SUSTAINABLE ENTREPRENEURSHIP
REGIONAL AND COUNTRY STUDIES

United States

SUSTAINABLE ENTREPRENEURSHIP PROJECT

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Sustainable Entrepreneurship: Regional and Country Studies (United States)

About the Project

The Sustainable Entrepreneurship Project (www.seproject.org) engages in and promotes research, education and training activities relating to entrepreneurial ventures launched with the aspiration to create sustainable enterprises that achieve significant growth in scale and value creation through the development of innovative products or services which form the basis for a successful international business. In furtherance of its mission the Project is involved in the preparation and distribution of Libraries of Resources for Sustainable Entrepreneurs covering Entrepreneurship, Leadership, Management, Organizational Design, Organizational Culture, Strategic Planning, Governance, Corporate Social Responsibility, Compliance and Risk Management, Finance, Human Resources, Product Development and Commercialization, Technology Management, Globalization, and Managing Growth and Change.

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Sustainable Entrepreneurship: Regional and Country Studies
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The materials in this publication are not maintained and thus may not include the most current information, particularly with regard to economic and demographic data. More recent information may be included in the Libraries of Resources for Sustainable Entrepreneurs referred to above and available from the Sustainable Entrepreneurship Project (www.seproject.org). Additional information on the region and countries covered by this publication is available on the Regional and Country Studies pages of the website of the Sustainable Entrepreneurship Project (www.seproject.org).

PART I
UNITED STATES

Preface

In 1985 Ronen and Shenkar reviewed the then-published literature on country clustering[1], including works by Haire, Ghiselli and Porter[2]; Sirota and Greenwood[3]; Ronen and Kraut[4]; Hofstede (1976)[5]; Griffeth, Hom, Denisi and Kirchner[6]; Hofstede[7]; Redding[8] and Badawy[9]. Ronen and Shenkar integrated and synthesized the available data to propose their own map of country clusters based on patterns of employee work attitudes derived after reviewing responses of thousands of employees in dozens of countries around the world to questions about their general attitudes towards work (e.g., the importance of various work goals, their satisfaction of needs through work, organizational factors and managerial issues and the nature of roles and interpersonal relationships in the workplace including how well managers related to subordinates).

Using a statistical procedure known as "smallest space analysis", Ronen and Shenkar identified and diagrammed eight country clusters: Arab, Near Eastern, Nordic, Germanic,

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[1] S. Ronen and O. Shenkar, "Clustering countries on attitudinal dimensions: A review and synthesis", Academy of Management Review, 10 (1985), 435-454. For further discussion of the various research studies reviewed by Ronen and Shenkar, see "Globalization: A Library of Resources for Sustainable Entrepreneurs" prepared and distributed by the Sustainable Entrepreneurship Project (www.seproject.org).

[2] M. Haire, E. Ghiselli and L. Porter, Managerial thinking: An international study (New York: Wiley, 1966).

[3] D. Sirota and J. Greenwood, "Understand your overseas work force", Harvard Business Review, 49(1)(1971), 53-60.

[4] A. Kraut and S. Ronen, "Similarities among countries based on employee work values and attitudes", Columbia Journal of World Business, 12(2) (1977), 89-96.

[5] G. Hofstede, "Nationality and espoused values of managers", Journal of Applied Psychology, 61 (1976), 148-155.

[6] R. Griffeth, P. Hom, A. Denisi and W. Kirchner, A multivariate, multinational comparison of managerial attitudes. Paper presented at the annual meeting of the Academy of Management, Detroit (August 1980).

[7] G. Hofstede, Culture's consequences: International differences in work related values (Beverly Hills: Sage, 1980). Hofstede's IBM survey is referenced frequently in this Guide and Ronen and Shenkar noted that several survey instruments used by Hofstede included various items relating to work goals (i.e., Hofstede's famous initial four dimensions of power distance, uncertainty avoidance, individualism and masculinity), need deficiency, fulfillment and job satisfaction. Hofstede also sought the opinions of respondents regarding their choice among four types of managers as to actual and preferred types of characteristics for their manager. Information regarding the variables used in the study and survey procedures that were followed is derived from S. Ronen and O. Shenkar, "Clustering Countries on Attitudinal Dimensions: A Review and Synthesis", The Academy of Management Review, 10(3) (July 1985), 435-454 (Table 1 – "Variables Used in the Studies Reviewed").

[8] G. Redding, "Some perceptions of psychological needs among managers in South-East Asia", in Y. Poortinga (Ed.), Basic problems in cross-cultural psychology (Amsterdam: Swets and Zeitlinger B.V.: 1976), 338-343.

[9] M. Badawy, Managerial attitudes and need orientations of Mid-Eastern executives: An empirical cross-cultural analysis. Paper presented at the annual meeting of the Academy of Management, Atlanta (August 1979).

Far Eastern, Latin American, Latin European and Anglo.[10] They also categorized four countries that they felt could not be easily fit into one of the clusters as "independents": Brazil, India, Israel and Japan. In general, countries tended to cluster together based on similarities in level of development and technological progress, geographic proximity, language and religious values and beliefs. Those countries that were classified as independents each had a unique language, religion, and history. The composition of the membership of each cluster is represented in the following table[11]:

Arab	Near Eastern	Nordic	Germanic	Far Eastern	Latin American	Latin European	Anglo
Abu-Dhabi	Greece	Denmark	Austria	Hong Kong	Argentina	Belgium	Australia
Bahrain	Iran	Finland	Germany	Indonesia	Chile	France	Canada
Kuwait	Turkey	Norway	Switzerland	Malaysia	Columbia	Italy	Ireland
Oman	Yugoslavia	Sweden		Philippines	Mexico	Portugal	New Zealand
Saudi Arabia				Singapore	Peru	Spain	South Africa
United Arab Emirates				Taiwan	Venezuela		United Kingdom
				Thailand			United States
				Vietnam			
Independents							
Brazil		India		Israel		Japan	

Ronen and Shenkar found that there country clusters generally corresponded to how countries might be grouped based on their measurements on the four original dimensions in Hofstede's cultural dimension model[12]:

	Power Distance	Individualism	Uncertainty Avoidance	Masculinity
Nordic	Low	Medium-High	Low-Medium	Low
Germanic	Low	Medium-High	Medium	High
Anglo	Low-Medium	High	Low-Medium	High
Latin European	High	High	High	Varies
Latin American	High	Low	High	Varies
Far East	High	Low	Low-Medium	Medium
Near East	High	Low	High	Medium

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[10] S. Ronen and O. Shenkar, "Clustering countries on attitudinal dimensions: A review and synthesis", Academy of Management Review, 10 (1985), 435-454. Ronen and Shenkar actually presented the clusters in a "pie chart" format that grouped countries together in terms of their similarity on work-related variables and the table in the text follows this grouping of countries. For example, Latin American and Latin European countries were closely related as were Nordic and Germanic countries.

[11] Id. For discussion of "smallest space analysis," see L. Guttman, "A general non-metric technique for finding the smallest coordinate space for a configuration of points", Psychometrika, 33 (1968), 461-469.

[12] Derived from S. Ronen, Comparative and multinational management (New York: John Wiley & Sons, 1986), 262-265; and S. Ronen and O. Shenkar, "Clustering countries on attitudinal dimensions: A review and synthesis", Academy of Management Review, 10 (1985), 435-454.

An Anglo cluster was included in all of the cluster studies reviewed by Ronen and Shenkar and for purposes of their synthesis they quickly concluded that it made sense to group most of the countries that could be characterized as associated with the former British empire network including the United Kingdom, of course, and Australia, Canada, Ireland, New Zealand, South Africa and the US.[13] Inclusion of these seven countries was consistent with the Anglo cluster created by Hofstede in 1980 that included countries that shared various characteristics on his cultural dimension model: low to medium power distance; low to medium uncertainty avoidance; and high individualism and masculinity. While using former British rule as the criteria for inclusion in the Anglo cluster would dictate adding India and Israel, both of which were placed in that cluster by some of the researchers (i.e., Sirota and Greenwood; and Ronen and Kraut), Ronen and Shenkar excluded them based on the diversity that those countries showed on other dimensions. Other countries placed in the Anglo cluster in some studies—Austria, Sweden and Switzerland (i.e., Sirota and Greenwood; and Hofstede (1976))—were rejected by Ronen and Shenkar after further reanalysis of the original data.

1	2	3	4	5	6	7	8	9
UK	UK	UK	UK		UK		UK	UK
US	US	US	US					US
	Australia	Australia						Australia
	Canada	Canada					Canada	Canada
	India	India						
	New Zealand	New Zealand						New Zealand
	South Africa	South Africa			South Africa			South Africa
	Austria							
	Switzerland							
			Sweden					
					Ireland			Ireland
					Israel			

Cluster Studies: (1) Haire, Ghiselli and Porter; (2) Sirota and Greenwood; (3) Ronen and Kraut (1977) (SSA of Sirota and Greenwood); (4) Hofstede (1976); (5) Redding; (6) Ronen and Kraut; (7) Badawy; (8) Griffeth, Hom, Denisi and Kirchner; and (9) Hofstede (1980).

Researchers working on the Global Leadership and Organizational Behavior Effectiveness project, commonly referred to as "GLOBE" project[14], concluded that the respondents to their surveys could be classified into 62 "societal cultures". In order to facilitate meaningful interpretation of the results the researchers determined that the societal cultures they were investigating could be meaningfully placed into one of ten "societal clusters," sometimes simply referred to as clusters. The clusters were designed, defined and created before the research was conducted, not as a result of the findings

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[13] S. Ronen and O. Shenkar, "Clustering countries on attitudinal dimensions: A review and synthesis", Academy of Management Review, 10 (1985), 435-454.

[14] For detailed discussion of the GLOBE project, see "Globalization: A Library of Resources for Sustainable Entrepreneurs" prepared and distributed by the Sustainable Entrepreneurship Project (www.seproject.org)..

reached once the data was collected and analyzed, and were based on a variety of factors including the results of previous empirical studies; other factors such as common language, geography and religion; and historical accounts.[15] Societal cultures in the Anglo cluster include Australia, Canada (English-speaking), England, Ireland, New Zealand, South Africa (white sample) and the US.[16] Societies in the Anglo cluster were high in performance orientation and low in in-group collectivism meaning that they tended to competitive and result-oriented and less attached to families, organizations and other groups than other societies.[17]

The degree of similarity or dissimilarity between the Anglo cluster and the other nine societal clusters with respect to the cultural dimensions measured during the GLOBE study was as follows[18]:

Correlation	Societal Clusters
Strong Similarity	Nordic Europe; Germanic Europe
Mild Similarity	Latin America; Latin Europe
Neutral	Southern Asia; Sub-Saharan Africa
Mild Dissimilarity	Confucian Asia; Eastern Europe
Strong Dissimilarity	Middle East (Arab)

Based on the information in the table above a manager from a society in the Anglo cluster would expect to find familiar cultural values, although not precisely the same as in his or her own society, in the Nordic Europe and Germanic Europe clusters but would need to be especially careful and mindful of significant cultural differences in the Middle East (Arab) cluster.

The following chart depicts the relative importance and intensity of endorsement of the six culturally endorsed leadership dimensions to the societies included in the Anglo cluster:

Level of Importance/Endorsement	Leadership Dimension
High	Charismatic/Value-Based Leadership
High	Participative Leadership
High	Humane Oriented Leadership
Moderate	Team Oriented Leadership
Moderate	Autonomous Leadership
Low	Self Protective Leadership

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[15] For extensive discussion of the design of the societal cultures and the reasons for placement of societies within those clusters see Chapter 10 of R. House, P. Hanges, M. Javidan, P. Dorfman and V. Gupta (Eds), Culture, Leadership, and Organizations: The GLOBE Study of 62 Societies (Thousand Oaks CA: Sage, 2004), 536. See also V. Gupta, P. Hanges and P. Dorfman, "Culture clusters: Methodology and findings," Journal of World Business, 37(1) (2002), 11-15.

[16] For further information on this cluster, see N. Ashkansasy, E. Trevor-Roberts and L. Earnshaw, "The Anglo cluster: Legacy of the British empire," Journal of World Business, 37(1) (2002), 28-39.

[17] P. Northouse, Leadership: Theory and Practice (4th Ed) (Thousand Oaks, CA: Sage, 2006), 310.

[18] Chapter 10 of R. House, P. Hanges, M. Javidan, P. Dorfman and V. Gupta (Eds), Culture, Leadership, and Organizations: The GLOBE Study of 62 Societies (Thousand Oaks CA: Sage, 2004).

Leaders in societies in the Anglo cluster are most likely to be perceived as effective when they strive to inspire and motivate and expect high performance outcomes from others on the basis of firmly held core values, when they involve subordinates in making and implementing decisions and when they are patient, supportive and considerate and demonstrate compassion, generosity and concern for the well-being of others. Societies in the Anglo cluster strongly disapprove of leaders who are self-protective and engage in behaviors such as being status- and class-conscious, ritualistic, procedural, normative, secretive, evasive, indirect, self-centered, and asocial. The leadership profile of the Anglo cluster is strongly similar to the profiles for the Nordic Europe and Sub-Saharan Africa clusters and strongly different than the profiles for the Middle East and Eastern Europe clusters.

The preferences and dislikes of the various leadership styles among the societies in the Anglo cluster, including the US, will lead to challenges in deploying the leadership styles preferred within this cluster in other clusters. For example, charismatic/value-based leadership is strongly endorsed in the Nordic Europe, Latin America and Latin Europe clusters but disliked in the Middle East cluster. Participative leadership will work well in the Nordic Europe cluster but is not endorsed in a number of clusters including Southern Asia, Eastern Europe, Middle East and Confucian Asia. Humane-oriented leadership will be welcome in the Sub-Saharan Africa cluster but not in the Nordic Europe or Latin Europe clusters. Finally, while the Germanic Europe and Nordic Europe clusters have the same low assessment of self protective leadership as the societies in the Anglo cluster that leadership style is endorsed in a number of other clusters including Southern Asia, Eastern Europe, Latin America, Middle East and Confucian Asia and thus cannot be ignored by leaders from the Anglo cluster working in those other parts of the world. In general, the main difficulties for leaders from the societies in the Anglo cluster in transferring their preferred leadership skills to other societal clusters will be based on differences regarding perceptions of the value and effectiveness of several of the leadership styles notably the self protective, participative, human oriented and charismatic/value-based styles.

References and Resources

Additional information on studies and commentaries relating to various aspects of leadership and management styles and practices in the United States can be found in the Sustainable Entrepreneur's Libraries of Resources prepared and distributed by the Sustainable Entrepreneurship Project (www.seproject.org) covering Leadership, Management, Organizational Design, Organizational Culture, Strategic Planning, Governance, Corporate Social Responsibility, Finance, Human Resources, Product Development, Technology Management, Globalization and Managing Growth and Change.

§1:1   Introduction

Popular media reports often make it seem like dozens, if not hundreds, of new companies are achieving quick success. However, the reality is that launching and building an emerging growth company is challenging adventure that typically takes a substantial amount of time. A study of all US corporations involved in non-financial services during the early 1980s revealed that less than 1% of those companies ever achieved an annual sales volume in excess of $25 million.[19] Another study of companies in high technology industries in the US found that 80% of new start-up firms exited the market after one year and that among firms that actually survived until the fourth year, the exit rate within the following year remained over 60%. In fact, it was not until the seven or eighth year that firms could anticipate more than a 50% survival rate into the future, which means that it generally takes that long for the company to establish sufficient credibility in the marketplace and build an inventory of resources that can be used for sustainable growth.[20] For those firms that were able to survive long enough to establish a foothold in the target market, there was a strong likelihood that they would eventually be integrated into the operations of another company. Still another study of technology-based firms that were all formed and organized in the 1960s indicated that a third of those firms had been acquired, including by merger, by 1980 and in that survey the mean age of the acquired firms was 6.4 years when the deal was completed.[21] In a comprehensive study of the evolution of emerging companies, researchers from the University of Chicago Graduate School of Business found that, on average, it took six years for the 49 companies in their study group to move from their earliest business plan to the date that they released their third annual report following completion of an initial public offering ("IPO").[22]

While the studies mentioned above provide a sobering picture regarding the prospects for new technology-based ventures in the US, it is apparent that this class of innovation-focused businesses consistently provides the best candidates for firms that will be able to follow the path suggested by metamorphic growth stage models. While there are arguably a number of innovation clusters distributed around the US, the country's two most recognized and discussed hubs of growth-oriented entrepreneurial activity are in California ("Silicon Valley") and Massachusetts ("Route 128"). The history of both of

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[19] See, e.g., R. Cavanagh and D. Clifford, The Winning Performance of Mid-Sized High Growth Companies (1982). See also D. Birch, "The Booming Hidden Market", Inc. (September 1987), 15 (less than 650,000 companies in the US in 1987 qualified as "growth firms" at a time when the number of small businesses in the country topped 17,000,000, and 98% of all gross new jobs created by this group could be traced to just the top 15% (97,500 firms)); and P. Reynolds and S. Freeman, 1986 Pennsylvania New Firm Study (1987) (most companies enjoy only limited or marginal growth following their initial year of sales activity).

[20] R.K. Kazanjian, "Relation of Dominant Problems to Stages of Growth in Technology-Based New Ventures", Academy of Management Journal, 31(2) (1988), 257.

[21] F. Bruno and A. Cooper, "Pattern of Development and Acquisitions for Silicon Valley Start-ups", Technovation, 1 (1982).

[22] S. Kaplan, B. Sensoy and P. Stromberg, What are Firms?: Evolution from Birth to Public Companies (2005). The study compared the firms on a wide array of factors including financial performance, business idea, points of differentiation, non-human capital assets, growth strategy, customers, competitors, alliances, top management, ownership structure, and the size and composition of the board of directors.

these areas has been well documented by others and it is not necessary to repeat it in detail here.[23] For point of reference, however, it is useful to note that Silicon Valley has been described geographically as being a thirty-mile by ten-mile strip of land in Santa Clara County of Northern California between the cities of San Francisco and San Jose that was used largely for agricultural purposes until the mid-1950s. Since that time Silicon Valley has emerged as arguably the top science and technology region in the world by successfully mixing world-class academic institutions (Stanford University and the University of California campuses in both Berkeley and San Francisco), brilliant scientific and managerial talent eager and happy to live in the region's pleasant climate, military contracting opportunities and unprecedented reservoirs of venture capital. Route 128 is a 65-mile stretch of highway surrounding Boston and Cambridge in Massachusetts that began with world-class academic institutions and expanded to include connections between academics at those institutions and commercial businesses launched in buildings alongside the highway to pursue and commercialize ideas conceived by the academics using funds provided by federal agencies including the Department of Defense and National Science Foundation.

When describing the histories of Silicon Valley and Route 128 researchers have identified what they perceive as the key reasons for the success of each area as well as the similarities and differences between them, the reasons for any differences and why those differences might be important to understanding how companies in Silicon Valley and Route 128 are launched, built and managed. Rogers and Larson were among the first to identify certain regional advantages for Silicon Valley including the factors mentioned above such as world-class academic institutions, brilliant scientists, military procurements of semiconductors and the pleasant climate.[24] The ability of academic institutions such as Stanford University to attract talented and ambitious faculty from East Coast colleges and universities was certainly an important factor in the development of Silicon Valley; however, just as significant was the eagerness of some of those faculty members to proactively encourage, through funding and provision of equipment, the creation and commercialization of real-world applications of the innovations that had been uncovered in their laboratories. Stanford also established a science park during the 1950s that eventually became the geographic core of the sprawling network of companies that would become Silicon Valley. At about the same time Lockheed, a major military contractor, relocated to the area and Silicon Valley soon became the new home for a number of well-funded defense-related research projects commissioned by a variety of agencies and departments within the federal government.

Historians of Silicon Valley have identified other characteristics of Silicon Valley that have proven to be significant to the success of the area and the lifestyles and values of many of the knowledge-based workers within Silicon Valley companies. Rogers and

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[23] See, e.g., E. Rogers and J. Larsen, Silicon Valley Fever (1984); S. Rosegrant and D. Lampe, Route 128 (1992); A. Saxenian, Regional Advantage: Culture and Competition in Silicon Valley and Route 128 (1994); and A. Saxenian, Lessons from Silicon Valley, MIT Technology Review (1994). The discussion in this paragraph is based on P. Mackun, Silicon Valley and Route 128: Two Faces of the American Technopolis.

[24] P. Mackun, Silicon Valley and Route 128: Two Faces of the American Technopolis (citing E. Rogers and J. Larsen, Silicon Valley Fever (1984)).

Larsen noted the concentration of highly-trained workers and Saxenian argued that many of the scientists and engineers—generally a strongly homogenous group of white males who had migrated to California from other parts of the country—had a developed the mindset of being "technological pioneers" who had aggressively taken, and overcome, difficult professional and technical risks to create successful companies.[25] Mackun pointed out that "[a]long with sharing the same type of risks, the entrepreneurs also shared a camaraderie unsurpassed almost anywhere else in American industry" and reported that it was commonplace for engineers and scientists from competing firms to assist each other on technical problems and gather at local bars and restaurants after hours to share work stories and network about potential job opportunities.[26] In fact, employees frequently tapped into these networks as resources for job mobility and statistics for the 1980s showed that the average turnover rate for small-to medium sized firms was 35% and the average job tenure was approximately two years.[27] Saxenian summarized her view on the overall environment in Silicon Valley as of the mid-1990s as follows: "In short, Silicon Valley has a regional-based industrial system -- that is, it promotes collective learning and flexible adjustment among companies that make specialty products within a broad range of related technologies. The region's dense social networks and relatively open labor markets encourage entrepreneurship and experimentation."[28]

Route 128 has a lot of apparent similarities to Silicon Valley at least in terms of its industrial emphasis, proximity to major universities and the influence of federal government spending on development and expansion of the area; however, historians have identified important contrasts to the way things have been done in Silicon Valley. For example, Mackum has argued that "[i]n direct opposition to the Silicon Valley's reliance on risk-taking and partnerships is eastern Massachusetts' emphasis upon convention, decorum, and self-reliance" and attributed this to long-established societal conventions in the area that "have resulted in relatively stable and conservative hold on certain aspects of its residents' life".[29] Mackum reported evidence of a greater divide between work and play on the East Coast than in Silicon Valley and Saxenian argued there were a lack of role models and less developed informal social contacts in the Route

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[25] E. Rogers and J. Larsen, Silicon Valley Fever (1984); and A. Saxenian, Regional Advantage: Culture and Competition in Silicon Valley and Route 128 (1994), 317.

[26] P. Mackun, Silicon Valley and Route 128: Two Faces of the American Technopolis.

[27] A. Saxenian, Regional Advantage: Culture and Competition in Silicon Valley and Route 128 (1994). The relatively high turnover rates in Silicon Valley could also be attributed to the fact that "Silicon Valley's engineers developed stronger commitments to one another and to the cause of advancing technology than to individual companies or industries" and the widespread belief that the most important thing for technology workers is doing excellent work and that if they could not do that at one firm they would simply move on to another one. See A. Saxenian, Lessons from Silicon Valley, MIT Technology Review (1994).

[28] A. Saxenian, Regional Advantage: Culture and Competition in Silicon Valley and Route 128 (1994). In a separate publication Saxenian wrote: "Silicon Valley has a decentralized industrial system that is organized around regional networks. Like firms in Japan and parts of Germany and Italy, Silicon Valley companies tend to draw on local knowledge and relationships to create new markets, products, and applications. These specialist firms compete intensely while at the same time learning from one another about changing markets and technologies. The region's dense social networks and open labor markets encourage experimentation and entrepreneurship. The boundaries within firms are porous, as are those between firms themselves and between firms and local institutions such as trade associations and universities." A. Saxenian, Lessons from Silicon Valley, MIT Technology Review (1994).

[29] P. Mackun, Silicon Valley and Route 128: Two Faces of the American Technopolis.

128 area that likely constrained the creation of new companies and the level of job mobility in the region. According to Saxenian, traditionalism among Route 128 firms was reinforced by the close ties with the defense industry, which caused companies to be more aligned with Washington DC than companies in their own region; the tendency, in stark contrast to Silicon Valley, to recruit and hire older individuals who were usually wedded to the status quo and much less likely to experiment with alternative organizational structures; and much looser, often non-existent, communications among firms and between firms and the communities in which they were operating.[30] Another interesting observation by Saxenian was that "New England conservatism" caused stability and company loyalty to be valued over experimentation and risk-taking and professionals in the Route 128 region were prone to remaining with one company for the long-term as opposed to the frequent job movement seen in Silicon Valley.[31]

§1:2   Entrepreneurship

In their study of early-stage technology companies in the Silicon Valley researchers from the Stanford Project on Emerging Companies ("SPEC") concluded that it was impossible to identify any hard and fast rules or predictions with respect to the type and sequence of the steps that such companies would take to build their businesses.[32] For example, while some companies obtained financing before they had products, employees or a detailed business plan, other companies already had products on the market and committed customers by the time they first began to seriously pursue additional financing. With regard to management personnel and formalization of their duties and responsibilities, many companies moved forward without a traditional CEO for a long period of time and companies often did not assign specific duties and titles within the founder group until pushed to do so by customers, investors and other business partners.[33]

As part of the SPEC study the companies were asked whether or not they had performed certain "organization-building" activities and, if so, at what point those activities were performed in relation to the date, either before or after, that the company began its normal

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[30] Id. (citing A. Saxenian, Regional Advantage: Culture and Competition in Silicon Valley and Route 128 (1994)). Saxenian further explained: "Consonant with New England's two-century-old manufacturing tradition, Route 128 firms sought to preserve their independence by internalizing a wide range of activities. As a result, secrecy and corporate loyalty govern relations between firms and their customers, suppliers, and competitors, reinforcing a regional culture of stability and self-reliance. Corporate hierarchies ensure that authority remains centralized and information flows vertically. The boundaries between and within firms and between firms and local institutions thus remain far more distinct." See A. Saxenian, Lessons from Silicon Valley, MIT Technology Review (1994).

[31] A. Saxenian, Lessons from Silicon Valley, MIT Technology Review (1994).

[32] Stanford Graduate School of Business, Entrepreneurship: Lessons from the Stanford Project on Emerging Companies (September 3, 2003). See also J. Baron and M. Hannan, "Organizational Blueprints for Success in High-Tech Start-Ups: Lessons from the Stanford Project on Emerging Companies", California Management Review, 44(3) (Spring 2002), 8. For a concise and useful overview of the SPEC and the methodology used to collect and analyze information from and about the surveyed companies, see J. Baron, M. Burton and M. Hannan, "The Road Taken: Origins and Evolution of Employment Systems in Emerging Companies", Industrial and Corporate Change, 5(2) (1996), 239.

[33] Stanford Graduate School of Business, Entrepreneurship: Lessons from the Stanford Project on Emerging Companies (September 3, 2003), 32-33.

business operations. Among the key activities included in the questions were the following: legally establishing the company; prepare a business plan; retain an attorney; establish an accounting system; obtain first external financing; write a mission or values statement; hire an employee; develop a marketing plan; announce a product; have a working prototype; file a patent application; sell first product; hire a full-time sales/marketing specialist; hire a full-time financial officer; and hire a full-time personnel specialist.[34] One particularly interesting question was which of these key activities occurred first in the company's lifecycle and the responses within the study group were as follows: organization of the business as a formal legal entity (e.g., incorporation) (46.9%); preparation of a business plan (33.6%); hiring of first employee(s) (16.8%); obtaining external financing (16.1%); announcing a product (9.1%); organization- or identity-building (8.4%); and filing of patent application (3.5%). These percentages do not add up to 100% because multiple events occurred at the same time with some companies and thus were counted twice in compiling the results. If one looked at the events that companies thought important enough to do first or second the leaders were legal formation, business plan preparation and hiring first employee(s).[35]

The SPEC researchers also examined the impact that founders can have on organizational culture of their early-stage technology companies in Silicon Valley.[36] Among other things the researchers were interested in the choices made by founders and non-founder CEOs of these companies that influenced the organizational design of their firms—the basis of attachment to and retention by the company; the organizational structure, as determined by the means selected to attempt to coordinate and control employee activities; and the criterion used for selecting persons to join the workforce—and found that when these choices were analyzed and clustered it was possible to identify five basic models of employment relations, each of which are described elsewhere in this chapter, and confirm that, in fact, the choices made by the founders with respect to the initial employment blueprint did have a strong impact on the evolution of the company and its eventual success.[37]

The model selected clearly impacted the role that the founder was expected to play in managing the business and interacting with employees. For example, founders of companies pursuing the "star" model (challenging work, professional control and selection based on long-term potential) needed to establish and maintain an exciting environment and find a way to balance their need for control against the autonomy demanded by talented employees attracted to that particular employment model. Founders of companies based on the "commitment" model (love, peer group control and selected based on cultural fit) tended to be personally involved in even the simplest aspects of company operations. On the other hand, founders opting for either the "bureaucracy" or "autocracy" models did not invest a lot of time in warm and fuzzy

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[34] Id. at 43.

[35] Id. at 44.

[36] J. Baron and M. Hannan, "Organizational Blueprints for Success in High-Tech Start-Ups: Lessons from the Stanford Project on Emerging Companies", California Management Review, 44(3) (Spring 2002), 8.

[37] J. Baron and M. Hannan, Entrepreneurship: Lessons from the Stanford Project on Emerging Companies (September 2003), 5–7, 13.

interactions with employees and relied on formalized controls to guide day-to-day activities and tended not to delegate substantial amounts of authority with respect to key decisions relating to the company.[38]

Interestingly the SPEC researchers did not find any consistent correlation between the employment models selected by the founders and the founders' own professional background working within other organizations. For example, while there were founders within the sample group who came from bureaucratic organizations and chose to adopt a bureaucratic template there were also a similar number of founders coming from the same background who specifically rejected bureaucracy as dysfunctional and expressed a keen desire to embrace a completely different culture and operating style for their new companies.[39] On the other hand, there did appear to be a link between the organizational blueprint selected and the founder's initial business strategy.

The researchers from the University of Chicago Graduate School of Business who studied the evolution of 49 venture capital-backed companies from the date of their early business plan to the point where they had arrived at mature public status by releasing their third annual report following completion of their IPO collected information on the involvement of members of the founding group of the surveyed companies beginning with the date of the earliest business plan and moving forward through the period that the companies grew and outsiders were brought in to join the management team.[40] Of those companies that did have a CEO at the time of the earliest business plan, 77% of them were one of the founders of the company. If a founder was not the CEO of the company, he or she was still quite likely (92%) to be a member of the board of directors of the company. In general, founders were heavily involved in management on the date of the earliest business plan and each of the companies in the study group had a founder as either one of the top five executives or a director at that stage. What is interesting to note, however, is how the involvement of founders declined as the companies grew and matured. While 92% of the companies still had a founder as one of the top five executives or a director at the time of their IPO, the number of companies that had a founder as the CEO went down from 77% to 57%. Several years later, on the date of the third annual report following the IPO, only 72% of the companies had a founder as one of the top five executives or a director and the percentage of companies that had a founder serving as its CEO had declined further to 46%. In summary, there appeared to be a clear trend of movement by founders of the surveyed emerging companies from executive and operating positions to directorships and, finally, to no further involvement with the firm on a formal senior level.

The University of Chicago study also evaluated changes in the ownership percentages of the founders (as a group) as the companies evolved and matured. The median ownership percentage of the founders at the time of the earliest business plan, at least for those companies for which such information was available, was 28.9%; however, this

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[38] Id. at 5–7, 13-15.
[39] Id. at 10.
[40] S. Kaplan, B. Sensoy and P. Stromberg, What are Firms?: Evolution from Birth to Public Companies (2005).

percentage dropped to 12.4% immediately prior to the IPO and 8.8% after the IPO (taking into account sales of shares in the IPO, if any, and dilution by new shares issued in the IPO).[41] Since it was, and remains, widely accepted practice to impose restrictions on the ability of founders to sell or transfer any shares until at least nine months following the IPO, almost all of the dilution in their ownership interest could be attributed to the need to issue new shares to obtain capital from venture capitalists and recruit new and additional managers from outside the founding group. Consistent with reduced founder involvement in management of the companies after the IPO, the median percentage ownership interest of the founder group continued to fall to 5.3% on the date of the third annual report following the IPO due to both additional share issuances and the decisions by the individual founders to liquidate their shares and cash in on the success of their businesses.

§1:3   Leadership

Academics exploring leadership of emerging companies in the US have suggested a variety of frameworks for classifying and explaining "leadership styles". Inc. focused on four strategies—directive, participative, laissez-faire and adaptive—and suggested that the dynamic environment in which emerging companies operated required that leaders be able to apply each of the styles at the appropriate moment.[42] A PsychTests study of more than 7,000 top-performing leaders, including leaders of firms other than emerging companies, confirmed the advice from Inc. by finding that the most effective leadership style in terms of firm performance could best be described as "eclectic" and incorporated elements of four other distinct leadership styles identified in that same study: the "sports coach", the driver-director, the mentor, and the "country clubber".[43] An article in Fast Company described the menu of leadership styles developed by Goleman in his 2000 study of mid-level managers: pacesetting, authoritative, affiliative, coaching, coercive, and democratic.[44] Obviously the apparent ability to identify and describe a particular leadership style does not mean that it is effective or used as often as it should be. For example, Goleman found that his pacesetting and coercive styles typically produced a negative impact on leadership effectiveness and that his coaching style, which he argued could be quite effective, was often kept on the shelf by leaders who feared it would take too long to apply.[45] Complicating the area even further is that argument of researchers such as Kets de Vries that companies can no longer look to a single omnipresent ruler but must instead recognize that success is tied to creating and maintain a team of self-aware

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[41] Within the study group the median percentage ownership interests of the following groups of owners immediately prior to the IPO was as follows: venture capitalists (52.6%), founders (12.4%), non-founder CEO (4.2%), non-founder managers other than the CEO (2.2%), and others (e.g., non-venture capital investors and non-founder employees) (22.7%). The percentage ownership interests of founders and the management team were smaller in biotechnology firms than in other companies. While business partners, such as strategic alliance partners, owned 0% of the median firm they owned 3.8% of the average company. If a founder held the CEO position prior to the IPO his or her average percentage ownership interest was 9.8%.

[42] G. Blickenstaff, 4 Leadership Styles to Master (2012).

[43] A. Kay, "At Work: One Size Doesn't Fit All on Leadership" (June 29, 2013).

[44] R. Benincasa, 6 Leadership Styles and When You Should Use Them (2012) (citing D. Goleman, "Leadership That Gets Results", Harvard Business Review 78 (March-April 2000)).

[45] Id.

executives that learn how to work together to apply "distributive, collective, and complementary leadership."[46] Kets de Vries suggested that the "leadership team" have the capability to carry out eight different archetypical roles including strategist, change-catalyst, transactor, building, innovator, processor, coach, and communicator.[47]

The extraordinary financial and inventive success of Apple, and the death of its iconic leader Steve Jobs, has served as a platform for a robust debate about whether or not Jobs should be lauded for his leadership practices and style. Williams, writing for Psychology Today, noted that many management consultants, academics and business leaders had applauded Job for his work as a "leader" and pointed to research conducted among the heads of Silicon Valley companies that showed meaningful support for Jobs' often abusive behavior as necessary for building a financially successful company (i.e., the "ends justifies the means").[48] Williams, who described Jobs' leadership style as autocratic, egotistical and lacking in transparency and generally based on an old-style "carrot and stick" approach, suggested that "claiming Steve Jobs was a great leader smacks more of hero worship than an objective view of what a great organizational leader should be and do" and warned that "extolling his virtues to a new generation of up-and-coming leaders would be a serious mistake".[49] He also pointed to research that, Apple notwithstanding, an abusive leadership style is not the road to optimal bottom line performance.

Other well-known Silicon Valley-based companies have also generated commentary regarding the leadership styles that have been used to build their organizations. Thompson has written that Google has attempted to avoid excessive oversight of employees and provide them with substantial leeway, and resources, to develop new ideas that they might think of on their own.[50] Critics have scoffed at the efficacy of this approach from a financial perspective, arguing that most of the new products that have been developed have not been successful; however, it appears that the system has produced important intangible benefits in the form of a workforce that feels "personally invested in the company's sense of mission and future success".[51] According to Manimala and Wasdani the five key precepts of the leadership practices of Eric Schmidt, Google's Chief Executive Officer, were "get to know your employees, create new ways to reward and promote your high-performing employees, let your employees own the problems you want them to solve, allow employees to function outside the company hierarchy, and have your employees' performance reviewed by someone they respect for their objectivity and impartiality".[52] Manimala and Wasdani also reported that an

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[46] W. Yakowicz, "Leadership: 8 Archetypes Explained", Inc. (2013) (citing M. Kets de Vries, The Hedgehog Effect: The Secrets of Building High Performance Teams (2011)).

[47] M. Kets de Vries, "The Eight Archetypes of Leadership", Harvard Business Review Blog Network (2013).

[48] R. Williams, "Why Steve Jobs Was Not a Leader", Psychology Today (April 7, 2012) (citing R. Sutton, The No-Asshole Rule: Building a Civilized Workplace Surviving One That Isn't (2007)).

[49] Id.

[50] S. Thompson, Google's Business Leadership and Organizational Culture.

[51] Id.

[52] M. Manimala and K. Wasdani, "Distributed Leadership at Google: Lessons from the Billion-Dollar" Brand, Ivey Business Journal (May/June 2013).

internal Google research team headed by the Laszlo Bock, Google's senior executive for human resources, had identified the follow eight qualities among the best and most-effective leader-managers within the company: "be a good coach, empower your team and don't micromanage, express interest in your team members' success and well-being, be productive and results-oriented, be a good communicator and listen to your team, help your employees with career development, have a clear vision and strategy for the team . . . [and] . . . have technical skills so you can advise the team".[53]

§1:4   Management

Two general types of management styles can be observed in the US: the "employee-centered" approach, which is seeks to involve employees in the process of setting goals and planning work activities in an effort to increase their motivation and productivity; and the "management-centered" approach, which is used less often and features a "top down" management system similar to what is used in the military.[54] Several popular management practices are associated with the employee-centered approach. For example, "management by objectives", or "MBO", is often used as means for facilitating collaboration between managers and employees on identifying specific metrics to track progress over a fixed period of time toward mutually agreed goals and objectives. This approach allows employees to be part of the decision making process and establishes a framework for performance feedback. MBO is often adopted in government offices and educational institutions, health care organizations and non-profit organizations. In addition, managers can select from a variety of employee recognition programs that recognize and celebrate things such as performance in a specialized area, length of service, perfect attendance, superior customer service, high quality work produce and improvement. Incentives used in employee recognition programs can include cash, recognition in ceremonies in front of peers, vacations, stock ownership, parties and other activities, prizes, special assignments, promotion and training opportunities. Finally, the employee-centered management style features processes to facilitate employee involvement or participation in making decisions about organizational goals and the best ways to pursue and achieve those goals. Examples of employee involvement programs include representative participation (e.g., work councils), quality circles and employee stock ownership plans. In general, American managers tend to be more flexible and able to adapt their management styles to fit the particular situation and the challenges confronting the organizational unit at that moment.

Rogers and Larsen found that the primary reason for the failure of high technology companies in Silicon Valley was poor management, as opposed to lack of capital, technical difficulties with products or poor human resources. In turn, the successful firms were those in which senior management delegated authority and closely monitored all products and systems.[55] Many books and articles have traced the development of the "Silicon Valley approach" to management and the stories generally begin back in the

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[53] Id.

[54] The discussion of US management styles in this section is based on "Management Styles: International Management Styles", http://www.amasuweb.com/files/ob.ppt [accessed January 10, 2012].

[55] E. Rogers and J. Larsen, Silicon Valley: Fever-Growth of High Technology Culture (1984).

1940s and 1950s with iconic firms such as Varian Associates and Hewlett Packard ("HP"). Important managerial characteristics of these companies included the removal of restrictions on pursuit of new ideas and innovations; employee participation in the company's successes through the use of stock options, a strategy intended to foster cooperation and enthusiasm throughout the workforce; emphasis on teamwork; and the ability to manage rapid change. A famous story, often retold, about the beginnings of Silicon Valley focuses on the decision in 1957 of eight employees of Shockley Labs to abandon the firm led by William Shockley, a Nobel Prize-winning co-inventor of the transistor, to form Fairchild Semiconductor to escape Shockley's intense micromanagement and forge their own company based on "open communications, laissez-faire management styles, flat organizational structures, and generous distributions of stock options".[56] Bernshteyn argued for the proposition that successful Silicon Valley firms operated under a non-traditional management style that fostered growth, creativity, innovation and employee retention and relied on a "bottom-up" approach that began with finding and hiring the brightest and most nimble managers and employees, finding the right place in the organizational structure to maximize their strengths and empowering those employees by avoiding excessive direction and rulemaking from the top.[57]

HP is often held out as the premier example of the original Silicon Valley management style and the management philosophy articulated by the founders of HP, Bill Hewlett and David Packard, became known as the "HP Way" and included respect and trust for the individual, hiring the best people and matching them to the right job; contribution to the customer and the community, integrity, teamwork, innovation and continuous learning with the help of customer feedback.[58] Carly Fiorina revised and updated the HP Way as the "Rules of the Garage" in 1999 and admonished HP employees to believe they could change the world; work quickly, keep their tools unlocked and work whenever; know when to work alone and when to work together; share tools and ideas and trust their colleagues; set aside politics and bureaucracy; accept that it is the customer that defines a job well done; acknowledge that radical ideas are not bad ideas; invent different ways of working; make a contribution every day; and believe that together HP employees could do anything.

While the Silicon Valley management style has been widely praised, and attempts to emulate it have proliferated around the world, some have expressed concerns about some of the consequences of focusing too much on managing change through flexibility and embracing "lean and mean" resources management strategies. Pfeffer, for example, began with the premise that the model of Silicon Valley management that had emerged by the early 2000s was based on four basic ideas: a "free agent" model of employment that demanded that employees look out for themselves and be prepared and willing to move on—change jobs—at a moment's notice; extensive reliance on teams of outside contractors that could be expanded or reduced quickly and efficiently; use of stock

[56] L. Berlin, "How the Valley Start-Up was Invented: William Shockley Drove His Team Nuts", San Jose Mercury News (September 2, 2005), http://leslieberlinauthor.com/wp-content/uploads/2011/05/HowtheValleyStart-UpwasInvented.pdf
[57] D. Travios, "The Secret Sauce of Silicon Valley", Forbes (June 15, 2012).
[58] S. Towers, The Silicon Valley Management Style (2002), http://www.itstime.com/apr2002.htm

options as an important element of compensation; and the belief that value to the organization was measured by the number of hours worked (i.e., working long hours was the norm).[59] He noted that companies built on these principles would presumably be well positioned to pivot quickly as their environments shifted; however, he suggested that the free agent mentality created excessively high turnover that was actually quite costly to companies in terms of having to recruit and train new staff, manage and minimize disruption to relationships with customers and other strategic partners and worry about whether former employees were using their ideas in new jobs with competitors. Pfeffer also questioned whether outsourcing was conducive to building a sustained competitive advantage since a large portion of the knowledge generated during outsourcing arrangements resided outside of the company.

§1:5   Organizational design

Historians have cited and described an egalitarian social environment in Silicon Valley and have argued that the lack of rigid hierarchies extended to the firms operating in the area and that "[t]he traditional delineations between employers and employees were not so sharp as on the East Coast, and in some cases they disappeared entirely".[60] Saxenian's intensive comparative studies of Silicon Valley and Route 128 during the 1990s uncovered widespread evidence of decentralization within the organizational structures of Silicon Valley companies accompanied by the grant of large amounts of autonomy to major divisions of firms.[61] In sharp contrast, however, researchers analyzing hierarchies within the organizational structures of Route 128 firms have generally found them to be much more rigid and centralized than their counterparts in Silicon Valley and also found that communications were typically more formal, and status differences more pronounced, within Route 128 firms than in Silicon Valley.[62]

Much has been written about the distinguishing characteristics of the organizational structures deployed in Silicon Valley. In some cases, the formal boundaries of the organizational chart have not been very different than those used for decades by companies outside of the Valley. For example, Thompson reported that Google's corporate structure was relatively traditional, apart from a few unique top-level positions such as Chief Culture Officer and Chief Internet Evangelist, and featured an executive management group at the top of the organizational chart that oversaw the usual functional-based departments such as engineering, products, legal, finance and sales.[63] The functional-based departments each had their own smaller, more specialized, units and the internationalization of sales activities was based on geographically organized branches focusing on the Americas, Asia Pacific, and Europe, the Middle East and Africa. In general, however, scholars and managers have been fascinated by several distinguishing characteristics of Silicon Valley organizational culture including flatter

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[59] J. Pfeffer, "What's Wrong With Management Practices in Silicon Valley? A Lot", Sloan Management Review (Spring 2001), http://sloanreview.mit.edu/article/whats-wrong-with-management-practices-in-silicon-valley-a-lot/

[60] P. Mackun, Silicon Valley and Route 128: Two Faces of the American Technopolis.

[61] A. Saxenian, Regional Advantage: Culture and Competition in Silicon Valley and Route 128 (1994).

[62] P. Mackun, Silicon Valley and Route 128: Two Faces of the American Technopolis.

[63] S. Thompson, Google's Business Leadership and Organizational Culture.

hierarchies, greater decentralization and autonomy, flexibility and adaptability, and tight and intentional linkages between organizational structure and culture.

In the 1990s Teece described a "high flex 'Silicon Valley-type firm" as a company that would have shallow hierarchies, significant local autonomy and a resistance to hierarchical accouterments of seniority and rank and functional specialization.[64] According to Teece, decision making processes in these companies were usually simple and informal, with key decisions typically being made by the founders during the early stages of development, and an effort was made to ensure that communication and coordination among functional-based groups was relatively quick and open. Teece noted that while these companies were likely to be highly innovative they often labored under severe resource constraints, particularly with respect to availability of capital, and the most successful companies were those able to strategically overcome those constraints through effective use of outsourcing and alliances. A preference for flatter structures within organizations that thrive and survive on innovation is understandable given that hierarchies typically create bottlenecks that can slow the pace of progress and persons that have reached a comfortable position on one of the higher floors of a tall organizational structure may be reluctant to permit and promote initiatives that might make the existing way of doing things, including current products and services, obsolete.

Commentators have also noted the strong link between organizational structure and culture among Silicon Valley companies. Apple, for example, has been held up for the way that it accentuated the importance it placed on being product- and engineering-driven by moving its design group out of the lower levels of the organizational hierarchy where it is often placed and positioning it near the top with a direct reporting line to the CEO.[65] In the same vein Meyer explained in the late 1990s that "[i]n contrast to traditional firms where organizational structure defines the framework within which work occurs, Valley firms use the work to define organization's structure" and then went on to note that organizational structures in Silicon Valley could best be described as flat, flexible, permeable, and fluid.[66]

As described elsewhere in this chapter the researchers at the Stanford Project on Emerging Companies ("SPEC") believed that organizational structure, as determined by the means selected by founders and non-founder CEOs of early-stage technology companies in Silicon Valley to coordinate and control the flow of work within their companies, was one of the three crucial dimensions that could be used to categorize how those companies created a blueprint for creating and maintaining a relationship with their employees that fostered reliability and accountability.[67] The SPEC researchers found that the most commonly used method relied heavily on informal controls through peer pressure and, eventually, organizational culture; however, at least three other approaches

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[64] D. Teece, "Firm Organization, Industrial Structure and Technological Innovation", Journal of Economic Behavior and Organization, 31 (1996), 193, 212-213.
[65] T. McKinnon, How to Build a Great Company Culture (October 4, 2013).
[66] C. Meyer, Relentless Growth (1998).
[67] J. Baron and M. Hannan, "Organizational Blueprints for Success in High-Tech Start-Ups: Lessons from the Stanford Project on Emerging Companies", California Management Review, 44(3) (Spring 2002), 8.

were also identified. First, some companies relied on "professional control," which was grounded in the assumption that employees were professionally socialized to diligently perform outstanding work based on their formal education and training. Employees in these companies, which tended to have a recruiting preference for high-potential individuals from elite institutions, were given significant autonomy and independence. Second, some companies chose to implement formal procedures and systems to control employees. Finally, some founders preferred to directly oversee the activities of their employees to control and coordinate the work flow within the company.[68] SPEC researchers also found that companies receiving venture capital were more likely to bureaucratize more often and at an earlier stage and that the most commonly attempted changes to the original organizational structure as companies in the SPEC study evolved were related to attempts to control coordination.[69]

Kashen argued that while technology and product innovation have certainly been important and impressive outputs from Silicon Valley, firms in that region have also been innovators in identifying and implementing new ways for groups of people to organize themselves and work together.[70] For example, he described one company that had abandoned the traditional functional-based organizational structure in favor of autonomous "pods" with at least one representative from each discipline that worked on its own scope of product and set and followed its own set of metrics and goals. Leadership within each pod rotated based on the stage of product development so no one person had a management title. Another alternative described by Kashen was referred to as "Holacracy" and relied not on top-down authority but on a "set of explicit processes and structures designed to achieve the company's purpose". Kashen explained: "In a Holacracy, every role in the organization has an explicit, documented purpose and set of accountabilities, and roles exist separately from the individuals who happen to be filling them at the time. The core operating processes include two distinct meetings that occur on a regular (typically weekly) basis: Tactical (actions) and Governance (structure), each with a clear set of procedures. The Governance meeting is what most distinguishes Holacracy: it allows for explicitly changing the organizational structure on a weekly basis! If a project or set of tasks is proposed that does not clearly fit into the explicit accountabilities of any current role in the organization, then the Governance meeting will resolve the ambiguity by assigning it to a particular role. This leads to much more clarity throughout the organization around who owns what, and who makes which decisions." Kashen also mentioned that some companies have apparently done away with formal management and hierarchy completely and allow leadership of projects to be determined organically based on whoever steps up. In this type of environment there are no titles, reviews or promotions and raises and bonuses are determined through peer reviews.

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[68] J. Baron and M. Hannan, Entrepreneurship: Lessons from the Stanford Project on Emerging Companies (September 2003), 4-5.

[69] J. Baron, M. Burton and M. Hannan, "Engineering Bureaucracy: The Genesis of Formal Policies, Positions, and Structures in High-Technology Firms", Journal of Law, Economics, and Organization, 15(1) (1999), 1, 41 (as cited in J. Baron and M. Hannan, Entrepreneurship: Lessons from the Stanford Project on Emerging Companies (September 2003), 9).

[70] The discussion in this paragraph is adapted from D. Kashen, Flat is the New Up: Why are Companies Using Organizational Structures that Are Thousands of Years Old? (April 27, 2013).

Adaptability and flexibility have also been popular themes in descriptions of Silicon Valley organizations. According to Lam, the "new economy companies" focusing on technology sectors that were launched during the late 1990s in Silicon Valley "drew their innovative capabilities from the dynamic integration of technical and entrepreneurial skills within highly flexible, open network organizations".[71] Lam focused on those firms as "learning organizations" that operated through organizational structures somewhat akin to the "adhocracy" identified by Mintzberg and that "tend[ed] to rely more upon individual specialist expertise organized in flexible market-based project teams capable of speedy responses to changes in knowledge and skills, and integrating new kinds of expertise to generate radical new products and processes."[72] Bahrami and Evans argued that organizational structures of successful and prototypical Silicon Valley-type companies were dynamic, entrepreneurial and adaptive.[73]

Stefanović et al. argued that Silicon Valley companies often exhibited characteristics of what they referred to as "reconfigurable organizations" including active leadership, knowledge management, learning, flexibility, integration, employee commitment and change readiness.[74] They noted that the description of organizational structures used in Silicon Valley provided by Bahrami—"structured and yet chaotic . . . between stability on the one hand and flexibility on the other"—was a good example of a reconfigurable organization and explained that Bahrami had argued that Silicon Valley organizations consisted of two components: "The first component is a substrate of the formal structure which only periodically undergoes major transformation. This provides a formal mechanism for grouping skills, clustering activities, and assigning reporting relationships, as well as a base unit, which gives many employees an anchor of stability. However, due to inertial forces, these bedrock structures cannot be changed as frequently as may be warranted by internal and external changes. Many firms compensate for the relative inflexibility of the bedrock structure by using overlays of temporary project teams and multi-functional groups whose members are drawn from various operating units. These enable a firm to focus on critical assignments without causing major disruptions."[75]

§1:6   Organizational culture

As substantial amounts of economic power and media attention have shifted from Wall Street and manufacturing industries to technology-based companies organizational

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71 A. Lam, Innovative Organizations: Structure, Learning and Adaptation, in Innovation Perspectives for the 21st Century (2010), 163, 168 (citing W. Lazonick, "The Innovative Firm", in J. Fagerberg, D. Mowery and R. Nelson (Eds.), The Oxford Handbook of Innovation (2004), 29; and W. Lazonick, "The Chandlerian Corporation and the Theory of Innovative Enterprise", Industrial and Corporate Change. 1 (2010), 317).

72 A. Lam, Innovative Organizations: Structure, Learning and Adaptation, in Innovation Perspectives for the 21st Century (2010), 163, 171 (citing H. Mintzberg, The Structuring of Organization (1979)).

73 H. Bahrami and S. Evans, "Flexible Recycling and High-Technology Entrepreneurship", in K. Martin (Ed.), Understanding Silicon Valley: The Anatomy of an Entrepreneurial Region (2000), 166.

74 I. Stefanović, S. Prokić and D. Vukosavljević, "The Response to the Changing Landscape of Tomorrow: Reconfigurable Organizations", African Journal of Business Management, 5(35) (2011), 13344, 13346 (noting that the characteristics were originally developed and popularized in J. Galbraith, D. Downey and A. Kates, Designing Dynamic Organizations: A Hands-on Guide for Leaders at All Levels (2002)).

75 Id. at 13350 (citing H. Bahrami, "The Emerging Flexible Organization: Perspectives from the Silicon Valley", California Management Review, 34(4) (1992), 33, 39).

culture in Silicon Valley has become a popular topic. An interesting study of organizational culture among early-stage technology companies in the Silicon Valley was undertaken by the Stanford Project on Emerging Companies ("SPEC").[76] Based on extensive interviews of the founders and, where applicable, non-founder CEOs of the companies in their study group the researchers identified what they considered to be three crucial dimensions that could be used to categorize how companies created a blueprint for creating and maintaining a relationship with their employees that fostered reliability and accountability. Two of these dimensions—the organizational structure, as determined by the means selected to attempt to coordinate and control employee activities, and the criterion used for selecting persons to join the workforce—are discussed elsewhere in this chapter. The third dimension was described as "attachment" and referred to the basis for the bond, or relationship, formed between a company and its employees. The SPEC researchers described three different bases for attachment—love, work and money. Founders and CEOs wishing to rely on "love" did so by attempting to create and maintain a feeling of community and "family" within the workplace and thus forge strong emotional bonds within the workforce that would motivate employees and make them want to remain with the company. On the other hand, when attachment was based on "work" the focus was on appealing to the desire of knowledge workers to be part of an organization that provided opportunities for interesting and challenging work on cutting-edge technologies and for personal and professional development. In this type of environment, the primary loyalty of employees was to a specific project as opposed to the company, a supervisor or other co-workers. Finally, companies where the attachment was based on "money" tended to be those where both sides looked at the employment relationship simply as an exchange of labor-for-money without the additional emotional connection and/or intellectual challenge associated with the other forms of attachment.[77]

After the SPEC had researchers identified the methods of coordination and control, the criterion for selection and the strategies for attachment present within the companies in the study group they moved on to study the relationships among the three dimensions in order to construct various alternative models for employment relations, a strong proxy for organizational culture. Based on how the choices made by the various companies were clustered the researchers came up with five basic models of employment relations: engineering (challenging work, peer group control, and selection based on the ability to perform specific tasks), star (challenging work, professional control and selection based on long-term potential), commitment (love, peer group control and selected based on cultural fit), bureaucracy (challenging work, formalized control, and selection based on the ability to perform specific tasks) and autocracy (exchange of labor for money, control through personal oversight, and selection based on the ability to perform specific tasks).[78]

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[76] The discussion below is based on J. Baron and M. Hannan, "Organizational Blueprints for Success in High-Tech Start-Ups: Lessons from the Stanford Project on Emerging Companies", California Management Review, 44(3) (Spring 2002), 8.

[77] Id. at 10.

[78] Id. at 11-12 (Spring 2002). For further discussion of each of the "blueprints" see also J. Baron and M. Hannan, Entrepreneurship: Lessons from the Stanford Project on Emerging Companies (September 2003), 6-7.

Not surprisingly, the "engineering" model, which was characterized by challenging work, peer group control, and selection based on the ability to perform specific tasks and thus conformed closely to the standard descriptions of the basic Silicon Valley model, was the most common model among the SPEC study group. Companies formed on the "engineering" evidenced a strong commitment to the project-at-hand, if not the company itself as was the case with the "commitment" model. Employees were attracted to these types of companies by the need to work on closely-knit teams dedicated to resolution of difficult and challenging problems. Employees were performance driven and achievement-oriented and able and willing to work on interdisciplinary teams that were formed for a particular project and then disbanded when work on the project was completed. These companies tended to have a high level of customer focus when selecting their projects. Accordingly, as customer preferences changed the selection criterion for employees had to be modified also in order to ensure that the available personnel were qualified for the current tasks.[79]

While the professional background of the founders of the companies in the SPEC study group did not appear to have a consistent correlation with the employment models that they chose there did appear to be, as discussed elsewhere in this chapter, a link between the organizational blueprint selected and the founder's initial business strategy (e.g., companies that selected a "radical innovation" strategy tended to select either the 'star' or "engineering" models). The SPEC researchers claimed that the results of their study provided evidence that the choices made by the founders with respect to the initial employment blueprint did have a strong impact on the evolution of the company and that attempts to significantly alter the blueprint as the company mature would likely have a substantial destabilizing effect. A little over half of the companies in the SPEC study group made no changes in their organizational blueprint as they evolved while another 30% changed on just one dimension, usually to control coordination. About 15% of the companies attempted to change from one of the pure model types to another, although almost three-quarters of these changes were between the closely related "engineering" and "bureaucracy" models.[80]

Companies that adopted the commitment model took on lower levels of administrative overhead as they developed and matured[81]; were more likely to go public, relative to comparable companies that selected different models; and were also the least likely to "fail," which included declaring bankruptcy, being acquiring on unfavorable terms or simply shutting the doors and disappearing without a formal closure.[82] Companies that selected the star model were least likely to go public; however, star model companies that

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[79] J. Baron and M. Hannan, Entrepreneurship: Lessons from the Stanford Project on Emerging Companies (September 2003), 6.

[80] Id. at 12-13.

[81] J. Baron, M. Burton and M. Hannan, "Engineering Bureaucracy: The Genesis of Formal Policies, Positions, and Structures in High-Technology Firms", Journal of Law, Economics, and Organization, 15(1) (1999), 1, 41, as cited in J. Baron and M. Hannan, Entrepreneurship: Lessons from the Stanford Project on Emerging Companies (September 2003), 13.

[82] M. Hannan, J. Baron, G. Hsu and O. Kocak, Staying the Course: Early Organization Building and the Success of High-Technology Firms (Unpublished Manuscript) (as cited in J. Baron and M. Hannan, Entrepreneurship: Lessons from the Stanford Project on Emerging Companies (September 2003), 14-15).

did go public enjoyed the highest levels of stock market performance once the IPO was completed. Star model companies fared second best, behind the commitment model companies, in their ability to avoid failure. It should be noted that star model was very popular among, and tended to be limited to, companies engaged in medical technology and research, including biotechnology. Companies that selected the autocratic model were most likely to fail and if they were able to survive and complete an IPO they turned in the worst post-IPO stock market performance. The second worst performance came from those companies that had no clear model. It should be noted, however, that apart from the striking strengths of the commitment model with respect to completing an IPO and avoiding failure, the differences among the other models were not that significant.[83] In general, the two most unattractive models for Silicon Valley-based companies were the "bureaucratic" and "autocratic" blueprints.

Perhaps the most popularized example of Silicon Valley organizational culture is the famous "HP Way" meticulously developed by Bill Hewlett and David Packard at Hewlett Packard. Saxenian noted that Hewlett and Packard strove to create and preserve "openness, intensity and sense of purpose" within the working life of their employees and followed a management style that was "characterized by a high degree of professional autonomy and generous employee benefits".[84] Saxenian emphasized the crucial role that the personal involvement and engagement of the founders played in institutionalizing the HP organizational culture, noting that Hewlett and Packard were continuously immersed and engaged in the day-to-day operations of their company and always visible to employees through their practice of wandering around and initiating informal lunch and hallway conversations with employees at all levels within the organization. Saxenian also pointed out that there was no place in the HP Way for "most traditional corporate status symbols, including private offices, reserved parking spaces, and differentiated attire and office furniture" and that "[a]ll employees were eligible for the same profit sharing and stock options". Saxenian argued that while many of these apparent innovations with respect to organizational culture were symbolic they nonetheless "contributed to a culture that was far more participatory than the traditional low-trust management of most American corporations [during the 1960s and 1970s]" and observed that various aspects of the HP Way could be found among many Silicon Valley firms by the end of the 1970s and that the HP Way became the measuring stick for organizational culture in the Valley in the decades that followed. In fact, the SPEC researchers commented that "[a]necdotally, the most well-known and celebrated example of the commitment model within Silicon Valley has been Hewlett Packard."[85]

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[83] J. Baron and M. Hannan, Entrepreneurship: Lessons from the Stanford Project on Emerging Companies (September 2003), 15.

[84] The discussion in this paragraph is adapted from A. Saxenian, Lessons from Silicon Valley, MIT Technology Review (1994).

[85] J. Baron and M. Hannan, Entrepreneurship: Lessons from the Stanford Project on Emerging Companies (September 2003), 6-7. The dominant characteristics of the SPEC's "commitment" model were emotional and familial links between the company and its employees (i.e., "love"), peer group control, and selection based on cultural fit. Baron and Hannan explained that it was common for the founders of companies based on the "commitment" model to speak of their personal involvement in the simplest aspects of the company and its relations with employees, including personal visits with employees on a regular basis and

Writing in 1998, Trompenaars, who developed and popularized a well-known model of organizational culture that feature four distinguishable types of cultures, argued that, smaller companies from Silicon Valley could be identified as "archetypal incubators".[86] According to Trompenaars, the incubator type of organizational culture was "fulfillment-oriented" and associated with high scores for egalitarianism and person-orientation.[87] In contrast to other types of organizational cultures, incubators placed individual fulfillment before organizational goals and it was expected that the organization would "serve as incubators for self-expression and self-fulfillment". Incubators have little formal structure or hierarchy in order to free members of the organization from routine; however, with freedom comes the expectation that members will use it "to confirm, criticize, develop, find resources for and help to complete the innovative product or service". Incubators typically generate intense emotional commitments among their members; however, the emotional ties are not to other members, even though personal relationships are strong, but rather to nature of the work being carried out by the organization (i.e., saving lives, empowering people, "changing the world", etc.). Trompenaars summed up the incubator well by observing: "Incubator cultures enjoy the process of creating and innovating. Because of close relationships, shared enthusiasms and superordinate goals, the incubator at its best can be ruthlessly honest, effective, nurturant, therapeutic and exciting, depending as it does on face-to-face relationships and working intimacies". Interestingly, he also noted that incubators rarely survived the maturation of their products and the associated markets.

Beyond the studies mentioned above, organizational culture has been a popular topic for pundits of the Silicon Valley scene who have covered and described the wave of spectacularly successful companies that emerged after the "Dot-Com bubble" burst in 2001. For example, Thompson referred to Google as having a "culture of creativity" supported by perks that are intended to create and promote a "fun and creative atmosphere" and also noted that Google's policies and decisions were driven by the company's unofficial motto of "Don't Be Evil".[88] Facebook's culture in its early years was described as "relaxed, unstructured and open" and created and nurtured specifically to "encourage collaboration, team-work and an informal atmosphere and communication".[89]

§1:7   Strategic planning

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down-to-earth involvement in company events, and that for these founders the goal was to encourage lifetime employment and commitment to the company, its missions and the people who worked there. Id.

[86] F. Trompenaars and C. Hampden-Turner, Riding the Waves of Culture: Understanding Cultural Diversity in Global Business (2nd Ed) (1998), 182.

[87] The descriptions and quotes in this paragraph are taken from F. Trompenaars and C. Hampden-Turner, Riding the Waves of Culture: Understanding Cultural Diversity in Global Business (2nd Ed.) (1998), 179-181.

[88] S. Thompson, Google's Business Leadership and Organizational Culture. Thompson mentioned, for example, that Google employees "receive free food cooked by a company chef, are provided with bus rides to work and are allowed to travel through the building on scooters and bicycles" and that "[t]hey also have access to company daycare facilities, exercise gyms and other amenities".

[89] D. Lehner, "Organizational Culture's Role in Facebook's Success" (October 26, 2010), http://blogs.ubc.ca/daniellehner/2010/10/26/organizational-cultures-role-in-facebooks-success/

The researchers from the University of Chicago Graduate School of Business who conducted the study of the evolution of 49 venture capital-backed companies described above found that those companies generally stayed within their original business model or core business as they evolved and matured and continued to sell to similar customers and compete with similar competitors as time went by.[90] When changes did come for these companies it was typically attributable to either broadening or narrowing product or service offerings within the originally selected market segment and rarely did companies attempt to make a wholesale change in their business model which would involve actions such as shifting sales activities to a completely different set of customers, making significant changes in the types of products or services offered by the company and/or seeking and completing acquisitions of other companies that are engaged in business activities unrelated to the core business of the acquiring company.

As for growth strategies, the emerging companies in the University of Chicago study group maintained a strong focus on internal growth as they evolved and production of new or upgraded products was the most frequently cited growth strategy from the time that a company was launched through its annual report three years following the IPO. Other popular growth strategies included seeking new customers from increased market penetration or leadership and expanding into new geographic markets. As companies matured they became more comfortable seeking growth through external strategies including strategic alliances and acquisitions. The researchers found that there was an increase in the use of strategic alliances from the time of the earliest business plan to the IPO; however, usage then appeared to flatten out thereafter through the date of the third annual report following the IPO. Not surprisingly, strategic alliances were more important in some industries than others and the researchers found that firms in the biotechnology sector were more likely to pursue strategic alliances with large pharmaceutical companies that could provide assistance and support with development, testing and distribution of products and, in some cases, provide a separate source of working capital.

One the interesting findings among the results of the study by the SPEC described above was the apparent link between the organizational blueprint selected and the founder's initial business strategy.[91] The companies in the SPEC study group generally chose one of five specific business strategies—radical (technological) innovation (49%); technology enhancement (20%); sales, marketing or service (14%); cost minimization (7%); or a hybrid (10%). Companies that selected radical innovation tended to select either the 'star' or "engineering" models. Companies that selected technology enhancement tended to select the "star", "engineering", or "bureaucracy" models. Companies that selected sales, marketing or service preferred the "commitment," "engineering," or "bureaucracy" models. The choice of the "commitment" model for implementation of this strategy made sense given that the strategy depended on establishing close long-term relationships

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[90] S. Kaplan, B. Sensoy and P. Stromberg, What are Firms?: Evolution from Birth to Public Companies (2005).

[91] J. Baron and M. Hannan, Entrepreneurship: Lessons from the Stanford Project on Emerging Companies (September 2003), 11-12.

between the company and its employees which, in turn, could support the strategic objective of strong long-term relationships between these committed employees and the company's key customers. Finally, companies that selected cost preferred either the "engineering" or "autocracy" models. While one could find engineering companies that tried to compete through each of the four main business strategies, companies following the commitment model limited their business strategy to sales, marketing or service. Similarly, "autocratic" companies limited their business strategy to cost minimization. This data was consistent with the view of many commentators that strategy is an important factor in organizational design generally and specifically in selecting the appropriate form of organizational culture.

§1:8   Governance

The corporate governance model typically associated with the Anglo-American countries (i.e., the US, UK, Canada, Australia and New Zealand) is often referred to as "market-based" since it features an active external market for corporate control and is designed to support a fluid capital market that allows participants to quickly and efficiently access the cash needed to pursue market opportunities as soon as they are identified.[92] Proponents of this model usually point to the way in which it has facilitated progress by companies in the US and UK in the development and expansion of innovative products and "new economy" industries such as electronics, software, media, and financial services. However, there has obviously been a down side to this approach given the damage that has occurred for companies and investors due to the inherent volatility of the model and the short-term orientation of executives operating in these markets due to the widespread reliance on performance (short-term)-based compensation arrangements.[93]

According to Toonsi, the Anglo-American model is based on the fundamental principal that the firm is "instrumental" and to be used as a means for collecting and deploying resources in a way that facilitates the creation of value for the owners (shareholders in the corporate context). As such, it follows that the owners (shareholders) are the main stakeholders with respect to exerting influence on managerial decision making; however, ownership concentration is low among the Anglo-American countries. In the fact, it can rightly be said that the main feature of the Anglo-American model is the separate of control of the enterprise from an ownership group that has traditionally consisted of a

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[92] The Anglo-American model has been given a number of different names including the outsider, common law, market-oriented, shareholder-centered, or liberal model. R. Aguilera and G. Jackson, "The Cross-National Diversity of Corporate Governance: Dimensions and Determinants", Academy of Management Review, 28(3) (2003), 447. While associating the outsider model with the Anglo-American countries is appropriate, Nestor and Thompson reminded that in some of the smaller English-speaking countries (i.e., Australia, Canada and New Zealand) there is a discernibly higher percentage of ownership concentration than in the US and the UK, particularly family-owned firms; however, they concede that the corporate governance systems in those countries clearly have characteristics similar to those in the US and the UK: strong recognition of shareholder rights, institutional ownership of wealth, the tradition of strong legal regulation of securities markets and heavy insistence on transparency in accounting. See S. Nestor and J. Thompson, "Corporate Governance Patterns in OECD Economies: Is Convergence Underway?", in S. Nestor and T. Yasui (Eds.), Corporate Governance in Asia: A Comparative Perspective (2000), 19, 30.

[93] Portions of the description in this section is adapted from F. Toonsi, "Cultures of Control: International Corporate Governance", QFinance.

large number of widely dispersed individual shareholders and, more recently, institutional investors (i.e., mutual funds, pension funds and insurance companies). The Anglo-American model relies on a one-tier board system with one level of directors and no distinctions between executives ("inside" directors) and non-executives ("outside" or "independent" directors), although recent changes in the legal and regulatory framework for corporate governance in the Anglo-American countries, particularly in the US, have led to more formalized and distinguishable duties and responsibilities for non-executive members of the boards of public companies. Stock and bond markets are extremely important in the Anglo-American countries and great emphasis is placed on their efficiency and performance.

Shareholders in the Anglo-American model are heavily dependent on the actions of professional managers who have been vested with control over corporations and their assets, a situation that has led to referring to corporate governance in the Anglo-American countries as the "principal-agent" model. Clearly such a model has the potential for efficiency in light of the increasing size of firms required to attain competitive economies of scale; however, there is always the fundamental issue of how shareholders can ensure that their "agents" are acting in ways that further the interests of the shareholders and other stakeholders as opposed to simply taking advantage of their insider status and creating benefits for themselves. Not surprisingly, the Anglo-American countries have focused a good deal of attention on developing legal and regulatory frameworks that can provide protections for the shareholders.

The US and the UK share the same underlying legal system, generally referred to as the "common law", and thus the fundamental structure for governance of corporations in those two countries is quite similar.[94] Day-to-day management of the corporation is the responsibility of the members of an executive team who are charged under corporate law with fiduciary duties to act in the best interests of the shareholders who are the ultimate owners of the corporation. Shareholders are not expected to be involved in the day-to-day management of the business of the corporation; however, they exercise their control through the election of the members of the board of directors who are supposed to set the policies for the corporation and select and oversee the executive team. Boards of corporations with publicly traded securities, so-called "public companies", generally have 10 to 15 members and a majority of "outside", or "independent" directors who are not executives, officers or employees of the corporation, a structural decision designed to reduce the potential for self-dealing at the board level. For a long time, however, the outside directors were typically nominated by the chief executive officer ("CEO") and there were often serious doubts about whether outside directors could, or would, stand up to the CEO. Shareholders in the US and the UK traditionally had little input into corporate affairs other than the election of directors; however, the trend now seems to be toward giving shareholders more input into controversial issues such as executive compensation. Disclosure requirements have also been escalating in an effort to provide

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[94] The discussion in this section is based on F. Allen and D. Gale, Comparative Financial Systems: A Survey, 25-26. The article also appears as F. Allen and D. Gale, "Comparative Financial Systems: A Survey", in A. Boot, S. Bhattacharya and A. Thakor (Eds.), Credit, Intermediation and the Macroeconomy (2004), 699.

shareholders with an expanded view of the relationships between directors and executive officers on the one hand and the corporation on the other.

The study conducted by the University of Chicago research group described above provided interesting information on the composition of the executive teams of the various emerging companies included in their study (i.e., the top five executives that the companies themselves identified at various stages of development).[95] In general, the executive teams of the companies were incomplete at the time of their earliest business plan. For example, 12% of the companies did not yet have a CEO, only 42% had a chief financial officer ("CFO") among their top five executives, and only 38% included a chief sales or marketing officer ("CMO") among their top five executives. On the other hand, the importance to technology was illustrated at that stage by the fact that 77% of the firms had someone serving as the Chief Scientist, Chief Technical Officer, Vice President of Engineering or similar top technology management position ("CTO"). Not surprisingly given the importance of financial reporting and capital management for publicly traded companies recruitment of a CFO became increasingly important as the firms matured while the importance of the CMO position remained fairly stable as time went by and the popularity of the role of the CTO fell dramatically by the date of the third annual report following the IPO. As for the experience and professional backgrounds of those persons identified as being among the top five executives of the companies at the time of their earliest business plan, the following categories emerged: general management (42%); technical or technology management (25%); science or other technical experience (16%); marketing (9%); and finance and accounting (8%). Industry variations could be identified between biotechnology companies, where the top executives were more likely to have technical or scientific backgrounds, and non-biotechnology companies, where the top executives usually came to their jobs with general management experience and training.

The University of Chicago researchers found interesting evidence of substantial turnover among the persons named as the top five executives of the companies as those companies evolved and matured. Specifically, only 50% of the persons serving as the CEO of the companies at the time of their earliest business plan remained in that position on the date of their third annual report following their IPO and only 25% of the persons included among the top five executives of the companies at the beginning remained in that group on the date of their third annual report following their IPO. On balance, turnover was more likely to occur after, rather than before, the IPO. The researchers also founded that the stated importance of proprietary intellectual property (e.g., patents) and physical assets to the companies increased as time went by in relation to human capital ("expertise") and argued that these findings, coupled with the turnover among the executive teams, was telling evidence of the fact that human capital within the firms included in the study was quite unstable. The researchers also proposed that the evidence that the business models of the emerging companies in their study were most stable than the composition of the management team tended to show that the product/market method of selecting portfolio companies used by some venture capitalists was to be preferred over emphasizing the perceived strengths and experiences of the original management

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[95] S. Kaplan, B. Sensoy and P. Stromberg, What are Firms?: Evolution from Birth to Public Companies (2005).

team. Since firms were "successful" at least by reference to whether they completed an IPO and three years of operations thereafter, in spite of significant turnover within the management team it appears that venture capitalists are able and willing to bring in replacements and/or additional managers to improve oversight and direction of the core businesses as the firm grows.[96]

With regard to the size and composition of their boards of directors, the median number of directors of the companies in the University of Chicago study group at the time of their earliest business plan was five and the medium number increased to seven at the time of the IPO and on the date of their third annual report following their IPO. At each point along the way, the medium number of insiders, which included founders and then-current or past managers of the company, serving as a director was two, and the median number of venture capitalists on the board was two at the time of the earliest business plan, three at the time of the IPO, and one on the date of the third annual report following the IPO. The decrease in the number of venture capital directors after the IPO was consistent with their specific goal of seeking liquidity and profit-taking once the IPO has been completed. In turn, the number of non-venture capital independent directors increased from a median of one at the time of the earliest business plan to two at the time of the IPO and to three on the date of the third annual report following the IPO. The typical background of these independent directors was an industry expert and/or an experienced senior executive of other firms.

In their study of early-stage technology companies in Silicon Valley the researchers at the SPEC found that the average percentage of women included in the senior management team was 14% and that senior women were typically toiling in human resources and administration and much less likely to be found overseeing engineering or research and development activities.[97] When the spotlight was placed on the top of the organizational hierarchy the researchers found that only about 10% of the studied companies had a woman occupying the role of CEO, president or founder. Gender diversity at the top of the organizational hierarchy did have an impact on hiring policies for other roles within the company as the researchers found that when there was a woman at the top of the pyramid the company, or leading the engineering or research and development functions, it was much more likely that the company would have more women in scientific and technical positions.

The SPEC researchers were also interested in testing for differences between the preferences of the founders and non-founder CEOs of their surveyed companies with regard to the blueprint that should be used to create and maintain a relationship with

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[96] The opinion of the University of Chicago researchers is not universally endorsed and another group of researchers has claimed that human capital and other non-alienable assets such as knowledge and/or business processes have become more important to firms than the traditional tangible assets that can be easily sold, assigned or pledged to other firms. See R. Rajan and L. Zingalses, "The Influence of the Financial Revolution on the Nature of Firms", American Economic Review, 91 (1981), 206.

[97] J. Baron, M. Hannan, G. Hsu and O. Kocak, "In the Company of Women: Gender Inequality and the Logic of Bureaucracy in Start-Up Firms", Work and Occupations, 34 (2007), 35.

employees to foster reliability and accountability.[98] Differences were expected because non-founder CEO's were likely to come on board a significant amount of time after the founders have launched the company and, in fact, the researchers found that the star and engineering models were more popular with founders than with the CEO group and that the CEO group was more likely than the founder group to prefer the bureaucracy model. However, in general, the founder's views regarding the appropriate level of self-management were generally so well engrained during the start-up phase that later attempts by a new CEO to introduce more formal bureaucratic procedures (e.g., formalized controls and specific documented operational procedures, methodologies and systems) were typically not very successful and were often dangerously destabilizing to the business.[99]

§1:9   Finance

The United States is the clear global leader in the volume of venture capital financing and a wide array of resources are available for information and analysis on the US venture capital market and industry. The National Venture Capital Association ("NVCA") has become the widely recognized trade association of the venture capital community and the NVCA website includes research reports on venture capital investment, fundraising, exits and performance. The NVCA collaborates with PricewaterhouseCoopers to produce MoneyTree reports on a regular basis that provide quarter-to-quarter comparisons of venture capital activity using data from Thomson Reuters. Professional services providers, such as law firms, also aggregate deal information from their clients to produce "state of the market" reports for investors and entrepreneurs. Data from venture capital activities during the first half of 2015 indicated that venture capital investments had risen to their highest levels since 2000.

In a 2002 survey that actually focused on the influence of immigrant professionals in Silicon Valley Saxenian reported that a majority of Silicon Valley companies, regardless of whether they were led by US or foreign-born entrepreneurs, followed a similar path during their launch phase: incorporated in the US, raised money from personal savings and angel investors initially, and then subsequently tapped venture capitalists for additional financing.[100] Entrepreneurs from all of the surveyed companies, regardless of leadership, complained that "access to investors" was their biggest problem with respect to financing their ventures and reported that "friends and family" were their closest allies when looking for help in raising money.[101]

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[98] J. Baron and M. Hannan, "Organizational Blueprints for Success in High-Tech Start-Ups: Lessons from the Stanford Project on Emerging Companies", California Management Review, 44(3) (Spring 2002), 8. For a brief description of the "blueprints" referred to in this paragraph see the section on Organizational Culture in this chapter.

[99] J. Baron and M. Hannan, Entrepreneurship: Lessons from the Stanford Project on Emerging Companies (September 2003), 13.

[100] A. Saxenian, Local and Global Networks of Immigrant Professionals in Silicon Valley (2002), 37.

[101] Id. at 42-43. Current or formerly colleagues came second with regard to helping raise money (actually of equal importance to friends and family for those born in the US) and professional associations ranked a distant third. Id.

One of the most striking features of the results of the study by the SPEC was the remarkable diversity among the companies in spite of their common roots within the mythical Silicon Valley culture and the related business and social network. A number of theories on organizational development argue against the high level of diversity found among the companies in the SPEC study group. For example, neo-institutionalists that have studied the development and growth of Silicon Valley have predicted that companies will adopt specific corporate structures and practices because of the profound influence of venture capitalists, human resource professionals, and the law and accounting firms that advise those companies.[102] While the SPEC researchers conceded that companies receiving venture capital were more likely to bureaucratize more often and at an earlier stage[103], in general the companies that had been supported by venture capitalists in the study group evidenced substantial diversity in the organizational blueprints. This does not necessarily mean that venture capitalists did not have any influence upon the strategies and structures selected by their portfolio companies. In fact, many venture capitalists, in an attempt to differentiate themselves in what is often a very competitive marketplace where investors fight to get into promising new deals, are well known for their preferences for certain corporate cultures. One can identify venture capitalists that prefer to be associated with companies that are being built to survive based on long-term emotional ties, similar to the "commitment" model, while others are more interested in "Star" cultures or companies that value technological excellence and structure their organizations and selection processes accordingly.[104]

While only 42% of the companies studied by the University of Chicago researchers had a CFO among their top five executives at the time of their earliest business plan the importance of financial reporting and capital management for publicly traded companies pushed the CFO into this top group for 80% of the companies at the time of their IPO and 85% of the companies by the date of their third annual report following their IPO.[105]

§1:10 Human resources

As described elsewhere in this chapter, the researchers at the SPEC believed that the method used by founders and non-founder CEOs of early-stage technology companies in Silicon Valley was one of the three crucial dimensions that could be used to categorize how those companies created a blueprint for creating and maintaining a relationship with

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[102] M. Suchman, "Dealmakers and Counselors: Law Firms as Intermediaries in the Development of Silicon Valley", in M. Kenney (Ed.) Understanding Silicon Valley: The Anatomy of an Entrepreneurial Region (2000), 70 (as cited in J. Baron and M. Hannan, Entrepreneurship: Lessons from the Stanford Project on Emerging Companies (September 2003), 9).

[103] J. Baron, M. Burton and M. Hannan, "Engineering Bureaucracy: The Genesis of Formal Policies, Positions, and Structures in High-Technology Firms", Journal of Law, Economics, and Organization, 15(1) (1999), 1, 41 (as cited in J. Baron and M. Hannan, Entrepreneurship: Lessons from the Stanford Project on Emerging Companies (September 2003), 9).

[104] J. Baron and M. Hannan, Entrepreneurship: Lessons from the Stanford Project on Emerging Companies (September 2003), 9-10.

[105] S. Kaplan, B. Sensoy and P. Stromberg, What are Firms?: Evolution from Birth to Public Companies (2005).

their employees that fostered reliability and accountability.[106] The underlying assumption made by the researchers was that that these company leaders would have a relatively high involvement in recruitment and selection of managers and employees at least while the size of the company remains small and that they were likely to have regular direct contact with most of the employees. Several distinct alternatives were identified in the course of the research. Not surprisingly, one of the popular approaches was to staff the company based on the skills and experience required in order to complete one or more of the tasks or activities that might be of immediate importance to the success of the company. This alternative is noteworthy because of its emphasis on the immediate, or short-term, needs of the company. Because start-ups often have less time and money than they really want or need it is essential that limited resources be invested in employees who can contribute right away and get up to speed quickly and easily without slowing down the process of developing new products or technologies. Companies that looked to grow and develop through completion of a series of projects tended to be more interested in long-term potential of new employees and their apparent aptitude for easily transitioning to new and increasingly challenging projects over time. Finally, some companies, which obviously interested in the skills and experience of prospective employees, tended to place the greatest weight on how well the candidate would fit into the culture of the company and relate to co-workers.[107]

Baron et al. used data collected from the surveys conducted by the SPEC to analyze how the employment model selected by the founders of Silicon Valley-based emerging companies shaped the subsequent adoption and timing of various human resource ("HR") policies and documents over the early years of their companies and found that the propensity of those companies to adopt specific HR policies and documents and to hire a full-time HR manager was indeed systematically related to the employment model on which the companies were founded.[108] In reporting their results Baron et al. used four employment models that were similar to those described elsewhere in this chapter when explaining the SPEC study: "star", "engineering", "commitment", and "factory", which was similar to the "bureaucracy" model.[109] They began by presenting and explaining some of the key distinctions among the companies with respect to their adoption of particular HR policies and practices within the first two years of operation[110]:

- Companies whose founders conceived of employment in "factory" terms were less likely to adopt virtually every type of HR policy and document, relative to otherwise-comparable companies that began with one of the other employment models.

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[106] J. Baron and M. Hannan, "Organizational Blueprints for Success in High-Tech Start-Ups: Lessons from the Stanford Project on Emerging Companies", California Management Review, 44(3) (Spring 2002), 8.

[107] J. Baron and M. Hannan, Entrepreneurship: Lessons from the Stanford Project on Emerging Companies (September 2003), 5.

[108] J. Baron, M. Burton and M. Hannan, "The Road Taken: Origins and Evolution of Employment Systems in Emerging Companies", Industrial and Corporate Change, 5(2) (1996), 239.

[109] The researchers explained that the "factory" model was based on purely monetary motivations, control and coordination through formal organization and close managerial oversight, and selection of employees to perform pre-specified tasks. Id. at 253.

[110] Id. at 258-260.

- Companies that followed the "star" model were considerably more likely to institute intellectual property or non-compete agreements and stock options within the first two years, a finding which made sense given that those types of companies were extremely reliant on recruiting and retaining key technical personnel.
- The "star" companies were much more likely to adopt a mission or values statement by the end of their second year of operation than the "factory" companies, a finding that the researchers attributed to the recruitment strategies of the star companies to clearly set out their mission and values to attract the best scientific and technical employees.
- The "star" companies were also the most likely to have promulgated job descriptions, standard employment applications, and standard performance evaluation forms by the end of their second year.
- The "commitment" companies were notable for their interest in implementing background checks of prospective employees, to conduct formal employee orientation programs, and to sponsor regular social events for employees, all of which appeared to be consistent with the desire of those companies to create an organization based on steady and long-term employment relationships.

Realizing that the trends described above may not be that meaningful given that most of the companies in the SPEC survey group did not make that much of an effort to formalize employment relations during their first two years of operations, the SPEC researchers conducted a further examination and analysis of the timing of adoption of various HR policies and documents over the entire history of the companies.[111] The researchers found that, in general, the differences across the four employment models observed for the first two years of operation continued as the companies got older. For example, the "factory" companies persisted in lagging behind the other models with respect to adoption of almost every type of HR policy or document. The researchers also discovered that the size of the companies, as measured by the growth in the number of employees, dominated aging of the companies as a determinant of the rate of adoption of HR policies and documents, with size being particularly important as triggers for actions on HR issues other than compensation such as formalization and standardization of employment relations and institutionalizing means of socialization and communication (regular social events and meetings, newsletters, e-mail, orientation programs, training). The effect of growth was non-significant for all of the items involving individual rewards (e.g., stock options, skill-based pay, individual bonuses, signing bonuses, and non-monetary rewards); however, the rate of growth was a significant influence on the rate of adoption of group- or team-based incentives and bonuses.

The SPEC researchers continued their analysis by assessing the level and rate of formalization of human resource management practices by reference to when companies first appointed a full-time HR manager.[112] The researchers reported there was substantial diversity among the companies in their survey when it came to appointing experienced HR managers: some companies brought a specialist in from the very beginning while others persisted in the belief that human resources management ("HRM") was "a frill at

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[111] Id. at 260-265.
[112] Id. at 266-268.

best and, at worst, an impediment to business activity". Many founders remained closely involved with HR activities as their companies grew; however, their approaches differed significantly. At one end were founders overseeing companies with over 300 employees who had brought in a senior HR manager yet insisted on being involved in all hiring decisions while other founders steering similarly sized firms supervised HR directly with modest administrative support. Age and size both had significant effects on the rate of hiring a full-time HR manager and, of course, companies were often driven toward more formalization by external events such as completing their initial public offering or landing a big government contract that made them subject to outside scrutiny of many of the HR policies relating to affirmative action and similar matters. The researchers also found that the employment model selected by the founders of the companies had a strong and statistically significant effect on the rate of transition to full-time HRM: "[c]ompanies whose founders espoused a more 'HR-intensive' blueprint (the star and commitment models) hire HR specialists much sooner than otherwise-comparable companies that embark with a different employment model".

The research by the SPEC also provided insights into gender diversity among Silicon Valley firms and survey results indicated differences in the degree of acceptance of women across industries—a higher percentage of scientific and technical roles were filled by women at biotech, medical device and research firms than at software and telecommunications companies—and that the type of organizational blueprint selected by the founders strongly influenced how women the career paths of women in their companies.[113] Specifically, the SPEC researchers found that companies built on the commitment model, which is based in part on building and maintaining an emotional attachment between the company and its employees, tended to have the fewest women on their scientific and technical staffs while companies that valued individual achievement and were less concerned about emotional attachment had much stronger representation by women. A summary of the research noted: "The evidence suggests that differences in hiring, rather than in attrition rates, account for women's underrepresentation in high-commitment firms."[114] The researchers also reported that the employment of larger numbers of women in technical and scientific roles tended to occur in companies that were "larger, growing more rapidly, and competing primarily through technological innovation" and which had already gone public and formalized their human resources activities accordingly by hiring a full-time human resources professional and adopting an affirmative action plan.[115] Looking at the average percentages of women working in positions in specific areas across all of the survey firms the researchers found the following: clerical (91%), administration (54%), sales and marketing (28%), scientific and technical (17%) and senior management (14%).

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[113] The discussion in this paragraph is adapted from J. Baron, M. Hannan, G. Hsu and O. Kocak, "In the Company of Women: Gender Inequality and the Logic of Bureaucracy in Start-Up Firms", Work and Occupations, 34 (2007), 35. See also J. Baron, M. Hannan, G. Hsu, and O. Kocak, "Gender and Organization-Building Process in Young High-Tech Firms", in M. Guillen (Ed.) The New Economic Sociology: Developments in an Emerging Field (Chapter 10) (2002).
[114] Stanford Graduate School of Business, Founders' Values Help Shape Gender Mix in High-Tech (February 1, 2007).
[115] Id.

§1:11 Product development and commercialization

Product development in Silicon Valley has been characterized by organizational innovations, as illustrated by the experiences in the semiconductor industry. At most of the earlier Silicon Valley semiconductor companies, such as Fairchild Semiconductor, the product development and manufacturing functions operated separately from one another with new products being developed first by engineers in the research and development ("R&D") department and then being transferred to the product department.[116] At the same time the manufacturing department had its own engineering team in its applications laboratory that focused on developing follow-up products. This type of organization was ultimately seen as terribly inefficient and conducive to turf battles between R&D and manufacturing. In addition, the transfer of technologies from R&D to manufacturing was often difficult due to differences in the equipment and processes used in each of the departments. At the next generation of Silicon Valley semiconductor companies, such as National Semiconductor and Intel, the founders, many of whom has begun their careers at Fairchild, were determined to remove the inefficiencies by tightly integrating the R&D and manufacturing functions and did so by dispensing with separate R&D laboratories and having product and process engineers work together in the manufacturing area using the same equipment and processes. At National Semiconductor the design engineering teams reported directly to plant management and the resulting product development process was described by Lecuyer as follows: "Each team included circuit-design and process engineers, and each focused on a specific product line. Under this scheme, engineers developed new products and processes directly on the manufacturing line, using existing equipment and interacting daily with the people who were going to manufacture their circuits. The design engineering groups were also responsible for a product from its initial design stage through its production. They were expected to solve any problems that might appear over the course of the product's life." This "new" approach allowed National Semiconductor and other companies to bring their products to market much more quickly and efficiently than Fairchild.

As discussed above, organizational structures in Silicon Valley were notable for their decentralization and this approach was often carried into the product development process. At Hewlett Packard, for example, product divisions were set up as "semi-autonomous business units, with full responsibility for product development, engineering, manufacturing, marketing, and personnel", an organizational structuring strategy that "not only increased the organization's responsiveness but also greatly reduced the decision-making authority of senior management".[117]

Google has received a good deal of attention for its pro-active encourage of new product ideas from employees through its "70/20/10" rule, which Thompson described as the expectation of top management that employees would "devote 70 percent of every work day to whichever projects are assigned by management, 20 percent of each day to new

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[116] The discussion in this paragraph is adapted from C. Lecuyer, Making Silicon Valley: Innovation and the Growth of High Tech, 1930-1970 (2006), 265-266.

[117] The discussion in this paragraph is adapted from A. Saxenian, Lessons from Silicon Valley, MIT Technology Review (1994).

projects or ideas related to their core projects, and 10 percent to any new ideas they want to pursue regardless of what they might be".[118] Obviously such a system became unwieldy as the company's growth exploded and additional steps needed to be taken to manage the flow of potential innovation including initiating the practice of having employees meet on a regular basis with the founders and other top executives of the company to pitch their new ideas and projects.

A fascinating window into the product development and management process at Google during the early 2000s comes from notes taken by Rodriguez on a presentation given in 2003 by Google product manager Marissa Mayer, who was later to become CEO of Silicon Valley icon Yahoo.[119] In her presentation Mayer noted that product development at Google was rigorously tied to the company overall mission of organizing the world information to make it universally accessible and useful and that "accessibility" and "utility" were thus key goals in each product development initiative. In fact, Mayer stressed several times that "user-centered design" was extremely important in the product development at Google and that this meant building products that people really wanted based on identifying and understanding user needs and desires. According to the notes prepared by Rodriguez the Google product development process began by accepting ideas from everywhere (i.e., employees and customers)—Google expended a lot of effort to encourage new ideas including sponsoring various forms and mediums for idea-collection and participation—and then prioritizing those ideas on a "Top 100" list based on several factors including utility to users, the likelihood that it would assist user retention, chances for success, the contribution it might make to diversifying revenue stream and, finally, the level of effort required relative to impact.

When a new product idea was selected for further development it was assigned to one of many small, agile engineering teams that were allowed a great deal of autonomy with respect to their internal organization. Google did not have a formal product development department and instead viewed each team, which typically had three engineers, as the relevant business unit for each project. Members of the team were co-located and worked exclusively on the project for three or four months before moving on to a new project. One of the engineers was designated as the "technical lead" for the team and had responsibility for the technical excellence of the project. At this early stage product documentation was very sparse and the team prepared only what was necessary to create a product requirements document that would be analyzed at the end of the initial development process. A Google product manager was continuously involved in the work of each team and product managers generally worked with nine or ten engineers across several teams at the same time. Larger projects were explored using the same methods applied to smaller projects by breaking the tasks into logical modules that could each be addressed by small teams (e.g., a large project might have four units of three people, a total of twelve people, each working on a discrete piece at the same time).

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[118] S. Thompson, Google's Business Leadership and Organizational Culture.

[119] The discussion in this paragraph and the following paragraphs regarding Mayer's presentation is adapted from E. Rodriguez, Google Product Development/Management Process: A Presentation by Google Product Manager Marissa Mayer to Silicon Valley Product Management Association on January 8, 2003, http://evelynrodriguez.typepad.com.

Rodriguez recorded several other interesting characteristics of the Google product development process. First, once the company was satisfied that a new product or service was likely to be seen as useful by users teams were created to create and execute an explicit "monetization" strategy for the product or service. Second, Google created organizational tools to ensure that the plans for launching each new product, including calendars and current status reports, were readily visible throughout the company. Third, as mentioned above, the focus on user-centered design was continuously reinforced and the product development path included weekly user studies, emphasis on quality and understanding what users really care about, experimentation and iteration. Finally, Google had a bias toward "expedient solutions" and getting new products and services out into the market quickly even if the company knew that further work would be needed to improve performance and the quality of the solution offered to users.

Abbott and Quinn noted that while historically in Silicon Valley product development has typically been driven by engineers they perceived a fundamental shift in the technology industry's approach to product development beginning in the late 2000s toward the fundamental disciplines of design: customer experience, interaction, and visual design.[120] They argued that more and more startups have launched as design-focused and that older firms have been forced to quickly shift from their engineering-centric roots to a new product development paradigm that emphasizes addressing and meeting customer expectations of simplicity and ease-of-use in new products.

Rush et al. have conducted ongoing research to identify best practices of highly successful new product development teams operating among Silicon Valley technology companies.[121] They were particularly interested in exploring the methods used by these companies to get new products to market quickly and efficiently while ensuring that customer requirements are satisfied. Among other things they found that the most successful companies were those that recognized that customer requirements were likely to change continuously during the development process and that it was a mistake to freeze the product specifications early in the process and not engage in regular contract with customers to gather feedback. In fact, the researchers found that the most successful product development teams proactively sought out product requirements from the most suitable and dominant customers in the market segment that the companies had chosen for the new product. Jaruzelski and Le Merle argued that Silicon Valley companies were more successful at innovation than their counterparts in other parts of the world because Silicon Valley companies did a much better job of creating and maintaining strong alignment between their innovation and business strategies and emphasized that the most successful Silicon Valley companies anticipated customer needs, had their top technical executives report directly to the CEO, ensured that innovation strategies were developed and communication from the top throughout the company, and constantly refreshed their product development staffs.[122]

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[120] M. Abbott and M. Quinn, Redesigning Product Development in Silicon Valley (2013).

[121] A. Rush, J. Schmook, N. Mitchell and B. Biddinger, Fast-Time-to-Market Best Practices (1992).

[122] B. Jaruzelski and M. Le Merle, "Revealed! Silicon Valley's Secrets to Innovation Success", Forbes (March 27, 2012).

§1:12 Technology management

Proprietary intellectual property rights, such as patents, and physical assets became more important as time went by to the emerging companies in the University of Chicago study group described elsewhere in this chapter.[123] While 29% of the companies in the study group owned, or had exclusive license rights, to patent at the time of the early business plan, this percentage increased to 49% at the IPO and 62% on the date of the third annual report following the IPO. The researchers argued that this finding was consistent with anecdotal evidence and the expressed desire of many emerging companies to differentiate themselves from their competitors by developing and commercializing unique products and technologies which must, by their very nature, be surrounding by strong and enforceable intellectual property boundaries. As noted elsewhere in this chapter, 77% of the companies in the University of Chicago study group had someone serving in a position comparable to CTO at the time of their earliest business plan, clearly a nod to the importance of technology to those companies at the beginning of their lives; however, while the popularity of the CTO position held at 77% at the time the survey companies were completing their IPO it fell dramatically to just 47% on the date of their third annual report following their IPO.[124]

Glasser provided an interesting and straightforward catalogue of what he saw as the key roles of a CTO of a startup company operating in the high-tech arena.[125] His list began with ensuring that the company had the best technology to carry out the specific technology-related activities that were required in order for the company to competitive and this meant creating and continuously engaging with the appropriate suppliers and other allies and making sure that the technology requirements for each company project were clearly understood among the members of the teams working on those projects. In that regard, he noted that "[t]he greatest leverage is when the project is in its earliest phases, when we are deciding on architectures in the context of market requirements and when technology choices are being made". The second item on his list was creating options for the company—either for existing businesses or launching new businesses—and being heavily involved with other functions, such as business development, in incubating opportunities that are based on exploiting technological breakthroughs. Glasser's third activity for the CTO was attending to the health and well-being of the technical community including acting as the public face of technology for the company and making sure that technology optimization is taken into account in all decisions and activities throughout the organization. Finally, the CTO needs to be involved in the formulation and execution of the company's overall business strategies given that Silicon Valley companies are competing by forging technical excellence in the products and in the processes used to create those products. Glasser's ideas were similar to those described by Ries a few years earlier when he argued that "[t] CTO's primary job is to

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[123] S. Kaplan, B. Sensoy and P. Stromberg, What are Firms?: Evolution from Birth to Public Companies (2005).
[124] Id.
[125] The discussion of Glasser's arguments in this paragraph is based on L. Glasser, What Does a CTO Do? (2011).

make sure the company's technology strategy serves its business strategy" and then suggested that the effective CTO need to be adept at several specific skills including platform selection and technical design; seeing the "big picture"; providing options; finding ways to "get 80% of the benefit for 20% of the cost; growing technical leaders; and owning the development methodology.[126]

According to Harris et al. technology management in Silicon Valley emphasizes ways to move quickly, retain flexibility and motivate IT workers and key strategies include treating IT decision as urgent business decisions, dispensing with unwieldy steering committees and reviews and conducting quarterly, rather than annual, reviews of projects and budgets to remain nimble; encouraging wide participation in testing and assessment of proposed new IT solutions ("crowdsourcing technology decisions") and community involvement in the design and building of new software and other processing technologies; and making sure that the best IT workers are provided opportunities to grow and assume leadership positions even it increases the risk that such person will eventually leave to pursue their careers at other companies.[127] A related article identified and discussed other technologies, management practices and cultural features believed to be contributors to the speed of IT development in Silicon Valley including the use of cloud and open technologies to enable rapid improvements, reliance on iterative development disciplines and tools to create systems quickly, and cultivation of an organizational culture that include impatience and openness.[128]

§1:13 Globalization

Saxenian has studied the influence of immigrant professionals in Silicon Valley beginning with a 1999 report that indicated that 24% of all Silicon Valley companies were led by Chinese or Indian immigrants and that 14% of the total employment in Silicon Valley at that time was being provided by foreign-owned companies.[129] Her 2002 survey of foreign-born professionals in Silicon Valley—which focused on first-generation Indian and Chinese immigrants, the largest groups of skilled immigrants in the region at that time—provided interesting insights into the involvement of Silicon Valley's foreign-born professionals in the region's associational life and entrepreneurial economy, the nature of the professional connections that first-generation immigrants were building to their native countries, and the extent to which immigrants were becoming transnational entrepreneurs and establishing business operations in their native countries and Saxenian described her main findings from the survey as follows: first-generation immigrants to Silicon Valley, most of whom already had entrepreneurial experience, quickly adopted the patterns of external networking and information exchange that distinguished US-born professionals in the region; Chinese and Indian immigrants had a wide range of professional ties to their native countries with many of

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[126] E. Ries, What Does a Startup CTO Actually Do? (September 30, 2008).

[127] J. Harris, A. Alter and M. Matos, "Silicon Valley Management Secrets: Make Your Tech Team Faster and More Innovative", Bloomberg Businessweek: The Management Blog (July 24, 2013).

[128] J. Harris, A. Alter and C. Kelly, "How to Run IT at the Speed of Silicon Valley", Wall Street Journal (June 27, 2013).

[129] A. Saxenian, Local and Global Networks of Immigrant Professionals in Silicon Valley (2002) (citing A. Saxenian, Silicon Valley's New Immigrant Entrepreneurs (1999)).

them returning regularly to their native countries for business purposes, to exchange technology and labor market information with colleagues and friends, to advise local companies and meet with local government officials, and to invest in startups and venture funds in their home countries; and while the characteristics of the timing, location and financing of startups founded by immigrants did not differ significantly from those of companies launched by US-born entrepreneurs, many foreign-born entrepreneurs set up operations in their native countries (i.e., subsidiaries, joint ventures, subcontracting, or other business operations) to gain access to low-cost labor and, in the case of China, access to its domestic market.[130]

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[130] A. Saxenian, Local and Global Networks of Immigrant Professionals in Silicon Valley (2002), viii and 37.