I</td>
</tr>
<tr>
<td>Majority Mormon</td>
<td>6 firms</td>
<td>4 firms</td>
</tr>
<tr>
<td></td>
<td>all with Mormon majority workforce</td>
<td>all with Mormon majority workforce (except one)</td>
</tr>
<tr>
<td>Majority NON-Mormon</td>
<td>INTERMEDIATE II</td>
<td>NON-MORMON</td>
</tr>
<tr>
<td></td>
<td>4 firms</td>
<td>6 firms</td>
</tr>
<tr>
<td></td>
<td>all with Mormon majority workforce</td>
<td>all with NON-Mormon majority workforce</td>
</tr>
</tbody>
</table>

2 The case study firm sample shown consists of 20 firms in SIC 7371 (Computer Programming Services), all of which have 20-99 employees (the dominant firm size category in the survey), and half of which are located in Salt Lake County and half in Utah County.
Crucially, the data in Figures 5.2 and 5.3 show that the Mormon founded and managed firms in my case study sample have a higher proportion of strategic partners who are similarly Mormon founded and managed than do their non-Mormon counterparts. While just over two thirds (67.5%) of the Mormon firms’ partners in Utah are similarly Mormon founded and managed, this is true for only half of the non-Mormon firms’ Utah partners. However, focusing only on firms’ partners outside Utah (Figure 5.3), while the above patterns are repeated they are less stark. This time only 12-15% of the Mormon case study firms’ partners are Mormon founded or Mormon managed. The in-depth interviews allowed me to access the rationales and decision-making processes driving these patterns:

‘There’s always that moment with other companies where they’re trying to figure out if you’re Mormon. And the fact is, people do have a thread on which firms are LDS and which firms aren’t. And if the decision maker is Mormon, they will let it sway them. If you’re in the ‘Mormon Circle’, and you hook up with another Mormon in business, that’s a very strong relationship’. Vice President of Marketing, UNY, inactive Mormon female.

‘Mormons go to Mormons, it definitely is a thing of who you know. I can’t tell you how many times in business meetings I’ve heard ‘Oh, he’s in my Ward’ or ‘He’s my Stake President’. And as soon as they discover I’m not a Mormon there’s a barrier goes up and I have to establish a level of trust that would automatically be assumed if I was LDS. The easiest way to access that inner circle is to have been on a Mission or have grown up in the church’. Consultant, PSO, non-Mormon

‘Mormons in the business world in Utah are very protective of each other, and so you do get companies here who will help each other out because we’re all in this together, and that’s been true for years and years. When we first settled Utah it was an ‘us-versus-them’ mentality for the first hundred years or more and that mentality of us versus the rest of the Gentile world still translates into business - there’s a lot of cooperation between Mormon high tech businesses’. Creative Director, WSU, active Mormon.

I argue that these distinctive Mormon-Mormon network structures are in turn premised on trust 3, a phenomenon that has received increased attention as a key constituent of economic relations, both in the general literature (e.g Fukuyama, 1995; Gambetta, 1988, 1990; Kramer and Tyler, 1996) and within the industrial district literature itself (Harrison, 1992; Lorenz, 1992). Being able

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3 Trust as ‘a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behaviour (of a partner)’ (Hutt et al., p.52); the mutual confidence that no party to an exchange will exploit the other’s vulnerability (Sabel, 1992).
to judge the trustworthiness of others is increasingly important because of the inevitable scope for opportunism offered by the necessary incompleteness of contracts (verbal or written) in an uncertain climate of demand. Unanticipated contingencies, associated with technical change or demand shifts, provide opportunities for firms to interpret contract terms in ways that shift the distribution of returns to the favour of one side (Lorenz, 1992: 199). Trust is therefore identified as a socioeconomic ‘lubricant’, essential for interfirm co-operation to arise. There is also a pervasive assumption in the literature that trust is something which emerges over time, based on our judgment of others’ honesty based on their behaviour in repeated encounters (Florida and Kenney, 1988; Harrison, 1992; Lazaric and Lorenz, 1997; Lorenz, 1992; Sabel, 1992). In contrast, I argue that the Mormon software firms in my case study sample have a propensity to trust each other in the absence of repeated interaction. This ‘cultural trust’4 is rooted, I argue, in a common cultural history, belief in the same God and a common cultural heritage. Fundamentally, people attribute favourable traits to those like themselves and unfavourable traits to people who are somehow different (Orbell et al., 1992):

‘You want to do business with people who you feel comfortable with, who have a similar personality and social criteria or standards that you have. So I’m gonna pick one where the business opportunity is good but with a guy who thinks like I do, where I understand how he thinks and what his motives are’. Chairman, PSO, non-Mormon.

My respondents suggested that they gauge the activity status of other Mormons in business whom they have not previously met using a set of cultural markers (see Chapter 6 for detail on this). Specifically, general teaching, preaching, and organisational roles and offices within the LDS Church (‘callings’), along with Mormon missionary experience carry overtones connoting status and good standing within the general Mormon community (May, 2001; Shepherd and Shepherd, 1994; Stark, 2001) and which I argue are also often invoked as evidence of a person’s good character in Utah’s computer software industry (also see Mauss, 1994). My respondents highlighted how these cultural markers often form the basis for explicit decisions within the firm:

‘There’s certainly that thing where you’ll run across another company and the founder is LDS as well, and you kinda think let’s pay this guy a little more attention. You’ll give them a little more, because there’s that greater sense of he is what he says he is. There’s

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4 Harrison et al. (1997) and Meyerson et al. (1996) also describe trust in the absence of significant repeated interaction, in terms of ‘swift trust’. However, they highlight the emergence of trust where the individuals have a limited history of working together, and have limited prospects of working together in the future. Swift trust is therefore temporary, only resilient long enough to survive the group. Cultural trust I argue is qualitatively different, given that being observed by other Mormon in business and of seeing them in a church setting in the future are very high (see Chapter 6 on mechanisms of embedding).
an equal understanding of various issues of integrity and work ethic’. CEO and Founder, ANH, active Mormon.

‘I try to make sure that anyone we work with is active and not just ‘nominally’, but that they’re really living the principles of the Gospel of Jesus Christ. A lot of people just act like they are. Why? – because the chances are they’ll be honest and have integrity in our business dealings’. CEO and Founder, NMU, active Mormon.

I argue that common Mormon customs, conventions and social norms generate a ‘cultural closeness’ (Gertler, 1995) between firms, a social architecture that aids working alliances, helping to achieve a common interpretation of goals and agreement on norms and work rules. Interwoven networks of church and business therefore sustain an unusual amount of trust and co-operation in the absence of previous interactions between the co-operating parties, a further key content of firms’ embedding in the regional Mormon culture:

‘We find those LDS Church relationships everywhere, and in a lot of ways those have benefited us; just that connection seems to tie us closer to the customer firm than if we didn’t have that religion connection’. Vice President of Technology, GOY, active Mormon.

‘It is easy to make general assumptions about people and their companies based on [LDS] church membership. There is an instant trust level among members of the church because there’s an expectation, but if that ever fails then the disappointment is greater’. Vice President of Strategic Customer Relations, MSO, active Mormon.

However, while this is a distinctive content of firms’ import of Mormon cultural traits, the pattern is not monolithic. Rather, there are other respondents for whom the Mormon identity of potential business partners is not an issue:

‘But it’s not an active strategy to seek out firms with an LDS background; it doesn’t make or break a deal for us. Because it’s not an appropriate inquiry to make: ‘Are you LDS? Oh no?’. And so it’s not appropriate to make that overtly a deciding factor, so we don’t do it. It’s like when you go to the supermarket to buy cereal, ‘Is it LDS?’, I don’t know, I don’t care!’ Director of Technology and Co-Founder, PSO, active Mormon.

This key content of firms’ embedding in Mormon culture therefore has potential benefits for firms’ abilities to access wider networks of information with similar firms. Trust is a means of speeding decision-making and negotiations under conditions of risk (Harrison, 1992; Harrison et
al., 1997; Lorenz, 1988, 1990, 1992; You and Wilkinson, 1994), and only when firms trust each other are they likely to share ideas, models, data and material of a very scientific and/or commercial value (Zucker and Darby, 1996). Indeed, Lorenz (1992) argues that higher levels of trust among actors within industrial districts underpin higher levels of technological dynamism. However, ‘the obvious corollary of the blurring of boundaries between self and other in the context of the [LDS] church is that the boundary between the domain of the church and the ‘outside world’ is drawn at the same time’ (Dunn, 1996: 38). Thus, whilst cultural trust in the Utah high tech business setting helps sustain interaction between like firms, it simultaneously functions to exclude firms that do not share the same cultural markers, consistent with the experiences of many of my non-Mormon industry respondents:

‘In any business environment you’re in, there’s an old boys network, and the old boys network in Utah, while I don’t want to say right out that it’s very Mormon, it’s certainly got a lot of Mormons in it!’ CFO, ECY, active Mormon.

‘From what I’ve experienced, the technology people in Utah pretty much stick together, it’s not an easy network to get into. I moved here from the Bay Area and I was out of work for three months, and trying to find a job in Utah was not easy, it was pretty hard to crack into that group. It’s a really close community and everyone knows everyone, at least in technology. It’s pretty tight, and that very much goes into the religious culture, there’s a heightened level of ‘caring’ amongst individuals within this community’. Vice President of Technology, GOY, active Mormon.

‘There is an instant level of trust assumed in Utah business if you are Mormon, and if you are coming in from the outside like me then you really have to prove yourself based on merit in order to participate. But they will include you a lot more readily if you are a member [of the LDS Church], especially if you’re the son of a Bishop or something, there’s just the instant acceptance. So it has been an interesting saga for me on the outside looking in’. Vice President of Engineering and Co-founder, ECY, non-Mormon.

There are two further ways in which processes of cultural distrust operate to sustain the distinctive Mormon-Mormon network links that characterise my case study dataset (see Figures 5.2 and 5.3). First, my respondents outlined patterns of exclusion of Mormon firms by ‘Mormon bashers’. Not only does research on similarity suggests that dissimilarity limits interaction and liking, but religion itself also carries negative connotations in business, as a highly inappropriate form of expression that is too dogmatic and hence vulnerable to charges of narrow-mindedness (Egan, 1999). As such, many firms actively avoid interacting with firms that have any religious
overtone. Second, there is also a cultural distrust by Mormon firms of other Mormons in business for whom religion is worn on the sleeve, in which Mormon cultural markers are overused, or made much more explicit than they need be:

‘I’ve found in business dealings, the times when I’m most cautious about doing business especially with firms round here, is when the other firm makes a point of saying ‘Yeah, I’m a Mormon’, or ‘I’m a Bishop’, or ‘I have a Temple recommend’. It’s a red flag that says they’re trying to hide behind a veil of church membership, as opposed to the reality of their business dealings. The reality of the way they do business might be very different to what they’re portraying. So anybody who proclaims do business with me because I’m a good active Mormon, they are the ones you’d better stay away from’. CEO and Co-Founder, QDD, active Mormon.

‘I don’t like people who wear their religion on their sleeve you know, who advertise it and make a big deal out of it, it’s a very big turn-off. If the first thing I have to tell you is how much you should trust me, then you probably shouldn’t really trust me. I’ve had people in business in Utah do that a lot’. President and Co-Founder, JET, active Mormon.

I argue that we can therefore interpret Mormon-Mormon network links and cultural trust between similarly Mormon founded and managed firms in the absence of significant repeated interaction as key contents of firms’ cultural embedding in the region. Further, these key ‘contents’ of embedding have direct implications for firms’ abilities to access new sources of information and hence innovate. While at one level, they enhance Mormon firms’ abilities to interact with like firms, they simultaneously limit their abilities to interact with, and hence learn from, non-like firms.

5.3 - SELF-SUFFICIENCY AND AUTONOMY

Vs Outsourcing and Use of Comparative Strategic Advantage

Successful innovation therefore requires that firms maintain close interrelationships and networks of association (e.g., Capello, 1999; Cooke and Morgan, 1993; Harrison, 1992; Lawson and Lorenz, 1999; Leadbeater, 1999; Scott, 1988; Saxenian, 1994; Storper, 1996). Additionally, interfirm collaboration is an important means of broadening firms’ capacities more widely. The benefits of interfirm co-operation not only include group problem-solving, multiple sources of learning and the diffusion of information within the region (as outlined in Section 5.2), but also involve access to shared resources and shared risk. High tech firms co-operate in order to reduce
and share the uncertainty and costs of research and development, and crucially to exploit each others’ comparative advantage, a need further enhanced by the increased complexity and intersectoral nature of new technologies, markets and products and by the shortening of product life cycles. Firms enter alliances to combine their distinctive skills and competencies with those of a partner to create a competitive position that neither of them could have achieved alone; to speed the pace of introduction of new products; to improve product quality and performance; and therefore help firms move more quickly into new markets (e.g. Hutt et al., 2000; Saxenian, 1994). Thus, in order for firms to be competitive they need to look beyond their own boundaries and establish an external web of interactions and information flows, the intangible essence of competitive firms and competitive regions (Malecki, 1999: 14).

In contrast, the Mormon regional culture on the Wasatch Front is characterised by strong emphases on individual self-sufficiency, independence and self-reliance, ethics which I argue are being imported into the workings of local software firms, impacting on their overall levels of interaction with other firms. The Mormon social ideals of independence and self-reliance (Ludlow, 1992) have their historical roots in the Mormon pioneer experience. Uprooted from the Mid-West the Mormons founded Salt Lake City to provide them with a high degree of isolation from the wider US society from whom they had received persecution (Alexander and Allen, 1984), with the hostile Utah environment further forcing Mormon families to rely on themselves and to hone the virtue of self-sufficiency (Young, 2000). This ethic of individual self-sufficiency is also reinforced by an historical promotion of economic independence by the LDS Church at the group level, based on the premise that the Kingdom of God should rise independent of the gentile nations. As such the church became involved in nearly every important industrial development in Utah during the first two decades of settlement (Arrington and Bitton, 1992). This principle also underlies the extensive LDS programme of welfare services.

I argue that the import of the Mormon individual self-sufficiency ethic is manifest in terms of firms’ overall levels of strategic partnering. The data in Figure 5.4 show the average number of strategic partner firms (in Utah only) for each of the three size categories of firm in the survey sample, and allow a comparison of Mormon and non-Mormon firms variously defined.

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5 From the beginning, non-Mormons who came to Salt Lake found themselves dubbed ‘gentiles’, a term which stemmed from the Mormon belief that the LDS church was really God’s modern Israel (Alexander and Allen, 1984).
Figure 5.4 – Firms’ Average Number of Strategic Partners (Utah Partners Only)
– Mormon and Non-Mormon Firms Compared (Survey Sample – 105 firms)

(a) MICRO (1-19 emp, 29% of survey sample)

(b) MED (20-99 emp, 54% of survey sample)

(c) MED-LARGE (100-499 emp, 17% of survey sample)

I defined my survey sample firms’ ‘strategic partners’ as those firms with which they undertake joint product development, joint research and development, or other self-identified formal alliances as outlined on firms’ corporate websites or by my industry-respondents. My results suggest that the Mormon firms (however defined) in my survey sample have fewer strategic partner firms in Utah than do their non-Mormon counterparts. This pattern is most obvious for firms in the medium-large size category, where the non-Mormon (founded and managed) firms have over three times the number of strategic partners of their Mormon counter-parts. Further, while 63% of the Mormon (founded and managed) firms in the survey sample have no partners in
Utah, this compares with only 42% of their non-Mormon counterparts. However, the patterns are not particularly staggering and may simply be a function of Utah’s computer software industry not being diverse enough that firms are able to partner with others in similar niche markets. I therefore expanded my analysis also to include firms’ strategic partners outside Utah, and the results are shown in Figure 5.5.

*Figure 5.5 – Firms’ Average Number of Strategic Partners (Partners in Utah and Beyond) - Mormon and Non-Mormon Firms Compared (Survey Sample) *

(a) MICRO (1-19 emp, 29% of survey sample)

(b) MED (20-99 emp, 54% of survey sample)

(c) MED-LARGE (100-499 emp, 17% of survey sample)

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6 The Intermediate firms (mix of Mormon and non-Mormon founders and management) are too few within each size category to give meaningful results, hence I only compare the Mormon and non-Mormon firms.
When firms’ strategic partners both inside and outside Utah are included, the patterns are more obvious. The data in Figure 5.5 show that the non-Mormon firms in my survey sample (however defined) typically have around twice as many strategic partner firms as their Mormon counterparts in all three firm size categories. These patterns are repeated when Mormon majority workforces are added into the analysis (i.e. in the case study sample). The data in Table 5.3 show that the Mormon firms in the case study sample have an average of just over six total strategic partner firms, compared with just over four for their Mormon counterparts.

Table 5.3 – Firms’ Average Number of Strategic Partners
- Mormon and Non-Mormon Firms Compared (Case Study Sample)

<table>
<thead>
<tr>
<th></th>
<th>Ave. Partners in Utah</th>
<th>Ave. Total Partners (UT &amp; beyond)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MORMON (6 firms)</td>
<td>0.2</td>
<td>4.2</td>
</tr>
<tr>
<td>founded, managed and majority workforce</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NON-MORMON (6 firms)</td>
<td>0.8</td>
<td>5.8</td>
</tr>
<tr>
<td>founded, managed and majority workforce</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Thus, while Mormon firms have a higher propensity to interact with other Mormon firms (Section 5.2), their overall levels of interfirm networking are reduced relative to their non-Mormon counterparts, a function I argue of their embedding in the regional Mormon culture. My in-depth interviews allowed me to access the rationales driving these strategies, motives that centre largely on cultural issues of control. Indeed, many of my industry respondents themselves traced these self-sufficiency tendencies in Utah business to the Mormon pioneer experience:

‘A real problem Utahns face is the feeling that they have a chip on their shoulder, that we are the ugly stepchild of the US and no-one cares about us, and it all traces back to the Mormon persecution experience. So there’s kind of this underdog feeling, that we’ve always got to prove something, and that overflows into the business space. This is the only state in America where the majority is in the minority!’ Manager of Corporate Affairs, PWQ, non-Mormon female.

‘We run into this all the time, I call it the ‘Pioneer Spirit’, that they can do it all. One of the reasons we’re selling so much out of state is that, even for the large companies in town, there tends to be this feeling of well we’ve got it covered, we can do it ourselves, and
so there’s a lesser willingness to bring in outsiders, to farm it out’. Vice President and Co-Founder, MKM, non-Mormon female.

‘Being driven out of our houses and being tarred and feathered, and having our women raped, and losing our property, and not getting redress from the government, that’s still there. So I don’t want to give up control, because giving up control goes back to losing control in Illinois, in Missouri, and in Idaho. And what you end up with is an approach to business that is very reflective of the historic reality. So control of the business becomes a really big deal. Working with people that you know becomes a really big deal. And that’s one of the things that holds over many Latter-day Saints in business’. President and Founder, PTS, active Mormon.

Respondents outlined a whole range of further manifestations of their import of Mormon ethics of self-sufficiency and self-reliance:

‘That insularity is very much reflected in LDS business approaches, there’s a real tendency to keep everything in-house. So we’ve never looked out of the window, we’ve never even looked at our competitors’ products, at anybody else’s ideas’. Director of Corporate Research, MSO, active Mormon (convert).

‘We put our own cafeteria in our office and we staffed that ourselves, but that’s almost unheard of outside the state - in all the companies I’ve ever dealt with outside they would just outsource that. Plus we’ve hired our own janitor crews rather than outsource it, and we’re not abnormal in doing that here! And I think even me, if I’ve got a project to do, I’m less likely to go hire a consultant to do it, I’ll just do it myself’. Director of Human Resources, GGJ, active Mormon.

While I found typical pride amongst my respondents in their firms’ self-sufficiency and having grown something from nothing, many firms were also aware of the limits of such an insular approach:

‘There’s a very real attitude of ‘I can do whatever needs to be done myself, I don’t need other people’s experience or expertise to help me out’, and I’ve seen it very pervasively in the majority of the Utah companies I’ve been associated with. The attitude is a very Mormon pioneer-type attitude, and it’s very damaging. I’ve seen a lot of Utah companies really hurt themselves because they’ve said ‘Oh I don’t need an attorney, I can review that contract myself’, or ‘I don’t need an accountant, I can structure this loan or investment myself’. And they do things which make it difficult for the business to grow and to be
successful. There’s a real value in using people that have the specialist expertise’. Chief Financial Officer, ECY, active Mormon.

‘In the first incarnation of [the company] it was very much that way to a fault. Whenever we needed to mass-produce, rather than outsourcing the duplication to a company out here that has the facilities, we went out and bought our own duplicator. And then when it came to shrink wrapping, did we farm it out to someone to do that? - No, we go buy a shrink wrapper and we do that ourselves! So to a fault we outsourced nothing and that was one of the great mistakes we made in running the company, and getting so bogged down in the process that we kinda delayed getting to a lot of our overall goals’. President and Founder, IEH, active Mormon.

Further, a whole range of studies have demonstrated the dangers of self-sufficiency; where firms are introverted and rely mainly on internal resources their individual performance is weakened, along with that of the entire regional system (MacPherson 1992; Wiig and Wood, 1997). Rarely does a single firm have superior capabilities in all phases of the production process (Scott and Paul, 1990), and so it is imperative that they take advantage of the synergies that flow from shared enterprise. Cooperative alliances allow firms to combine their distinctive competencies with those of a partner to create a competitive position that neither could accomplish alone. By unbundling production and collaborating with others, firms can share costs, and spread the risks of new product design and production, reduce time to market, and so increase the frequency of new product introduction (Oerlemans et al., 1998; Saxenian, 1990, 1994). By following strategies of self-sufficiency, firms deny themselves these advantages of interfirm co-operation. Firms therefore rarely innovate in isolation. Rather, the capability to innovate successfully is strongly conditioned by the ability to access sources of knowledge via external relations e.g. (Amin and Thrift, 1992, 1994; Camagni, 1995; Maillat, 1995; Oinas and Malecki, 2002; Sunley, 2000; Tödtling, 1994). As such, these Mormon culturally-informed corporate strategies of self-sufficiency potentially limit firms’ opportunities to learn from a richer set of strategic possibilities that lies beyond their external boundaries.

Overall, my results suggest that Mormon and non-Mormon firms differ in their general personality and outlook towards networking and contacts. Drawing on Malecki and Poehling’s (1999) classification of firms based on their differential use of external information7, I suggest that we can view the introvertedness of particular Mormon firms in my survey and case study

7 The identification of extroverted versus introverted firms has parallels in work by Kelley and Brooks (1992) who use the terms ‘active’ and ‘passive’ in a similar context, and by Bramanti and Senn (1990) who distinguish between ‘outward-looking’ versus ‘inward-looking’ firms.
samples as visible manifestations of their embedding in the regional Mormon culture. Thus while Mormon firms have a preference to interact with similarly Mormon firms, a function of cultural trust, their simultaneous import of the Mormon self-sufficiency ethic is manifest in terms of fewer overall interfirm relationships relative to their non-Mormon counterparts. I argue that this key content of firms’ cultural embedding in the region potentially constrains their innovative capacities by limiting their access to sources of information and expertise external to the firm. In Section 5.7.1 I measure the impact of that constraint, along with the other cultural constraints and enablers of innovation outlined in this chapter.

5.4 - DEBT AVOIDANCE AND FRUGALITY

Vs Venture Capital as Enhancing Innovation

Over the last two decades the regional innovation and industrial district literature has consistently shown that the existence of well developed venture capital networks significantly accelerates the pace of technological innovation and regional economic development (Florida and Kenney, 1988; Florida and Smith, 1990; Rausch, 1998; Zook, 1999). Venture capital refers to the provision by specialised financial companies or by individuals (‘business angels’) of, usually, equity capital for new and existing enterprises, which are unable to finance growth from internally generated sources of finance and debt finance, and are too small or unwilling to access public equity markets (Martin, 1999; Mason and Harrison, 1999). For companies seeking to exploit significant growth opportunities, the financial requirements of the business may rapidly exceed its capability of generating funds internally and of attracting additional debt finance on account of the limited availability of business collateral (Binks and Ennew, 1996). However, at the start-up stage firms have neither the track record nor the collateral to support bank lending on the scale required (Mason and Harrison, 1999). In these circumstances, firms’ abilities to obtain equity finance will determine their ability to grow and survive. As such, venture capital is an integral component of the technology infrastructure within regional economies (Florida and Samber, 1999), encouraging entrepreneurs to form new companies and providing the capital and contacts to facilitate those business formations.

However, whilst analyses typically adopt a supply-side focus in terms of the availability of venture capital to firms in the region, I argue that we need to recast the argument also to include firms’ willingness to seek external finance in the first place. That is, we need to develop a

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8 Venture capital involves the exchange of capital for an ownership stake in the firm (Florida and Smith, 1990).
demand-side focus. My results suggest that many of Utah’s lead computer software firms on the Wasatch Front actively import Mormon cultural attitudes towards debt and frugality, along with broader Mormon attitudes towards self-sufficiency as outlined in the previous section. Getting into debt is a very serious issue within Mormon culture and members are taught from childhood to live within their own means, to be frugal and to strive for economic independence. Imported into the firm, these key Mormon cultural traits impact on firms’ willingness to seek external finance relative to non-Mormon firms, and hence on their use of venture capital. This I argue is a key ‘content’ of firms’ cultural embedding within the region, and one which potentially constrains their abilities to innovate.

In general, entrepreneurs follow an established pecking order in their preferences for, and use of, finance to start and grow a business. Where possible they prefer internally-generated finance, and so tend to rely on personal finance and retained earnings generated by the business (Meyers and Majluf, 1984). However, these sources are often insufficient, generating a need for external finance, including debt finance and equity finance (i.e. venture capital). There are two main sources of venture capital, the first being informal venture capital, comprised of wealthy individuals, or ‘angels’, the majority of whom are self-made. Angels historically include friends and family members of the start-up team who have both an interest in the start-up and a personal interest in the members of the team (Gibbons, 2000). The second type is institutional venture capital, which raises finance from financial institutions (e.g. banks, insurance companies, pension funds) to invest in businesses with high growth prospects in return for an equity stake in the firm. The venture capitalist then structures the transaction, adds value to the post-investment relationship and secures an exit for the investment (Mason and Harrison, 1999: 158). Debt finance is typically preferred because entrepreneurs for the most part have a pressing desire to maintain control and ownership of the business (ibid.). If equity finance is sought, then finance from family and friends is preferred over finance from institutional sources. My results suggest that the embedding of firms in Mormon culture exaggerates firms’ preferences for internal over external financing strategies, and where firms do seek external finance, impacts upon firms’ preferred external finance type relative to their non-Mormon counterparts. My survey focused specifically on firms’ early stage financing strategies, in terms of seed financing, R&D financing, start-up funding and early-growth financing, as outlined in Table 5.4.

9 I did not examine firms’ second or third stage financing, or accelerated growth financing, given the varied ages of the firms and the increased complexity that this would have placed on the study. However, given the results for the early-stage financing, there is clearly scope for an extension of my analysis to examine the cultural impacts on firms’ choice of later-stage financing options.
Table 5.4 – The Different Components of Early Stage External Technology Financing

*(Based on Graham et al., 2000)*

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seed Financing</td>
<td>Small amount of capital needed to prove a concept and qualify for start-up capital. Seed financing may be used for product development and building a management team.</td>
</tr>
<tr>
<td>Research and Development Financing</td>
<td>Capital to finance initial product development.</td>
</tr>
<tr>
<td>Start-up Financing</td>
<td>The capital provided to companies completing product development and initial marketing. Companies at this stage have not yet sold a product commercially, but they have usually conducted market studies, assembled key management, developed a business plan, and are essentially ready to do business.</td>
</tr>
<tr>
<td>Early-growth or First-stage Financing</td>
<td>Capital to initiate full-scale manufacturing and sales. This kind of capital is provided to companies that have already developed a prototype or service for which commercial feasibility has been proven.</td>
</tr>
</tbody>
</table>

The dominant sources of early-stage financing for Mormon versus non-Mormon firms in the survey sample are shown in Table 5.5. In all three size categories, internal financing is a more significant source of Mormon firms’ early stage financing than for their non-Mormon counterparts. Internal funding strategies include using the personal funds of the founders, the profits from the previous firms of the founders, internally-generated contract money, and bootstrapping\(^\text{10}\).

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\(^{10}\) Bootstrapping can be defined as creative ways of acquiring the use of resources without borrowing money or raising equity from traditional sources – e.g. working from home; reduced, foregone or delayed salary; advances from customers and free or subsidised access to machinery and access to equipment (Freear *et al.*, 1995: 395).
Table 5.5 – Internal Versus External Early-Stage Financing Strategies
– Mormon and Non-Mormon Firms Compared (Survey Sample – 105 Firms).

<table>
<thead>
<tr>
<th>Firm Type</th>
<th>Internal (%)</th>
<th>External (%)</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Debt</td>
<td>Angel</td>
<td>Institutional VC</td>
</tr>
<tr>
<td>MICRO (1-19 emp, 29% of survey sample)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mormon</td>
<td>73</td>
<td>7.3</td>
<td>17</td>
<td>2.7</td>
</tr>
<tr>
<td>Non-Mormon</td>
<td>66</td>
<td>22</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>MEDIUM (20-99 emp, 54% of survey sample)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mormon</td>
<td>55</td>
<td>17</td>
<td>18.5</td>
<td>9</td>
</tr>
<tr>
<td>Non-Mormon</td>
<td>45</td>
<td>9</td>
<td>27</td>
<td>18</td>
</tr>
<tr>
<td>MED-LARGE (100-499 emp, 17% of survey sample)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mormon</td>
<td>38</td>
<td>0</td>
<td>12</td>
<td>5</td>
</tr>
<tr>
<td>Non-Mormon</td>
<td>0</td>
<td>0</td>
<td>(0)</td>
<td>(100)</td>
</tr>
</tbody>
</table>

Further, taking only those firms in Table 5.5 for whom external finance is the dominant source of early-stage financing, Table 5.6 shows that the distribution of Mormon versus non-Mormon firms across the three types of external finance (debt, angel or institutional venture capital) differs in all three firm size categories:

Table 5.6 – Sources of Early-Stage Financing for Externally-Financed Firms Only
– Mormon and Non-Mormon Firms Compared (Survey Sample).

<table>
<thead>
<tr>
<th>Firm Type</th>
<th>Debt (%)</th>
<th>Angel (%)</th>
<th>Institutional (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MICRO (1-19 emp)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mormon</td>
<td>27</td>
<td>63</td>
<td>10</td>
</tr>
<tr>
<td>Non-Mormon</td>
<td>66</td>
<td>0</td>
<td>33</td>
</tr>
<tr>
<td>MEDIUM (20-99 emp)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mormon</td>
<td>39</td>
<td>41</td>
<td>20</td>
</tr>
<tr>
<td>Non-Mormon</td>
<td>17</td>
<td>50</td>
<td>33</td>
</tr>
<tr>
<td>MED-LARGE (100-499 emp)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mormon</td>
<td>0</td>
<td>19</td>
<td>81</td>
</tr>
<tr>
<td>Non-Mormon</td>
<td>(0)</td>
<td>(0)</td>
<td>(100)</td>
</tr>
</tbody>
</table>
The most obvious pattern shown in Table 5.6 is that where firms in the survey sample have sought external financing, institutional venture capital is a more significant source of external finance for non-Mormon firms than it is for their Mormon counterparts. Indeed, in the micro category, the non-Mormon firms are three times more likely to have institutional venture capital as their dominant mode of external finance than their Mormon counterparts (33% versus 10%). These patterns are further repeated when the effects of a Mormon majority workforce are added into the analysis (i.e. in the case study sample). Indeed, for firms in the case study sample internal early-stage financing strategies are twice as prevalent for Mormon (founded and managed) firms than for their non-Mormon counterparts, 67% versus 33%, as shown in Table 5.7:

### Table 5.7– Internal Versus External Early-Stage Financing Strategies

– Mormon and Non-Mormon Firms Compared (Case Study Sample)

<table>
<thead>
<tr>
<th>Firm Type</th>
<th>Internal (%)</th>
<th>External (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Debt</td>
</tr>
<tr>
<td>MORMON (6 firms)</td>
<td></td>
<td>67</td>
</tr>
<tr>
<td>NON-MORMON (6 firms)</td>
<td>33</td>
<td>17</td>
</tr>
</tbody>
</table>

Similarly, taking only those case study firms in Table 5.7 for whom external finance is the dominant source of early-stage finance, the non-Mormon firms are twice as likely to have institutional venture capital as their dominant mode of external finance than are their Mormon counterparts (49% versus 24.25%):  

### Table 5.8 – Sources of Early-Stage Financing for Externally-Financed Firms

– Mormon and Non-Mormon Firms Compared (Case Study Sample)

<table>
<thead>
<tr>
<th>Firm Type</th>
<th>Venture Capital</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Debt (%)</td>
</tr>
<tr>
<td>MORMON (6 firms)</td>
<td>24.25</td>
</tr>
<tr>
<td>NON-MORMON (6 firms)</td>
<td>25.5</td>
</tr>
</tbody>
</table>
Potentially, the patterns I have outlined may be a function of the Mormon firms being less successful in their funding applications to institutional venture capitalists, such that they have been forced to finance themselves internally\textsuperscript{11}. However, the in-depth interviews allowed me to access the strategies driving these patterns. Significantly just under half (45\%) of the firms in the case study sample had explicit strategies to remain wholly internally-financed from start-up. Specifically, while 86\% of the Mormon firms in the case study sample have never sought external financing, this compares with only one third of their non-Mormon counterparts. Further, these patterns are consistent with firms seeking early stage funding from sources beyond Utah. The data in Table 5.9 show that in the survey sample, the non-Mormon firms have a greater tendency to seek early-stage financing beyond Utah than do their Mormon counterparts, in all three categories of firm size:

Table 5.9 – Proportions of Firms that Have Actively Sought Early-Stage Financing Beyond Utah – Mormon and Non-Mormon Firms Compared (Survey Sample – 105 Firms).

<table>
<thead>
<tr>
<th>Firm Type</th>
<th>Firm size (employees)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Small (1-19)</td>
</tr>
<tr>
<td>MORMON founded and managed</td>
<td>38.9</td>
</tr>
<tr>
<td>NON-MORMON founded and managed</td>
<td>44.4</td>
</tr>
</tbody>
</table>

Adding in the effect of a Mormon majority workforce into the analysis exaggerates the pattern in the medium size category. The data in Table 5.10 show that while half of the non-Mormon firms in the case study sample have sought early-stage financing beyond Utah, this compares with only one third of their Mormon counterparts:

\textsuperscript{11} To compensate for the risks of financing small high tech ventures, venture capitalists are highly selective in the types of firms in which they invest. Typically less than 1\% of proposals are eventually financed (Fried and Hisrich, 1994; Sweeting, 1991; Tyebjee and Bruno, 1984).
Table 5.10 – Proportions of Firms that have Actively Sought Early-Stage Financing Beyond Utah
– Mormon and Non-Mormon Firms Compared (Case Study Sample).

<table>
<thead>
<tr>
<th>Firm Type</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MORMON founded, managed, and majority workforce</td>
<td>33.3</td>
</tr>
<tr>
<td>NON-MORMON founded, managed, and majority workforce</td>
<td>50.0</td>
</tr>
</tbody>
</table>

Overall, my results suggest that firms’ embedding in Mormon culture has two key ‘contents’ with regard to financial strategies: (i) *internal* financing is a more significant source of early-stage finance than are external sources; and (ii) where Mormon firms *do* seek external finance, institutional venture capital is a less significant source of external finance than for their non-Mormon counterparts. Further, two thirds of the (9) firms in the case study sample that have implemented internal financing strategies since start-up admitted that such strategies are driven by a desire to make a *moral* decision in line with the founders’ personal values, but which are not necessarily in the best (profit-maximising) interests of the *company*. Significantly this figure includes two thirds of the Mormon firms, yet none of non-Mormon firms. My respondents were particularly concerned about issues of losing control of the firm to outside investors, especially venture capitalists. In return for their investment, venture capitalists become partial owners in the firm and demand representation on the firm’s board of directors\(^\text{12}\), with the primary aim of dramatically multiplying the value of their investment to distribute to their limited partners (Kenney and Florida, 2000). Ultimately a venture capitalist’s loyalty is therefore not to the entrepreneur but to their investment, and hence they typically promote profit-maximising strategies in the firm. Indeed, venture capitalists tend to hold a majority of voting rights, even if they only control a majority of the cash flow rights\(^\text{13}\). If the firm faces severe difficulties and the venture capitalist has majority stock ownership, they will often replace the firm’s executive team (Kenney and Florida, 2000):

> ‘The problem with venture capital is that your culture has to change, because then you’re working for outside investors and having to meet quarterly goals and those kinds of things. Even if you don’t want to be, you’re dictated by the market and market

\(^{12}\) Although normal operational decisions are left to the management team.

\(^{13}\) While angels are similarly equity-orientated like their institutional venture capital counterparts (Mason and Harrison, 1999), as informal investors they have less power to replace or modify the management team.
expectations. You’re legally obligated to do whatever’s in the best interest of the shareholder, and so you lose the ability to make a moral decision, to say ‘I understand that this is not the best decision for the company, but this is the best decision in terms of my morals’. And so it is very important to maintain control over the company because of the uncertainty of the morality of external business influences’. Director of Technology and Co-Founder, PSO, active Mormon.

‘There is a great deal of resistance to external finance, because who controls you? As Mormons we are taught to control our own destinies. So the issue about venture capital is really about control – who controls me? And also, is that money really earned. Going back to the honest-day’s work for an honest day’s pay dictum, the church teaches us that you should never have money that you didn’t earn. So that plays into it; control your own destiny. And if you can’t control it then sell it and start it over and do it yourself again, and that’s what I did in my last two companies, I sold over and started again. And we would all rather sell this company than give it away to investors’. Director of Brand Management and User Experience, PSO, active Mormon.

Thus while aversions to losing control did not significantly differ between the Mormon firms and the non-Mormon firms, only in the Mormon firms was this ever justified with recourse to religious and doctrinal teachings. Significantly, in two thirds of the Mormon firms in my case study sample, respondents openly admitted that they would not like to give up a place on their management team to a non-Mormon:

‘Having to answer to a shareholder that is essentially not a family member, who is not a member of the church, it puts a different dynamic on the company and a different dynamic on my management, a responsibility that just isn’t desirable in a lot of ways so we’ve never looked for it’. CEO and Co-Founder, QDD, active Mormon.

However, in several cases respondents outlined a qualified position, distinguishing much more explicitly between their own Mormon identity and that of their firm:

‘But a corporation isn’t me. So even though I’m not willing to behave in business in a way that breaks my Mormon values, and that does affect the corporate structure here, a company can still go into debt and that doesn’t strike me as odd. If I had to do something that breaks my own personal morals to help the company, that’s not gonna happen. But if I can keep my own morals and help the company at the same time, that’s OK. As a company, if we go to the bank for a line of credit and they see us as a good risk then I
have no problem with that.  It's not an issue.' Director of Brand Management, PSO, active Mormon.

Overall, firms’ import of Mormon cultural values of self-sufficiency and autonomy is manifest in terms of a preference for internal finance strategies and an aversion to venture capital. My respondents outlined a number of perceived advantages of these financial strategies in terms of a lack of debt, greater autonomy and a real ability to make a moral decision. Indeed, I typically encountered pride among respondents at having grown their company alone. However, these culturally-informed financial strategies also place constraints on firms’ abilities to innovate. Venture capitalists have a role that goes beyond the financial, becoming heavily involved in the myriad tasks attached to new business formation and development, both to minimise downside risk and also to add value to their investments (Bygrave and Timmons, 1992; Fried and Hisrich, 1995; Gorman and Sahlman, 1989; Macmillan et al., 1989; Florida and Kenney, 1988). Many start-ups are founded by engineers who are naïve about high tech business management, but venture capitalists bring technical skill, operating experience, and networks of industry contacts as well as cash to the ventures they fund, helping to further the long-term viability of newly-created firms (Castilla et al., 2000). The relationship between the financial and broader activities of venture capitalists over the course of the investment cycle is shown in Table 5.11.

Table 5.11 – Non-Financial Activities of Venture Capital Firms over the Course of an Investment (Modified from Florida and Kenney, 1988: 36)

<table>
<thead>
<tr>
<th>Financing Stage</th>
<th>Stage of Business Devt</th>
<th>Non-Financial Activities of (Institutional) VC Firms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seed</td>
<td>Business concepts, R&amp;D</td>
<td>Review and clarify business plan</td>
</tr>
<tr>
<td>Start-up</td>
<td>Product devt</td>
<td>Recruit manager, conduct market analysis, refine products</td>
</tr>
<tr>
<td>First Stage</td>
<td>Initial commercialisation, start production</td>
<td>Assist with production problems, locate co-investors</td>
</tr>
<tr>
<td>Expansion</td>
<td>Expansion of production and sales</td>
<td>Build up sales / marketing staff, change management, locate co-investors</td>
</tr>
<tr>
<td>Liquidation</td>
<td>IPO, upward merger</td>
<td>Assist with IPO or upward merger</td>
</tr>
</tbody>
</table>

14 This parallels the Italian industrial system, as outlined by Martin et al. (2001) which is argued to be ‘closed’ in the sense that entrepreneurs have been very reluctant to take equity partners because of the fear of undesired external influence and the possible loss of control. Indeed, that even searching for equity capital is potentially damaging to a firm’s reputation.
Thus, culturally-driven strategies through which firms avoid seeking venture capital also limit their access to these wider benefits that venture capitalists bring to firms. Broader studies of technology-based firms have also highlighted a strong link between business success and the amount of financing firms initially receive (Roberts, 1991). While some firms have grown to a significant size without raising external finance at some stage (see Bhide, 1992; Bygrave, 1997), they are exceptions (Mason and Harrison, 1999). Indeed, firms were themselves often aware of the limits of their self-sufficient financial strategies:

‘I’ve seen [the company] flounder financially for years but still we’ve never chosen to seek external money. We’ve always just maintained this strong independent streak. In terms of surrendering the firm to venture capitalists, the boss just refuses to do it. And it’s been a fascinating thing to see because we’ve almost lost the company probably 10 times in the last 5 years! It’s been a real white knuckle ride of a company to work for. We would have been a lot more successful a long time ago if we’d been willing to give more away’. Director of Corporate Research, MSO, active Mormon (convert).

‘We have been very hesitant to lose control of the company by taking outside investment so we never have. But, we always struggle and battle over that topic, because there’s so much we feel we could do, and grow faster, and be more profitable with an infusion of cash but so far we’ve not even pursued it. So it’s a Mormon thing I guess, but we’d never acknowledge that’. CEO and Founder, ANH, active Mormon.

Further, as outlined by one of my key respondents based on his 25 years experience of commentating on Utah’s technology economy:

‘Accepting outside money means that those companies are forced to operate to a higher standard. Outside investors bring pressure to bear on the founders of that company, that management team to say ’I don’t care, go find the best person, not your buddy, not your brother, your brother sucks at marketing, go find someone who really knows marketing, who has experience and hire that person, and I’ll let you keep your brother on over trade shows and that’s it!’ The venture capitalists can force that to happen, but that’s not what’s happening in the bulk of companies here in Utah – why? Because the control of most of the technology companies in the state of Utah still resides with the founders’. President and Founder, QUT, active Mormon.

---

15 Broader studies confirm the positive impacts of venture capital on the firm. Notably Coopers and Lybrand / VentureOne’s (1996) analysis of the fastest-growing companies in the US indicates that VC-backed companies increased their revenues by 37% in 1995, compared with 23% for non-VC backed companies in the fast growth category, and employed 114 workers in the US on average compared with only 60 in non-VC backed companies.
Significantly, these perceptions from within the industry are in turn evidenced in my own case study sample of firms, as shown in Figure 5.6:

**Figure 5.6 – Proportions of Firms Whose Founders are Chief Executive Officer (2001) - Mormon and Non-Mormon Firms Compared (Case Study Sample – 20 firms)**

It is significant that the Mormon firms in my case study sample are more likely to still have their founder in charge than are their non-Mormon counterparts in the same age group. Nor is this pattern simply a function of potentially different age distributions of the Mormon versus non-Mormon firm categories (that the Mormon firms are simply younger than their non-Mormon counterparts and hence more likely still to have their original founder in charge). Not only are the age breakdowns of these two types of firm broadly similar (see Figure 5.7), but in two out of the three definitions of Mormon firms, the Mormon firms actually have a higher proportion of older firms (over 15 years old) than do their non-Mormon counterparts.

We can therefore interpret Mormon firms’ preferences for internal finance strategies, their aversion to venture capital, and their justification in terms of a recourse to religious or doctrinal teachings, as key ‘contents’ of firms’ cultural embedding within the region, contents which have key implications for firms’ abilities to compete. In Section 5.8.1 I measure the overall impact of that embedding on the firm.
Figure 5.7 – Age Breakdown of Mormon Versus Non-Mormon Firms in the Case Study Sample

### (i) FOUNDING

<table>
<thead>
<tr>
<th>Mormon (10 firms)</th>
<th>Non-Mormon (10 firms)</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Pie Chart" /></td>
<td><img src="image2" alt="Pie Chart" /></td>
</tr>
</tbody>
</table>

### (ii) MANAGEMENT

<table>
<thead>
<tr>
<th>Mormon (10 firms)</th>
<th>Non-Mormon (10 firms)</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image3" alt="Pie Chart" /></td>
<td><img src="image4" alt="Pie Chart" /></td>
</tr>
</tbody>
</table>

### (iii) FOUNDING AND MANAGEMENT

<table>
<thead>
<tr>
<th>Mormon (6 firms)</th>
<th>Non-Mormon (6 firms)</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image5" alt="Pie Chart" /></td>
<td><img src="image6" alt="Pie Chart" /></td>
</tr>
</tbody>
</table>


5.5 – FAMILY (AND CHURCH) ABOVE ALL / BALANCE

Vs Sleeping Bags Under the Desk

In her analysis of Silicon Valley and Route 128’s divergent performances through the 1980s, Saxenian (1994) highlights how Silicon Valley’s engineers, often young men without wives or families, instead developed shared identities around the project of advancing new technologies. Crucially, their lack of local family ties allowed for a regularity of long unsocial work hours through an enhanced willingness of employees to be committed to the firm. This in turn facilitated the completion of large workloads in short periods of calendar time, particularly when bringing a new product to market. This key facet of Silicon Valley’s industrial culture is a key underpinning of the region’s technological dynamism. In contrast the Mormon regional culture centred on Utah’s Wasatch Front is characterized by a rigid separation of work and social life, premised on Mormon cultural commitments to family and church. My results suggest that this key facet of Mormon culture is being imported into local computer software firms, impacting upon their work patterns, a key ‘content’ of firms’ cultural embedding within the region that also has direct implications for their abilities to compete.

The concept of family lies at the heart of Mormonism, with the LDS Church consistently having taught that children are a blessing and parenthood an essential lesson in Christian giving (May, 2001). Indeed, recent years have witnessed an increased emphasis on family life in official LDS rhetoric (Heaton, 2001). Notably, the church’s (1995) ‘Proclamation on the Family’ reaffirmed Mormon teachings on the importance of marriage, procreation and traditional gender roles within the family, as well as the relationship between good family life and social stability. Consistent with these cultural emphases, Mormons are characterized by higher rates of marriage, lower rates of divorce, higher fertility rates and larger families than the US national average (Heaton, 2001). Crucially, Mormonism teaches that children are of far greater value than any material wealth, with the favourite dictum of former church President David O. McKay often quoted in support; that ‘no success can ever compensate for failure in the home’. Indeed, various sociological studies have demonstrated that these Mormon commitments to family life detract from devoting large amounts of time to careers (ibid.).

My own results are consistent with these findings, not only at the employee level but also at the firm level, a result I argue of firms’ import of Mormon cultural values on the primacy of family. There are five key ‘contents’ through which this key facet of firms’ cultural embedding in the region is manifest: (i) average lengths of work week; (ii) the prevalence of abnormal work hours within the firm (overtime, late hours, all nighters, weekend working); (iii) restrictions on Sunday
working; (iv) the extent to which long hours are viewed as a medal of honour with the firm; and (v) average lengths of paid vacation. These key ‘contents’ all potentially impact firms’ abilities to replicate the social structures found in other studies of innovative regions.

5.5.1 - WORK WEEK LENGTHS

In terms of this first indicator, the data in Figure 5.8 show that the Mormon (founded and managed) firms in the case study sample have average work weeks that are 5.8 hours (approximately 10%) less than those of their non-Mormon counterparts (44.7 hrs / wk vs. 50.5 hrs / wk). Further, when the effect of a Mormon majority workforce is added into the analysis, the difference increases to 6.3 hours per week (44.7 hrs / wk vs. 51hrs / wk).

The pattern is not however monolithic. Several of the Mormon firms have longer work weeks than their non-Mormon counterparts, but overall there is patterning across these firms, a function I argue of their import of Mormon cultural emphases on the primacy of family. However, potentially the patterns in Figure 5.8 may be driven by the non-Mormon category of firms having a higher proportion of start-ups, where long hours are a far more common occurrence, than the Mormon category. I therefore repeated the analysis with start-up firms removed (defined as less than 5 years), and the results are shown in Figure 5.9.
Figure 5.9 – Average Length of Work Week – Mormon and Non-Mormon Firms Compared
(Case Study Sample Excluding Start-Ups, 16 Firms)

The data in Figure 5.9 show that even when the start-ups are excluded from the analysis, the Mormon firms in the case study sample have average work weeks less than those of their non-Mormon counterparts. When all three defining features are used in conjunction (founding, management and workforce), the difference between the Mormon versus the non-Mormon firms is 7 hours per week (43.0 hrs / wk vs. 50.0 hrs / wk). This patterning at the firm level is consistent with that at the employee level. The average work week for my (47) active Mormon industry respondents is 47 hours compared with just over 51 for their non-Mormon counter-parts (47.1 vs. 51.2 hours), consistent with my in-depth interview data:

‘We continually have managers who want to schedule off-site meetings on Sundays, and many LDS employees have just said flat out that they will not be there because it’s a Sunday. That’s very common here but was very unusual in other places I’ve worked, where if a manager calls a meeting on a Sunday you’re just there. But if you look at commitments to the church versus commitments to our company, the church is always first for the Mormon. That is the number one commitment. Work is secondary’. Manager of Corporate Affairs, PWQ, non-Mormon.

Indeed, over half of my (47) active Mormon industry respondents described to me how they have explicitly sought jobs that allow them to work regular limited hours, viewing that as a long-term advantage:
‘I actually left my last company because they didn’t understand that Mormon family work ethic. ‘Face time’ meant the boss wanted people on his schedule – in at 10am and stay til 10pm – and he wanted people available when he picked up the phone. Even if you had no work to do, there was just this cultural thing that you had to be there. 60 / 70 hour weeks, in a lot of high tech companies they just expect that of you and that’s where you get conflict. If you try to do those hours constantly in this Mormon culture, you get problems. Of the people who ran my last company, three out of the four of them ended up with broken marriages, divorce, and two ended up leaving the [LDS] church altogether because of the stresses induced by that’. Director of Marketing, EPX, active Mormon.

Again, this is not to suggest that non-Mormon employees do not also seek these type of jobs, indeed one third of them explicitly stated at interview that this was a key factor in their choice of current firm, but that they did so without recourse to religious justification. Further, almost two thirds (62%) of my (47) active Mormon respondents explicitly outlined the continual problem of juggling work around church and family, around half of those in turn coming into the office earlier in the day (some as early as 5 am on a regular basis) in order that they are still able to leave at 5pm to be with their families and maintain church commitments. While 14% of the non-Mormon respondents also raised this as an issue, never was it framed in terms of religious commitments. I also got the impression that several of my non-Mormon respondents, especially in the three games companies in the sample, inflated the number of hours they claim to work in a typical week (in most cases this was confirmed by their colleagues). However, none of my Mormon respondents did so. Significantly, this adds credibility to the fourth ‘content’ of firms’ embedding in Mormon culture, the extent to which long work hours are viewed as a medal of honour within the company, which I explore later in Section 5.5.3.

5.5.2 – PREVALENCE OF ABNORMAL WORK HOURS

The second key ‘content’ of firms’ import of Mormon cultural emphases on family centres on the prevalence of abnormal working hours within the firm. My results show that abnormal work hours are much less frequent in Mormon firms compared with non-Mormon firms. I defined abnormal work hours in terms of e.g. working beyond 7pm, working through the night on occasion, working weekends and / or working overtime, definitions that I gleaned over the course of my industry interviews. If these types of work practices are common within in a firm on a monthly basis then the firm is included in Figure 5.10. When firms are defined in terms of founding and management, abnormal work hours are a regular occurrence in 67% of the non-Mormon firms in any particular month. However, this compares with in only 42% of their
Mormon counterparts. When the effect of a Mormon majority workforce is added into the analysis, the difference increases to 38% (42% c.f. 80% for the non-Mormon firms).

*Figure 5.10 - Abnormal Hours as a Regular Occurrence Within the Firm
Mormon and Non-Mormon Firms Compared (Case Study Sample – 20 Firms)*

Again, while the pattern is not monolithic, overall there is clear patterning, a function I argue of the embedding of these firms in Mormon culture. Indeed, over half of my (47) active Mormon industry respondents have *actively* sought firms where long irregular hours are an infrequent occurrence. Specifically, they have sought both older, more established firms or younger firms whose corporate cultures have a lower expectation of abnormal work hours than the typical software start-up company.

The results of repeating the analysis with the start-up removed firms removed (defined as less than 5 years old) are shown in *Figure 5.11*:
When the start-up firms are removed from the case study sample, Figure 5.11 shows that only one fifth of the Mormon (founded, managed and majority workforce) firms have abnormal work hours as a regular occurrence, compared with three quarters of their non-Mormon counterparts. Indeed, in the majority of Mormon managed firms this is a deliberate strategy:

‘Family and church are very high priorities for us, so we try not to have our employees working a lot of extra hours, and we try to reduce that as much as we can in order for them to participate in religious activities and family activities which we see as a very important part of our culture’. Director of Business Development, NMU, active Mormon.

The most frequently cited area of abnormal work hours involved Sunday working, a major tension for Mormons working in Utah’s computer software industry. The Sabbath has been historically set apart in Mormon culture as a day a holy day of worship, for rest and spiritual renewal. Five firms in the case study sample (25%) never work Sundays as company policy, even during crunch times (see Table 5.12).
Table 5.12 – Prevalence of Sunday Working
– Mormon and Non-Mormon Firms Compared (Case Study Sample)

<table>
<thead>
<tr>
<th>Firm Type</th>
<th>Sunday Working Common (Includes start-ups) (% yes)</th>
<th>Sunday Working Common (excluding start-ups) (% yes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MORMON (6 firms) founded, managed and majority workforce</td>
<td>14</td>
<td>10</td>
</tr>
<tr>
<td>NON-MORMON (6 firms) founded, managed and majority workforce</td>
<td>60</td>
<td>45</td>
</tr>
</tbody>
</table>

Thus, while two thirds of the Mormon (founded, managed and majority workforce) firms in my case study sample have company policies that restrict Sunday working, none of their non-Mormon counterparts maintain such policies. This is significant given the fifteen-month development schedules common among the firms in my case study sample. Typically in the final stages of a software project, weekend working and late evenings are the norm in the non-Mormon firms:

‘The last two or three months of a project, you’re working 80 hour weeks, and those last few weeks get insane! On my last project, in the last month I slept in my own bed twice! We got sofas in the basement and so you’d just go down there and grab a few hours and carry on – insane! But good employees, LDS or not, they just know that’s what this industry’s about, and they know they get paid better because of it’. Chief Financial Officer, BWB, non-Mormon male.

These attitudes to Sunday working contrast with those that characterise the corporate cultures of the majority of the Mormon firms in my case study sample:

‘Even when we’ve had 24 hour a day 6 days a week operations, we always close Sunday! I’ve just always tried to maintain that. We don’t want work replacing family structure or religious structure. Work is supplementary and there to support family and church. True happiness is not achieved through a bigger bonus’. Director of Marketing, FOW, active Mormon.

Again respondents often justified these corporate policies in terms of Mormon teachings on Sunday working, often relating those back to beliefs in divine intervention in the firm, as outlined in Section 4.4.1:
‘We don’t ever have anybody working on Sunday, just that simple, employer or not, Mormon or not, and that’s because we believe the company can’t be blessed if we’re expecting things that go contrary to our beliefs. In the Old Testament when they’re giving the Ten Commandments, when the Sabbath is talked about, it says ‘Not your man servant, your maid servant or your mules, not your hired hands, nor anyone coming to visit you shall you cause to work on the Sabbath’. So that’s it, we don’t make anyone work on Sundays’. Director of Brand Management and User Experience, PSO, active Mormon.

Overall, Sunday working is explicitly avoided much more in Mormon firms than in the non-Mormon firms. Further, even in non-Mormon firms where Sunday working is also limited, never is that policy ever justified in terms of a recourse to religious teachings, in contrast to their Mormon counterparts as outlined.

5.5.3 – (NOT) VIEWING LONG WORK HOURS AS A MEDAL OF HONOUR

The fourth ‘content’ of firms’ import of Mormon cultural emphases on the importance of family centres on attitudes towards long work hours within the firm. The phrase ‘medal of honour’ was the key term most commonly employed among my industry respondent sample to describe how long work hours are regarded within their respective firms. The term refers to self-identified work group norms, management expectations and peer pressures within the firm to work beyond the typical 8am to 5pm work day; a key factor perceived within firms to underpin employee promotion; and hence that working long hours is regarded as a positive work norm (also see Reich, 2001). My results show that long work hours are regarded much less as a medal of honour in Mormon firms than in their non-Mormon counter-parts (Figure 5.12).
When firms are defined in terms of founding and management, in none of the Mormon firms are long work hours regarded as medal of honour, compared with in half of their non-Mormon counterparts. When the effect of a majority Mormon majority workforce is added into the analysis, the figure for the Mormon firms remains at 0% but increases to 60% for the non-Mormon firms. Thus, while not monolithic, cultural patterning is again apparent, a function I argue of the embedding of these firms in Mormon culture. Repeating the analysis with the start-up firms removed (defined as less than 5 years) exaggerates the pattern (see Figure 5.13).
The data in Figure 5.13 show that in four out of the five definitions of Mormon firms, in none of the Mormon firms are long hours regarded as a medal of honour, compared within 40% to 75% of their non-Mormon counterparts, depending on the definition of ‘non-Mormon’ firm used. Again the difference between Mormon and non-Mormon firms is greatest when all three defining features (founding, management and majority workforce) are used in conjunction (0% c.f. 75%).

5.5.4 – AVERAGE LENGTHS OF PAID VACATION

The patterns outlined in the previous sections are consistent with the fifth indicator, average holiday lengths. I encountered some difficulties in measuring firms’ average holiday lengths, as these typically vary over time as employees are able to accrue extra holiday the longer they have worked for a company. The holiday lengths shown in Table 5.13 are for software engineers below the Vice-President level who have been with a firm for three years.
Table 5.13 – Average Paid Days of Vacation
– Mormon and Non-Mormon Firms Compared (Case Study Sample)

<table>
<thead>
<tr>
<th>Firm Type</th>
<th>Ave. annual paid vacation days (after 3 yrs service)</th>
<th>Ave. annual paid vacation days (after 3 yrs service)</th>
<th>Excluding Start-ups</th>
</tr>
</thead>
<tbody>
<tr>
<td>MORMON (6 firms) founded, managed and majority workforce</td>
<td>17.5</td>
<td>18.5</td>
<td></td>
</tr>
<tr>
<td>NON-MORMON (6 firms) founded, managed and majority workforce</td>
<td>11.25</td>
<td>11.5</td>
<td></td>
</tr>
</tbody>
</table>

The results show that average lengths of paid vacation are on average 6 days (approximately 55%) longer in the Mormon firms than in the non-Mormon firms. Removing the start-ups from the analysis has a negligible effect on the data. Further, while holiday lengths are typically closer to the European average of 4 weeks (Trades Union Congress, 2002) in the Mormon firms, in the non-Mormon firms they are closer to the US average\(^{16}\). Indeed, 100% of the Mormon firms in the case study sample have average paid vacation lengths greater than the US average. One specific holiday of special importance in Mormon culture is Pioneer Day, which marks the entry of the first Mormon pioneers into the Great Salt Lake Valley in July 1847, celebrated by parades, rodeos, and Old West re-enactments. Figure 5.14 shows the Mormon and non-Mormon firms (variously defined) in my case study sample which grant Pioneer Day as a company holiday. Thus, while over 80% of the Mormon firms in the case study sample grant Pioneer Day as a company holiday, none of the wholly non-Mormon firms do so. However, in the majority of these latter cases, Mormon employees typically use their own personal vacation time to observe Pioneer Day. The results at the firm level are significant because in all cases, these firms have large customer bases outside Utah, for whom Pioneer Day is meaningless. In 2001, Pioneer Day (July 24) fell on a Tuesday, when these client firms would have been working and who would have also expected that from their partner firms in my case study sample.

\(^{16}\) US average: 11.7 days annual paid vacation for professional, technical and related employees after three years service with the company, US Department of Labor, 1996 – Employee Benefits in Small Private industry Establishments (Annual).
Overall, these five key ‘contents’ of firms’ embedding in Mormon culture suggest that Mormons in Utah’s computer software industry have created a corporate environment in which work is valued differently than in typical US software firms. Mormon cultural emphases on the importance of family, a balanced lifestyle, that no success can ever compensate for failure in the home, and of money as merely a means to a higher spiritual end all impact upon the structure of firms’ work weeks and mean that extra-long working hours are discouraged. My respondents highlighted a number of perceived advantages of these key contents of firms’ cultural embedding, the most commonly cited advantages centring on a more healthy, less stressed and consistently productive workforce:

‘It’s a strategic advantage because living the principles of the Gospel results in a better overall person. So it’s true that you can work 18 hour days for me and probably produce a lot, but not over the long-term. So the church’s emphasis on balance and family and taking care of yourself results in a more consistently productive workforce. It’s not just about producing more, but about producing better’. Director of Technology Development, PSO, active Mormon.

There is also a perception that those companies which expect long work hours from their employees lose sight of key moral values, again linking back to beliefs in divine intervention in the firm as outlined in Chapter 4 (Section 4.4.1). However, my respondents were also aware of the constraints of these culturally-informed work patterns, often highlighting how Mormon culture discourages people from making the sacrifices necessary to grow a software start-up. One
of the most often self-cited constraints concerns the difficulties of managing deadlines for big product release, of a lack of a sense of urgency:

‘There very definitely is a strong sense in the Mormon Church that your job and your success are not the most important thing in your life. And that then is a discouragement for people to make the sacrifices necessary to run a successful software business. There’s no doubt that the LDS employees, especially the devout ones really resist the Sunday workday. And so that tends to create a hardship on the team, especially during crunch mode. Because when you’re really in it, and you get a key programmer that says ‘Sorry, I’m just not coming in today’, it makes everybody’s productivity suffer and it’s difficult’.

CEO, LEL, non-Mormon.

‘So there have been a lot of times when I wonder if we’re as effective at competing with other corporations, precisely because we can’t, and we won’t, throw everything we’ve got into the company, we’re always limited. So you’ve got firms elsewhere working 80, 90, 100 hour work weeks, often putting in twice as many hours as we did in the same week! There just isn’t much incentive in LDS culture to be super-successful’.

Director of Technology and Co-Founder, PSO, active Mormon.

My respondents emphasised how these cultural traits potentially affect speed to market and the number of successful launches of new products. Indeed, respondents in two of my firms (10% of the case study sample, both in the Intermediate I category, non-Mormon founded but Mormon managed), described how this regularly causes friction within their respective firms:

‘We continually battle the problem of our managers from other US locations feeling like the workforce here in Utah aren’t as committed, and don’t put enough effort towards hitting milestones. And consistently, with all the companies I’ve worked for, that’s the attitude toward the Utah group. And that is reflected in lower levels of new product introduction in the Utah office compared with the other company offices. So if you have a big product release scheduled, it’s almost impossible to manage it to make that deadline. Your Utah employees are more likely to say well we’ll just have to push it back and reschedule and that’s all there is to it. Whereas in some of our other office locations, you have more of a willingness to spend 24 hours a day at work until it’s done’.

Director of Human Resources, GOG, active Mormon.

Indeed, these self-perceived constraints are supported by wider secondary analyses at the US national level. Notably, a 1995 report by the US National Center for the Educational Quality of
the Workforce (EQW)\textsuperscript{17} investigated the relationship between firms’ work hours and their overall productivity, estimating that for a 10% increase in work hours in non-manufacturing firms, there results a 6.3% increase in establishment productivity\textsuperscript{18}. Significantly, my own results suggest that the non-Mormon firms work 16% longer work weeks than their Mormon counterparts (43.0 hrs / week vs. 50.0hrs / week).

However, there are also a number of qualifications to the overall pattern. First, even the most devout Mormon employees are often willing to work Sundays towards the end of a particular product development cycle, or occasionally to travel on Sunday for a meeting on Monday morning, but really have to be convinced of the importance of that to the company. This is not to suggest that non-Mormon employees do not also resist Sunday working, nor deny the importance of family, but that they do so \textit{without} recourse to Mormon doctrinal justifications. As one respondent put it, ‘\textit{Mormons are just a lot more in your face about that sort of thing’}. Also, several respondents outlined how, because of unusual work hours, they will sometimes begin their Sabbath on the Saturday night, read LDS Scripture while travelling, and if forced to be away from home on a Sunday always attend local LDS Ward meetings in that area. A key second qualification to these patterns concerns change over time. While many of my Mormon respondents often worked long hours in the early start-up stage of their respective companies, they were unwilling to do this once the firm had become established. Third, I encountered considerable variation in personal interpretations of Mormon teachings. While many respondents interpret Mormon teachings on family in terms of limited work hours in order that they spend more time their families, others interpret that same teaching to justify long work hours to support their families. As such, the \textit{same} LDS teachings are often used to justify opposing work patterns.

Overall, the Mormon firms in my case study sample are characterised by shorter average work weeks, a lower prevalence of abnormal work hours, and higher amounts of annual paid vacation time than their non-Mormon counterparts. There are also lesser tendencies to view long work hours as a medal of honour within Mormon firms compared with their non-Mormon counterparts. I argue that these are key ‘contents’ of firms’ import of Mormon cultural emphases on the primacy of family; that is, of firms’ cultural embedding in the region.

\textsuperscript{17} ‘\textit{The Other Shoe: Education’s Contribution to the Productivity of Establishments}. This examined over 300 establishments all of which employ over 20 staff.

\textsuperscript{18} Measured in terms of output whilst also controlling for materials used, employee hours, age of equipment, industry, size, and employee turnover.
5.6 – FAMILY (THEN CHURCH) ABOVE ALL
Vs Afterwork Socialising and Informal Information Diffusion

The regional innovation literature has consistently stressed how processes of ‘collective learning’ (Camagni, 1991; Lazari and Lorenz, 1997; Lawson, 1997; Lorenz, 1992) crucially involve interaction and the exchange of expertise. In particular, scholars have focused on the role of tacit knowledge\(^\text{19}\) embodied in people rather than in written form, which is transferred between firms through informal social networking (Lam, 2002). Personal contacts between firms act as conduits of information, facilitating a rapid and continual circulation of information, and therefore reinforce more formal types of corporate interaction. While this may mean losses of proprietary knowledge for individual firms, allowing others to appropriate returns on their investment, such flows initiate all manner of interfirm relations that provide sources of complimentary competences and an increased dynamism at the regional level. Actors in a collaborative network learn of new technologies, opportunities, and challenges more quickly because of higher densities of interaction between firms (Fountain, 1997). As employees swap knowledge and ideas about how things are done in other firms interaction helps to raise knowledge throughout the industry (Henry and Pinch, 2000). These interactions are advantageous at two levels: (i) acting to transfer knowledge once-and-for-all by taking expertise/knowledge with them; or (ii) establishing an ongoing link between the firms via the personal relations maintained between the various employees. Indeed, Powell (1990) argues that social networks are the most efficient organisational arrangement for sourcing information given that information is difficult to price in a market and difficult to communicate through a hierarchy. Ideas are thus recombined in different firms in new ways with existing skills, technology, know-how and experience, and in this way, information diffusion through informal social networks helps stimulate innovation (Capello, 1999; Lawson and Lorenz, 1999; Saxenian, 1990).

These social interactions are found in formal and informal settings within the region. Saxenian (1994) highlights specifically how Silicon Valley’s engineers, migrating to California from the East Coast lacked any roots or family ties, and instead developed shared identities around the project of advancing a new technology, premised on a porous division between work, social and leisure activities (\textit{ibid.}: 60-64). Employees frequently meet at trade shows, industry conferences, and

\(^{19}\) Notions of tacit knowledge draw on the work of Michael Polanyi, and refer to the knowledge or insights that individuals acquire which is ill-defined or uncodified and which they themselves cannot fully articulate. Polanyi argues that explicit (or codified) knowledge is knowledge that is transmittable in formal, systematic language. Tacit knowledge is personal, context-specific, embedded in practice, and difficult to formalise and communicate – that ‘we know more than we can tell’ (Polanyi, 1967: 4). However, the distinction between ‘tacit’ and ‘explicit’ knowledge is not fixed.
seminars, talks and other social activities organised by local business organisations, as well as in more informal venues such as bars, clubs, pubs, internet cafes and coffee shops. In these social contexts, relationships are easily formed and maintained (Saxenian, 1990), technical and market information exchanged, contacts established and new ideas conceived. These connections therefore provide access to a diversity of wider ideas and bases for comparison with other ideas and practices, often leading to new, often unexpected, ideas or synergies (Malecki, 1991).

Although Mormon culture is also permeated by extensive formal and informal social networks, these tend to be in very different areas to those highlighted in the regional learning and innovation literature. Significantly, Mormon culture is characterised by long-standing ties to family, church and community, and a rigid separation between work life and social life. I argue that these key facets of Mormon culture impact on levels of afterwork socialising, and hence information diffusion, among Mormon employees in Utah’s computer software industry; the fifth key ‘content’ of firms’ cultural embedding within the region.

*Plate 5.1 – Typical Ward House in Salt Lake City: The Centre of Utah Mormons’ Social Worlds*

For a devout Mormon family, church activities dominate the week from worship, classes and committee work on Sundays, to youth activities, temple visits, and volunteering at church-sponsored activities during the rest of the week. The design of Ward meeting houses themselves demonstrates the social nature of Mormon life (May, 2001). In addition to a chapel for worship they always include a gymnasium with a stage for theatre and sports, numerous classrooms, a
room for women’s activities, a fully equipped kitchen, a library, a Scout room, and a chapel for small children (ibid.). Further, except for a relatively small number of top leaders, the LDS Church is managed by a lay clergy and Mormons are called to contribute in various specific capacities, such as administrative, teaching or service-orientated positions. In an average Ward of 625 persons there are approximately 280 regular church offices and teaching positions to be filled (ibid.). Vernon estimates that the number of opportunities for individuals to take part in common leadership roles before an audience for the group is about 11,500 for a Ward per year. There are an additional 5,000 opportunities for home teaching calls within the ward. Adding in monthly home visits, genealogy, temple work, welfare work and other various activities at the Ward and Stake levels, every week each church member has around 90-100 persons involved in providing their church activities (Vernon, 1980: p. 164). It is this heavily participatory nature of involvement in the LDS Church that makes it difficult for active Mormons to get involved in non-Mormon activities such as afterwork socialising. Indeed, active Mormons have little social contact outside the Ward in which they reside, and even less outside the Stake of which their Ward is part (May, 2001).

These key elements of Mormon culture have important implications for computer software firms on Utah’s Wasatch Front, in terms of their abilities to access new sources of information through informal social networks. Of the total 51 Mormons in my industry respondent sample, 47 are active members of the LDS Church. It proved difficult to derive secondary data on actual levels of informal socialising, and as such this section draws primarily on the in-depth interview data. However, there are two key issues consistently raised at interview by the majority of my respondents, Mormons and non-Mormons alike, that are relevant to this part of my analysis. The first centres on cultural constraints on amounts of afterwork socialising that firms’ employees are able to engage in. While respondents in every firm in my case study sample outlined how young families restrict employees’ abilities to socialize afterwork, only in 9 firms (45% of the sample) were those restrictions explicitly vocalised in Mormon cultural terms. This includes 100% of the Mormon firms in my case study sample, yet none of their non-Mormon equivalents. Further, over 80% of the 27 respondents in my sample with experience of working in the US computer software industry outside Utah suggested that after-hours socialising with work colleagues is far less frequent in Utah:
‘In Utah, when they’ve finished work they go home. Not like other places I’ve worked where every Friday at 4 o’clock everyone will pull down to the pub and sit round drinking whatever they like to drink, whether it’s alcoholic or not, but just sit round and bullshit and tell stories and whatever else. But here in Utah that just doesn’t happen’. Vice President of Engineering and Co-Founder, ECY, non-Mormon.

‘Getting people to come to things like dinner parties and that sort of socialising is hard because the entire lives of Latter-day Saints is work, their families, and church, and so it’s very hard for us to say Wednesday night, bridge night, no such thing! Wednesday is basketball night at the church. There’s no time to just go out and socialise, so it has to be done within work hours, because our primary obligations are our families, and the church’. Chief Technology Officer, UIE, active Mormon.

Of my total industry respondent sample, whilst over half of my non-Mormon respondents had socialised afterwork with a colleague in the previous two weeks, less than a fifth of my active Mormon respondents had done so.

The second key ‘content’ concerns Mormon cultural influences on the type of corporate social event that firms are able to hold. Specifically, 35% of the firms in my case study sample maintain company policies that prohibit employees from drinking alcohol not only at corporate social events, but also on any business trip. This figure includes 83% of the Mormon firms, 25% of the Mormon intermediate firms, but none of the wholly non-Mormon firms. Further, 11 firms in my case study firm sample asserted Mormon cultural restrictions on the type of corporate social even that they are able to hold as a firm, a figure which includes all of the Mormon firms, half of the Mormon intermediate firms, but only one of the non-Mormon firms. Respondents instead outlined a range of ‘pub substitute’ corporate social events, including ‘family days’, afternoons of golf, basketball games, a big lunch culture, family picnics, barbecues, and other participatory sporting events that they undertake as a firm. Firms are thus very aware of the types of corporate social events that they are able to do together, as a result of the influence of Mormon culture on their firms:

‘And when there are corporate events, it’s always ‘family day’ with good wholesome food and never a can of beer to be seen. Back in LA, those business events looked like a bus to the rehab center or something! - letting your hair down was a big part of the business culture. But that just never happens here, and it’s very visible to our managers’. Director of Corporate Research, MSO, active Mormon (convert).
However, firms are also aware of the disadvantages of these cultural influences upon the firm, especially my single non-Mormon respondents, many of whom had come to Utah from elsewhere in the US and for whom the Mormon cultural limits on their own social lives is a hot topic:

‘But there is a part of business that’s conducted offsite in social situations, whether it be lunch, or meeting for drinks after work. And in California the drinks after work thing was a big deal. In Utah’ it’s like it never happens. Here they substitute that for an afternoon of golf, or a Jazz game\(^{20}\), that’s a big one. Basically they’ve taken the drinks after work and they’ve stuffed it into these other categories and areas. And the problem is, if you try to do business with people outside of Utah who don’t do it with a Jazz game or golf, there’s some kind of disconnect which makes it hard for businesses to be successful dealing with people outside of Utah’. CFO, ECY, active Mormon.

‘Company policy actually prohibits employees from drinking alcohol whilst on any kind of business trip or business event, and it causes real problems because a lot of times you’ll meet with journalists or whatever and go to dinner and have a drink. So it’s just inappropriate to then say you’re not drinking because it’s company policy! So you really lose out on that personal aspect of business where you meet other firms and go and have drinks and go crazy with other people, to show that outside of work we’re still cool people. But there is never really an attempt to ever develop that profile among LDS firms’. Director of Research, MSO, active Mormon (convert).

Overall, the Mormon regional culture maintains a rigid separation between work and social life, which in turn limits informal socialisation among firms’ employees after work, and hence informal information diffusion within the region which would otherwise supplement more formal corporate interactions. However, one potential qualification to the patterns outlined in this section is that informal business networking is potentially displaced to the Ward. However, the manner in which Wards are organised within the LDS Church often limits this. Wards are assigned according to the location of members’ homes, with strict geographical boundaries. Members cannot simply choose where they attend a Ward (unless they choose to move into a house within another Ward boundary), but rather it is assigned to them. This then has key implications for the levels of informal information sharing that are possible within Wards:

‘The church really encourages socialising within the Ward but those people are not necessarily like-minded, there just aren’t a lot of technologically-minded people in my Ward, but I still feel that I need to be socially involved with them. So for me there’s very
little transfer of technical knowledge after hours, almost non-existent in fact, except within my tight group of friends, but even there I don’t spend a lot of time with them, I spend much more time with my Ward’. Director of Technology and Co-Founder, PSO, active Mormon.

The fifth key ‘content’ of firms’ cultural embedding within the region therefore centres on their import of Mormon cultural emphases on the primacy of family and church, cultural priorities which impact on both the amounts of afterwork socialising that Mormons working in Utah’s computer software industry might undertake, and the type of corporate social events that firms are able to hold. These key contents potentially limit firms’ abilities to innovate, in terms of limiting their access to informal networks of business information sharing, sources of information which would otherwise supplement more formal types of corporate interaction.

5.7 - RESPECT FOR AUTHORITY, ESTABLISHED IDEAS, UNITY
Vs Creative Dissent and Constant Questioning

For high-tech firms, competitiveness is sustained by becoming a moving target through continuous technological learning and the rapid development and commercialisation of new ideas (Block, 1990; Storper, 1995). Crucially however, competitiveness is dependent not only on firms’ abilities to access external sources of information (see Sections 5.2 and 5.3), but also on their abilities to assimilate, reconfigure, transform and apply new information to commercial ends. That is, it is also dependent on firms’ ‘absorptive capacities’ (Cohen and Levinthal, 1990, 1994; Feldman and Klofsten, 2000; Howells, 2000; Hotz-Hart, 2000). Different absorption rates are not random but depend on the social and cultural structures within firms (Farrands, 1997), because the ability to absorb new knowledge within a firm will always depend on socio-cultural constructions of what is acceptable and desirable (Schoenberger, 1997). The innovation literature has thus consistently highlighted a set of cultural norms that, if widely shared by the members of a firm, actively promote the generation of new ideas and help in the implementation of new approaches. My results suggest that in some cases, firms’ import of Mormon cultural values reinforces these corporate cultural traits beneficial to firms’ absorption of new ideas. In other cases it undermines them.

First, the business and management literature clarifies the potential benefits of diversity within the firm, although this literature has yet to be fully tapped in economic geography (Ettlinger, 2001).

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20 The Utah Jazz, the state basketball team.
New product development in high technology sectors is favoured by co-operation among individuals with partially overlapping technical knowledges (Lawson and Lorenz, 1999). Interactions between different actors with different ideas, approaches to work problems and viewpoints will often lead to new, unexpected ideas or synergies (Malecki, 1991). Crucially, the generation of new knowledge results from combining diverse knowledges, and the more diverse these knowledges, the better (Lawson and Lorenz, 1999). Diversity is therefore a key cultural attribute within the firm that positively impacts on the absorption and use of new information (DiBella et al., 1996). In contrast, Mormon culture is characterized by strong conformity within the group, and cultural emphases on unity and individual sacrifice for the common good. These key cultural traits I argue are being imported into the workings of computer software firms on the Wasatch Front, the first key content I argue of firms’ embedding in Mormon culture that impacts specifically on their absorptive capacities:

‘If there is anything distinctly cultural about Mormonism it’s that it does predispose us to working with our own and trying to make things happen as a group. There’s no incentive for the lone thinker, the individual artist or creative genius, we don’t seem to have a lot of them’. Head, EFDF, CZV – active Mormon.

‘In the church, when we have a new leader sustained, everybody raises their hand to show that they support that person in their calling. And I’ve noticed that kind of mentality within this company, that we all support the leader, that we understand that there is one leader in charge, and that we support his opinions and decisions in the same way that we would in a church setting’. Production Manager, ANH, active Mormon.

Significantly, 40% of the firms in my case study sample are internally perceived by my industry respondents as having corporate cultures that place a premium on unity within the firm. Interestingly, this includes two thirds of the Mormon firms and half of the Mormon intermediate firms. This compares with only one of the non-Mormon firms:

‘Unity is a very much higher value to us as Latter-day Saints. We don’t have quite the intrinsic treasuring of diversity that I see among my colleagues who aren’t LDS. All the time, no-one ever comes out with an opinion, there only seem to be collective opinions’. Director of Research, NMH, active Mormon.

This Mormon cultural impact on diversity of opinion in firms is consistent with the under-representation of females in firms’ workforces (see Section 4.4.6). In Chapter 4 I showed how for all three categories of firm size in the survey sample and in the case study sample, the proportions of women in Mormon firms’ total workforces are consistently less than those in their non-
Mormon counterpart firms. Further, those same patterns are also apparent at the management level in both survey samples (see Table 5.14).

Table 5.14 – Summary of Results from Section 4.4.6 –
Prevalence of Women in Firms’ Total Workforces and Management Teams

<table>
<thead>
<tr>
<th></th>
<th>% Total Workforce Female</th>
<th>% Management Female</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mormon</td>
<td>Non-Mormon</td>
</tr>
<tr>
<td>Survey Sample</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MICRO (1-19 emp)</td>
<td>13.7%</td>
<td>29.8%</td>
</tr>
<tr>
<td>MEDIUM (20-99 emp)</td>
<td>19.9%</td>
<td>27.9%</td>
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<tr>
<td>MED-LARGE (100-499 emp)</td>
<td>27.9%</td>
<td>30.0%</td>
</tr>
<tr>
<td>Case Study Sample</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All 20-99 emp</td>
<td>7%</td>
<td>26%</td>
</tr>
</tbody>
</table>

Crucially however, workforce diversity promotes innovation, with men and women usually bringing different approaches to work problems, opportunities and decisions (Wachs-Book, 2000). Specifically, heterogeneity in terms of a mix of genders\(^{21}\) in senior management teams consistently has been shown to be positively correlated with superior corporate performance in firms’ annual sales, growth revenues, market shares, shareholder value, market share, net operating profit, worker productivity, and total assets (US Congressional Committee on the Advancement of Women and Minorities in Science, Engineering and Technology Development, 2000)\(^{22}\). As such, ‘the absence of women… from the highest level of corporate management deprives corporations of diverse strategic skills and competencies in management that translate into economic gains’ (ibid.: 12). Consequently, the Mormon firms in my case study sample with greater male majority management teams and workforces, are likely to have absorptive capacities that are potentially limited relative to their non-Mormon counterparts with their higher proportions of female managers and employees.

The second key area in which firms’ embedding in Mormon culture impacts specifically on their absorptive capacities, concerns Mormon cultural attitudes towards established ideas and

\(^{21}\) As well as diversity in terms of employee ethnic background and age.

\(^{22}\) This report draws on data from the American Management Association\(^{22}\) which surveyed over 1000 of its members for its report: Senior Management Team: Profile and Performance, 1996.
leadership. The organisational learning literature consistently highlights the following set of corporate cultural traits as aiding firms’ absorption and use of new information: a climate of openness in which debate and conflict are encouraged; a willingness to break with convention; widespread support for trying new things; the right of employees to challenge the status quo; and multiple advocacy, that learning requires more than one ‘champion’ if it is to succeed (Deal and Kennedy, 2000; DiBella et al., 1996; O’Reilly, 1989). Firms’ abilities to innovate thus presume a necessary relationship between learning and active employee involvement at all levels; that all employees can act as independent agents, take responsibility, experiment, and make mistakes as they learn (Spender, 1996).

In contrast, Mormon culture is characterised first by a pervasive respect for established ideas. Indeed, suppression of open discussion (of church doctrine, procedures, and systems of organisation) has been LDS Church policy since the 1960s for fears of it breeding dissent and moral ambiguity (Ostling and Ostling, 1999; Shupe, 1992). Second, the LDS Church organisational system is also based on predominantly top-down flows of information, in which leadership decision are never challenged, only supported by the wider Mormon populace. Indeed, an oft cited dictum used to justify this system is that ‘when the Prophet speaks the thinking has been done’23. Third, these cultural emphases of reverence for established ideas and leadership authority are in turn reinforced by wider Mormon emphases on being passive, non-confrontational and never demeaning another.

This distinctive set of Mormon cultural traits is perceived by my respondents, both Mormon and non-Mormon alike, as also characterising the corporate cultures of the same Mormon firms in my case study sample whom I have already identified as placing a premium on unity within the firm. That is, two thirds of the Mormon (founded and managed) firms and half of the Mormon intermediate firms. Also significant is that over half of my (14) non-Mormon industry respondents identified their Mormon colleagues and employees more generally as less willing to question ideas and leadership authority than their non-Mormon colleagues and employees, Mormon software employees that are spread across the whole spectrum of Mormon, Mormon intermediate and non-Mormon firm types. Further, almost one third of my (47) active Mormon industry respondents also identified this trend among their fellow Mormon employees and colleagues generally, arguing that Mormon managers and employees raised in the distinctive LDS

---

23 Indeed, several Mormon scholars have been excommunicated and faculty members at Brigham Young University also dismissed in recent years, for writings that are perceived as contrary to the LDS Church (see Waterman and Kagel, 1998). This then provides a clear message to other Mormons with regard to ‘stepping outside the box’ and ‘going against the grain’.
Church simply borrow from the models that are familiar to them as they work in Utah’s software industry.

My respondents outlined a number of ways in which these distinctive Mormon-informed corporate cultures potentially aid firms’ abilities to use and absorb new information. First, various respondents suggested that unity through a common value base makes it easier for the firm to mesh as a team, as a tighter-knit work group. Indeed, key norms highlighted in the innovation literature as promoting the implementation of new ideas in the firm include teamwork, a shared vision and a common direction upon which firms can build consensus, mutual respect and trust (O’Reilly, 1998), corporate cultural norms that are consistent with Mormon emphases on unity, group consensus and teamwork. Second, I found a widespread appreciation among both my Mormon and non-Mormon respondents alike of the more friendly and less stressful work environments that these Mormon-informed corporate cultures sustain, in which people are slow to get angry:

‘Mormon culture teaches us to be more passive and less confrontational, and I’ve always found a much more mild atmosphere in Utah offices than in other places of the US I’ve worked before. When they [Mormons] talk to people they try really hard to control their emotions, and you don’t have the passionate, loud, angry discussions that I’ve seen happen in other organisations where people do get upset, sometimes even end up leaving because of that. People are just a lot more supportive of each other here in Utah’. Director of Human Resources, GOG, active Mormon.

Third, my respondents also contrasted their firms’ mutually supportive corporate cultures with the processes of one-upmanship characteristic of typical US firms which instead often foster the attitude that a key measure of our intelligence is the extent to which we can show others to be wrong, and which instead potentially limit employees’ willingness to put forward novel interpretations.

However, my respondents also identified a number of disadvantages of these distinctive Mormon-informed corporate cultures, in terms of their limiting firms’ abilities to *use* new information once it enters the firm. Primarily these constraints centre on Mormon cultural traits of respect for established ideas, unity and top-down leadership authority undermining the processes of creative dissent, constant questioning and multi-directional knowledge flows that underpin innovation in
firms. Indeed the majority of my Mormon industry respondents were themselves aware of these limits:

‘It’s a strange paradox to be working in high tech in this heavily Mormon environment where obedience is expected and questioning authority is frowned upon in a very direct way. There’s a tendency not to question authority, to just follow instructions. So you often get R&D situations where people are just doing that they’re told rather than thinking outside the box and helping the company come up with the creative solutions that they need to beat their competitors. But if you don’t question things you will never survive in this business, and when I say question I mean question everything’. Creative Director, WSU, active Mormon.

‘Sometimes there’s too much of a lack of confrontation among Utah employees, where they don’t speak up when they should, they don’t raise issues because they’re afraid of creating contention and hurting other’s feelings, and I think that makes us less effective’. Director of Human Resources, GOG, active Mormon.

‘But it’s hard for the company to grow beyond what it is if it doesn’t have differing opinions and people from differing backgrounds. Because if employees look at things in different ways, then they are going to solve problems in different ways and come up with innovations to launch the company to a new level in a particular product line. But this cultural environment in many ways tends to stifle that. It’s just a very don’t-rock-the-boat type of corporate culture. There’s definitely some of that Mormon ethic of just doing what we’re told and what’s in the plan, and it’s killed some good ideas within the company that are just too ‘out there’’. Manager of Corporate Affairs, QXU, non-Mormon female.

I therefore argue that we can interpret firms’ import of Mormon cultural emphases on unity and strong conformity within the group, respect for established ideas and leadership authority, and passive non-confrontation as key contents of their cultural embedding within the region. I also argue that while in some cases these contents potentially enhance firms’ innovative capacities in terms of their abilities to use new information once it enters the firm, in other cases they potentially limit them, in turn reinforced by cultural constraints on firms’ abilities to access new

24 I am though aware of the debates surrounding the need for constructive confrontation in the firm, and whether this really is critical for innovation, given the success of Japanese firms based on very non-confrontational work cultures. However, the fact that my own respondents outlined the constraints of their self-identified passive corporate cultures justifies the direction I have taken in my analysis here.

25 However, several of my Mormon respondents suggested that there is a clear difference between questioning religious doctrine versus questioning technical knowledge within a corporate environment.
information in the first place (see Sections 5.3 and 5.5.1). In the remainder of this chapter I seek to measure the overall direction of these impacts of cultural embedding on the firm.

5.8 – DISCUSSION - LINKING THE REGIONAL CULTURE HIERARCHY TO FIRMS’ COMPETITIVENESS

I argue that firms are embedded in a culture hierarchy within the region, made up of their own corporate cultures, a regional industrial culture, and the broader regional culture in which these are set. As such, we can conceptualise the cultural embedding of firms in terms of the overlaps between the different levels of this culture hierarchy:

Figure 5.15 – Hypothesised Culture Hierarchy in Which Firms are Embedded in the Region

In this chapter I have sought to extend my answer to the key question of how we actually recognise cultural embeddedness when we see it, showing how key elements of the Mormon regional culture, in terms of conventions, norms and societal routines, are being imported into local software firms, impacting upon the nature of both their internal and external relations. Further, I have outlined how there are a series of enablers and constraints on firms’ innovative abilities which stem from the same regional culture in which firms are embedded. Table 5.15 summarises the self-identified cultural traits imported into firms, alongside the key elements of corporate cultures that have been consistently shown in the regional learning literature to enhance innovation. In some cases the two are mutually reinforcing, in others they are in direct opposition. Table 5.16 then outlines the actual corporate manifestations of firms’ import of these key Mormon cultural traits, and shows their prevalence across the firms in my case study sample, a graphical representation of the degree (strength) of firms’ cultural embedding within the region.
### Table 5.15 – Self-Identified Mormon Cultural Traits Versus High Tech Cultural Traits Known to Promote Innovation in the Firm – Alignments and Clashes

<table>
<thead>
<tr>
<th>Mormon Culture (Self-Identified)</th>
<th>Regional Industrial / Corporate Culture (Promoting Success)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CO-OPERATION AND MUTUAL TRUST</strong></td>
<td><strong>INTERFIRM CO-OPERATION AND TRUST</strong></td>
</tr>
<tr>
<td>- Reciprocity</td>
<td>- Increased channels of information exchange</td>
</tr>
<tr>
<td>- Mormon pioneer heritage</td>
<td>- Information recombined in new ways in new firms</td>
</tr>
<tr>
<td>- Feelings of intense mutual obligation</td>
<td>- Firms gain new competencies</td>
</tr>
<tr>
<td>- Collective unity over the individual</td>
<td>- Reduced time to market products</td>
</tr>
<tr>
<td>- Unity as a Christian virtue</td>
<td></td>
</tr>
<tr>
<td><strong>SELF-SUFFICIENCY AND AUTONOMY</strong></td>
<td><strong>USE OF COMPARATIVE ADVANTAGE</strong></td>
</tr>
<tr>
<td>- Self-sufficiency a virtue</td>
<td>- Multiple evaluations of own knowledge</td>
</tr>
<tr>
<td>- Mormon persecution complex &amp; isolationism</td>
<td>- Exploit partially overlapping technical knowledges</td>
</tr>
<tr>
<td>- Zion to rise independent of Gentile nations</td>
<td>- Shared resources / expertise / costs / risks</td>
</tr>
<tr>
<td>- Control over own destiny</td>
<td>- Group problem-solving – unexpected synergies</td>
</tr>
<tr>
<td><strong>DEBT AVOIDANCE</strong></td>
<td><strong>VENTURE CAPITAL SOUGHT</strong></td>
</tr>
<tr>
<td>- Frugality</td>
<td>- VC as capitalist and catalyst</td>
</tr>
<tr>
<td>- Live within one’s means</td>
<td>- VC networks accelerate innovation &amp; economic devt</td>
</tr>
<tr>
<td>- Self-sufficiency</td>
<td>- Gatekeepers to wider networks of info and expertise</td>
</tr>
<tr>
<td>- Money as a means to a higher spiritual end</td>
<td>- Social structure of innovation</td>
</tr>
<tr>
<td><strong>FAMILY (THEN CHURCH) ABOVE ALL</strong></td>
<td><strong>I - SLEEPING BAGS UNDER THE DESK</strong></td>
</tr>
<tr>
<td>- Family as the fundamental unit of society</td>
<td>- Large workloads over short periods calendar time</td>
</tr>
<tr>
<td>- Eternal nature of family relations</td>
<td>- Long work hours a medal of honour</td>
</tr>
<tr>
<td>- Strict separation of work and social life</td>
<td>- Abnormal work hours</td>
</tr>
<tr>
<td>- Children of greater value c.f. material wealth</td>
<td></td>
</tr>
<tr>
<td>- Need for a balanced lifestyle</td>
<td></td>
</tr>
<tr>
<td>- Extensive lay system of organisation</td>
<td></td>
</tr>
<tr>
<td>- Little social contact outside own Ward</td>
<td></td>
</tr>
<tr>
<td>- Long-standing ties to family, church, community</td>
<td></td>
</tr>
<tr>
<td><strong>RESPECT FOR ESTABLISHED IDEAS AND AUTHORITY</strong></td>
<td><strong>II- AFTERWORK SOCIALISING</strong></td>
</tr>
<tr>
<td>- Unity as a virtue</td>
<td>- Blurring of work and social identities</td>
</tr>
<tr>
<td>- Strong conformity within the group</td>
<td>- Informal information networks</td>
</tr>
<tr>
<td>- Respect for established ideas</td>
<td>- Diffusion of embodied (tacit) knowledge</td>
</tr>
<tr>
<td>- Obedience and acquiescence</td>
<td>- Reinforced more formal corporate interaction</td>
</tr>
<tr>
<td>- High value on pragmatic problem-solving</td>
<td></td>
</tr>
<tr>
<td>- Teamwork</td>
<td></td>
</tr>
<tr>
<td>- Reverence for authority</td>
<td></td>
</tr>
<tr>
<td>- Top-down information flows</td>
<td></td>
</tr>
<tr>
<td>- God-given gender roles</td>
<td></td>
</tr>
<tr>
<td>- Passive non-confrontation</td>
<td></td>
</tr>
<tr>
<td><strong>CREATIVE DISSENT, MULTIPLE ADVOCACY, CONSTANT QUESTIONING</strong></td>
<td></td>
</tr>
<tr>
<td>Table 5.16 – Measuring the Degree (Strength) of the Embedding of the Case Study Firms in the Mormon Regional Culture on the Wasatch Front (Part II)</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MORMON (founded AND managed)</td>
</tr>
<tr>
<td></td>
<td>AN</td>
</tr>
<tr>
<td>MORMON MAJORITY WORKFORCE</td>
<td></td>
</tr>
<tr>
<td>100% MORMON WORKFORCE</td>
<td></td>
</tr>
<tr>
<td>CO-OPERATION, MUTUAL COMMITMENT AND TRUST</td>
<td></td>
</tr>
<tr>
<td>Predominance of Mormon-Mormon network links</td>
<td></td>
</tr>
<tr>
<td>SELF-SUFFICIENCY</td>
<td></td>
</tr>
<tr>
<td>Less than half the mean number of total partners (UT and beyond)</td>
<td></td>
</tr>
<tr>
<td>No Utah partners</td>
<td></td>
</tr>
<tr>
<td>No total partners</td>
<td></td>
</tr>
<tr>
<td>DEBT AVOIDANCE</td>
<td></td>
</tr>
<tr>
<td>Internal financing deliberate strategy from start-up…</td>
<td></td>
</tr>
<tr>
<td>…to make a MORAL decision</td>
<td></td>
</tr>
<tr>
<td>Funding not sought beyond Utah</td>
<td></td>
</tr>
<tr>
<td>Reservations about giving management place to non-Mormon</td>
<td></td>
</tr>
<tr>
<td>FAMILY (THEN CHURCH) ABOVE ALL</td>
<td></td>
</tr>
<tr>
<td>Short work weeks (less than half mean average)</td>
<td></td>
</tr>
<tr>
<td>Abnormal work hours rare</td>
<td></td>
</tr>
<tr>
<td>Above US average holiday lengths</td>
<td></td>
</tr>
<tr>
<td>Pioneer Day company holiday</td>
<td></td>
</tr>
<tr>
<td>Sunday working totally restricted</td>
<td></td>
</tr>
<tr>
<td>Perceived cultural restrictions on AMOUNTS of afterwork socialising</td>
<td></td>
</tr>
<tr>
<td>Perceived cultural restrictions on TYPE of corporate social event</td>
<td></td>
</tr>
<tr>
<td>Corporate policies of no alcohol</td>
<td></td>
</tr>
<tr>
<td>RESPECT FOR ESTABLISHED IDEAS / AUTHORITY</td>
<td></td>
</tr>
<tr>
<td>High value placed on unity within the firm</td>
<td></td>
</tr>
<tr>
<td>Women under-represented in the firm c.f. US average</td>
<td></td>
</tr>
<tr>
<td>No women in total (UT) workforce</td>
<td></td>
</tr>
<tr>
<td>No women in (UT) management team</td>
<td></td>
</tr>
<tr>
<td>Passive-aggressive corporate cultures</td>
<td></td>
</tr>
</tbody>
</table>
Cultural embedding therefore has two key impacts on firms’ abilities to innovate in terms of: (i) influencing their abilities to access wider sources of information, expertise and finance; and (ii) influencing their abilities to use new information once it enters the firm. The import of Mormon emphases on unity and mutual commitment impact on the structure of firms’ external relations and Mormon firms are characterised by a predominance of Mormon-Mormon network links in contrast to their non-Mormon counterparts\(^\text{26}\). Whilst easing interaction with similar firms, this key content of cultural embedding simultaneously constrains firms’ interactions with non-like firms. Second, firms’ import of Mormon traits of self-sufficiency mean that their overall levels of external interaction are reduced relative to their non-Mormon counterparts, limiting their access to wider networks of information and sources of comparative advantage. Similarly, firms’ import of Mormon emphases on debt avoidance and self-reliance sustain internal financing strategies, constraining access to finance, and also to venture capitalists who act as gate-keepers to broader knowledge and business networks. Finally, firms’ import of Mormon emphases on the importance of family and of money as merely a means to a higher end are manifest in terms of shortened work weeks, above average holiday lengths, and lower levels of informal socialising among Mormon employees, the latter again limiting firms’ access to wider sources of tacit knowledge. The import of Mormon traits of respect for hierarchical authority, established ideas and unity also impacts on the use of new knowledge once it enters the firm. These cultural traits contrast with those of creative dissent, constant questioning and diversity of opinions and viewpoints known to promote innovation within the firm, potential constraints which are also reinforced by the limited (gender) diversity of Mormon firms relative to their non-Mormon counterparts.

While each of these key contents of firms’ embedding in the Mormon regional culture is not particularly significant by itself, there is patterning at three levels. First, patterning is apparent within firms across the different cultural traits outlined in Table 5.15, which are mutually reinforcing within particular firms (see Table 5.16). Second, this patterning is in turn consistent with the Mormon cultural values that characterise the regional culture of the Wasatch Front. Here then is the link between regional culture and firms’ corporate cultures (see Figure 5.2). Third, this patterning is in turn consistent across different firms’ corporate cultures, sustaining I argue a regional industrial culture, the third link in the culture hierarchy triangle. Overall, Mormon firms seem to be characterised by relatively closed systems of corporate governance and passive non-confrontational corporate cultures. Mormon regional cultural traditions therefore shape patterns of entrepreneurship in software firms along the Wasatch Front through processes of cultural embedding.

\(^{26}\) Cultural trust, in the absence of significant repeated interaction, based on whole series of cultural markers.
Further, I argue that the various ‘contents’ of firms’ cultural embedding in the region identified in this chapter are more significant at the regional industrial level. The data in Table 5.16 show that the Mormon and Mormon intermediate firms have a greater number of contents of embedding than do their non-Mormon counterparts. Crucially, while Mormon founded or managed firms make up 50% of firms in case study sample, they are even more numerous in the survey sample, making up almost 70% of firms at that regional scale (Table 5.17).

*Table 5.17 – Using the Case Study Sample to Make Inferences Back to the Regional Level.*

<table>
<thead>
<tr>
<th></th>
<th>CASE STUDY SAMPLE</th>
<th>SURVEY SAMPLE (regional)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MORMON</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Founded Managed</td>
<td>50%</td>
<td>69%</td>
</tr>
<tr>
<td>Majority workforce</td>
<td>(65%)</td>
<td>68%</td>
</tr>
<tr>
<td>Founded AND Mormon managed</td>
<td>30%</td>
<td>56%</td>
</tr>
<tr>
<td>Founded, managed AND majority workforce</td>
<td>(30%)</td>
<td>--</td>
</tr>
<tr>
<td>NON-MORMON</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Founded Managed</td>
<td>50%</td>
<td>31%</td>
</tr>
<tr>
<td>Majority workforce</td>
<td>(35%)</td>
<td>32%</td>
</tr>
<tr>
<td>Founded AND managed</td>
<td>30%</td>
<td>21%</td>
</tr>
<tr>
<td>Founded, managed AND majority workforce</td>
<td>(30%)</td>
<td>--</td>
</tr>
<tr>
<td>INTERMEDIATES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type I - NON-Mormon founded, Mormon managed</td>
<td>20%</td>
<td>9%</td>
</tr>
<tr>
<td>Type II - Mormon founded, NON-Mormon managed</td>
<td>20%</td>
<td>9%</td>
</tr>
</tbody>
</table>

Further, the cultural embedding of firms is strongest (see Table 5.16) for the Mormon founded and managed firms, and while these make up 30% of the case study sample, they are almost twice as prevalent at the regional (survey) level (56%). Indeed, this was a deliberate feature of my sampling protocol, to inflate the numbers of non-Mormon and intermediate-Mormon firms to provide controls against which to compare the Mormon firm sample. Further, of the total SIC 737 population at the Wasatch Front regional level, over 90% of firms are in the 1-99 employee category. My case study firm sample focuses on the 20-99 employee category of firms.
5.8.1 – MEASURING THE OVERALL IMPACT OF CULTURAL EMBEDDING ON THE FIRM

In this chapter I have outlined key enablers and constraints on firms’ innovative capacities that stem from their embedding in the same Mormon regional culture. To gauge the relative impacts of these ‘contents’ on the firm, I have employed four measures of firms’ innovativeness and general competitiveness, in terms of: (i) revenue growth since start-up; (ii) R&D intensity Type I (ratio of R&D expenditure to annual revenue); (iii) R&D intensity Type II (ratio of R&D employment to total employment); and (iv) productivity in terms of revenue per employee.

Table 5.18 – Basic Size Distribution of the Survey and Case Study Firm Samples

<table>
<thead>
<tr>
<th>Firm Type</th>
<th>Firm Size Category</th>
<th>Survey Sample</th>
<th>Case Study Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Micro (1-19 emp)</td>
<td>Medium (20-99 emp)</td>
</tr>
<tr>
<td>MORMON</td>
<td>founded and managed</td>
<td>18 firms</td>
<td>28 firms</td>
</tr>
<tr>
<td>NON-MORMON</td>
<td>founded and managed</td>
<td>10 firms</td>
<td>12 firms</td>
</tr>
</tbody>
</table>

| MORMON    | founded, managed and majority workforce | -- | 6 firms | -- |
| NON-MORMON| founded, managed and majority workforce | -- | 6 firms | -- |

Due to the relatively small number of non-Mormon firms in the medium-large size category (N = 4), I have not included statistical comparisons between Mormon and non-Mormon firms in this size category. Nevertheless, the figures do tend to be consistent with the general patterns shown for each of my four indicators of firms’ competitiveness.

27 This is an avenue for future research, expanding my survey dataset to include more firms in the medium-large size category.
In terms of the first indicator of competitiveness, revenue growth since firm start-up, I estimated these rates in terms of both: (i) an assumed linear growth rate (2000 UT revenue / age); and (ii) an assumed exponential growth rate (2000 UT revenue / √age). The results are shown in Tables 5.19 and 5.20.

*Table 5.19 – Estimated Rates of (Assumed Linear) Revenue Growth Since Start-up*

– Mormon and Non-Mormon Firms Compared (Survey and Case Study Samples)

<table>
<thead>
<tr>
<th>Firm Type</th>
<th>Firm Size Category</th>
<th>Micro</th>
<th>Medium</th>
<th>Med-Large</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>(1-19 emp)</td>
<td>(20-99 emp)</td>
<td>(100-499 emp)</td>
</tr>
<tr>
<td>Survey Sample</td>
<td>Micro</td>
<td>0.155</td>
<td>0.784</td>
<td>1.56</td>
</tr>
<tr>
<td>Mormon founded and managed</td>
<td>Medium</td>
<td>0.3165</td>
<td>1.047</td>
<td>(0.90)</td>
</tr>
<tr>
<td>Non-Mormon founded and managed</td>
<td>Med-Large</td>
<td>--</td>
<td>0.184</td>
<td>--</td>
</tr>
<tr>
<td>Case Study Sample</td>
<td></td>
<td>--</td>
<td>0.726</td>
<td>--</td>
</tr>
</tbody>
</table>

* 2000 revenue / age

Assuming linear rates of growth, Table 5.19 shows that at the survey level in both the micro and medium size categories the non-Mormon firms have rates of revenue growth around twice those of their Mormon counterparts. These patterns are further consistent with the case study firm sample, where adding in the effect of a Mormon majority workforce into the analysis exaggerates the pattern at the survey level: non-Mormon firms have growth rates 4 times that of the Mormon firms (0.726 vs. 0.184).

Assuming exponential growth rates, Table 5.20 shows that these patterns are repeated at the survey level, except in the medium size category where the Mormon and non-Mormon firms both have growth rates around 1.7. However, in the case study sample when we add in the effect of a Mormon majority workforce, the non-Mormon firms have growth rates 3 times greater than their Mormon counterparts (1.57 vs. 0.56).
Table 5.20 – Estimated Rates of (Assumed Exponential) Revenue Growth Since Start-up*
– Mormon and Non-Mormon Firms Compared (Survey and Case Study Samples)

<table>
<thead>
<tr>
<th>Firm Type</th>
<th>Firm Size Category</th>
<th>Micro (1-19 emp)</th>
<th>Medium (20-99 emp)</th>
<th>Med-Large (100-499 emp)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Survey Sample</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mormon founded <em>and</em> managed</td>
<td></td>
<td>0.278</td>
<td>1.70</td>
<td>3.272</td>
</tr>
<tr>
<td>Non-Mormon founded <em>and</em> managed</td>
<td></td>
<td>1.051</td>
<td>1.678</td>
<td>(1.25)</td>
</tr>
<tr>
<td><strong>Case Study Sample</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mormon founded, managed <em>and</em> majority workforce</td>
<td></td>
<td>--</td>
<td>0.56</td>
<td>--</td>
</tr>
<tr>
<td>Non-Mormon founded, managed <em>and</em> majority workforce</td>
<td></td>
<td>--</td>
<td>1.57</td>
<td>--</td>
</tr>
</tbody>
</table>

* 2000 revenue / √age

5.8.1.2 - R&D INTENSITY (TYPE I)

Research and development is an important measure of firms’ innovativeness because it represents an active outlook, an absorptive capacity, a level of technological progressiveness, and an open mind, reaching out for new information and being receptive to it (Malecki, 1999: 13). The data in Table 5.21 compare Type I R&D intensities (the ratio of firms’ R&D expenditure to sales revenue) for the Mormon and non-Mormon firms in the survey sample. First, in the micro size category (1-19 employees), the Mormon and non-Mormon firms have almost identical R&D intensities. However, in the medium firm category (20-99 employees) the non-Mormon firms are over twice as R&D intensive as their Mormon counterparts (0.22 % c.f. 0.53 %). This is not a function of the differences in the age distributions of Mormon versus non-Mormon firms; Figure 5.16 shows that the age distributions of these two types of firm are almost identical, indeed that the Mormon category actually has a higher proportion of firms over 15 years old.
Table 5.21 – R&D Intensity Type I (R&D Expenditure: Total Firm Expenditure)
– Mormon and Non-Mormon Firms Compared (Survey Sample – 105 Firms)

<table>
<thead>
<tr>
<th>Indicator (all 2000 figures)</th>
<th>MORMON Founded and managed</th>
<th>NON-MORMON Founded and managed</th>
</tr>
</thead>
<tbody>
<tr>
<td>MICRO (1-19 emp)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ave. R&amp;D expenditure ($)</td>
<td>175 000</td>
<td>533 333</td>
</tr>
<tr>
<td>Ave. total revenue ($)</td>
<td>750 000</td>
<td>2 268 750</td>
</tr>
<tr>
<td>Ave. R&amp;D expenditures: total rev. (%)</td>
<td>0.23</td>
<td>0.24</td>
</tr>
<tr>
<td>MEDIUM (20-99 emp)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ave. R&amp;D expenditure ($)</td>
<td>974 896</td>
<td>1 738 571</td>
</tr>
<tr>
<td>Ave. total revenue ($)</td>
<td>4 344 762</td>
<td>3 300 000</td>
</tr>
<tr>
<td>Ave. R&amp;D expenditures: total rev. (%)</td>
<td>0.22</td>
<td>0.53</td>
</tr>
<tr>
<td>MED-LARGE (100-499 emp)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ave. R&amp;D expenditure ($)</td>
<td>5 832 000</td>
<td>5 871 414</td>
</tr>
<tr>
<td>Ave. total revenue ($)</td>
<td>7 596 667</td>
<td>6 568 530</td>
</tr>
<tr>
<td>Ave. R&amp;D expenditures: total rev. (%)</td>
<td>0.77</td>
<td>(0.89)</td>
</tr>
</tbody>
</table>

Figure 5.16 - Age Breakdown of Firms in the Medium Size Category (20-99 Employees)
Mormon and Non-Mormon Firms Compared (Survey Sample)

(i) MORMON founded and managed (28) Firms
(ii) NON-MORMON Founded and Managed (12) Firms
When the effect of a Mormon majority workforce is added into the analysis (i.e. using the case study sample), these patterns are repeated (see Table 5.22).

Table 5.22 – R&D Intensity Type I (R&D Expenditure: Total Firm Expenditure)
Mormon and Non-Mormon Firms Compared (Case Study Sample – 20 Firms)

<table>
<thead>
<tr>
<th>Innovation Indicator</th>
<th>ALL firms in sample</th>
<th>MORMON founded, managed, and majority employees</th>
<th>NON-MORMON founded, managed, and majority employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ave. R&amp;D expenditure ($)</td>
<td>3 036 529</td>
<td>502 000</td>
<td>2 516 666</td>
</tr>
<tr>
<td>Ave. total revenue ($)</td>
<td>7 950 489</td>
<td>1 730 000</td>
<td>4 300 000</td>
</tr>
<tr>
<td>Ave. R&amp;D expenditure : total revenue (%)</td>
<td>0.38</td>
<td><strong>0.29</strong></td>
<td><strong>0.59</strong></td>
</tr>
</tbody>
</table>

The data in Table 5.22 show that Type I R&D intensities for the non-Mormon firms are on average twice those of the Mormon firms in the case study sample (0.59 % c.f. 0.29 %). Again, this is likely not a function of the different age distributions of these two types of firm, as these are broadly similar (see Figure 5.17).

Figure 5.17 - Age Breakdown of Firms in the Case Study Sample (all 20-99 employees)
Mormon and Non-Mormon Firms Compared
5.8.1.3 – R&D INTENSITY (TYPE II)

The results for the survey firm sample using the third indicator, Type II R&D intensity (ratio of R&D employment to total employment) are shown in Table 5.23. Only in the medium size category (20-99 employees) is there a difference between the Mormon and non-Mormon firms, where the Mormon firms have Type II R&D intensities two thirds those of their non-Mormon counterparts (0.40 vs. 0.58). Again, this is likely not a function of any age differences. Rather, as Figure 5.16 shows, the age distributions of these two types of firm are broadly similar.

Table 5.23 – R&D Intensity Type II (R&D Employment: Total Firm Employment)
– Mormon and Non-Mormon Firms Compared (Survey Sample)

<table>
<thead>
<tr>
<th>Indicator (all 2000 figures)</th>
<th>MORMON Founded and managed</th>
<th>NON-MORMON Founded and managed</th>
</tr>
</thead>
<tbody>
<tr>
<td>MICRO (1-19 emp)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ave. R&amp;D employment</td>
<td>7.47</td>
<td>5.14</td>
</tr>
<tr>
<td>Ave. total employment</td>
<td>13.59</td>
<td>9.0</td>
</tr>
<tr>
<td>Ave. R&amp;D emp.: total emp. (%)</td>
<td><strong>0.55</strong></td>
<td>0.57</td>
</tr>
<tr>
<td>MEDIUM (20-99 emp)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ave. R&amp;D employment</td>
<td>14.92</td>
<td>24.4</td>
</tr>
<tr>
<td>Ave. total employment</td>
<td>36.2</td>
<td>42.1</td>
</tr>
<tr>
<td>Ave. R&amp;D emp.: total emp. (%)</td>
<td><strong>0.40</strong></td>
<td><strong>0.58</strong></td>
</tr>
<tr>
<td>MED-LARGE (100-499 emp)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ave. R&amp;D employment</td>
<td>40.86</td>
<td>85.2</td>
</tr>
<tr>
<td>Ave. total employment</td>
<td>140.71</td>
<td>115.3</td>
</tr>
<tr>
<td>Ave. R&amp;D emp.: total emp. (%)</td>
<td><strong>0.29</strong></td>
<td>(0.74)</td>
</tr>
</tbody>
</table>

However, adding in the effect of a Mormon majority workforce into the analysis actually reverses the survey level pattern in the medium firm size category. The data in Table 5.24 show that in the case study sample, Type II R&D intensities for the non-Mormon firms average only half those of their Mormon counterparts (0.34 vs. 0.57).
Table 5.24 – R&D Intensity Type II (R&D Employment: Total Firm Employment)
Mormon and Non-Mormon Firms Compared (Case Study Sample – 20 firms)

<table>
<thead>
<tr>
<th>Innovation indicator</th>
<th>ALL firms in sample</th>
<th>MORMON founded, managed and majority employees</th>
<th>NON-MORMON founded, managed and majority employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ave. R&amp;D employment (2000)</td>
<td>24.95</td>
<td>10.29</td>
<td>8.8</td>
</tr>
<tr>
<td>Ave. total employment (2000)</td>
<td>49.9</td>
<td>18.14</td>
<td>42.2</td>
</tr>
<tr>
<td>Ave. R&amp;D employment relative to total employment (%)</td>
<td><strong>0.50</strong></td>
<td><strong>0.57</strong></td>
<td><strong>0.34</strong></td>
</tr>
</tbody>
</table>

5.8.1.4 –PRODUCTIVITY

The results for the survey firm sample using the final indicator, productivity levels measured in terms of firms’ revenues per employee (2000 data, revenues attributable to firms’ Utah operations only) are shown in Table 5.25. In the micro size category, the Mormon firms have productivity levels less than half those of their non-Mormon counterparts (60.47 vs. 155.7). However, this pattern is reversed for firms in the medium size category. Again the age distributions of Mormon and non-Mormon firms in these two size categories are highly similar (Figures 5.16 and 5.18).

Table 5.25 – Productivity (2000 UT Revenue per UT Employee)
Mormon and Non-Mormon Firms Compared (Survey Sample)

<table>
<thead>
<tr>
<th>Firm Size Category</th>
<th>MORMON founded and managed firms ($1000 / employee)</th>
<th>NON-MORMON founded and managed firms ($1000 / employee)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MICRO (1-19 emp)</td>
<td>60.47</td>
<td>155.71</td>
</tr>
<tr>
<td>MEDIUM (20-99 emp)</td>
<td>123.69</td>
<td>80.82</td>
</tr>
<tr>
<td>MED-LARGE (100-499 emp)</td>
<td>48.36</td>
<td>(57.1)</td>
</tr>
</tbody>
</table>
However, adding in the effect of a Mormon majority workforce into the analysis actually reverses the survey level pattern in the medium firm size category. Table 5.26 shows that at the case study level, average productivity for the Mormon firms is less than that for the non-Mormon firms:

<table>
<thead>
<tr>
<th>Firm Type (all 20-99 employees)</th>
<th>Productivity ($ / employee)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MORMON founded, managed, and majority workforce</td>
<td>88 744</td>
</tr>
<tr>
<td>NON-MORMON founded, managed and majority workforce</td>
<td>103 828</td>
</tr>
</tbody>
</table>

Again, the age distributions of these two types of firm at the case study level are almost identical (Figure 5.17).
Accelerating technological change, less predictable and more customised markets have put increased pressure on firms to launch new products more frequently and to compress product development cycles (Thrift, 2000). Economic growth is thus ever more dependent on the continuing capacity of firms to innovate rapidly, and their collective ability to bring new ideas and knowledge to the marketplace (Gertler et al., 2001). However, four of the five indicators of firms’ competitiveness in Table 5.27 suggest that the embedding of software firms on Utah’s Wasatch Front in the Mormon regional culture has an overall constraining effect on firms’ abilities to innovate, and hence on their competitiveness:

Table 5.27 – The Impact of Cultural Embedding on the Firm

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Survey Level</th>
<th>Case Study Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(founding and management)</td>
<td>(founding, management and majority workforce)</td>
</tr>
<tr>
<td></td>
<td>Micro (1-19 emp)</td>
<td>Medium (20-99 emp)</td>
</tr>
<tr>
<td>(i) Revenue growth since start-up</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) linear</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(b) exponential</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(ii) R&amp;D intensity type I (employment)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(iii) R&amp;D intensity type II (expenditure)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(iv) Productivity (revenue / employee)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

However, this is not to suggest that the impacts are all one way. As I have outlined in this chapter, there are a whole series of Mormon regional cultural traits imported into firms that impact on their willingness to go beyond their boundaries and access new knowledge and finance, and to use new knowledge once it enters the firm. In some cases they promote innovation within the firm, in other cases they constrain it. This chapter therefore highlights the need for a multiple
method approach, to gain a more nuanced understanding of the processes, agents and mechanisms in turn manifest in statistical data which would otherwise be masked by a simple broad survey level analysis.

5.9 -SUMMARY

In this chapter I have shown how a series of self-identified cultural traits from the Mormon regional culture are being imported into the workings of Utah’s lead computer software firms on the Wasatch Front. I have also demonstrated how this cultural embedding of firms in the region has material impacts upon firms’ competitiveness, specifically in terms of their abilities to innovate. I have argued that cultural embedding is best conceptualized in terms of a series of sustained tensions between key Mormon cultural traits, versus elements of corporate and industrial cultures that have consistently been shown in the regional learning literature as central to firms’ abilities to innovate. Firms’ import of Mormon regional cultural traits is manifest in terms of: a preference for interaction with similarly Mormon founded and managed firms; tendencies towards self-sufficiency and internal financing strategies; reduced work hours and increased paid vacation leave; constrained levels of informal afterwork socialising amongst their employees; and an enhanced respect for established ideas, leadership authority and unity within the firm. As such, cultural embedding impacts upon both firms’ abilities to access new knowledge and on their use of new knowledge once it enters the firm. However, whilst the non-Mormon firms in my survey and case study samples generally outperform their Mormon counterparts in terms of revenue growth since start-up, R&D intensity measured in terms of employment, and productivity, the pattern is not monolithic. Crucially, both enablers and constraints on firms’ innovative capacities stem from the same regional culture in which they are embedded. In Chapter 6 I expand my analysis to unpack the specific mechanisms through which firms import these regional cultural traits into their internal structures; that is, through which firms are culturally embedded in the region.
CHAPTER 6

UNPACKING THE MECHANISMS OF CULTURAL EMBEDDING

‘A major task ahead for economic geographers is to interrogate the dynamics of these various dialectics – between economic institutions and culture – if we are to succeed in understanding how economic relations in particular places are embedded within (and not separate from) a broader social and political matrix’.

M.S. Gertler (1997: 57)

‘In order to really understand strategic decisions made in a firm and their outcomes, we should understand the personal embeddedness of key actors and decision makers (owners, managers and various employees) as well as the embeddedness of a firm, as a collectivity, in its external environments’.

P. Oinas (1997: 27)

6.1 – INTRODUCTION

Regional economies are more than simply firms and the networks between them; they are also constituted by the institutional and cultural traditions that facilitate and regulate economic behaviour and social activity (Wolfe and Gertler, 1998: 100). However, while accounts typically describe particular corporate or regional cultures, these are rarely explained, in terms of how they originate, how they have material impacts on the firm and the region, and how that influence is maintained over time. Rather, ‘culture is often misrepresented as something ethereal and eternal, divorced from historical material practice, or misconstrued as a self-perpetuating tradition that determines contemporary activities’ (Sayer and Walker, 1992: 178). Explanations have tended to give culture causal powers outside of the individuals whose interactions sustain it as a pluralistic set of social practices (McDowell, 1994; Mitchell, 1995), reinforced by the widespread use of process language which further obscures the role of tangible causal agents, and so limiting the policy relevance of these studies (see Markusen, 1999). It is therefore imperative that we move beyond the limits of this body of regional cultural theory. In Chapters 4 and 5 I outlined how the Mormon regional culture on Utah’s Wasatch Front informs local corporate forms, actual firm
behaviour, and hence regional innovative capacity, as firms import key regional cultural traits into their internal workings (see Table 6.1). In this chapter I focus explicitly on the actual mechanisms by which this corporate import of regional cultural values, traditions and ways of thinking occurs, and how those mechanisms might vary as firms grow and change over time.

Table 6.1 – Conceptualising the Cultural Embedding of Firms in Terms of the Overlaps Between Regional Culture and Corporate Cultures

<table>
<thead>
<tr>
<th>REGIONAL MORMON CULTURE (SELF-IDENTIFIED)</th>
<th>CORPORATE CULTURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>BELIEF IN DIVINE REVELATION</td>
<td>BELIEF IN DIVINE INTERVENTION IN THE FIRM</td>
</tr>
<tr>
<td>MONEY AS SIMPLY A MEANS TO A HIGHER END</td>
<td>LDS VALUES OVERRIDE PROFIT MAXIMISING STRATEGIES</td>
</tr>
<tr>
<td>LDS CHURCH ‘CALLINGS’ SYSTEM</td>
<td>‘CALLING’ MENTALITY</td>
</tr>
<tr>
<td>BUILDING THE KINGDOM</td>
<td>MORMON VALUE-ORIENTATED SOFTWARE PRODUCT</td>
</tr>
<tr>
<td>GOD-GIVEN GENDER ROLES</td>
<td>PATRIARCHAL ORIENTATION</td>
</tr>
<tr>
<td>FAMILY ABOVE ALL</td>
<td>EXPLICIT FAMILY ORIENTATION</td>
</tr>
<tr>
<td>CO-OPERATION AND MUTUAL TRUST</td>
<td>MORMON-MORMON CO-OPERATION AND TRUST</td>
</tr>
<tr>
<td>SELF-SUFFICIENCY AND AUTONOMY</td>
<td>LIMITED STRATEGIC PARTNERS, SELF-RELIANCE</td>
</tr>
<tr>
<td>DEBT AVOIDANCE &amp; AUTONOMY</td>
<td>AVERSION TO EXTERNAL FINANCE AND LOSING CONTROL</td>
</tr>
<tr>
<td>FAMILY (THEN CHURCH) ABOVE ALL</td>
<td>REDUCED WORK HRS, EXTENDED HOLIDAYS, LIMITED AFTERWORK SOCIALISING</td>
</tr>
<tr>
<td>RESPECT FOR ESTABLISHED IDEAS AND AUTHORITY</td>
<td>PASSIVE NON-CONFRONTATION</td>
</tr>
</tbody>
</table>
Figure 6.1 summarises the multiple-scaled mechanisms through which I argue software firms on the Wasatch Front come to be culturally embedded within the region, moving from the micro to the local, regional and national scales\(^1\). In the remainder of this chapter I outline these mechanisms in depth.

\(^1\) However, this is not to imply that there is some linear consequential relationship between the different levels of the diagram – mechanisms at different scales interact often by-passing intermediate scales.
Figure 6.1 – Unpacking the Multiple-Scaled Mechanisms of Firms’ Cultural Embedding in the Region

**KEY INDIVIDUALS WITHIN THE FIRM**

Simultaneous occupation of positions of corporate power and regional cultural identity

**STRENGTH IN NUMBERS**

**INTER-FIRM LEVEL**

Influence of surrounding business community
Visibility factor

**INTRA-FIRM LEVEL**

Conformity to norms of the group
Mutual observance in the workplace
Group ratification of culturally-informed decisions

**MORMONS FOUNDING / MANAGING / STAFFING FIRMS**

**REGIONAL**

**LDS CHURCH**
Church investment portfolio
Role model leaders
Formal church teachings
Youth socialisation
Priesthood progression

**LABOUR RECRUITMENT**

Firms actively seeking employees that match their own values
Employees seeking firms that match their own values
Difficulties of attracting employees from out of state

**BRIGHAM YOUNG UNIVERSITY**

Training in skills & culture
Strict honour code
Compulsory religion classes
Graduates as embodied Mormon culture

**STATE**

**UTAH LEGISLATION**

Right-to-work status (in favour of employer); strict liquor and anti-smoking laws; LDS systemic power in govt

**NATIONAL**

**US LEGISLATION**

Civil Rights Act (1964) & Workplace Religious Freedom Act (1972)
Increase employers’ responsibility to accommodate workers’ religious beliefs in workplace

**FIRM**

**INDIVIDUAL**

**COUNTY**

**NATIONAL**
In the first section I outline the two primary mechanisms of cultural embedding: (i) key individuals who simultaneously maintain positions of power in the firm and in wider Mormon socio-cultural networks; and (ii) a ‘strength in numbers’ mechanism; that any regionally-culturally-informed decision needs to be ratified by a wider workforce majority if it is to have a significant impact upon the firm. This mechanism is also applicable at an inter-firm level, and in Section 6.4 I examine the influence of the wider business community (county level) on firms’ cultural embedding in the region. Second, I focus on a range of secondary mechanisms which reinforce the primary mechanisms of cultural embedding. These include labour recruitment processes, educational and training mechanisms, role model emulation, and regional and national legislation. Third, while some of these mechanisms are specific to the Mormon cultural context, the majority are locally contingent manifestations of much more general mechanisms. I examine how these mechanisms are often mutually reinforcing within the firm, and how different combinations of mechanisms within different firms sustain different ‘degrees’ (strengths) of embeddedness as measured in Chapters 4 and 5. Fourth, I focus my analysis around key elements of Bhaskar’s critical realism, which I argue offers a cleaner, more substantive and hence policy workable model of firms’ cultural embedding in the region. I focus on three key relations of embedding, in terms of: (i) individuals and individuals; (ii) individuals and the firm; (iii) firms and their wider environments. Finally, I examine how the relevance of these various mechanisms to the firm changes over time, arguing that culture should not be conceived as a once-and-for-all influence on firms’ activities, but rather as continually constructed and reconstructed through everyday processes of social interaction through tangible causal agents.

6.2 - KEY INDIVIDUALS WITHIN THE FIRM AS AGENTS OF EMBEDDING

Too often, explanations of the innovative success of high tech industrial districts tend to black-box a region’s labour force as simply a ‘pool’ that firms dip into. However, I argue that all interactions between firms are ultimately between real people immersed in a whole range of interrelationships which include economic, social, cultural, political, religious, and family networks. As such, I argue that the first primary mechanism through which firms import regional cultural values centres on key individuals who occupy positions of power within the firm, by virtue of which they have a disproportionate influence over firms’ corporate cultures. Scholars have traditionally focused on the role of firms’ founders in this context (e.g. Deal and Kennedy, 2000; Schein, 1991). Founders often possess dynamic personalities, strong values and a clear vision of what the firm should look like, how it should operate and where it is going (Furnham and Gunter, 1993). Their personal values, priorities, ideas and values are readily transmitted to
new employees, become accepted within the firm and often persist over time. However, my results also highlight a range of ‘opinion leaders’ or ‘culture carriers’ at different levels within the firm. These include not only Vice Presidents who by virtue of their job role have a large influence over the behaviour of others, but also managers at a range of levels, lead software engineers and other operational personnel who by virtue of their strong personality or achievements have undue influence on the opinions and behaviour of others. Fundamentally, because who and what the firm understands itself to be are produced in and through the actions and interpretations of its employees, the identities and commitments of these key individuals are closely entwined with, although not identical to, corporate identities and commitments (Schoenberger, 1997). Further, when somebody is employed in a firm, their cultural upbringing comes with them. As such, it is not just a case of people’s personal values becoming institutionalised in the firm, but of regional cultural values being imported into the firm, informing internal operations and decision-making processes through definitions of what has value and what does not.

This ‘key individuals’ mechanism of embedding is manifest in my data. Firms with Mormon founders, managers, and CEOs have a higher degree of embedding in Mormon culture as measured in terms of the empirical indicators outlined in Chapters 4 and 5, than do their Mormon intermediate counterparts with their mix of Mormon and non-Mormon founders, managers, and CEOs (see Table 6.2). Indeed, the majority of respondents found it impossible to draw a line between their religion, culture, and their work. Only in a very small number of cases was ‘business is business’ the response. Rather, my active Mormon respondents consistently outlined how Mormonism provides them with a strong core of values upon which they continually draw in their daily worklives:

‘I cross the line between work and church all the time. I have a personal faith and a vision of how the world could be, that is who I am, and yeah I bring all that to work. If you’re active in the church and fully engaged putting effort into it, you just can’t help that. Now that doesn’t mean you have to be pious, it’s better to just be an example of what you believe rather than preaching or coming right out and saying stuff’. Director of Software Development, XTU, active Mormon

‘I really feel that our company is the way that we are because of the type of people that we are, and certainly the religion has helped form the type of people we are. If you do find some type of commonality, it’s because the church teaches true principles’. CEO and Co-Founder, QDD, active Mormon
Table 6.2 – Significance of the Key Individuals Mechanism of Embedding as Manifest in the Data

<table>
<thead>
<tr>
<th>INDICATOR OF EMBEDDING</th>
<th>Morman FIRMS</th>
<th>Morman INTERMEDIATE FIRMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BELIEF IN DIVINE INTERVENTION IN THE FIRM</td>
<td>AN</td>
<td>PS</td>
</tr>
<tr>
<td>Praying Over Corporate Strategic Direction - Firm Level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fasting for the company - individual Firm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seeking revelation at the Temple w.r.t. the company</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LDS VALUES &gt; PROFIT MAXIMISING STRATEGIES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Firms unwilling to work on unwholesome content</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vocalised as LDS issue</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Firm as money-making entity &lt; FIRM as vehicle for good</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Policies of across-the-board pay-cuts over lay-offs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PERCEIVED IMPORT OF CALLING MENTALITY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MORMON ORIENTATED SOFTWARE PRODUCT As deliberate corporate strategy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PATRIARCHAL ORIENTATION</td>
<td>AN</td>
<td>PS</td>
</tr>
<tr>
<td>No women in total workforce</td>
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% POSSIBLE INDICATOR CELLS FILLED                                | 61 | 25
Further, I found that for the majority of respondents, the application of their religious values within the workplace was not only acceptable, but a natural thing for them to do rather than a deliberate strategy. When people set up an organisation they typically borrow from models or ideals that are familiar to them (Trompenaars and Hampden-Turner, 1997: 157):

“We do try to build the company on what we feel are good values of the [LDS] church, because it’s only natural that the lifestyles that our key employees are accustomed to would also be in the working environment we have. You just can’t leave your religious beliefs on the doorstep when you come to work. In my business dealings throughout the world with people, my personal religious beliefs and values, they always influence the way I do business. Work is an opportunity for people to see you as an example of what you believe in’. CEO and Co-Founder, QDD, active Mormon

“So while it’s not been a passive thing, it’s not been an active decision to keep the company’s culture in line with Mormon values either. As a Latter-day Saint you’re not actually thinking of any ‘cultural values’, it’s just personal values, which in turn manifest themselves in that culture. It’s just like no-one in England starts a company and say’s everyone’s gonna be a little reserved and stiff upper-lipped. It’s just the English way of doing things. Equally, this is just the Mormon way of doing things. But often you just wanna remove the church label because of the stigma that brings in business’. Director of Brand Management and User Experience, PSO, active Mormon

Thus, it is the scientists, engineers, programmers and other professionals working in a region whose personal values and commitments become transformed over time into deeply-held, implicit shared values, norms and assumptions within the firm concerning appropriate behaviour and ways of thinking. Crucially, their personal values are in turn informed by the wider regional culture. As such, key individual agents are one of the primary mechanisms of firms’ cultural embedding within the region, premised on their multiple identities and simultaneous existence at a range of scales (also see Harvey, 1996).

6.3 – STRENGTH IN NUMBERS

6.3.1 - INTRA-FIRM LEVEL

Intimately related to the ‘key individuals’ mechanism of cultural embedding is the second primary mechanism, ‘strength in numbers’, which centres on a workforce majority who share similar cultural values to the firm’s opinion leaders. There are three key components to this mechanism:
(i) conformity to the norms of the group; (ii) observance in the workplace by other culture members; and (iii) group ratification of regionally-culturally-informed decisions. First, one of the key influences on our modes of thinking and behaviour as individuals are our associations with others, whose attitudes and behaviour patterns either reinforce or proscribe (‘punish’) our own (Bahr, 1994). Because our confidence in own attitudes and beliefs is bolstered when others share the same perspectives (Brinkerhoff and Mackie, 1986), conformity to the norms of the group is therefore natural. Thus, if we want to be accepted at work we try to live up the expectations of our colleagues; we pay attention to their actions and learn from them, taking them as our cue when we are uncertain of what to do (O’Reilly, 1989). The greater the proportion of a workforce who share a particular set of cultural values, the greater the likelihood that those values become the norm that newcomers look up to and take as their cue, and hence these values become dominant in the firm.

The second component of the strength in numbers mechanism of embedding concerns direct observation by other members of one’s culture. Given the high percentage of Mormons in Utah’s high tech industry, particularly in Utah County, direct observation by other Mormons in business also appears significantly to influence individuals’ and firms’ behaviour on the Wasatch Front. Phillips (1998) suggests that because LDS Church norms and community norms have become fused in Utah, individuals must therefore assess the odds and consequences of being observed by other Ward members, neighbours, friends and acquaintances even in the business setting. Control comes from the knowledge that someone who matters to us is paying close attention to what we are doing and will tell us if our behaviour is appropriate or inappropriate (O’Reilly and Chatman, 1996: 161). The more Mormons in a firm’s workforce therefore, the greater that control, and hence the greater the strength of this mechanism of cultural embedding.

The third key component of this mechanism concerns the group ratification of regionally-culturally-informed decisions in the firm. Critically, we need to conceptualise culture first and foremost as a social structure, that is, a group property (Stark, 1996). As such, what counts in terms of particular cultural values limiting firm behaviour, is not only whether the firm’s decision makers embody those values, but whether those values are ratified by the wider work group and accepted by the majority as a valid basis for action (ibid.: 164). If most of the firm’s employees do not share those values, even if individuals do bring regional cultural considerations into the decision-making process that surrounds corporate strategy formulation (e.g. praying or fasting over corporate decisions), these will rarely strike a responsive chord in most of the others and instead be smothered by group indifference. However, when the majority of people in a firm
share the same culture, then its associated set of values and priorities will enter freely into everyday interactions and become a valid part of the firm’s normative system.

My respondents were very aware of this tri-partite ‘strength in numbers’ mechanism, through which firms come to import Mormon values into their internal structures, and especially outlined the limits to this mechanism:

‘With the majority of sharing the same religion, we share a lot of common beliefs which allows us often to express religious opinions, and even to base some of our company decisions on our religious values. And we’ve come across situations, whether it’s doing a project, or what direction we might take over the next few months, and we’ve changed our business plan having sought guidance from God in thought and prayer, and fasting, and those types of things. And the decisions are pretty easy because we are all on the same page religiously and so forth. But just a couple of key management personnel who aren’t LDS would be enough to swing the pendulum. We’d have to stop that.’ Director of Technology and Co-Founder, PSO, active Mormon

‘We [Mormons] are always taught that it is an ethical system we are learning, not a specific Sunday morning procedure. And because Mormons are in the religious majority in Utah, the people you see on Sunday are a lot like the people you see at work, and so then it’s easier for you to carry over that value system into work. I mean it’s pretty rare to go outside Utah and find so many Mormons in an organisation that they actually mirror the structures of the church, but not so here. You get individuals mirroring the church attitudes all the time in work’. Head, TE, CZV, active Mormon

While my in-depth interviews confirmed the significance of this mechanism of cultural embedding, I have been unable to isolate that mechanism in my cultural matrices (Chapters 4 and 5) that measure firms’ degrees of cultural embedding in the region. Crucially, this would require a comparison of the wholly Mormon firms (Mormon founded, managed and with a Mormon majority workforce) with firms that are Mormon majority founded and / or managed but who have a non-Mormon majority workforce. Only one firm in my case study sample met these criteria, a function I argue of the labour recruitment mechanisms of embedding outlined in Section 6.4.

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2 Utah County is 89% Mormon on its general population, compared with Salt Lake County which is 65% Mormon.
6.3.2 – STRENGTH IN NUMBERS - INTER-FIRM LEVEL

The strength in numbers mechanism of cultural embedding as outlined above, premised on conformity to the group norms, mutual observance by others and ratification of culturally-informed strategies, also operates at the inter-firm level. This mechanism therefore encompasses the role of firms’ surrounding business communities and is manifest in my data at the county level. My data shows that the Mormon founded and managed firms in my Utah County case study sample have a higher degree of cultural embedding (measured in the indicators outlined in Chapters 4 and 5) than do their Salt Lake County counterparts (see Table 6.3 right-hand-side). While the Utah County Mormon firms fill on average 73% of the available embeddedness matrix cells, their Salt Lake County counterparts fill only 50%.
<table>
<thead>
<tr>
<th></th>
<th>MORMON FIRMS (founded AND managed)</th>
<th>INDICATOR OF EMBEDDING</th>
<th>MORMON INTERMEDIATE FIRMS (Mormon/ non-Mormon mix of founders and management)</th>
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<td>Praying Over Corporate Strategic Direction - Firm Level</td>
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<td>Fasting for the company - individual Firm</td>
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<td>Seeking revelation at the Temple w.r.t. the company</td>
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<td>LDS VALUES &gt; PROFIT MAXING STRATEGIES</td>
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<td>Firms unwilling to work on unwholesome content</td>
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<td>Vocalised as LDS issue Firm</td>
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72 50 % POSSIBLE INDICATOR CELLS FILLED 34 16
In Utah County, Mormons comprise 89% of the general population and average 82% of firm’s total workforces in my case study sample, compared with Salt Lake County equivalent figures of 65% and 52%. As such, there is a higher chance that a Mormon firm in Utah County will be surrounded by other similarly Mormon founded and managed firms from whom its employees might receive peer support for their Mormon culturally-inflected business patterns, than a Mormon firm in Salt Lake County might. My data also shows a similar pattern for the Mormon intermediate firms, with their Mormon and non-Mormon mix of founding and management (see Figure 6.3 left-hand-side). While the Utah County intermediate Mormon firms fill on average 34% of the available embeddedness matrix cells, their Salt Lake County counterparts fill only 16%. Respondents confirmed the significance of this mechanism of embedding at interview, in terms of observation in business by Ward members, neighbours and acquaintances in other firms, especially in Utah County:

‘Yeah the visibility factor does have a lot to do with it. Because the Utah high tech market is fairly small, so you see the same people turning up again and again. I see them in my Ward, I see them at the ball game, I see them in business. So it would be awfully strange for me to see a person and act totally different in business than I do at church. So that visibility factor is an accountability factor and tends to push people at work towards the moral end of things. If you’re LDS then you’d better behave!’ Director of Technology and Co-Founder, ORN, active Mormon

‘It was a real shock coming to Salt Lake from having worked down in Utah County. They really do incorporate their religion into business a lot more down there. Utah County’s just on a different planet! I think if you’re talking about Utah County business and you don’t make reference to the Mormon Church you’ve kind of missed the point!’ National Sales Director, JET, active Mormon

The ‘strength-in-numbers’ mechanism therefore also operates at an inter-firm level, and incorporates the role of the surrounding business community in helping define the degree to which a firm comes to import regional cultural values into its internal structures.

6.4 – LABOUR RECRUITMENT MECHANISMS

Labour recruitment processes function as key secondary mechanisms that reinforce firms’ import of regional cultural values via the ‘key individuals’ and ‘strength in numbers’ mechanisms of embedding as outlined in Sections 6.2 and 6.3. The business management literature suggests that
firms’ founders typically have a clear notion, based on their own cultural history and personality, of how things ought to be in their new firm, of how to arrange things internally and who to hire to get those ideas fulfilled. Typically, the founder brings in a small group of people and creates a core management group that shares their original vision for the company (Schein, 1991), and my own results are consistent with this model. Figures 6.2 and 6.3 show that at both the survey and case study levels, the degree to which firms are Mormon founded positively correlates with the degree to they are Mormon managed:

**Figure 6.2** – Scatter Distribution of Survey Sample (N = 105) by Mormon Founding and Management

**Figure 6.3** – Scatter Distribution of Case Study Sample by Mormon Founding and Management

Further, my results suggest that the proportion of firms’ total workforces that are Mormon (case study level) is positively correlated with the proportion of Mormons in their founding and management teams (Figures 6.4 and 6.5). This is therefore consistent with notions of firms’
founders surrounding themselves with a management team who shares their own values, who in turn surrounds itself with a wider workforce of similarly minded people.

However, the direction of causation driving the patterns in Figure 6.5 may be the reverse; that the more Mormons there are in a firm’s total workforce, the more Mormons there are likely to be in its management team. My in-depth interviews therefore allowed me to determine the nature of the processes and mechanisms sustaining these distinctive patterns, and hence confirmed the direction of the relationships in the graphs above. There are three key components to the recruitment mechanism that reinforces firms’ cultural embedding, centred on: (i) firms actively seeking employees that match their own values; (ii) employees actively seeking firms that match their personal values; and (iii) difficulties of recruiting (non-Mormon) employees from out of state.
6.4.1 – FIRMS ACTIVELY SEEKING EMPLOYEES THAT MATCH OWN VALUES

Under Title VII of the US Civil Rights Act (1964) it is illegal to discriminate in labour recruitment, indeed in any condition of employment, based on stereotypes or assumptions about the abilities, traits or performance of individuals of a certain religious, ethnic or cultural group. However, despite this legislation my results suggest that firms do discriminate, sometimes quite blatantly, between Mormon versus non-Mormon employees, a key mechanism that reinforces firms’ import of Mormon regional cultural values. Indeed, while firms’ leaders were typically keen to emphasise that religious beliefs and cultural background have no bearing on employee recruitment, the reverse was often perceived lower down the company, by non-Mormon and Mormon employees alike. Recruitment is a critical mechanism for understanding firms’ cultural embedding because it is at this stage that the particular characteristics and attributes sought in potential employees are made most clear (see also McDowell, 1997). Fundamentally, people like to recruit people like themselves (ibid.). First, there exist direct filtering mechanisms, that is, explicit requests on the type of candidate that firms are seeking to fill a position. This was begrudgingly admitted in five (25%) of the firms in my case study sample:

‘LDS managers do tend to gravitate towards LDS potential employees. I previously worked as HR Director in an LDS family-run company and a lot of times I would receive explicit requests on the type of candidate that they were looking to fill a position, and they would use religion as a descriptor – ‘we’d really like someone who’s raised LDS or who’s familiar with the culture’. So I would let them know that that’s something we couldn’t do, that we have to hire on an equal level. But it was surprising to have a CEO and owner of a company of a couple of thousand people come in and put that as one of their descriptors, and I know that other people in my position would accept that as valid’.
Director of Human Resources, UIE, non-Mormon, female

‘It’s not stated, but when you glance down resumes and see down the bottom ‘educated at BYU’ that’s a point in my mind. So will I be a little more likely to call that person for an interview? – yes. Will I be a little more comfortable with them because I feel like I won’t have to wrestle with them over issues of character? - yes. If I was ever charged with a discrimination lawsuit, would they ever prove it? – probably not. So yeah, it’s definitely there’.
Director of Technology and Co-Founder, PSO, active Mormon

Nor by gender or sexual orientation.

Brigham Young University is the university of the LDS Church, 99% Mormon in its student body (see Section 6.5.1).
Second, there exist *indirect* filtering mechanisms, as firms seek to hire people who provide a ‘good fit’ with the firm’s current culture. This mechanism is applicable to *all* of the firms in my case study sample. Once we have developed an integrated set of shared cultural assumptions, we will be most comfortable with those who share the same set of assumptions, and uncomfortable in situations where different assumptions operate (Schein, 1992: 22-3). As such, firms seek employees whose personal values ‘fit in’ with those that the company already holds central. Further, my results suggest that various proxies or ‘cultural markers’ are used at interview to help recruiters sift through potential job candidates, and which indicate their personal cultural values. These markers can be overt and physical or less readily observable and more symbolic. The most common Mormon cultural markers described to me at interview are outlined in *Table 6.4*.

*Table 6.4 – Self-Identified Mormon Cultural Markers*

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<thead>
<tr>
<th>CULTURAL MARKER (self-identified)</th>
<th>COMMENTS</th>
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<tbody>
<tr>
<td>‘Mormon speak’</td>
<td>A particular vocabulary, much of which is derived from Mormon religious heritage – e.g. Mormons are forever ‘grateful’, ‘blessed’, ‘humble’, they ‘take counsel’ with people.</td>
</tr>
<tr>
<td>CTR rings / jewellery</td>
<td>CTRs (‘Choose the Right’) are a classification of Mormon children aged 4 to 7 yrs, but the popular terms has also given rise to a range of jewelry emblazoned with the initials for teenagers and adults.</td>
</tr>
<tr>
<td>Garment lines</td>
<td>Garments are the special underclothing worn by Mormons who have gained their endowments, a special ordinance given in the Temple. Seams are visible under thin clothing (e.g. business suits) halfway down the thigh, upper arm, and around the neck.</td>
</tr>
<tr>
<td>Modest dress</td>
<td>Mormons are counselled to be modest in their appearance.</td>
</tr>
<tr>
<td>Not drinking alcohol / smoking</td>
<td>Mormons abstain from most forms of caffeine, alcohol and tobacco as counselled by the ‘Word of Wisdom’, the church’s divinely-inspired health code.</td>
</tr>
<tr>
<td>Availability on Sundays / Monday evenings</td>
<td>Sunday is the Sabbath within the LDS Church, and Monday evenings the church’s ‘family home evening’ in which members are urged to undertake worship as a family and when all other church activities are suspended.</td>
</tr>
<tr>
<td>Utah County residence</td>
<td>Utah County’s population is officially 90% Mormon.</td>
</tr>
<tr>
<td>BYU alumnus status</td>
<td>BYU’s student body is over 99% Mormon.</td>
</tr>
<tr>
<td>Mission (2 yr period of community service abroad at age 19)</td>
<td>Mormon mission system enlists 60% of Mormons age 19 – 26 yrs. Some explicitly state Mission on their resumes, others remove the church label.</td>
</tr>
</tbody>
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5 Equally, recruiters use cultural markers that suggest applicants are *not* Mormon – e.g. smelling of cigarette smoke.
These cultural markers are often used by employers to evaluate the desirability of job applicants, both consciously and subconsciously, by Mormons and non-Mormons alike:

‘Job interviews here are a nightmare, because firms do make those assumptions. I’ve been asked questions like how long have I been married, where did I meet my husband, do I know Bishop blah from the town in which I live, what my calling is, which Ward I’m in, things that are kinda going real close to the edges but without ever coming right out and asking if you’re LDS or not’. Vice President of Marketing, UNY, inactive Mormon female

‘If we have someone in from Utah County and they talk to me, I immediately make assumptions about them, whether they’re correct or not. Something in the way they act or the way they talk will correct that assumption for me one way or another. But it’s not overt, I don’t ever go in and sit down in a hiring process, or with somebody who wants to do business with us, and literally say ‘Oh, I wonder if these guys are Mormon or not’. Just being who I am, I make those judgments during the course of an interview or meeting’. Director of Marketing, FQY, active Mormon

Further, while in many cases firms act on these cultural markers in ways that reinforce their embedding in Mormon culture, other firms also act on these same cultural markers in ways that limit their embedding in Mormon culture:

‘I find it on resumes, the fact that they’ve served a Mormon Mission is on there, and I find that to be a turn-off actually. So if I have two candidates and one mentioned the Mission and one didn’t, I’d probably look at the one who didn’t first. Because it says to me you’re trying to let me know you’re LDS, you’re trying to make this an advantage as part of your skill set, and unless it’s a sales position I don’t see that value. In business it doesn’t belong there, and I just don’t want you trying to convert the whole office!’ CEO and Founder, WSU, non-Mormon female

‘People do interviews and will say ‘I just can’t work on Sundays’ and that factors into who they hire. And while it might not viewed as a religious thing, it’s something we might need you know. We don’t ask the reasons why people won’t work Sundays, maybe it’s religious, maybe they just don’t do that regardless. But sometimes we just need that from people’. Software Programmer, LEL, inactive Mormon
As such, Mormon firms use this mechanism to enhance their cultural embedding in the region, through its reinforcing the ‘key individuals’ and ‘strength-in-numbers’ already outlined. Simultaneously, some non-Mormon firms use the same recruitment mechanisms to limit their import of Mormon regional cultural values

6.4.2 - EMPLOYEES ACTIVELY SEEKING FIRMS THAT REFLECT OWN VALUES

The tendency for firms to hire employees who match their own culture is reinforced by the tendency for potential employees to apply to firms that they regard as holding similar values to their own. These two processes are therefore different sides of the same recruitment mechanism coin. My results suggest that the main corporate value preferences vocalised by Mormon candidates at job interview centre on issues of not working Sundays, not working on violent, sexual, or gambling software content, earning a wage that is large enough for their wife to remain at home and so maintain a traditional Mormon nuclear family, and of working on a software product that has obvious social benefit. Again, while these are not exclusively Mormon value preferences (indeed firms themselves outlined how some non-Mormon applicants also raise these issues at interview), only with potential Mormon applicants are such issues ever vocalised with explicit recourse to religious justifications:

‘When you speak to applicants about what is it they’re looking for from an employer, they’re looking for something that matches their beliefs and something that helps them to live their life and conduct themselves in the way that they believe. That’s exactly how I’ve had applicants respond. But I’ve only had it vocalised by LDS potential employees. So some of these applicants said that I really wanna do something good in my life, and I think this is a positive thing that you’re creating. And that do-good attitude is definitely part of LDS training, I want to do something for the world, I want to make something better’. Director of Human Resources, UIE, non-Mormon female

‘All of us are LDS here and that was an attraction to me because it means we can get into discussions that we wouldn’t be able to enter into elsewhere. Just LDS-specific things, talking about church and things related to that, that just made me feel comfortable because it was something I’d grown up with and was used to. Plus, it was also critical that I was working on software that I felt I could morally support. A job has to be so much more than just a means of making money for me, it has to allow me to contribute something meaningful. And if you push me, the business is so much less important to me than keeping the Commandments that I will leave my job over it. In fact I actually took a
pay-cut to come and work here’. Manager of Software Development, QDD, active Mormon

As such, distinctive patterns of employees actively seeking firms that reflect their own personal Mormon values strengthens patterns of firms in turn seeking employees that match their own values. Both therefore reinforce firms’ import of Mormon regional cultural values via the ‘key individuals’ and ‘strength-in-numbers’ mechanisms already outlined.

6.4.3 - DIFFICULTIES OF RECRUITING EMPLOYEES FROM OUTSIDE UTAH

Talent is a critical factor of production and in turn, amenities, entertainment, and lifestyle considerations are important elements in the ability of places to attract people and firms (Glaeser et al., 2000). Regions open to social diversity are therefore able to attract a wider range of talent, in terms of race ethnicity, and sexual orientation, compared with those that are relatively closed (Florida, 2000). However, Utah has a number of socio-cultural barriers to entry for talent from outside the region, the third key component I argue of the labour recruitment mechanisms that reinforce firms’ cultural embedding in the region. While my interviews uncovered a whole host of these, the main ones centre on three key areas. First, Utah is a racially homogenous state with over 92% of the population identifying themselves as white non-Hispanic. Indeed, Utah’s Mormon population is even more homogenous, over 98% white non-Hispanic (Heaton, 1996). The image of the LDS Church as a predominantly white church of the suburban west thus remains very strong (Cimino and Lattin, 1998), discouraging many potential employees from moving to the state. Second, a key legacy of the LDS Church’s anti-Equal Rights Amendment campaign is a widespread lack of credibility for Mormonism as an advocate for women (Quinn, 1997), coupled with the LDS Church’s active stance against homosexuality and gay liberation (May, 2001). These sustain an ultraconservative image of Mormon Utah that discourages many potential job applicants from out of state. Finally, Utah’s strict liquor licensing laws and anti-smoking policies are also a powerful deterrent. Indeed, these recently figured in high profile critiques of Utah’s business culture by Iomega’s CEO Bruce Albertson and Compaq’s Senior Vice President and Chief Technology Officer Shane Robinson, that these laws significantly discourage potential applicants from outside Utah from moving to the state. My in-depth interviews confirmed the significance of this reinforcement mechanism of embedding:

‘You talk to potential employees about coming to Utah, and the only things they know about it is Mormons, Donnie and Marie, and ski-ing. And once those issues are off the table people don’t even want to talk about Utah anymore. So we don’t even get up to the
plate with about 90% of the potential employees because they just don’t want to even talk about moving to Utah. They’re afraid that everyone’s gonna be Mormon, and they’ll all hang out together and they won’t talk to us, that it’s a boring place where nobody drinks and nobody has fun. I mean I’m a transplant - I told my family I was moving to Utah and quite frankly they thought I was nuts!’ CEO, LEL, non-Mormon

‘There’s this perception of Utah as some holier-than-thou Hicksville, that the Mormons are out here in their stovepipe hats and horse and buggies, a cultural lifestyle like in Urban cowboy you know, that we’ll go bull riding and after that we’ll go shear some sheep! OK, so this is not the birth place of free love, but people have just no sense of how multicultural Salt Lake City is. So that really limits Utah’s ability to grow, but I don’t know that we’ll ever completely eliminate that because the church’s headquarters is here’.

Director of User Experience, NSO, active Mormon

Almost three quarters of the firms in my case study sample raised their difficulties of attracting appropriately qualified employees from outside Utah. Further, while the Mormon culture repels many potential employees who judge it too repressive and homogenous, those applicants who do move to Utah from out of state are usually members of the LDS Church who are looking for a way back. These barriers therefore limit Utah’s ability to attract new employees from out of state, and so reinforce firms’ import of Mormon cultural values by filtering out potential non-Mormon employees from out of state, who would potentially dilute the cultural embedding of firms via their impact on the ‘key individuals’ and ‘strength-in- numbers’ mechanisms outlined above. These same barriers simultaneously encourage Mormon employees from out of state who strengthen those same two mechanisms of cultural embedding.

6.5 - REGIONAL SUPPORTING MECHANISMS

6.5.1 - BRIGHAM YOUNG UNIVERSITY

Within the regional learning and industrial district literatures, universities have been widely theorised as central to the success of innovative high tech regional economies, functioning as sources of advanced research, offering a supply of skilled labour, providing continuing education and retraining, aggressively licensing their intellectual property, granting faculty time to consult and perform other functions in the corporate world and developing research parks and local incubators (e.g. Fountain, 1997; Rogers and Larsen, 1984; Rosenberg, 2002; Saxenian, 1994; Scott and Paul, 1990). But while these tangible roles of universities have been well theorised,
there has been relatively little discussion of their role in the cultural embedding of high tech firms within the region. Conceptualising graduates as embodied culture, I argue that universities are a key reinforcing mechanism in firms’ cultural embedding in the region. Brigham Young University (Plate 1), located in Provo 45 miles south of Salt Lake City, is the largest privately-owned religious university in the US, wholly financed and managed by the LDS Church (Bezzant and Chadwick, 1996)⁶.

Plate 6.1 – Brigham Young University by Night (Looking East)

BYU actively seeks to integrate Mormon religious teachings with secular academic learning, and its faculty, staff and student body are selected only from individuals who voluntarily live the principles of the LDS Church. Thus, over 99% of BYU’s current 32 000 students are members of the LDS Church (Davies, 1996), and of those, 83% of males and 15% of female students have served full-time missions⁷. There are three key components to this key reinforcement mechanism of cultural embedding. First, as a condition of their continuing enrolment, students must observe

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⁶ Originally founded as Brigham Young Academy in 1875 to train teachers for public schools, the school was elevated to university status in 1903. The LDS Church also founded University of Deseret in 1850, but which later changed its name to the University of Utah, a tax-supported state institution.

⁷ Mormons are attracted to BYU for the cultural experience as much as the education, a further attraction being that members of the church get the entire college package (tuition, room, board, etc) for less than $10 000 a year through LDS Church subsidies - about 70% of the total cost of the students’ education is paid for by the church.
BYU’s strict honour code, which includes specific policies on dress and grooming standards, residential living standards, and continuing ecclesiastical endorsement (see Table 6.5).

### Table 6.5 – Key Components of BYU’s Honour Code

<table>
<thead>
<tr>
<th>MANDATE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MEN &amp; WOMEN</strong></td>
</tr>
<tr>
<td>Clothing is inappropriate when it is sleeveless, revealing or form fitting.</td>
</tr>
<tr>
<td>Hairstyles should be clean and neat, avoiding extremes in style and colour.</td>
</tr>
<tr>
<td>Shoes must be worn on campus.</td>
</tr>
<tr>
<td>Must use clean language.</td>
</tr>
<tr>
<td>Abstain from use of alcohol, tobacco, tea, coffee and substance abuse.</td>
</tr>
<tr>
<td><strong>MEN</strong></td>
</tr>
<tr>
<td>Shorts must be knee length or longer.</td>
</tr>
<tr>
<td>Hair must be trimmed above the collar leaving the ear uncovered.</td>
</tr>
<tr>
<td>Sideburns should not extend below the earlobe or onto the cheek.</td>
</tr>
<tr>
<td>If worn, moustaches must be neatly trimmed and not extend beyond or below the corners of the mouth.</td>
</tr>
<tr>
<td>Men should not wear beards.</td>
</tr>
<tr>
<td>Earrings and other piercings are not acceptable.</td>
</tr>
<tr>
<td><strong>WOMEN</strong></td>
</tr>
<tr>
<td>Clothing may not be backless or strapless.</td>
</tr>
<tr>
<td>Dresses and skirts must be knee-length or longer.</td>
</tr>
<tr>
<td>Excessive ear piercing (more than two per ear) and all other body piercings are unacceptable.</td>
</tr>
</tbody>
</table>

This honour code therefore maintains a very distinctive and strong Mormon culture at BYU whose associated set of values I argue is subsequently imported into local software firms who employ BYU students following their graduation. Second, BYU students are required regularly to attend religious services and activities and develop in-depth religious studies alongside their major subject. BYU is divided into 21 Stakes and over 230 Wards (congregations) where students regularly attend religious services and activities. Students are taught to balance their worklife against a very active church life, cultural traits which are highly prevalent among my interview respondents as outlined in Chapters 4 and 5. Third, even in their major subject, students are urged to frame their questions in ‘prayerful’ and ‘faithful’ ways, another habit I argue is imported into workplaces in later life. Mormon examples and case studies are used to illustrate academic arguments, even in technical subjects, and many lectures and meetings are opened with a prayer, traits which I also found prevalent in many firms in my case study sample. These key components of the BYU experience are especially evident in the three departments most relevant to my case study: computer science, electrical engineering, and the MBA Program\(^8\). Indeed, the

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\(^8\) The latter having seen a growth in students over the past decade who have a computer science degree later returning to do an MBA.
computer science and electrical engineering departments run a joint ‘Computers and Society Ethics’ class, in which:

‘We encourage students to use the moral independence they’ve learned to make a difference out in society, and to help shape some of the way we do things. Computing is a fast-changing area and has opportunities to be leaders and to help guide the direction that it goes so it stays true. We’re hoping that the students grow that innate spiritual character in themselves, that wherever they then go in the world they can hopefully share that point of view in decisions that are made’. Chair, Department of Computer Science, BYU, active Mormon.

‘Oh yeah, BYU graduates are notorious for bringing that religion influence with them to the firms that employ them, and a lot of people actually appreciate that and want it’. Lead Applications Developer, WSU, inactive Mormon

As such, I argue that BYU is a key mechanism in the cultural embedding of software firms on the Wasatch Front, via graduates who embody BYU’s distinctive set of cultural attitudes and values, taking those with them to their subsequent firms on employment. Indeed, around one quarter of BYU computer science graduates tend to stay in Utah once they have graduated (BYU Internal Salary Survey, 1996-1999). My own results also highlight the significance of this mechanism. First, over one third (34%) of my respondents are BYU alumni; 23% if we include only the software industry respondents (Table 6.6):

<table>
<thead>
<tr>
<th></th>
<th>Industry Watchers, etc</th>
<th>High Tech Employees</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Male</strong></td>
<td>10</td>
<td>17</td>
<td>27</td>
</tr>
<tr>
<td><strong>Female</strong></td>
<td>1</td>
<td>16</td>
<td>17</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>11</td>
<td>23</td>
<td>34</td>
</tr>
</tbody>
</table>

Second, the significance of the BYU mechanism is even greater when we examine who is actually founding and managing Utah’s lead software firms. In my survey sample of Utah’s lead 105 software firms on the Wasatch Front, 36% of those firms were founded by BYU alumni. Indeed of all the Mormon founded firms in my survey sample, 55% of those firms are founded by BYU
alumni, and 33% headed by CEO’s who are BYU alumni. Third, nor is this BYU mechanism of embedding only confined to Utah County (where BYU is located). Crucially, the data in Figure 6.6 show that the influence of BYU on firms’ founding, management teams, and hence on their cultural embedding in the region, extends right across the Wasatch Front.

Figure 6.6 – Impact of the BYU Mechanism of Embedding Across the Wasatch Front – Survey Firms Majority Founded or Managed by BYU Alumni

Finally, the significance of BYU as a mechanism that reinforces firms’ cultural embedding, concerns a preference among some companies for BYU alumni, readily admitted by around one quarter of my case study firms at interview. First, because the vast majority of students at BYU are returned missionaries, they are typically two years older than the average undergraduate elsewhere and are also noted to be more self-assured, polished, mature, and self-confident, a function of the mission experience (Stark, 2001):

‘Well you think about it, you get a young man out there at the age 19, a very impressionable time of life, you send them out to a foreign country, probably their first time away from home, you put them with someone 24 hours a day and you tell them to “sell Jesus Christ”. That’s a very challenging position for someone to be in. So you learn that it’s OK to be rejected, how you move, how you communicate with people. Then you come back at 21 and are more mature from an emotional level that the other kids who’ve been having their Frat parties’. CEO and Co-Founder, QDD, active Mormon
Also, as a function of the mission training, over 60% of BYU’s students have also intense foreign language experience (Kotkin, 1992), very attractive to local firms. Second, as the LDS Church grows in excess of 11 million members worldwide, there are over 200,000 college-aged church members in the US alone, while the BYU undergraduate population remains limited to 32,000. As a result, the quality of BYU students is much higher than would otherwise be expected for comparable universities elsewhere in the US, yet these graduates are regarded as still ‘pretty cheap and very good value’. As such, I argue that we can conceptualise BYU as a key mechanism that reinforces firms’ import of Mormon cultural values into their internal structures, underpinning the ‘key individuals’, ‘strength-in-numbers’ and labour recruitment mechanisms outlined earlier.

6.5.2 - LDS CHURCH AS A FORMAL INSTITUTION

6.5.2.1 – MORMON INVESTMENT PORTFOLIO

The first component of the LDS Church’s role as a mechanism that reinforces firms’ application of Mormon values to their own business activities centres on the church’s business investment portfolio (Figure 6.7), which I argue provides a very visible statement that business can and should be used as a tool to further the mission of the church. There has always been an intimate theological connection in Mormonism between the spiritual and the economic, reinforced by the historical Mormon pioneer experience (Arrington, 1992). The church had to assume responsibility for the welfare of its persecuted members, and as the Mormon pioneers developed settlements in the Salt Lake Basin, church-sponsored economic programmes were required for initiatives that could not be mounted by individual entrepreneurs alone. Thus, in the first century of Mormonism, LDS Church leaders were partners, officers or directors in more than 900 Utah-area businesses (Van Biema, 1997). Path-dependent from this, the LDS Church still maintains a portfolio of business concerns, many of which have since grown into multimillion dollar operations whose profits help finance church operations. Crucially, Mormon theology shapes the church’s investment policies in four key ways. First, investments are highly conservative.

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9 These patterns are also repeated at the case study level, these firms being a subset of the survey sample. The lack of BYU founded firms in Weber County is a function of the limited number of total firms in my survey sample located in Weber County.

10 However, my own research suggests that the level and style of foreign language to which Missionaries are exposed to is different to that required in a business setting, but overall firms suggested that it was an advantage.

11 Essentially these are an outgrowth of enterprises begun in the Mormon pioneer days when they were isolated from the rest of society, although some investments date from the mid-twentieth century - prudent stewardship of tithing donations dictates that funds not needed to meet current operating expenses of the church are not allowed to sit idle.
with a predictable high rate of return and negligible chance of failure, a reflection of LDS teachings on stewardship and the need to multiply God’s resources entrusted to us. Second, investments (especially those in farmland and real estate) are also based on prophecies that foresee political instability and famine in the US, during which Mormons will be called upon to take a leadership role in rebuilding government and the economy. They must therefore accumulate the resources that will allow them to assume that role. Third, the LDS Church maintains an extensive media and communications arm, consistent with its drive to link Mormons across the world and to spread LDS doctrine. Finally, church policies dictate that its investment managers may not buy securities in firms that manufacture cola drinks, alcoholic beverages or tobacco products which contravene the church’s health code, nor in publishing companies that print material inconsistent with church moral standards.
Figure 6.7 – Structure of the LDS Church’s Investment Portfolio (from Ostling and Ostling, 1999)

Corporation of the President of the Church of Jesus Christ of Latter Day Saints

Deseret Mutual Benefit Association

Beneficial Life Insurance Co.

Brigham Young University

BYU Idaho

Deseret Ranches Florida

Deseret Management Corporation

Deseret Trust Co.

Deseret Title Holding Co.

Deseret News Publishing

Northland Park Inc.

Continental Western Life Insurance Co.

Western American Life Insurance Co.

Bonneville International Corporation.

Deseret Book Co.

Deseret Farms of California and Texas

Elberta Farms Corp.

Beneficial Development Co.

Management Systems Corp.

Utah Home Fire Insurance Co.

Utah Hotel Company

Zions Securities Corp.
Further, the significance of this Mormon investment portfolio as a mechanism that reinforces firms’ application of Mormon values to their own business activities lies not only in terms of its providing a very visible role model that this is a desirable thing to do, but that considerable business success can be achieved from that. Although little is known in detail about the LDS business portfolio (the church issued its last public statement of expenditures in 1959), its annual income is currently estimated to be at least $6 billion, with total assets over $30 billion (Ostling and Ostling, 1999). Indeed, if the LDS Church were a US Corporation it would rank number 243 on the Fortune 500 list (ibid.). As such, I argue that the LDS Church itself provides a fourth regional mechanism that reinforces firms’ import of key Mormon values into their internal operations, and hence of firms’ cultural embedding in the region.

6.5.2.2 – LDS GENERAL AUTHORITIES AS ROLE MODELS

The second component of the LDS Church’s role as a mechanism that reinforces firms’ import of Mormon cultural values, centres on its highest leadership who act as role models for Mormons who work in Utah’s high tech industry. The structure of the LDS Church leadership is shown in Figure 6.8.

Figure 6.8 – Structure of the LDS Church’s Top Leadership – The General Authorities

![Diagram of LDS Church leadership structure]

Compiled from Ostling and Ostling (1999: 153-4)
These General Authorities are the embodiment of Mormonism for LDS congregations around the world, and are particularly visible in Utah where they all reside. These LDS leaders are striking in terms of their considerable combined experience and success in the corporate world (see Table 6.7). Approximately half of ‘The Council’ have been executives, bankers, economists or financiers (Ostling and Ostling, 1999). Indeed, the Church actively recruits its leaders from the business world, the underlying logic being to fill the church’s top positions with men who not only have years of loyalty to the Church but who also have the ability to manage complex organizations (Heaton, 2001). These internal dynamics of LDS leadership formation therefore reinforce the popular notion of spiritual success equating with economic success in Mormon culture. These ‘business-man Apostles’ (Ostling and Ostling, 1999: 115) have succeeded in business whilst staying true to own Mormon values, and hence provide role models for other Mormons to do the same.

Table 6.7 – The LDS First Presidency and Quorum of the Twelve (2002)

- Selected Qualifications and Professional Business Experience.

<table>
<thead>
<tr>
<th>General Authority</th>
<th>Age</th>
<th>Professional Experience</th>
<th>Relevant Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>President - Gordon B. Hinckley</td>
<td>92</td>
<td>--</td>
<td>Graduate, Univ of Utah</td>
</tr>
<tr>
<td>First Counsellor – Thomas S. Monson</td>
<td>75</td>
<td>Director of the Newspaper Agency Corporation, Chairman, Deseret News Publishing Company, General Manager, Deseret Press, President, Printing Industry of Utah, Member of Board of Directors, Printing Industry of America</td>
<td>MBA, BYU, 1974 Degree in Business Administration, Univ of Utah, 1948</td>
</tr>
<tr>
<td>Second Counsellor - James E. Faust</td>
<td>82</td>
<td>Vice-chairman, Executive Council of Deseret News Publishing Company, Formerly a Director of Key Bank of Utah</td>
<td>Univ of Utah law graduate</td>
</tr>
<tr>
<td>M. Russell Ballard</td>
<td>74</td>
<td>Formerly in automotive, real estate and investment businesses</td>
<td>Univ of Utah graduate</td>
</tr>
<tr>
<td>Henry B. Eyring</td>
<td>69</td>
<td>Faculty Member, Graduate School of Business, Stanford University, Visiting Fellow, MIT</td>
<td>Ph.D. in Business Administration, Harvard University MBA, Harvard</td>
</tr>
<tr>
<td>Name</td>
<td>Age</td>
<td>Positions and Education</td>
<td>Additional Information</td>
</tr>
<tr>
<td>-----------------------</td>
<td>-----</td>
<td>-------------------------------------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>David B. Haight</strong></td>
<td>96</td>
<td>Director, Bonneville International Corp, First Security Bank Corp, Huntsman Chemical Corp, &amp; Stanford-Palo Alto</td>
<td>Member of Board of Advisers, Univ of Utah College of Business</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hospital President, Palo Alto Chamber of Commerce &amp; Downtown Merchants Association</td>
<td>Business Administration studies, Utah State University</td>
</tr>
<tr>
<td></td>
<td></td>
<td>President of his own retail company Regional Manager/Executive, Montgomery Ward Company Merchandise Manager of ZCMI</td>
<td></td>
</tr>
<tr>
<td><strong>Robert D. Hales</strong></td>
<td>70</td>
<td>Former business executive in three major US companies</td>
<td>MBA, Harvard Graduate, Univ of Utah</td>
</tr>
<tr>
<td><strong>Jeffery R. Holland</strong></td>
<td>62</td>
<td>President, American Association of Presidents of Independent Colleges and Universities (AAPICU)</td>
<td>B.A. Degree in English, BYU M.A. and Ph.D. in American Studies, Yale University</td>
</tr>
<tr>
<td><strong>Neal A. Maxwell</strong></td>
<td>76</td>
<td>Political Science Professor, Dean of Students, and Executive Vice-President, University of Utah</td>
<td>B.A. and M.A. in Political Science, Univ of Utah</td>
</tr>
<tr>
<td><strong>Russell M. Nelson</strong></td>
<td>78</td>
<td>President, Society for Vascular Surgery Former Research Professor of Surgery, University of Utah Member and Vice-Chairman of the Board of Governors, LDS Hospital</td>
<td>Ph.D., University of Minnesota Doctor of Medicine and B.A., Univ of Utah</td>
</tr>
<tr>
<td><strong>Dallin H. Oaks</strong></td>
<td>70</td>
<td>Member of the Board of Directors of the Public Broadcasting Service Professor of Law (University of Chicago) Practicing lawyer specializing in corporate litigation</td>
<td>Doctor of Law, University of Chicago B.A. in Accounting, BYU</td>
</tr>
<tr>
<td><strong>Boyd K. Packer</strong></td>
<td>78</td>
<td>Member of the Board of Trustees of Brigham Young University</td>
<td>Doctor's Degree in Education Administration, BYU, 1962 Master's Degree in Education, Utah State University Bachelor's Degree, Utah State University</td>
</tr>
<tr>
<td><strong>L. Tom Perry</strong></td>
<td>80</td>
<td>Retail business; Vice President and Treasurer of retail companies in: Idaho, California, New York, Massachusetts</td>
<td>B.S. Degree in Finance, Utah State University</td>
</tr>
<tr>
<td><strong>Richard G. Scott</strong></td>
<td>74</td>
<td>Govt and industry consultant on development of nuclear fuel</td>
<td>Mechanical Engineering Degree, George Washington University</td>
</tr>
<tr>
<td><strong>Joseph B. Wirthlin</strong></td>
<td>85</td>
<td>Former President of a Utah trade association</td>
<td>Bachelor of Arts Degree in Business Administration, University of Utah</td>
</tr>
</tbody>
</table>

(compiled from LDS.net; Ostling and Ostling, 1999: 430-1; LDS Church / Deseret News Almanac, 2001-2002)
Plates 6.2 – The LDS First Presidency and Quorum of the Twelve - Key Role Models for Mormon Populations to Apply Mormon Values to Their Own Business Dealings

First Counselor
Thomas Monson

President
Gordon B. Hinckley

Second Counselor
James E. Faust

Boyd K. Packer
L. Tom Perry
David B. Haight
Neal A. Maxwell

Russell M. Nelson
Dallin H. Oaks
M. Russell Ballard
Joseph B. Wirthlin

Richard G. Scott
Robert D. Hales
Jeffrey R. Holland
Henry B. Eyring
The Mormon theological concept of continuing modern-day revelation further reinforces the significance of this role model mechanism. There is an accepted notion among Mormons that their leaders enjoy inspiration from god in the conduct of their religious affairs. Further, many Mormons believe that divine inspiration is transferable when leaders speak out on secular, including business, affairs. Thus, not only have these men applied Mormon values to their own business affairs, they have been instructed through revelation from God to do so, and they have sustained considerable economic success from having done so. This mechanism might therefore be summed up as the ‘if it’s good enough for the General Authorities, then it’s good enough for me’ mechanism of embedding, which I suggest reinforces Mormon software employees’ import of Mormon values into their own firms, and hence firms’ cultural embedding in the region.

**6.5.2.3 - LDS BUSINESS MEN (&WOMEN) ROLE MODELS**

A second component of the LDS Church role model mechanism that reinforces software employees’ application of Mormon values to their own business affairs concerns high profile Mormon businessmen (and increasingly women) who have risen to the top of their chosen professions whilst remaining loyal to their Mormon values, often applying those Mormon values to their everyday business-lives. These key individuals provide tangible role models and standards of behaviour for others to follow (Deal and Kennedy, 2000) and whose example extends well beyond Sabbath services. The strength of this mechanism rests on the Mormon community continually putting its most successful members in the media spotlight in order to promote a positive self image (Heaton, 2001), daily through LDS newspapers, sermons, radio, and monthly through church magazines. Table 6.8 highlights some of the more popular role models. These people therefore reinforce the popular Mormon cultural connection between spiritual and temporal (economic) success, and hence I argue provide a further key mechanism that reinforces individuals’ application of Mormon values to their own business activities.
<table>
<thead>
<tr>
<th>Company Name</th>
<th>President/CEO</th>
<th>Company Name</th>
<th>President/CEO</th>
<th>Company Name</th>
<th>President/CEO</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>American Airlines</strong></td>
<td>Melvin E. Olsen</td>
<td><strong>American Broadcasting Corp.</strong></td>
<td>Robert H. Hinckley</td>
<td><strong>American Motors Corp</strong></td>
<td>George W. Romney</td>
</tr>
<tr>
<td><strong>American Telecom. Corp.</strong></td>
<td>Henry Marcheschi</td>
<td><strong>Atari Games</strong></td>
<td>Nolan Bushnell</td>
<td><strong>Bank of America</strong></td>
<td>Blair R. Egli</td>
</tr>
<tr>
<td><strong>B.F. Goodrich</strong></td>
<td>D. Lee Tobler</td>
<td><strong>Black and Decker</strong></td>
<td>Nolan D. Archibald</td>
<td><strong>Citibank</strong></td>
<td>Dan C. Jorgensen</td>
</tr>
<tr>
<td><strong>Columbia Records</strong></td>
<td>James B. Conkling</td>
<td><strong>Conoco</strong></td>
<td>Max G. Pitcher</td>
<td><strong>Dell Computer Corp</strong></td>
<td>Kevin B. Rollins</td>
</tr>
<tr>
<td><strong>Denny’s Restaurants</strong></td>
<td>John D. Hatch</td>
<td><strong>Dow Chemical</strong></td>
<td>Wayne Hancock</td>
<td><strong>Evans &amp; Sutherland</strong></td>
<td>David Evans</td>
</tr>
<tr>
<td><strong>Eastman Kodak</strong></td>
<td>Kay R. Whitmore</td>
<td><strong>Franklin-Covey</strong></td>
<td>Stephen Covey</td>
<td><strong>Goldman-Sachs</strong></td>
<td>A.Kim Smith</td>
</tr>
<tr>
<td><strong>Gucci Stores</strong></td>
<td>Harmon J. Tobler</td>
<td><strong>Harvard Business School</strong></td>
<td>Kim Clark (Dean)</td>
<td><strong>Hewlett-Packard</strong></td>
<td>Richard W. Anderson</td>
</tr>
<tr>
<td><strong>Hughes Tool</strong></td>
<td>Rodney H. Brady</td>
<td><strong>Huntsman Chemical Corp.</strong></td>
<td>Jon M. Huntsman</td>
<td><strong>J.C. Penney</strong></td>
<td>Oakley S. Evans</td>
</tr>
<tr>
<td><strong>JetBlue Airways</strong></td>
<td>David Neeleman</td>
<td><strong>Kaiser Steel</strong></td>
<td>Albert P. Heiner</td>
<td><strong>Kentucky Fried Chicken</strong></td>
<td>Leon W. Harman</td>
</tr>
<tr>
<td><strong>Los Angeles Times-Mirror</strong></td>
<td>Mark H. Willes</td>
<td><strong>Lufthansa Airlines</strong></td>
<td>Dieter F. Uchtdorf</td>
<td><strong>Marriott Hotels</strong></td>
<td>J.W. Marriott, Sr. and Jr.</td>
</tr>
<tr>
<td><strong>Mars Candy</strong></td>
<td>Merrill J. Bateman</td>
<td><strong>McGraw-Hill Publications</strong></td>
<td>David P. Forsyth</td>
<td><strong>Merrill Lynch Group</strong></td>
<td>Weston E. Edwards</td>
</tr>
<tr>
<td><strong>Micron Technology</strong></td>
<td>Jerry Hess</td>
<td><strong>Nabisco</strong></td>
<td>Lee S. Bickmore</td>
<td><strong>Newsweek</strong></td>
<td>Llewellyn L. Callaway</td>
</tr>
<tr>
<td><strong>Novell Corp.</strong></td>
<td>Ray Noorda</td>
<td><strong>Pacific Corp.</strong></td>
<td>Verl R. Topham</td>
<td><strong>Range Rover of N. America</strong></td>
<td>Joel E. Greer</td>
</tr>
<tr>
<td><strong>Ryder Truck Rentals</strong></td>
<td>M. Anthony Burns</td>
<td><strong>Seiko Time</strong></td>
<td>Donovan H. Larsen</td>
<td><strong>Union Carbide</strong></td>
<td>Isaac Stewart</td>
</tr>
<tr>
<td><strong>United California Bank</strong></td>
<td>James C. Ellsworth</td>
<td><strong>Warner Bros. Records</strong></td>
<td>James B. Conkling</td>
<td><strong>Weight Watchers / Heinz USA</strong></td>
<td>Douglas C. Haines</td>
</tr>
<tr>
<td><strong>Western Airlines</strong></td>
<td>Larry Lee</td>
<td><strong>Woolworth Stores</strong></td>
<td>Robert Kirkwood</td>
<td><strong>WordPerfect Corp</strong></td>
<td>Alan Ashton</td>
</tr>
</tbody>
</table>

* Selected large US national and international corporations, *not* owned or controlled by the LDS Church, which have / have recently had Mormons as their President, Vice-President, CEO, Chair of the Board, or General Manager at various times (Quinn, 1997: 841-2; Mormon News.com; general press).
6.5.2.4 – YOUTH SOCIALISATION & PRIESTHOOD PROGRESSION

The third component of the LDS Church reinforcement mechanism of cultural embedding concerns its system of socialisation and Priesthood progression, which strengthen the commitment of members to Mormonism in later life, reinforced by ongoing programs of teaching for adult Mormons. Socialisation, the process of acquiring culture (Vernon, 1962), occurs through educational, spiritual, and social activities and begins early in Mormonism (see Table 6.9). Small children meet weekly for religious instruction and social interaction through the Primary. The LDS Church also operates an educational system of seminaries (in high schools) designed to provide religious education, and so maintain the Mormon faith of teenage students, while they participate in secular education. LDS teenagers go off to school with their seminary classmates, the shared before-school activity forming them into LDS-based cliques at school, and reinforced by Mormon prohibitions on premarital sex, coffee, colas, alcohol, cigarettes, and drugs, at variance with current secular teenage norms (Stark, 2001). In the US and Canada, the LDS Church also operates 1407 institutes at colleges and universities (LDS Church, 2000) to provide LDS-orientated educational and social programs for college students in secular education. Thus, since Mormon doctrine is taught by exhortation and example from early childhood, its attitudes and values become second nature to those brought up in the Mormon home and community environment (O’Dea, 1957). This I argue reinforces employees’ ‘natural’ import of Mormon values into workplaces in later life as already described.
Table 6.9 – System of Youth Socialisation in Mormon Culture

<table>
<thead>
<tr>
<th>Age</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-11</td>
<td>PRIMARY (children baptised into the LDS Church at age 8)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cub Scout program</td>
<td></td>
</tr>
<tr>
<td>12-18</td>
<td>YOUNG MEN’S ORGANISATION</td>
<td>YOUNG WOMEN’S ORGANISATION</td>
</tr>
<tr>
<td></td>
<td>Aaronic (Lesser) Priesthood</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Deacon</td>
<td>Beehive</td>
</tr>
<tr>
<td>14</td>
<td>Teacher</td>
<td>Mia Maid</td>
</tr>
<tr>
<td>16</td>
<td>Priest</td>
<td>Laurel</td>
</tr>
<tr>
<td>18</td>
<td>MELCHIZEDEK (HIGHER) PRIESTHOOD</td>
<td>RELIEF SOCIETY</td>
</tr>
<tr>
<td>18</td>
<td>Elder (MISSION)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Member of the Seventies</td>
<td></td>
</tr>
<tr>
<td></td>
<td>High Priest</td>
<td></td>
</tr>
</tbody>
</table>

Second, for Mormon males the system of Priesthood progression also maintains their subsequent commitment to the church in later life (see Table 6.8). Central to this system is the mission\textsuperscript{12}, whose significance as a reinforcing mechanism in the cultural embedding of Utah’s computer software firms rests on two key factors. First, having defended the church and its doctrines for two years, returned Missionaries tend to be more orthodox and active in the church than other members (Vernon, 1980). Second, the sheer scale of the Mission system is massive, enlisting more than 60% of young Mormons of eligible age (Scheler, 2000). Thus, in my own interview respondent sample, 55 respondents were returned Missionaries (see Table 6.10), 81% of the (68) total active Mormon respondents in my sample:

\textsuperscript{12} In 1999 the LDS Church supported 58,593 LDS Missionaries in the field across the US and to 119 other countries worldwide (Deseret News LDS Church Almanac, 2001-2), approximately 75% of whom are young men between the ages of 19 and 26. After 8 weeks training in Utah, Missionaries are sent out in pairs, on two year assignments (18 months for females) to teach the LDS Gospel, win converts, and participate in community service.
Table 6.10 – Significance of the Mission as a Reinforcing Mechanism of Cultural Embedding -
Former LDS Missionaries Among the Interview Respondent Sample

<table>
<thead>
<tr>
<th></th>
<th>Returned Mormon Missionaries</th>
<th>Non-US Missions (hence language training) (39 high tech employees only)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Industry Watchers, etc.</strong></td>
<td>16 (76%)</td>
<td>Korea, Bolivia, Japan, Canada, Thailand, South America, Taiwan, Finland, Spain, Germany, Laos, France, Portugal, Norway, Denmark, China.</td>
</tr>
<tr>
<td><strong>Industry employees</strong></td>
<td>39 (83%)</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>55 (all male)</td>
<td></td>
</tr>
</tbody>
</table>

These key components of the LDS Church system of socialisation therefore strengthen the commitment of members to Mormonism in later life, and hence reinforce firms’ import of Mormon values into their internal structures via the ‘key individuals’ and ‘strength-in-numbers’ mechanisms already outlined.

6.5.2.5 - FORMAL LDS CHURCH TEACHINGS

The final component of the LDS Church’s role as a reinforcement mechanism of firms’ cultural embedding centres on four key areas of its teachings. First, economic growth has always been an integral part of Mormon theology (Shupe, 1992). Of some 122 revelations received by Joseph Smith, the founder of the LDS Church, 88 explicitly address fiscal matters (Van Biema, 1997) and Mormonism views economic success as a key aspect of religious life (Heaton, 2001). As such, applying Mormon values and teachings to business matters, a key element of firms’ cultural embedding, is theologically sustained within Mormonism:

‘There are a lot of lessons in our Mormon theology that apply to the business world, and apply to dealing with people and relationships’. CEO and Co-Founder, QDD, active Mormon

Second, Mormonism teaches that technology itself is a blessing, a tool that God has provided to help forward the spiritual goals of society and evidence of continuing revelation. As such where I have interpreted firms’ active alignment of their software products with Mormon values as evidence of their cultural embedding, this is one of the main mechanisms driving that import.
Finally, Mormon doctrine holds that all aspects of one’s life, hence including worklife, are subject to scriptural authority (O’Dea, 1957; White, 1977). As such, Mormons are taught that their daily behaviour must always be congruent with Mormon principles. The compartmentalisation of religion, keeping it separate from one’s work life, therefore fundamentally goes against the Mormon worldview:

‘The whole goal of the Gospel is to make people more Christlike in all that they do. Now none of us are there yet, we’re all weak, but when it works right, people will definitely take the LDS traits that they’re taught in church and apply it to all that they do. If you’re really striving to really live what you believe in, it carries over into every aspect of your life. You know leadership, the way you talk to people, the way you respect other people’s rights. It really is a stark thing. It’s much more a way of life that most people realise’.
Graphic Designer, IEH, active Mormon

‘You constantly get it drilled into your head at Church meetings you go to, the quorums, the classes, you talk about how you go to work the next day – do you put on two different faces where you’re this way on Sunday but at work you’re a totally different person? Ideally, the Gospel teachings of the Church are supposed to be at your core, so if you profess to be LDS you’ve got to be LDS in business, LDS with your wife, LDS everywhere. You try to lose the hypocrisy-type of mentality of being one way on Sunday and then coming to work and acting in a totally different way’.
Graphic Designer, IEH, active Mormon

Overall, these LDS formal teachings therefore combine to strengthen and legitimate the application and import of Mormon values into members’ daily work lives, and hence provide a key mechanism that reinforces firms’ cultural embedding in the region.

6.5.3 - UTAH STATE LEGISLATION & MORMON SYSTEMIC POLITICAL POWER

Two key components of Utah’s state legislation reinforce the embedding of Utah’s computer software industry in Mormon culture. First, Utah’s tough liquor laws and anti-smoking policies13 discourage potential employees from out of state from moving to Utah, employees that would otherwise diversify Utah’s software labour force and hence dilute the Mormon cultural influence within firms. These pieces of legislation therefore underpin the labour recruitment mechanisms,
and hence ‘key individuals’ and ‘strength-in-numbers’ mechanisms of cultural embedding. Second, Utah is a right-to-work state, facilitating employers’ abilities for religious-cultural considerations to influence their management style:

‘See, legislation in California is very in favour of the employee, whereas in Utah it’s in favour of the employer. So the ability of people to allow their religion to drive their management style, you’re not gonna find that in California because the employer is just gonna plain old get sued! But in Utah, as this right-to-work state the employer has the majority of power, so employers can throw their attitudes on employees, they can throw pot-lucks where prayers are said and it’s no big deal. You say a prayer at a business meeting in California, you’re gonna get your butt sued off! - and to be honest rightfully so. The workforce is supposed to be a neutral ground, for free thinking’. President and CEO and Founder, WSU, non-Mormon female

Both pieces of legislation are heavily Mormon-influenced, a function of the LDS Church having systemic power in Utah government (Burbank et al., 2001). Because the Mormon component of Utah’s population has grown past 70%, almost invariably most of the candidates for Utah public office have been members of the LDS Church. There is also a very strong public perception in Utah that non-Mormons, women, and ethnic minorities have little chance of being elected and so few stand for office. These two key factors have historically combined to produce Mormon majorities in excess of 80% in the Utah legislature in recent decades (ibid.: 172; Quinn, 1997). Thus, even though the Church as a formal institution rarely gets involved in Utah politics, decisions are nevertheless made as if the Church had been involved. Thus, Utah’s anti-liquor and anti-smoking laws reflect the LDS Church prohibition of those as part of its divinely-inspired health code. Further, Utah’s right-to-work status (since 1955) is also largely a function of the LDS Church’s historical opposition to labour unions, consistent with its doctrines and teachings on work as a God-given privilege that should be available to all, regardless of membership in labour collectives. The Utah state legislative context is therefore key in reinforcing firms’ import of Mormon regional cultural values.

6.6 – NATIONAL REINFORCING MECHANISMS - US LEGISLATION

The final mechanism that reinforces firms’ cultural embedding in the region centres on US national legislation that obligates employers to accommodate the religious-cultural beliefs and practices of their employees in the workplace. The US Workplace Religious Freedom Act (1972) amended Title VII of the US Civil Rights Act (1964) to require employers to make reasonable
accommodation for the religious beliefs of employees and prospective employees, unless doing so would ‘impose an undue hardship’, defining religion as ‘all aspects of religious observance and practice, as well as belief’. The *Religious Freedom Restoration Act* (1997) further increased employers’ responsibilities to accommodate workers’ religious beliefs within the workplace. These two key pieces of legislation therefore reinforce firms’ *obligations* to import Mormon religious-cultural values into their internal structures.

**6.7 – INTERACTION OF GENERAL VERSUS SPECIFIC MECHANISMS**

Utah’s computer software industry is therefore embedded in the Mormon regional culture via a set of mutually reinforcing mechanisms. Different combinations of these mechanisms in different firms translate into different degrees of embedding across different firms: those firms that have a Mormon founding team, Mormon majority management team, Mormon majority workforce and Utah County location have the highest ‘degree’ (strength) of cultural embedding in the region, as measured in *Chapters 4* and *5*. Further, while some of these mechanisms are specific to the Utah Mormon case, I argue that others are specific manifestations of much more general mechanisms (*Figure 6.9*) which are therefore applicable to other regions with strong cultures. The first primary mechanism centres on key individuals who maintain positions of power within the firm, and whose personal values informed by the wider regional culture are thus imported into the firm by virtue of these individuals having a disproportionate influence over the culture of the firm. This is in turn reinforced by the ‘strength-in-numbers’ mechanism in which culturally-informed decisions are ratified at the group level, reinforced by processes of conformity to the group, mutual observance and peer pressure, and which operate at both the intra- and inter-firm levels.

These primary mechanisms are underpinned by a series of secondary reinforcing mechanisms which include: (i) labour recruitment mechanisms, centred on firms seeking employees that match their existing corporate culture, and employees seeking firms that match their own personal values; (ii) educational and skilling mechanisms, in which graduates as embodied culture take the university’s cultural values, attitudes and norms into which they have been socialised to the firms that subsequently employ them; (iii) civic institutions that socialise individuals into a particular set of values and who exercise a high degree of social control over their members’ sense of identity and behaviour patterns; and (iv) local, regional and national legislation that strengthens the power of the employer *vis-à-vis* the employee, or which increases employers’ responsibilities to accommodate their employees’ particular cultural lifestyles in the workplace.
Firms’ embedding in the regional culture hierarchy\(^{14}\) is therefore not pre-given or static, but continually remade over time, via a key set of mechanisms which mediate between everyday social practices within the firm and the reproduction of corporate culture structures that in turn import key cultural traits from *regional* culture structures. The cultural values, attitudes, expectations and behaviour of employees and firms in the region are thus critically informed by those of its lead civic, educational, political and labour institutions. These spill over to workers, firms and industries in the region through the course of time (Martin *et al.*, 1997), in effect setting the social rules and defining the norms of behaviour across firms throughout the region (also see Glasmeier, 2000). I am not arguing that regional culture mechanically or rigidly determines worker and firm behaviour, but rather that it structures the material and cultural resources that

\(^{14}\) Made of a regional culture, individual corporate cultures, and a regional *industrial* culture.
enable and constrain the action of individuals and the firms in which they work. Further, once a dominating pattern of cultural embedding has been established, it will attract those employees and companies of a similar cultural background who are most compatible with the existing regional culture hierarchy. As such, I argue that the cultural embedding of firms in the region may become self-reinforcing over time. In the remainder of this chapter I take the general mechanisms of firms’ cultural embedding outlined above and relate them to notions of critical realism to try and develop a cleaner conceptualisation of cultural embedding, grounded in the causal agents driving those mechanisms.

6.8 - RECONCEPTUALISING CULTURAL EMBEDDING - IMPORTING CRITICAL REALISM

6.8.1 – APPLYING THE POSITION-PRACTICE SYSTEM TO THE FIRM

Critical realism is a distinct version of the realist philosophy originally proposed by Roy Bhaskar (1975, 1979, 1989) and subsequently adapted by others in sociology and economics (e.g. Collier, 1994; Keat and Urry, 1982; Lawson, 2001; Outhwaite, 1987, 1998; Sayer, 1984, 1992). However, the appropriation of critical realism by geographers has been at best partial (Pratt, 1995), and its ideas have yet to be fully applied to notions of the production of culture within the firm. I argue that the application of key elements of critical realism offers a cleaner and more substantive conceptualisation of processes of cultural embedding, centred on three key sets of relationships through which firms’ embedding in the region plays out. These are the relationships between: (i) individuals and individuals; (ii) individuals and the firm; and (iii) the firm and its wider environment.

Critical realism seeks to theorise the relationships between structure and agency, to answer the classic question of whether social phenomena are to be accounted for by social structures of which individuals are merely bearers, or by the conscious activity of individuals and groups? Thinking has tended to fall between two poles (Figure 6.10). Methodological individualism asserts that social phenomena (hence e.g. the firm) can ultimately be explained in terms of aggregate individual actions, that social processes are reducible to the apparently unconstrained actions of individuals (Sayer, 1992). Structuralism instead stresses that individual action can only take place within social relations and is therefore constrained by conditions not of the actors’ choosing (ibid.).
To offer a resolution to this debate Bhaskar instead develops his Transformational Model of Social Activity (TMSA), based on two key premises. First, he argues that socio-cultural structures are both the ever-present and necessary condition for intentional human agency, yet only exist as the continually reproduced outcome of human agency. This is the ‘duality of structure’. Second, while human agency makes no sense without structure, structures would not exist without human agents, who reproduce and transform socio-cultural structures through their everyday activities. This is the ‘duality of praxis’. Bhaskar’s Transformational Model of Social Activity (TMSA) (Figure 6.11) forms the core building block of his critical realist social ontology, later refined to incorporate change over time more explicitly (Figure 6.12):

**Figure 6.10 – Theorising the Relationship Between Structure and Agency**

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**Figure 6.11 – Bhaskar’s (1979) Original Transformational Model of Social Activity (TMSA)**

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15 Bhaskar’s model differs from Giddens’ Structuration (1984) in that while Giddens recognised the Duality of Structure, Bhaskar adds to this the Duality of Praxis (Lawson, 1997). Bhaskar later refined his original model because it tended to downplay historicity and emergence (Archer, 1998).
Crucially, the TMSA allows us to recognise the independent causal forces within regional, corporate and industrial culture structures and their associated rules, resources and constraints, yet simultaneously avoids an overly-structuralist deterministic account by recognising the key role of individuals agents. Socio-cultural structures are therefore manifest in, but not reducible to, the events and actions they facilitate (Lawson, 1997). Bhaskar argues that some ‘point of contact’ is required between social structure and human agency, a position-practice system which designates the slots in social structures into which active agents must slip in order to reproduce them (Bhaskar, 1979: 40-41). ‘Positions’ refer to the functions, roles, duties, rights, and obligations that are occupied (filled, assumed, enacted) by individuals, and ‘practices’ to the activities in which, by virtue of their occupancy of these positions (and vice-versa), individual agents engage. Applied to the firm, ‘positions’ therefore refer to the job roles that employees hold, and ‘practices’ the activities in which, in virtue of their occupancy of those job roles (and vice-versa) they engage. Critically, the model allows for the simultaneous occupation of multiple slots in different socio-cultural structures by individuals, which (may) place inconsistent demands upon them. Individuals can therefore occupy both a position-practice slot in the regional culture structure and a slot in the corporate culture of their own firm, the key vehicle through which regional cultures and corporate cultures overlap, the manifestations of which I have outlined in Chapters 4 and 5. Crucially, if an individual occupies a position-slot whose associated practices, duties and activities give the bearer undue influence over the commitments and actions of other colleagues and employees, then the bearer’s personal values and commitments, themselves crucially informed by the regional culture, may be brought to bear upon the firm. This then is the ‘key individuals’ mechanism outlined in Section 6.2, grounded in Bhaskar’s realist framework.

16 For example the trade-off between cultural versus profit maximizing strategies as outlined in Chapter 4.
6.8.2 – THE THREE KEY RELATIONS OF CULTURAL EMBEDDING

However, the cultural embedding of the firm is not only dependent on individuals bringing regional cultural values to bear upon the firm, but that their corporate import of regional cultural values is *ratified* by the wider workforce majority (the ‘strength-in-numbers’ mechanism of embedding, as outlined in Section 6.3). Bhaskar’s TMSA argues that we should conceptualise socio-cultural structures in terms of the *lattice-work* of relations between the bearers of different position-practice slots. Thus with regard to firms’ import of regional cultural values, it is not simply enough that key individuals simultaneously occupy slots in both the regional culture and the firm’s corporate culture, but that the occupiers of the *surrounding* position-practice slots in the corporate culture lattice do likewise. This necessary connection between individuals and other individuals in the firm I argue is the first key relation through which firms’ cultural embedding in the region occurs.

The second key relation concerns that between individuals and the firm. Crucially, while firms’ identities *are* intimately related to the identities of its employees, they are not wholly reducible to them. Rather, corporate cultures are irreducibly emergent, that is, more than simply the sum of their individual bearers (i.e. employees), but which in turn would not exist were it not for the everyday actions of its employees. Critically, we need to distinguish the occupant of these position slots from the position itself (Sayer, 1992). Individuals in the firm are able to bring regional cultural imperatives to bear upon the firm’s internal structures through their simultaneous occupation of multiple position-practice slots as outlined above, and over time these regionally-informed personal cultural values often become transformed into deeply-held, shared assumptions within the firm concerning appropriate behaviour, attitudes and ways of thinking. However, it is not the combined cultural traits of the fillers of those slots *per se* that define the firm’s culture, but the web of *interrelationships* between the various position-practices that they fill. While the individual occupants of position-practice slots in the firm typically change over time, the interrelations between position-practice slots nevertheless endure. As such, the structuring of corporate cultures therefore also arises from the *past* activities of key agents within the firm, who may have left or died, whose influence on the corporate culture of the firm new employees inherit. This central notion of emergence therefore defines the relationship between individuals and the firm, the second key relation of cultural embedding.

The third relation through which embedding occurs centres on that between the firm and its wider environment. If *Firm A*, is surrounded by other firms whose own employees also simultaneously

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17 Emergent phenomena are those that only come into being through social combination.
occupy position-practice slots in the regional culture and hence import regional cultural values into their internal workings, then Firm A’s own import of regional cultural values is likely to be stronger than if it was surrounded by firms whose employees did not simultaneously occupy slots in the regional culture. This is simply the ‘strength-in-numbers’ mechanism of embedding at the inter-firm level grounded in a critical realist framework, and operates primarily via processes of mutual observation, peer pressure, and spillover of business cultures from the lead firms into other firms through processes of labour recruitment and role mode emulation. One might also conceptualise this third relation of embedding as simply the individual-individual relation operating at the firm scale.

These three relations of embedding are therefore central to understanding the overlaps of corporate and regional cultures, and hence the cultural embedding of firms in the region. Adding in the secondary mechanisms outlined in the main body of this chapter which reinforce firms’ import of regional cultural values: (i) the labour recruitment mechanism functions both to fill key leadership and management position-practice slots in the firm’s corporate culture with employees who simultaneously occupy slots in the regional culture and to fill the firm’s surrounding slots with a majority workforce who do likewise; (ii) the educational and training mechanisms act to strengthen employees’ willingness to occupy multiple slots in different culture structures simultaneously; (iii) and the state and national legislative mechanism act to strengthen the ability of key individuals to occupy multiple slots.

However, as I have outlined in Chapters 4 and 5, cultural embedding is significant not only in terms of its impact upon firms’ internal structures, but also in terms of regional cultural values informing firms’ decision making processes, strategies, and hence patterns of behaviour. Since information must be interpreted in order to constitute knowledge, corporate strategy is unavoidably culturally-influenced, because it is only in and through culture that the firm constructs interpretations of the world and understands itself (Schoenberger, 1997: 152). However, it is not only a case of key individuals’ personal commitments being brought to bear upon corporate decision-making, but of regional cultural imperatives being imported into the firm via key individuals’ simultaneous occupation of position-practice slots in both the corporate culture and the regional culture. As such, regional cultural identities and commitments become fundamentally tied up with corporate cultural conceptions about what the firm can be and how it operates in the world, including understandings about relations internal to the firm, and between the firm and its external environment (ibid.: 145). Regional cultural values are therefore intimately involved in determining what kinds of corporate strategy will be accepted and which refused, through definitions of what has value, and what does not (see Figure 6.13).
Crucially, this model overcomes previous process-based accounts which ‘write out’ subjects and hence ‘dehumanise’ processes of cultural embedding, yet it also avoids methodological individualism by instead recognising the causal power of culture structures themselves. Further, the model also avoids reification of regional and corporate cultures, which I argue has been a persistent flaw in the embeddedness literature. We can therefore conceptualise the firm as embedded in socio-cultural relations both as a collectivity and via the embeddedness of its individual employees (see also: Oinas, 1999). I am not arguing that people use culture to derive pat answers within the firm, rather that regional culture is used as a lens through which difficult issues are analysed and understood. Regional culture does not supplant reason but rather informs it, corporate decision-making and strategic formulation therefore being different because of the import of regional cultural values into the firm. Further, not only are firms’ strategies often consistent with regional cultural imperatives (the link between the regional culture and corporate culture levels of the culture hierarchy), but they are also consistent across different firms, sustaining I argue a regional industrial culture, the final link in the culture hierarchy triangle.

18 That firms have powers independent of the people who constitute firms’ activities (Halford and Savage, 1997).
6.8.3 - CHANGE OVER TIME

While the secondary reinforcing mechanisms of cultural embedding are consistent over time, I suggest that the significance of the ‘key individuals’ and ‘strength in numbers’ mechanisms, and hence firms’ cultural embedding in the region, change over time. The degree to which regional cultural values are brought to bear upon the internal structures and decision-making processes of the firm depends on two key factors. First, it depends on the degree to which key leadership and management position slots in the firm, whose associated practices give their occupant large influence of the behaviour of others within the firm, are occupied by individuals who simultaneously maintain a strong regional cultural identity. This is the ‘key individuals’ mechanism of embedding. Second, firms’ embedding is also dependent on the proportion of firms’ total workforce position-practice slots filled by employees who also maintain slots in the regional culture, and who hence ratify regionally-culturally informed leadership and management decisions in the firm. This is the ‘strength-in-numbers’ mechanism of embedding. As a firm grows over time, it tends to develop a more elaborate chain of command (see Figure 6.14 A), and hence a greater number of position-practice slots in the firm’s corporate culture available for occupation by employees who also occupy slots in the regional culture, and who can thus bring regional cultural values to bear upon the firm’s internal processes.

Figure 6.14 - Change in Firm Characteristics Over Time Since Firm Inception

![Diagram showing changes over time since firm inception](image-url)
However, this driver of firms’ cultural embedding is in tension with an increase in the size of a firm’s total workforce which also increases over time. As firms grow they inevitably employ a wider skill base and hence a wider diversity of employees from different cultural backgrounds. As such, there is a greater potential for the proportion of firms’ total lattice of position-practice slots to filled by employees who are not part of the wider regional culture, with a consequent lesser ratification of regionally-culturally-informed decisions within the firm (Figure 6.14 B). Indeed, my own results are consistent with this pattern. While my case study sample is limited in terms of firms all being roughly the same age\(^{19}\), respondents were able to draw on their experiences in their previous companies of how their corporate cultures had changed over time. Typically, as their firms had grown from small cohesive groups of people committed to similar culturally-informed goals and objectives to larger, more bureaucratic and segmented type corporate environment, the values of the founders and the original group had become lost, particularly as new employees joined the company and expanded its skill-set and hence workforce over time:

‘So last year in particular we went through a lot of political in-fighting with this new batch of employees, with the traditional LDS structure really fighting up against the people who came in from the outside. And the outside won, they usually always do’. Director of Marketing, FQY, active Mormon

Thus, while new firms often take on the characteristics of their founders, as time passes it becomes less easy to justify a classification of firms based on a single individual. While my case study sample allows only a snapshot of these firms in time, the majority of my respondents are keen for me to visit them again as part of future research to examine how their degree of cultural embedding in the region has changed since 2001.

### 6.9 – SUMMARY

Corporate cultures, and hence the strategies which flow from those, are critically informed by wider regional cultural imperatives through a set of mutually reinforcing and multiple-scaled mechanisms which mediate between everyday social practices within the firm and the reproduction of corporate culture structures that in turn import regional cultural traits. The primary mechanisms centre on key individuals, reinforced by ‘strength-in-numbers’ at both the intra- and inter-firm levels, in turn underpinned by a series of secondary mechanisms that include...
labour recruitment, educational and civic institutional mechanisms, and local, regional and national legislation. Via these mechanisms, regional cultural imperatives *unavoidably* come to inform firms’ internal structures, decision-making processes, strategies and hence patterns of behaviour. I have also shown how Bhaskar’s (1989) Transformational Model of Social Activity offers a cleaner conceptualisation of the processes of cultural embedding, allowing us to ground those processes in terms of the agents responsible for them, an attribution of responsibility upon which policy-makers might then act. In the final chapter, I draw together my overall analysis around the four key research questions that I posed at the outset of the dissertation, and focus explicitly on the overall policy implications of this work.
CHAPTER 7

CONCLUSION

‘This broader theoretical integration of economy with culture has barely begun’.

R. Peet (1997: 37)

Over the last decade, the relationship between private sector innovation and regional growth has become a central avenue of inquiry for geographers, who have especially focused on the key institutions that underpin innovative firms and regional economies, part of a broader institutionalist ‘turn’ in the discipline through which conventional notions of ‘the economic’ have been broadened. However, while the set of formal ‘hard’ institutions that underpin innovative regional economies are relatively well theorised1, we still do not fully understand the nature of the ‘cultural glue’ that holds these regions together beyond mere specialisation and interlinkage, and which bestows on particular regional bundles of ‘hard’ institutions a self-reinforcing technological growth dynamic. While many accounts are typically suggestive of something intangible that permits innovation to proceed in some places but not in others, they often fail to specify the exact nature of the processes through which regional cultures promote innovative activity more successfully in some regions than in others. Accounts return again and again to the cultural properties of these regions, but do not specify the actual mechanisms through which regional cultures inform firms’ internal workings, decision-making and hence observed behaviour, nor how that influence is maintained over time.

I argue that these gaps in our understanding are largely a function of the limits of notions of cultural embeddedness, the key concept through which geographers have sought to understand the cultural bases of innovative regional economies. The term ‘embeddedness’ is used too casually and descriptively, with scholars rarely specifying the actual ‘contents’ of firms’ cultural embedding in the region. This results in a lack of any real theoretical or analytical consistency or coherence. Further, ‘culture’ itself remains an incredibly slippery term within the economic

1 In terms of the venture capital, educational and training institutions, networks of specialised suppliers and business
geography literature. References to culture in within economic geography are thus typically viewed as appealing to a ‘mystery’ of forces, a ‘dustbin category’ for anything we cannot explain, even tantamount to an admission of ignorance. My research therefore offers three broad contributions to this debate. First, I have shown that while dominant conceptions of regional culture in economic geography are typically fuzzy, and hence have limited policy application, there is no valid reason why this should be the case. I argue that culture has become reified and misrepresented as something ethereal and eternal, and given causal powers outside of the individuals whose interactions sustain it as a pluralistic set of social practices. This has been reinforced by the widespread use of process language which further obscures the role of possible causal agents. Crucially, I argue that we can demystify this regional cultural ‘glue’, and hence its impact on innovative regional economies, by grounding it in the everyday social and work processes through which culture is continually constructed and reconstructed, and also in the human agents responsible for those processes.

Second, I have shown how regional culture, part of the firm’s institutional environment, has very real and significant impacts upon the operation of the firm as a specific formal institutional arrangement. I have outlined how regional cultural collective understandings, rules, norms, procedures, customs and conventions impact on firms’ internal structures, decision-making processes, corporate ideologies, systems of organizational control, strategies and hence observed behaviour. Further, while conventional analyses of regional economic development have often sidelined culture because of alleged difficulties of actually measuring its impact on the firm, in contrast I have been able to measure firms’ degree (strength) of cultural embedding in the region, in terms of the prevalence of different ‘contents’ (manifestations) of firms’ import of regional cultural values, which are often mutually reinforcing in the firm.

Third, whilst scholars have typically highlighted the role of regional cultural traditions and aspects of social life that positively impact on firms’ economic performance, I have demonstrated how regional cultures may also undermine conditions conducive to knowledge creation, inventiveness, information dissemination and knowledge use, and hence constrain firms’ innovative capacities. Further, I have also shown how both enablers and constraints on firms’ innovative capacities stem from the same regional culture in which they are embedded, and have also measured the overall impact of cultural embedding firms’ on firms’ abilities to innovate by use of a series of empirical indicators of innovative capacity.

services, intellectual property and patent law firms, broadband internet connections, targeted government tax relief and incubators and other research organisations.
Overall, I have sought to derive a cleaner, more rigorous and hence useful framework for understanding the ways in which regional culture conditions and shapes the plausible responses of firms within a regional industrial system. To move beyond the all-encompassing notions of ‘culture’ typically employed in these debates I have unpacked it in terms of a regional culture hierarchy made up of: (i) individual corporate cultures; (ii) a regional industrial culture; and (iii) the broader regional culture in which these are set. I argue that we can conceptualise the cultural embedding of firms in the region in terms of the overlaps of the different levels of this hierarchy. In this context, my research focused on four key research questions, as outlined below.

*Figure 7.1 – Key Research Questions of the Dissertation*

1. How far, and through what mechanisms, do high tech corporate cultures come to embody the wider regional culture in which they are embedded, in terms of its associated values, traditions and ways of thinking?

2. How does the incorporation of regional cultural imperatives into the firm both promote and constrain its ability to learn and hence innovate?

3. How does the cultural embedding of the firm in the region change over time?

4. What are the implications of these mechanisms for realigning corporate cultures that inhibit regional dynamism, given their embedding in the wider regional culture?

In the remainder of this chapter I shall relate my overall analysis to each of these research questions in turn, ending with a focus on the wider policy implications of the research. I argue that the findings from my case study do have a high degree of generalisability. While the nature of the firms and the Mormon regional culture studied here is highly locally contingent, the agents, processes and mechanisms through which the cultural embedding of firms occurs are general to other regions that have similarly strong and cohesive regional cultures. As such, my case studies speak to broader issues of cultural embedding and for understanding why firms do what they do in the region.

With regard to my first research question, the degree to which a firm is culturally embedded in the region is best understood in terms of the number of overlaps between its own corporate culture and the regional culture. Corporate cultures are the set of social conventions, embracing behavioural norms, standards, customs, and the ‘rules of the game’, that underlie social
interactions within the firm, in turn linked to a deeper set of underlying core values (philosophies or ideologies). Crucially I have shown how these corporate sets of conventions, norms, attitudes and the like, as well as the deeper set of core values that underpin them, are themselves often part of the wider regional culture of the area in which the firm is located. As such, regional cultural imperatives can therefore define appropriate ways of behaving, attitudes, and ways of thinking within the firm. Further, I argue that cultural embedding is only significant if it makes a difference to either firms’ internal structures, their decision-making processes, the ways they operate, and/or to their actual behaviour. Since information must be interpreted in order to constitute knowledge, corporate strategy is unavoidably culturally-inflected, because it is only in and through culture that the firm constructs interpretations of the world and understands itself (Schoenberger, 1997). Crucially, when employees come to work in a firm their prior cultural experiences and identities, themselves informed by the regional culture, come with them. As such, regional cultural identities and commitments become fundamentally tied up with corporate cultural conceptions about what the firm can be and how it operates in the world. Regional cultural values are therefore intimately involved in determining what kinds of corporate strategy, and hence firm behaviour, will be accepted and which refused through definitions of what has value and what does not. Further, I not only found a patterning of corporate behaviour consistent with regional cultural values, but a patterning across firms, sustaining I argue a regional industrial culture, the third link in the culture hierarchy triangle.

The key mechanism through which firms come to import regional cultural values therefore centres on key individuals or ‘culture carriers’ at multiple levels within the firm who by virtue of their job role, strong personality, or achievements have undue influence on the opinions and behaviours of others. This is intimately related to a ‘strength in numbers’ mechanism, premised on the notion that any regionally-culturally-informed decisions must be ratified by the wider workforce majority if they are to have a significant impact upon the firm. The ‘strength-in-numbers’ mechanism also embraces processes of conformity to the group, mutual observance and peer pressure, processes which also operate at an inter-firm level. These primary mechanisms are in turn underpinned by a series of secondary reinforcing mechanisms which include: (i) labour recruitment processes that match employers with employees of a similar cultural outlook; (ii) educational and training mechanisms in which graduates act as embodied culture, taking that teaching institution’s cultural values, attitudes and norms to the firms that subsequently employ them; (iii) civic institutions that socialise individuals into a strong set of cultural values and who exercise a high degree of social control over their members’ sense of identity; and (iv) local, regional and national legislation that strengthens the power of the employer vis-à-vis the employee, or which increases employers’ responsibilities to accommodate their employees’
cultural lifestyles in the workplace. These mechanisms are often mutually reinforcing within the firm, with different combinations of mechanisms manifest in terms of different degrees (strengths) of embeddedness. Firms’ cultural embedding in the region is therefore not pre-given or static, but continually remade over time, via this key set of mechanisms which mediate between everyday social practices within the firm and the reproduction of regionally-informed corporate culture structures. I am not arguing that regional culture mechanically or rigidly determines worker and firm behaviour; rather, that it structures the material and cultural resources that enable and constrain the action of individuals and the firms in which they work.

With regard to my second research question I have demonstrated how firms’ cultural embedding has significant impacts on their abilities to innovate. These impacts are best understood as a series of sustained tensions between regional cultural traits imported into the firm, versus key elements of corporate cultures that have been consistently shown in the regional learning literature as central to firms’ abilities to innovate. First, this cultural import impacts on the structure and pattern of firms’ external relationships, and hence on their abilities to access sources of information and strategic competencies beyond their boundaries. Shared cultural norms, conventions, customs, and traditions may also help to create a sense of community and cultural trust in the absence of significant repeated interaction, trust upon which interfirm interaction and hence information sharing are predicated. Second, firms’ import of regional cultural values impacts on their abilities to use new information once it enters the firm. The use of information to generate new knowledge crucially depends on interactions between different actors with different ideas, methods of approach and viewpoints whose interactions around work problems will often generate new and unexpected ideas or synergies. The import of cultural attitudes of respect for authority, established ideas and non-confrontation, along with limited workforce diversity, therefore constrains firms’ abilities to use new information in this way. Thus, while in some cases, firms’ import of regional cultural traits enhances and reinforces their innovative capacities, in other cases it potentially constrains them. Crucially, both enablers and constraints on firms’ innovative capacities stem from the same regional culture in which they are embedded.

With regard to my third research question, I argue that the cultural embedding of the firm in the region changes over time, as firms increase in size and develop a more extensive internal division of labour. I argue that while the secondary reinforcing mechanisms of cultural embedding are constant over time, the significance of the ‘key individuals’ and ‘strength in numbers’ mechanisms, and hence firms’ cultural embedding in the region, change. As firms grow they tend to develop a more elaborate chain of command, and hence there results a greater number of leadership and management positions - which allow their occupant a large influence over the behaviour and opinions of others in the firm - to be occupied by employees who also maintain a
strong regional cultural identity. However, this driver of firms’ cultural embedding is in tension with an increase in the size of the firm’s total workforce, which also increases over time. As firms grow they inevitably employ a wider skill base and hence a wider diversity of employees from different cultural backgrounds. As such, there is an increased potential for a greater proportion of firms’ total workforce to become populated by employees who are not part of the wider regional culture, with a consequent lesser ratification of regionally-culturally-informed decisions within the firm. Depending on the relative balance of these two key mechanisms of embedding, firms’ import of regional cultural values is subject to change, most likely decreasing over time.

Finally, with regard to my fourth research question, given that firms’ cultural embedding in the region changes over time, then we may be able to deliberately influence the direction of that change and hence realign firms’ corporate cultures in line with those better suited to innovation. While the debates surrounding the organizational learning and culture change literature are massive, and I do not want to rehearse old ground on how we achieve change\(^2\), my research does have three relevant insights here. First, authors have argued that to change corporate cultures we need to identify their key gatekeepers, the most important guardians of its norms and values (e.g. Tichy and Devanna, 1986). Typically these are asserted as firms’ founders, leaders and managers who by virtue of their job role have a large influence over the culture the firm. However, I have highlighted a range of other culture carriers in job positions that span the whole corporate power hierarchy, who by virtue of their strong personality, personal achievements, or position at the centre of corporate friendship or gossip networks also have a large influence over the corporate culture of the firm, and who will also need to be targeted if culture change is to be successful. Second, my reconceptualisation of firms’ cultural embedding using the mediatory position-practice system suggests that to understand firms’ cultural embedding in the region we need to focus on three key sets of relations through which embedding takes place, in terms of: (i) individuals and individuals; (ii) individuals and the firm; (iii) firms and their wider environments. As such, it is insufficient to target only key individuals within the firm (the 1\(^{st}\) relation of embedding), without also targeting the firm’s wider workforce (the 2\(^{nd}\) relation of embedding), as well as other firms in the surrounding area from which that firm gains peer support for its culturally-informed strategies (the 3\(^{rd}\) relation of embedding). Third, given the ongoing nature of

\(^2\) Key methods outlined in the literature include bringing in new management from outside, developing new corporate systems of rewards and punishments, implementing training programmes, creating of a new corporate image that employees must live up to, changing round people’s positions within the organisation, bringing in ‘new blood’ through modified recruitment practices to bring in new ways of thinking and belief by which the company defines and carries out its business, or through out-placement programmes to immerse employees in fresh viewpoints, approaches and attitudes.
the mechanisms of cultural embedding outlined, corporate culture change cannot be a one-off discrete phenomenon if it is to work; it must be an ongoing process. Thus, while culture change in the firm may be difficult, the fact that the cultural embedding of the firm changes naturally over time suggests that deliberate programmes of corporate culture change are feasible.

Finally I turn to the wider policy relevance of my overall analysis. This centres on high tech cluster policy, with which policy makers across the globe have become fixated over the last two decades as an important tool for economic growth. However, while governments around the world have sought to grow their own high tech ‘clusters’ of specialised, internationally competitive industries, the vast majority of these policy efforts have failed to ignite any meaningful long-run process of regional economic growth. I argue that the limits of cluster policy are largely a function of the overly-narrow economic theory upon which they are based. While ‘clusters’ have long been researched by geographers, it is the ‘new economic geography’ which claims to have ‘rediscovered’ geography in economics, that has attracted the attention of policy bodies. As such, policy focuses almost exclusively on hard institutions that underpin high tech regional economic development, the tangible factors that are most easily measured and traditionally dealt with in economic analyses, in contrast to the messy, soft, cultural influences that tend to be sidelined, indeed ignored. The policy implications of my research are therefore four-fold.

First, my analysis suggests that cluster policy initiatives premised on the provision of particular incentives and disincentives will not work in some simple linear fashion. Cluster policies are premised on the notion that high tech growth in particular areas is dependent on the ‘right’ mix of formal institutions that go together to make an innovative regional economy: sleek low rise glassy office buildings, broadband internet connections, a few multinational companies, a government-run research institute or two, a few venture capitalists, lower taxes, add in an appropriately skilled workforce, landscape the area in a campus-like atmosphere and stir! However, merely an abundance of formal institutions does not ‘automatically’ generate the crucial interactions between firms so central to high tech regional dynamism. Rather, the regional institutions held central in policy circles to high tech development are themselves inseparable from the regional culture in which they are embedded, cultural influences which serve to make development locally variable and hence difficult to replicate in other places (Malecki, 1995). As such, regional culture is not simply an additional shopping list item, but a key component that underpins all of the factors, impacting upon how they function together as a regional industrial system. As such, it is problematic to simply try and take what works in one place and try to implement it in a different regional cultural context, without understanding how the regional culture of the
successful region underpins the way it operates, and crucially, the mechanisms through which that occurs. If these regional culture structures are ignored, then myths will continue to be perpetuated in policy about the replicability of the formal institutional parts of innovative regional economies which do not function independently of their underlying regional culture.

Second, culture will continue to be ignored in policy circles as long as our conceptions of its role are fuzzy, esoteric and accompanied by characterisations in which causal agents disappear. However, I argue that there is no good reason why geographical analyses of the role of regional culture structures within innovative regional economies should not be rigorous, and have demonstrated how we need to recast fuzzy conceptualisations of the impact of culture on firms in terms of the specific manifestations and tangible contents of firms’ import of regional cultural traits. Indeed, policy makers have tended only to include hard institutions in their shopping lists of the key components required for a successful regional economy largely because these are the institutions most easily measured and dealt with in economic analyses. However, I have shown that while it is often difficult to often gauge the impact of cultural institutions on the firm, it is nevertheless possible to measure that impact. I have also highlighted the key agents responsible for those regional cultural impacts on the firm, actively avoiding the use of process language which at present obscures the attribution of responsibility or possibility for change in a given situation.

Third, in the global knowledge economy, those firms, sectors, and regions that can learn and innovate faster become competitive because their knowledge is scarce and therefore cannot be immediately imitated or transferred to new entrants (Lundvall, 1992). As such, part of the attraction of the new economic geographers’ take on regional economic development is that they have rooted their analyses within a broader focus on the determinants of competitiveness, productivity and innovation, issues which all have central public policy relevance but which often remain sidelined in cultural accounts of the firm. The policy relevance of my own research therefore also lies in its linking a cleaner conceptualisation of firms’ cultural embedding in the region explicitly to the impacts of that embedding on firms’ abilities to innovate. Indeed, I have also demonstrated how both enablers and constraints on firms’ innovative capacities stem from the same regional cultures from which they are embedded.

Finally, the most common cluster policy approach has been simply to exhort firms doing business within a national jurisdiction to modify their behaviour so that interfirm cooperation becomes more commonplace. However, given my demonstrations of how corporate behaviour is driven by culturally-inflected rationales, if we are seeking to modify firms’ behaviour, that requires a
crucial cultural shift. That is, that firms and their members bend, or indeed break out of, accepted ways of thinking and acting in the firm to adopt new patterns of corporate behaviour. As such, it is insufficient to construct institutions that promote openness, co-operation, and collaboration, but which do not address questions of transforming firm’s internal structures (see also Gertler, 1995a), that is their corporate cultures. If we are to understand how to change firms’ corporate cultures as barriers that inhibit their abilities to innovate, then we need to understand the mechanisms through which those cultures are constructed and reconstructed over time. Herein lies the final policy relevance of my research.

I have therefore sought to demystify the crucial role of regional culture as an institutional base of innovative regional economies, through the development of a more rigorous theoretical framework of firms’ cultural embedding in the region, grounded in the specific ‘contents’ of that embedding, its material impacts on the firm, and its causal agents and mechanisms. This research could feasibly have also been undertaken in economics, sociology, management studies, cultural studies, or even theology. However I argue that my analysis would not have been as strong if squeezed and trimmed to fit one of these disciplinary pigeon-holes. Economic geography’s strength lies in its ability to draw from a whole range of different disciplines in its analyses of economies and their geographies. Further, there is no necessary reason why the cultural and institutional ‘turns’ should undermine the legitimacy of the discipline. The key question is not whether we should focus on the cultural or the economic, but how we do both at the same time, coupled with an ongoing interrogation and evaluation of existing policies to reveal their limitations, with the aim of producing more appropriate and effective forms of policy intervention. I view this dissertation as my own first step in that direction.
APPENDIX 1

IN-DEPTH INTERVIEW RESPONDENTS, UTAH (FEB - SEPT, 2001)

Individuals are identified with the firm or organisation that they worked for at the time of the
initial interview. Given mobility within the industry and also, uniquely in my case, the calling of
individuals on LDS Church missions, some moved to new organisations and new countries during
the course of my fieldwork. Many others have also since moved firms.

(I) INDUSTRY WATCHERS AND CULTURAL COMMENTATORS – all in person, all at
least once, many several times. Majority for over an hour, some much longer (2-3 hours), others
cumulative continual conversations and drop-in sessions over 8 month fieldwork period.

Bureau of Economic and Business Research, University of Utah - Senior Research Analyst –
inactive Mormon female.

Bureau of Economic and Business Research, University of Utah - Special Consultant and
Former Associate Director – non-Mormon male.

Bureau of Economic and Business Research, University of Utah – Senior Research Economist
– non-Mormon female.

Bureau of Economic and Business Research, University of Utah - Research Associate –
inactive Mormon male.

Bureau of Economic and Business Research - Senior Research Analyst – inactive Mormon
male.

Bureau of Economic and Business Research, University of Utah – Director – active Mormon
male.

Careers Office, Brigham Young University - Alumni Placement Co-ordinator – active Mormon
male.

Church of Jesus Christ of Latter-day Saints, The – Emeritus member of the First Quorum of
the Seventy – active Mormon male.
Dan Jones and Associates (Utah’s lead popular opinion polling firm) – President and Chief Executive Officer – active Mormon male.

Department of Computer Science, Brigham Young University - Department Chair – active Mormon male.

Department of Electrical and Computer Engineering, Brigham Young University – Chair – active Mormon male.

Department of Sociology, Brigham Young University - Professor of Sociology and former Director of the Women’s Research Institute – active Mormon female.

Department of Sociology, Brigham Young University - Professor of Sociology and Research Associate, Center for Studies of The Family – active Mormon male.

Department of Sociology, Brigham Young University – Professor of Sociology (retired) – active Mormon male.

Economic Development Corporation of Utah – President. Also, Chair, Utah Silicon Valley Alliance (Build-Out Committee) – active Mormon male.

Faculty of Political Science, University of Utah - Assistant Professor – non-Mormon male.


Marriott School of Business, Brigham Young University - Alumni Relations Manager – active Mormon male.

Marriott School of Management, Brigham Young University - Director of the MBA program. Also, Management Consultant, Monitor Company (Utah); and Chief Financial Officer of the Huntsman Cancer Foundation – active Mormon male.

Marriott School of Management, Brigham Young University – Chair, Organisational Leadership and Business Program – active Mormon male.

Marriott School of Management, Brigham Young University - Assistant Dean, External Relations – active Mormon male.
Politis Communications (public relations and marketing communications consultants) – President and Founder. Also, member of Utah Valley Entrepreneurial Forum – active Mormon male.

Salt Lake Evangelical Seminary – Dean of Students – non-Mormon male.


University of Utah – Former President (the last Mormon President to date) and Professor of Family Practice – active Mormon male.

University of Utah - International Adviser – non-Mormon female.

Utah Governor’s Office of Planning and Budget – Research Analyst – active Mormon male.

Utah Information Technologies Association - Founding President and Chief Executive Officer. Also, Commissioner of the Utah State Legislature’s Information Technology Commission; and Utah delegate to the 1995 White House Conference on Small Business – non-Mormon male.

Utah Lighthouse Ministry (for ex-members of the LDS Church) – Director. Also, great-great granddaughter of Brigham Young (second President of the LDS Church) – inactive Mormon female.

Utah State Division of Administrative Rules - Administrative Code Editor. Also, Doctoral Researcher in Political Science, University of Utah (the link between Mormonism and Utah Republican politics) – active Mormon male.

Utah Technology Finance Corporation – Attorney– active Mormon male.

Utah Valley Economic Development Association – Director of Business Development. Also, Board Member, Utah Silicon Valley Alliance (Telecommunications and Infrastructure Committee) – active Mormon female.


Utah Women in Technology Forum – President. Also Information Technology Recruiter – non-Mormon female.
Wayne Brown Institute, The (Utah Venture Capital leverager) – President. Also, member of the Utah Silicon Valley Alliance (Management and Mentoring Committee) – inactive Mormon male.

Wayne Brown Institute, The - Chief Operating Officer. Also, former Executive Assistant to Ray Noorda at Novell; founding member of the Utah Information Technology Association; and former Chair of the Utah Technology Finance Corporation – active Mormon male.

(II) HIGH TECH (SIC 737) EMPLOYEES – (* indicates the lead respondent/s in each firm)

Chief Financial Officer*- BWB - active Mormon male.

Chief Financial Officer - ECY – active Mormon male.

Vice President of Engineering and Co-Founder - ECY – non-Mormon male.

Vice President of Sales - ECY – active-Mormon male.

President, Chief Executive Officer, and Co-Founder* - ECY. Also, Board Member, Utah Silicon Valley Alliance Venture Capital Committee – active Mormon female.

President and Chief Executive Officer* - EDT – active Mormon male.

Director of Marketing* - FOW – active Mormon male.

Director of Marketing* - FOY – active Mormon male.

Senior Product Manager* - GGO – non-Mormon female.

Director of Human Resources* - GGO – active Mormon male.
Vice President of Marketing - GOY – active Mormon male.

Director of Corporate Communications* - GOY - active Mormon female.

Vice President of Technology - GOY - active Mormon male.

President, Co-Founder and Owner* - IEH – active Mormon male.

Software Developer - IEH – active Mormon male.

Graphic Designer - IEH – active Mormon male.

President and Chief Executive Officer and Co-Founder* - JET – active Mormon male.

Accounts Manager - JET – active Mormon female.

National Sales Director - JET – active Mormon male.

Chief Operating Officer and Co-Founder* - JET – active Mormon male.

Co-Founder* - JOU – active Mormon male.

Software Programmer - LEL – inactive Mormon male.

Project Director - LEL – non-Mormon male.

Chief Executive Officer* - LEL – non-Mormon male.

Studio Art Director - LEL – active Mormon male.

Director of Software Development - MSO – active Mormon male.

Director of Research and Corporate Communications* - MSO – active Mormon male.

Vice President of Strategic Customer Relations* - MSO – active Mormon male.

Director of Software Quality - MSO – active Mormon male.
Chief Executive Officer and Co-Founder* - NLN – inactive Mormon female.

Vice President* - NLN – non-Mormon female.

Chief Operations Officer and Co-Founder - NLN – non-Mormon female.

Director of Business Development - NMH – active Mormon male.

President and Founder* - NMH – active Mormon male.


Director of Brand Management and User Experience and Co-Founder* - PSO – active Mormon male.

Consultant - PSO – non-Mormon male.

Director of Technology Development and Co-Founder* - PSO. Also, Computer Science major, Brigham Young University – active Mormon male.

Manager of Technology Development - QDD – active Mormon male.

Director of Customer Services - QDD – active Mormon male.

Founder and CEO* - QDD – active Mormon male.

Director of Marketing - QDD – active Mormon male.

Director of International Marketing - QXU – active Mormon female.

Vice President of Human Resources - QXU – active Mormon female.

Software Engineer - QXU – active Mormon male.

Manager of Corporate Affairs* - QXU – non-Mormon female.

Senior Vice President and Legal Counsel* - UOG – active Mormon male.

Vice President of Human Resources - UOG – active Mormon male.
Director of Corporate Communications - UOG – active Mormon female.

Director of New Business Development - UOG – non-Mormon female.

Director of Human Resources* - UID – non-Mormon female.

Vice President of Business Development* - UID – non-Mormon male.

Chief Technology Officer - UID – active Mormon male.

Marketing Co-ordinator* - UNY – inactive Mormon female.

President and Chief Executive Officer* - WSU. Also, first female Chair, Utah Information Technology Association; and board member, Utah Silicon Valley Alliance (Management and Mentoring Committee) – non-Mormon female.

Senior Creative Director* - WSU – active Mormon male.

Lead Applications Developer - WSU – inactive Mormon male.

Computer Programmer - XTH – active Mormon male.

Director of Software Development - XTH – active Mormon male.

Accounts Manager - XTH – non-Mormon female.

President and Co-Founder* - XTH – non-Mormon male.

Software Engineer - ANH – active Mormon male.

Production Manager – Custom Services - ANH – active Mormon male.

Lead Artist - ANH – active Mormon male.

Chief Executive Officer and Co-Founder* - ANH – active Mormon male.
(III) UTAH WOMEN IN TECHNOLOGY FORUM – 30 DISCUSSANTS
APPENDIX 2

IN-DEPTH INTERVIEW GUIDE AND EXAMPLE QUESTIONS BY RELEVANT RESPONDENT

TO ALL

(i) **Personal Employment and Education History** – through preliminary chat, ‘tell me a bit about’
- Job role
- Degree – From where?
- Firms previously worked for in Utah
- Comparisons with current firm’s corporate culture

(ii) **Measuring the Internalisation of LDS Values by Key Individuals in the Firm**
- How active are you in the LDS Church?
- Do you pay a tithe / use coffee / alcohol / tobacco?
- Do you hold the Priesthood / a Temple Recommend?
- How many church services do you attend a week on average?

(iii) **Being Mormon at Work**
- Which LDS teachings have the greatest application to your daily work life?
- How might Mormon values have influenced your firm’s employee policies / financial strategies / marketing policies?
- Have you ever prayed over a business decision / fasted for the company?
- How prevalent are those practices among your firm’s employees?
- As you work in Utah’s software industry, to what extent are you observed by other Mormons? Does that influence your business behaviour? – How?
- Do you think that being a Mormon has had advantages / disadvantages for you as a high tech worker on the Wasatch Front?
- How important is it to you that your work allows you to be close to the Church in Utah? – Have you ever been offered a job transfer that you have turned down because of that desire?
1. TO CEO, PRESIDENT, COO OR SIMILAR

(i) Mechanisms of Cultural Embedding

(a) Key Individuals
   - What shared philosophies knit your firm’s employees together? - Also: shared values/beliefs/expectations/attitudes/work norms?
   - Which key individuals’ personal values are those shared corporate values most in line with?

(b) Key Individuals and Decision-Making in the Firm
   - Who has the greatest say over your firm’s ultimate strategic direction?
   - Does your firm being run by a leadership and management team who are Mormon make your business different? – How?
   - If your firm’s corporate culture is in large part driven by your firm’s founder/leader/CEO, what is the effect of them leaving the firm?

(c) Majority Mormon Workforce
   - What do you see as the biggest defining factor of a ‘Mormon’ high tech firm? - that its key leaders and managers are Mormon? – Or that the majority of employees are Mormon?
   - How does a Mormon majority workforce make a difference to the way your firm operates?

(ii) Change Over Time
   - As your firm has grown and attained a higher level of technological development, how has your firm’s corporate culture changed? - Founder’s original personal values lost as the company has grown?

(iii) Possibility of Deliberate Culture Change Within The Firm?
   - Has your firm ever attempted to realign its corporate culture / corporate image / strategic direction in recent years? – How has your firm sought to achieve that?
   - How successful have these been?
   - How are new ideas that stray from the accepted way of doing things accepted by your firm?
2. TO PERSONNEL OFFICER OR SIMILAR

(i) Indicators of the Religious-Cultural Embedding of High Tech Firms
- What would you suggest are the best indicators of a firm’s corporate culture incorporating Mormon values?
- Does the nature of your software reflect Mormon values? – Explicit strategy / coincidence?
- Does your firm grant Pioneer Day as a day off?
- Is there a characteristically Mormon style of business management? – What are the key features of that?
- What are the key differences in the way your Mormon firm competitors operate compared with your non-Mormon competitors?
- How prevalent is the use of flextime, to accommodate employees’ religious and family commitments?
- To what extent are your corporate social events especially family orientated?
- Is alcohol ever served at your corporate events?
- How prevalent is Sunday working / are abnormal work hours within your firm?

(ii) Recruitment Processes
- Where does your firm primarily source its employees? Local vs. out-of-state talent?
- Do you recruit new employees from Brigham Young University? – What are the most attractive features of BYU graduates?
- How might a Mormon be recognised at a job interview? - Cultural cues?
- Might non-Mormon potential employees potentially be put off by your firm’s Mormon values?

(iii) Mormon Cultural Learning and Their Business Benefits
- In what ways does the church’s organisational system provide opportunities for the development of skills useful in business?
- To what extent has your firm been able to utilise the language skills of its LDS mission-trained employees?

(iv) Labour Turnover, Mormon Ethic of Loyalty and Zion
- What is your firm’s annual employee turnover? - How does this vary between departments / Mormon versus non-Mormon employees?
- How much of a sense of loyalty do you feel towards your firm? – Is the firm merely a vehicle to do your work?
- Governor Leavitt’s Utah-Silicon Valley Alliance views Mormonism as the solution to Utah’s high tech problems; how far do you share his view?
3. TO DIRECTOR OF PRODUCT DEVELOPMENT, R & D, OR SIMILAR

(i) Cultural Influences on Information Use Within the Firm (& Hence on Learning)
- How do Mormon teachings on respect for authority and established ideas align with the need for constant innovation and the questioning of established ideas within your daily work life?
- How willing have you found your Mormon employees / colleagues to challenge ideas, compared with your non-Mormon employees / colleagues?
- How receptive is your firm to new ideas that come from outside the firm?

(ii) Sourcing of Local Inputs
- From which firms does your company predominately source its inputs from?
- What main factors dictate your use of local vendors and partners?
- To what extent does a similar cultural background with those firms help sustain trust / validity?
- Are you able to draw upon Church social networks in your business dealings?
- To what extent have you observed an ethic of self-preservation among Mormons in business?

(iii) Co-operation and Information Diffusion
- How do your relationships with other firms in the region differ between whether those partners are Mormon versus non-Mormon partner firms?
- How does a firm’s Mormon / non-Mormon orientation impact upon your willingness to interact with them?
- How much interaction does your firm have with companies outside Utah? Do these out-of-state firms have any links to the LDS Church?

(iv) Cultural Markers and Trust
- How are other Mormons whom you have not previously met recognised at business meetings? - Style of speech? Mode of dress? Diet?
- To what extent are lay positions within the Church invoked as evidence for a person’s good character?
- To what extent is there an instant level of trust assumed in Utah’s high tech business community if you are Mormon?
- To what extent does BYU alumnus status carry weight in Utah’s high tech community?

(v) Increased Productivity?
- Have you noticed a discernible hard work ethic among the Mormon employees within your company? - visible manifestations of that?
4. TO CHIEF FINANCIAL OFFICER OR SIMILAR

(i) Financial Strategies
- To what extent have Mormon teachings on self-sufficiency/economic independence impacted upon your firm’s funding strategy?
- How willing is your firm to accept equity finance?
- Has your firm ever floated shares to raise capital? What is your firm’s ultimate financial goal?
- What have been the biggest factors that have constrained the growth of your company as a high tech start-up firm in Utah?

(ii) Regional Industrial Culture?
- To what extent is there a regional industrial culture of co-operation among high tech firms here?
- How does the Mormon orientation of firms vary along the Wasatch Front?
- How do firms in Utah County compare to those north of the Zion Curtain?¹

(iii) Corporate Organisational Structure as Importing LDS Church Structures?
- How formal are your firm’s internal information and communication flows?
- What is the typical age of managers within your firm?
- Does your firm have private offices / open plan layout / reserved parking spaces / modes of dress that vary for different job roles / segregated eating areas?

5. TO ALL – TRADE-OFFS

(i) General
- Frequently businesspeople adopt two personalities: a private religious identity and a career identity - How does this fit in with your experience of working in Utah’s high tech cluster?
- Capitalism is very much about competition and survival of the fittest, whereas Mormon teachings urge followers to love thy neighbour – How do you as a Mormon balance these in business?
- What typical events in the high tech business world put your faith in a state of tension with the needs of the business? – Labour negotiations? Employee underperformance?

¹ Zion Curtain – the foot of the mountain at Draper, separating Utah County which its very strong Mormon culture from Salt Lake County which is more cosmopolitan.
(ii) Family Versus Work
- What is the average length of your own work day / week? – How does that compare with those of other employees in your company?
- As a Mormon would you ever work on a Sunday to meet a tight product deadline?
- Does your firm particularly discourage working on Monday evenings?
- How important is it to you that the firm you work for shares your own cultural values?
- What are the main difficulties your company has faced as a result of it being Mormon in outlook?

FINAL QUESTIONS
- Are there any retired employees of your firm who would be willing to be interviewed?
- To what extent do you view your firm’s Mormon-orientated corporate culture as a competitive advantage?
Regional Culture, Corporate Strategy, and High Tech Innovation: Salt Lake City

BIBLIOGRAPHY


