

The Godfathers: Characteristics and Roles of Central Individuals in the Transformation of Techno-Regions*

by

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Abstract

Many successful techno-regions have benefited from a single individual who sustained the regional vision, was the primary source of creative strategies, and is personally identified with the transformation and success of the region. This paper discovers common and distinctive factors in the biographies of these godfathers and in the roles they have played in their respective regions. We investigated eight godfathers of well-established techno-regions (including Frederick Terman of Silicon Valley, George Kozmetsky of Austin, and Morihiko Hiramatsu of Oita), comparing them with each other and with three godfathers and one godmother of smaller regions that have begun their transformative efforts more recently. Using theories of networking and diffusion of innovation, we advance tentative conclusions about the factors that enable a godfather's effective action, and about the newer godfathers' or godmothers' likelihood of success. These small-sample results suggest an extension of social network theory to encompass the unique characteristics of a tiny but highly influential minority: the godfathers who drive technological and economic change in regions.

Keywords: Technopolis, Technology-Based Economic Development, Entrepreneurship, Social Networking, Innovation Diffusion

Introduction

Success factors for technology-based economic transformation are of concern to many regions as they try to find or renew their distinctive competitive positions. Many successful techno-regions have benefited from a single individual who sustained the regional vision, was the primary source of creative strategies, and whose name never fails to be mentioned when his region is being discussed. Table 1 names several such "godfathers." Not just ordinary innovators, these godfathers have led dramatic and complete economic transformations in their regions.

Table 1
Godfathers of Established Techno-Regions

Austin, Texas	George Kozmetsky
Curitiba, Brazil	Jaime Lerner
Hyderabad, India	Chandrababu Naidu
Oita Prefecture, Japan	Morihiko Hiramatsu
Silicon Valley, California	Frederick Terman
Singapore	Lee Kwan Yew
Sophia Antipolis, France	Pierre Lafitte
Taiwan	Morris Chang

Our present purpose is to discover the common factors in the biographies of the well-known godfathers, and the common factors in the roles they have played in their respective regions. We will investigate eight godfathers of well-established techno-regions, and compare them with each other and with three godfathers and one godmother of smaller regions that have begun their transformative efforts more recently.

Our observation of the careers of these leaders over a period of many years, and our personal acquaintance with some of them, have led to hypotheses about a godfather's means of effective action. This paper's comparative case study approach will not allow formal testing of hypotheses. The comparative summary should, however, help organizations and institutions in budding techno-regions understand what they may and may not reasonably expect from their godfathers and illustrate effective ways of supporting and communicating with the godfathers. We will essay some predictions about the unfolding of the newer regions' (Table 2) experience with their godfathers.

Table 2
Godmother and Godfathers of Smaller and Newer Regions Attempting Transformation

Adelaide, Australia	Alfred Huang
Malta	Claudine Cassar
Ashland, Oregon	Jim Teece
Paramaribo, Suriname	Hans Lim A Po

In addition, this study will advance scholars' understanding of technology-based economic development. Current theories of social networking and innovation diffusion predict many but not all of the godfathers' characteristics. We find that godfathers are super-networkers of a kind not previously described in the literature. They are creative, entrepreneurial visionaries who network proactively, strategically, and persistently.

Table 3 is a preliminary list of the godfathers' characteristics and regional roles. It is based on our personal observations and our monitoring of the business press, and it corresponds to what, in a large-sample study, would be

Table 3
Hypothesized Characteristics and Roles of the Godfather

Personal characteristics of the godfather Maintains a "network of remarkable men and women."	Role played in techno-transformation Brings leading-edge knowledge and creative ideas to the home region.
Experience in multiple sectors. Involvement with education.	Boundary-spanning imagination; sees synergies. Educational innovator and/or donor. Builds bridges between town and gown.
Densely connected communication network within community and between communities.	Finger on the pulse of the community. A facilitator.
Independent means. Charisma.	Able to spend time on public role. Discriminating donor. Attracts followers. Influential communicator of ideas.

called a statement of hypotheses. Following the Table, the paper presents biographical summaries of the twelve godfathers and their activities relating to the economic transformation of their regions. A discussion follows of aspects of communication, networking, diffusion, and other pertinent theories. A comparative summary of the biographical data details the degree to which these godfathers share the hypothesized characteristics and conform to behaviors expected based on theory. The paper concludes with recommendations for further research and for godfathers and godmothers of newer techno-regions.

Boundaries of the Study

We limit the sample to godfathers identified with metropolitan regions and multiple-city regions (that may cross state or national borders). Individuals with broad national roles are excluded, except where (as in the case of Singapore and Taiwan) the nation's geography is compact and nearly all economic activity clusters around one major metropolitan area. The region's transformative strategy must depend to a large extent on technology entrepreneurship.

The godfathers' high social status, external connectivity, and orientation to growth entrepreneurship differentiate them from the professional facilitators who frequently moderate cluster strategy sessions and from the "community brokers" (Cromie, Birley, & Callaghan, 1993) who have started several small businesses and subsequently worked for a government agency, university office, or chamber of commerce in an economic development role.¹ Facilitators and brokers fitting these definitions are excluded from the study.

Why are there not more godmothers? One might cite Gro Harlem Brundtland of Norway, Margaret Thatcher in England, Israel's Golda Meir, or India's Indira Gandhi. However, whether because these nations do not fit our compactness criterion, or because the nation's transformation was based on natural resource extraction or promotion of traditional industries rather than innovative technology entrepreneurship, or because the leader's con-

tribution to innovative entrepreneurship in a particular region of the nation was incidental to her larger role in national and international politics, we exclude these women from the present discussion. We have no doubt that more godmothers in the sense of this paper will emerge to play visible roles in the future. We have similarly excluded a host of spectacularly successful male entrepreneurs, philanthropists, and politicians who did not take on the multifaceted roles that define a godfather of techno-economic transformation in a well-defined region.

Whether the presence of a godfather or godmother is a critical regional success factor is debatable and beyond the scope of this paper.² Godfathers are widely acknowledged to have offered significant advantages to a great many regions. The regional godfather is therefore a phenomenon worthy of study.

The Godfathers: Background and Overview

The visionary godfathers of Table 1 are extraordinary individuals, who combined technological knowledge with planning acumen, personal charisma, and political savvy (Phillips, 2006). Each is a longtime member of his respective community, trusted by varied community groups. In Austin, the godfather was George Kozmetsky; in Curitiba, former Mayor Jaime Lerner; in Oita, Prefectural Governor Morihiko Hiramatsu; and in Hyderabad, Chandrababu Naidu (Biswas, 2004), who persuaded Microsoft's Bill Gates and Steve Ballmer to dub the city "Cyberabad."

The godfather is the keeper of the vision. A visionary himself, he is steadfast and persistent and has excellent local and external networks of acquaintances. He may profit from economic development activities but does not take on his public role primarily for personal monetary or status rewards. Indeed, he is usually financially comfortable already, which enables him to persist in his role, sustaining the vision for decades, if need be.

The godfather's politics are nonpartisan, and he is careful not to cause irreparable rifts in the community. His imprimatur on a project attracts people to it; they know he will not support it if it is a cover for graft or hidden agendas. Members of the community gain status by their closeness to the godfather. Often the godfather can be more effective if he is not an elected official.

The godfather does not create trends in technology, but rather he draws attention to, and lends mentorship to, promising initiative-takers. Austin has produced masters of this tactic; to note two examples of many, George Kozmetsky mentored Michael Dell, and Willie Nelson moved from Nashville to lead—and benefit from—Austin's vibrant music scene. Both pursued BHAGs (an Americanism, "big, hairy, audacious goals"), recognizing their inspirational quality and their practical necessity in an economy driven by positive feedback and "tipping points" (Gladwell, 2003).

Many techno-regions led by godfathers have been driven more by the force of their personalities than by the

specificity of their goals. It is, therefore, difficult to categorize the initiatives that have taken root in those regions as pure examples of cluster initiatives or entrepreneurship initiatives. In almost all our present examples, the initiatives span boundaries, breaking barriers between industries, between socio-political groups, and between conceptual models of entrepreneurial action. Especially when they are not elected officials, godfathers find it expedient and constructive to utilize "fuzzy objectives" (Phillips, 2005) that blur these taxonomies.

Where a pure cluster initiative might be constructively headed by a professional facilitator, the transformative initiatives (see Phillips, Vallejo, & Mhondo, 2005) spearheaded by our godfathers are far more comprehensive. (All, however, place technology entrepreneurship at their center.) They have needed a leader with much more social status, connectivity, and clout than even experienced professional facilitators can bring to bear.

The godfather assumes his role, taking it on deliberately. He does not attempt to create a technopolis from a green field, but rather, he has mapped his region's existing strengths and seen that skilled evangelism may give it the needed boost to the tipping point. He becomes a community leader not, by being the lone voice in the wilderness, but by "noticing a parade is forming, and jumping in front of it."³

These characteristics of the godfather help further delimit the scope of this paper: Because of his public role, the godfather is forced into the "great man" category of entrepreneur (Cunningham & Lischeron, 1991). Thus, we do not attempt a further formal categorization of the godfather's brand of entrepreneurship.⁴ And because godfathers are self-selected, we do not aim to help techno-regions select their godfathers.

Roles and Characteristics of the Godfathers

The left-hand column of Table 3 presents the characteristics we have come to expect as we have observed several godfathers in action. The right-hand column displays observable manifestations of each characteristic, and these are the dimensions on which we compare the biographies of the twelve godfathers.

We can sharpen these ideas by mentioning some persons who were excellent contributors in their regions but not quite godfathers:

1. Doug Strain (see Farson, 2003) and Frank McBee were the first high-tech entrepreneurs in Portland, Oregon, and Austin, Texas, respectively. Their companies spun off innumerable other companies, and the two men became investors and advisors. Both have excellent internal and external networks and strong commitments to educational institutions. Neither, however, formed an overall vision for his region, nor took a publicly visible role as spokesman.

2. For decades in Portland, Les Fahey was the “go-to guy” for entrepreneurs, steering them to management advice and funding sources. However, Fahey did not take public roles that crossed sectoral boundaries, brought other companies to Portland, or aimed to improve the overall entrepreneurial environment of the city.
3. Former Portland Development Commission Chair Don Mazziotti had the energy and vision required of a godfather, but his appointed position as head of a public agency with a narrowly defined mission constrained his actions.
4. Pedro Nueno of Barcelona’s IESE Business School taught the first entrepreneurship courses in Spain in the 1970s and now teaches there again. His many graduates have become successful entrepreneurs, and Nueno has been a prominent advisor to governments. However, he spent ten years in India and much time in China, building international alliances of universities and heading scholarly societies (“Impressions,” 2005). These contributions prevented a single-minded pursuit of techno-economic development in Barcelona.

All are outstanding individuals who benefited their communities. It is no criticism to say they are not godfathers; their examples help us see that a godfather in the sense of Table 3 is a truly unusual personality.

The Godfathers: Established Regions **Pierre Lafitte: Sophia Antipolis, France**⁵

Pierre Lafitte was born in 1925 in Alpes-Maritimes, France. A member of the French Senate, Lafitte heads the Senate Committee studying how new technologies can contribute to economic, social, and cultural development in France. He is a member of the Royal Swedish Academy of Engineering Sciences.

Senator Lafitte is founder and President of the Sophia Antipolis technopolis and the International Association of Science Parks (IASP). He has also been President of the Ecole Nationale Supérieure des Mines de Paris, the Sophia Antipolis Foundation, “Route des Hautes Technologies,” and the Franco-German Association for Science and Technology and Honorary President of the Conférence des Grandes Ecoles (Union of French Selective High-Tech Universities).

Active in educational television, Lafitte has written a treatise on computerized geology and an article “Science Parks in France” in *Encyclopaedia Universalis*. He is the author of articles and the subject of interviews on science and technology parks in *Le Monde*, *Le Quotidien de Paris*, *L’Expansion*, *Financial Times*, *Corporate Times*, *Die Welt*, and other prominent fora.

His awards and honors include the Légion d’Honneur, Ordre National du Mérite, Commander of the Polar Star (Sweden), Commander of the National Order (Germany), and the De Gaulle-Adenauer Prize.

Sophia, one of the original technopoleis, now consists of four towns. It was home to 1,300 companies in IT or high tech in 2005 and continues to grow (*Review of Technology & Economic Development*, 2006).

Morris Chang: Taiwan⁶

“Perhaps no one was more responsible for Taiwan’s emergence as a high-tech leader than Morris Chang.”⁷ Morris Chang is internationally recognized for his global business vision and his role as a technological innovator.

Dr. Chang graduated from the Massachusetts Institute of Technology (MIT), obtaining a B.S. in 1952 and an M.S. in 1953, both in mechanical engineering. He received his Ph.D. in electrical engineering from Stanford University in 1964. In addition, he holds honorary doctorates in Taiwan from Chiao-Tung University, Ching-Hua University, and the Central University in Taiwan. In the United States, he holds an honorary doctorate from the Rensselaer Polytechnic Institute.

He is a member of the National Academy of Engineering (USA) and a member of MIT Corporation. He is also on the advisory boards of New York Stock Exchange, Stanford University, and University of California at Berkeley. In 2001, Dr. Chang joined the board of directors of the Goldman Sachs Group, Inc., a leading global investing banking and securities firm.⁸

From 1958 to 1983, Chang was responsible for a worldwide semiconductor business at Texas Instruments, where he was Group Vice President. In 1984-1985 he was the President and Chief Operating Officer of General Instruments Corporation in the United States.

In 1987, Morris Chang founded today’s largest silicon foundry, Taiwan Semiconductor Manufacturing Company Ltd (TSMC), a pioneer firm in the dedicated silicon foundry industry. Located in Taiwan, TSMC is a global leader in building microchips for everything from PCs to cell phones.

Dr. Chang was the recipient of the IEEE Robert N. Noyce Award for Exceptional Contributions to Microelectronics Industry and the Exemplary Leadership Award of the Fabless Semiconductor Association (FSA). He was selected by *Business Week* as one of the “Top 25 Managers of the Year” and “Stars of Asia” in 1998 and by BancAmerica Robertson Stephens as “One of The Most Significant Contributors in the 50 years of Semiconductor Industry” in the same year. In 2001, he was selected by *Time* magazine and CNN as one of the top 26 most influential CEOs.

TSMC anchors Hsin Chu Science Based Industrial Park. Instrumental in bringing expatriate talent back to Taiwan, Morris Chang chairs Taiwan’s Industrial Technology Research Institute.

Jaime Lerner: Curitiba, Paraná, Brazil

Jaime Lerner was born in 1937 in Curitiba in Brazil's southern state of Paraná. He has been Mayor of Curitiba three times (1971-75, 1979-83, and 1989-92) and Governor of Paraná State twice (1994-2002). The Prince Claus Fund⁹ biography of Lerner describes his achievements as follows:

In 1965, he was responsible for setting up and defining the structure of the Research and Urban Planning Institute of Curitiba (IPPUC). At the same time, he was involved with Curitiba's Master Plan to guide the City's physical, economic and cultural transformation.... Lerner has promoted the greatest economic and social transformation of all of Paraná's history. The State of Paraná has been able to consolidate its position as the country's new industrial hub thanks to a series of policies geared toward attracting productive investments, with the support of Curitiba's successful experience.

Lerner studied civil engineering, architecture, and urban planning at the Federal University of Paraná, and in 1964, he traveled abroad for further graduate study at Centre Scientifique et Technique du Bâtiment in Paris.

As mayor, he implemented a world-famous integrated mass transport system in Curitiba, and he was responsible for other social and environmental advances that have made Curitiba a model green city and given it a quality of life that all observers find exemplary (Rabinovitch, 1996). He is now involved in an advisory capacity in the rebuilding of the city of New Orleans.¹⁰

Jaime Lerner has been honored with the United Nations Environmental Award (1990), as a "Celebrity of Brazilian Architecture" by the Brazilian Institute of Architects (1991), and with the Child and Peace Award from UNICEF (1996), the Thomas Jefferson Medal from University of Virginia (1997), and the Prince Claus Fund Award, Netherlands (2000).

Lee Kuan Yew: Singapore¹¹

Lee Kuan Yew was the first prime minister of modern Singapore, elected repeatedly from 1959 through 1990. Lee is a fourth-generation Singaporean, his great-grandfather having emigrated from Guangdong province to the Straits Settlements in 1862. The eldest child of Lee Chin Koon and Chua Jim Neo, Lee Kuan Yew was born in Singapore in 1923. As a child, due in part to the influence of his grandfather, Lee was strongly influenced by British culture.

Educated in England (Cambridge), Lee Kuan Yew led Singapore to independence and served as its first prime minister. Under his guidance, Singapore became a financial and industrial powerhouse, despite a lack of abundant natural resources, and later merged administratively with Malaya. Lee ruled with ultimate authority, and his zeal for law and order was legendary. In 1990 he stepped down as prime minister, remaining in the cabinet as senior minister.

Lee and Kwa Geok Choo were married in 1950. They have two sons and one daughter. Lee devised his plans for the modern city-state of Singapore when in 1965, after six years of independent existence, the Malaysian Confederation fell apart.

Lee attempted to compensate for Singapore's small size and lack of resources by making the city-state a "first world oasis in a third world region." He adopted Israel as a model. Like Israel, Lee says, Singapore had to leapfrog the rest of the region and attract multinational companies. This it did, and Singapore is now one of the world's most prosperous nations.

Early problems were exacerbated by the loss of 50,000 jobs associated with the military withdrawal of the British. In a coup of economic development leadership, Lee convinced Harold Wilson to allow the extensive military infrastructure to be converted for civilian use, rather than destroyed as demanded by British law. Lee established the Singapore Economic Development Board in 1961 and, shortly after, the Singapore Tourist Promotion Board. He started a construction program leading to the building of an airport, port expansions, roads, and communications networks. He reduced the unemployment rate from 14% in 1965 to 4.5% in 1973.

Even in advanced age, Lee remains an avid user of the latest technology and is sensitive to the role of technology entrepreneurship. "It's time for a new burst of creativity in business," he says. "We need many new tries, many start-ups."

Lee Kuan Yew has written two volumes of memoirs, *The Singapore Story* and *From Third World to First: the Singapore Story*.

Lee has received awards including the Order of the Companions of Honour (1970), Knight Grand Cross of the Order of St Michael and St George (1972), the Freedom of the City of London (1982), the Order of the Crown of Johore First Class (1984), the Order of Great Leader (1988), the Order of the Rising Sun (1967), and Man for Peace (1990). Lee's academic decorations include Honorary Fellowship of the Edinburgh Royal College of Medicine (1988) and Fellow of Imperial College London (2002) in recognition of his development of joint science and engineering initiatives with the United Kingdom.

Frederick Terman: Silicon Valley, California, USA¹²

Frederick Terman, the father of Silicon Valley, was born 1900 in Indiana, son of a celebrated psychologist who moved his family to the Stanford, California, area in 1910. As a teenager, with his friend Herbert Hoover Jr., Frederick Terman experimented with amateur radio. In 1922, Terman began graduate study at MIT under Vannevar Bush, who was to become the principal architect of post-World War II U.S. technology policy.

Terman earned a Ph.D. in electrical engineering at

MIT in 1924. MIT Electrical Engineering Department chair Dugald Jackson taught his students that the proper business of engineering was business. As a result, Terman “first envisioned [Silicon Valley’s] unique partnership of academia and industry, and trained the first generation of students who effected it” (Leslie & Kargon, 1996).

In 1926, back in California, Terman taught a course in radio engineering which was Stanford University’s first course in electronics. Students in that class included Bill Hewlett and Dave Packard. Despite another period back east in the early 1940s directing Harvard’s Radio Research Laboratory, by 1950, Terman had made Stanford a top academic center in electronics.

Terman was appointed Provost of Stanford University in 1955. He persuaded William Shockley to choose Palo Alto as the site for the Shockley Semiconductor Company. Spin-offs from Shockley’s company created Silicon Valley.

Terman networked globally as well as locally, having an impact (either directly or through his protégés) on tech-based economic growth initiatives in New Jersey and Texas. Terman was personally involved in the formation of the very successful Korea Advanced Institute of Science and Technology (Leslie & Kargon, 1996).

Terman received the U.S. Presidential Medal of Merit in 1948. In 1953 he was elected to the National Academy of Sciences, and in 1976, President Gerald Ford awarded Terman the National Medal of Science. Frederick Terman was also given the Medal of Honor from the Institute of Radio Engineers.

George Kozmetsky: Austin, Texas, USA¹³

George Kozmetsky’s life (1917-2003) successfully combined academia, industry, and government. According to the website of the IC² Institute, he founded at University of Texas at Austin, “Kozmetsky never met a challenge too difficult or an idea too grand.” A Seattle native and the son of Russian immigrants, he graduated from the University of Washington at the age of 20. After decorated service in the Army Medical Corps during World War II, he earned MBA and DBA degrees from Harvard University.

At that time, Carnegie Tech’s (now Carnegie Mellon University) Graduate School of Industrial Administration (GSIA) was launched as a kind of “anti-Harvard,” its founders vowing to eschew the case-study method and to make the study of management scientific. Though one of the most junior of GSIA’s founding faculty, Dr. Kozmetsky was hungry for still more radical things. He announced that he would leave Pittsburgh, make a lot of money, become a business dean, and bend a major B-school in these radical directions. Charles Holt, one of the many GSIA faculty Dr. Kozmetsky later lured to Texas, recalled his fellow professors were skeptical. They told him condescendingly, “Sure you will, George.”

Dr. Kozmetsky went to work for Hughes Aircraft, then for Litton Industries. He then co-founded and served as Executive Vice President of Teledyne, Inc. Combining a knowledge of technology with astute financial and project management expertise, he was awarded the last major U.S. government Vietnam War era military avionics contract for Teledyne. As Teledyne diversified, its stock appreciated to make Kozmetsky a billionaire.

By 1966, it was time for Dr. Kozmetsky to fulfill his promise to the Carnegie Tech faculty. George Kozmetsky drew a mental line around Texas, New Mexico, and the bordering states of Mexico—with their large population (30+ million), industries, national laboratories, and enormous engineering schools—and said, “This is the place.” Dr. Kozmetsky served as the Dean of the College and Graduate School of Business of The University of Texas at Austin from 1966 to 1981.

Always looking ahead, he founded the IC² Institute in 1977 to provide a platform for continued research, experimentation, and demonstration of his ideas. He assisted in launching and building over 100 technology-based companies and served on corporate boards including those of Gulf Oil, La Quinta, and Dell Corporation.

Dreher (2002) quoted Richard Florida’s assessment:

Under the leadership of entrepreneur George Kozmetsky and others, [Austin] built a culture of entrepreneurship. Kozmetsky began very early on saying, “We’re not just going to steal companies, we’re going to build our own,” and then, very sophisticatedly, they went after major research dollars and built up the research capacity. They really went out and recruited top talent; they created a talent magnet at that university” (Page 5).

Dr. Kozmetsky served both state and federal governments as an advisor, commissioner, expert witness, and panel member of various task forces, commissions, and policy boards. He was a prolific author, with dozens of books and journal, magazine, and newspaper articles to his credit. A tireless international traveler, Dr. Kozmetsky enjoyed high-level business and government access throughout the world. He was an early advocate of learning from Japanese manufacturing practices, and, retaining his childhood Russian language, took early initiatives in reaching out to post-Soviet Russian science and industry.

Through his family foundation, George and his wife Ronya contributed tens of millions of dollars to medical and entrepreneurial research at various universities and institutes.

Dr. Kozmetsky was awarded the National Medal of Technology in 1993 by U.S. President Bill Clinton. Among his other honors were the Dow Jones Award from the American Assembly of Collegiate Schools of Business, the Thomas Jefferson Award from the Technology Transfer Society, and the Texas Business Hall of Fame. He

received the University of Washington Alumnus Summa Dignatus Award, Ernst & Young's Austin Entrepreneur of the Year Award, and (as its first recipient) the Entrepreneurial Leadership Award from the MIT Enterprise Forum. The YWCA of Austin honored him for his promotion of women in leadership positions.

Table 4 summarizes Austin's transformation and George Kozmetsky's role in it.

Nara Chandrababu Naidu: Hyderabad, India¹⁴

Son of an agriculturist, Chandrababu Naidu was born in Naravaripally, India, in 1950. He married Nara Bhuvaneshwari, eldest daughter of Mr. N. T. Rama Rao, founder of the Telugu Desam Party and former Chief Minister of Andhra Pradesh. Mrs. Nara Bhuvaneshwari is an executive director of Heritage Foods, India, a business engaged in the processing and marketing of liquid milk.

Naidu pursued his college education at the Sri Venkateswara Arts College in Tirupati. He obtained a master's degree in economics from the Sri Venkateswara University, Tirupati, and was working toward a Ph.D. when he first entered politics.

In 1978, he joined the Andhra Pradesh Legislative Assembly. He also served as director of the A.P. Small Scale Industries Development Corporation for some time. Between 1980 and 1983, Naidu performed as a minister with diverse portfolios, including archives, cinematography, technical education, animal husbandry, and minor irrigation. He served as Chairman of the State Karshak Parishad, looking after the welfare of the farming community.

In 1989, Chandrababu Naidu was once more elected to the State Legislature from Kuppam. He also served as Coordinator of the opposition party Telegu Desam. His role in this party was a critical factor in the subsequent success of the party at the hustings. Re-elected in 1994 to the Assembly from Kuppam, Naidu held the portfolio of Revenue and Finance. In this department, he broke the characteristic secrecy of the Department of Finances by systematically introducing transparency in government. A year later, Naidu was unanimously elected Chief Minister of Andhra Pradesh and re-elected for a second term in 1999 with more than 65,000 votes. With a personal style of governance similar to that of a CEO, and the conviction that modern technology should be used in the service of the ordinary man, Naidu puts great emphasis on the use of information technologies (IT) in government.

Table 4

Timeline of the Austin Technopolis - Broad Scale

1960s	<p>Austin industry is State government and higher education</p> <p>The times they were a'changin'; social tensions.</p> <p>Beginnings of a major music city are seen. Low prices, great quality of life.</p> <p>Air conditioning, jet planes enhance prospects of all southern cities including Austin.</p> <p>President Johnson steers useful development projects (e.g., river dams) to central Texas.</p> <p>George Kozmetsky touts technology innovation as the driver of economic development.</p>
1970s	<p>Austin's wealth, as the rest of Texas', is still based on land, cattle, and oil.</p> <p>But Austin is known worldwide for music.</p> <p>Social tensions ease; hippies and rednecks enjoy the same music in the same clubs.</p> <p>College grads want to stay in Austin but are underemployed—lots of Ph.D. taxi drivers.</p> <p>Energy crisis attracts rust-belt refugees to Austin.</p>
1980s	<p>Decade starts with wide skepticism about prospects of high technology.</p> <p>But oil, real estate, and cattle industries tank almost simultaneously in mid-decade.</p> <p>MCC (Microelectronics and Computer Consortium (later called Microelectronics and Computer Corporation) comes to Austin and symbolizes the high-tech future.</p> <p>Investment in UT-Austin results in soaring reputation for the University.</p> <p>Texas investors start to embrace high-tech; companies absorb the excess skilled labor.</p>
1990s	<p>Many technology development alliances formed to nurture Austin's high-tech transformation.</p> <p>Strengths in music, electronics, and software combine to form major multimedia development center.</p> <p>Austin known worldwide as a great place to start a high-growth company.</p> <p>IC² Institute personnel consult worldwide on technopolis formation.</p> <p>By 1991, there were 400 companies in Austin in the software sector alone.</p>
2000	<p>Labor market tapped out, even with enormous university graduating many engineers each year.</p> <p>Traffic problems increase, housing prices up.</p> <p>But Austin is showing all the bright signs of optimism and prosperity.</p>

Note: From F. Phillips (2006) *Social culture and high tech economic development: The technopolis columns*. London: Palgrave.

Advancing the concept of social audit, Naidu involved the people in public programs, making available to the public, through the use of IT, the work done with public initiative funds. Naidu also promoted team-work in community building programs, as well as the work of self-help groups consisting of several community members looking to solve a common social problem (irrigation, education and health committees, among others) and whose work has been widely acknowledged for improving the conditions of the poor.

In contrast with previous political practices, Naidu has made active use of IT to keep involved and in contact with community and program leaders. Through videoconferences, he has been in contact with district collectors and cabinet ministers on various social issues (power supply, rythu bazaars, price monitoring, road works, sanitation, and public health, among other issues), overcoming bureaucratic delays and shortening time-response. In addition to visiting frequently the remote corners of his region and personally supervising the development of programs, Naidu has a TV program called *Dial Your Chief Minister* in which citizens have the opportunity to discuss with him a specific topic of the week.

Naidu has given a special emphasis to water management and to healthy state finances. Regarding the first issue, as Chief Minister, he has launched an innovative program called *Neeru Meeru* focused in the formation of watershed committees. A Water Conservation Mission has also been formed as a state initiative in this direction, and several voluntary participatory movements amongst citizens have been conducted, such as the construction of rain water-harvesting structures. Regarding public finances, Naidu took steps to incorporate accountability as an intrinsic feature of government functioning. He headed the campaign for fiscal federalism to the Eleventh Finance Commission and emphasized equity and efficiency in the devolution of central revenues and sharing of resources between the center and the states.

Naidu is a co-chair of the National Task Force on Information Technology, set up by the central government to prepare the IT program for the future. In this position, he has taken several initiatives to dismantle the telecommunications sector monopoly and to promote IT for better governance.

A disciplined man with clearly defined objectives and goals, Chandrababu Naidu is the guiding force behind his party and holds a firm grip over his council of ministers. A natural strategist and organizer, he has played an important and decisive role in his party and geographical region. His contributions to the growth of the IT industry in the state have been very significant, giving this industry the necessary public boost by promoting Hyderabad as the IT hub of India, a hub able to entice multinational IT giants and record rapid growth in software exports. Naidu was also successful in influencing the captains of the industry for the promotion of the Indian School of Business and the

Indian Institute of Information Technology (IIIT) near Hyderabad. Naidu is the first chief minister in the country to introduce IT as an effective tool in the governance of the state. Among his innovative concepts are teleconferencing facilities that have revolutionized the work culture in public administration. Some of his welfare measures that have proved beneficial to the public include road-widening programs, construction of flyovers, a clean and green program, and distribution of liquefied petroleum gas connections to rural women. His greatest contribution has been the political stability he brought to Andhra Pradesh. All this has led to numerous awards and recognitions, among them the IT Indian of the Millennium (*India Today*), Business Person of the Year (*Economic Times*), and member of the World Economic Forum's Dream Cabinet and South Asian of the Year (*Time Asia*). *Business Week* chose him as one of 50 leaders at the forefront of change in the year 2000 for being an unflinching proponent of technology and for his drive to transform the state.

Morihiro Hiramatsu: Oita Prefecture, Japan¹⁵

Morihiro Hiramatsu, unchallenged four-term Governor of Oita Prefecture from 1979 to 1995, "is regarded as the father of this booming, progressive prefecture", having transformed it from a backwater of Japan to "one of the country's most desirable places to live" (Ordoñez, 1995, para.1).

Hiramatsu was born in Oita in 1924. His father, a school teacher and hat-maker, founded a night school for working people. Hiramatsu's two brothers inherited this passion for education, one founding a network of day schools and the other becoming a professor at Nagoya University.

During World War II, Hiramatsu served as a navy accountant in the Kurile Islands. In late 1945, following the atomic bomb attacks on Hiroshima and Nagasaki, Hiramatsu returned to defend Japan's main islands. Japan's surrender made this unnecessary. However, Russia quickly regained control of the Kurile Islands. If Hiramatsu had stayed there a day longer, he says, he "would have had a completely different future, serving prison time in Siberia under the Russians" (Ordoñez, 1995).

In 1946, Hiramatsu started studying law at Tokyo University. His interest in history led him to realize that revolutionary change movements in Japan did not begin in the country's central cities but in peripheral prefectures like Kagoshima and Yamaguchi. This led to his belief that "Oita, a rural prefecture, and not Tokyo, can spark the energy needed to create a modern-day peaceful revolution" (Ordoñez, 1995).

Upon graduation, Hiramatsu was married and began what was to become a 30-year career at the Ministry of International Trade and Industry (MITI). He recalls his "direct negotiation" with his prospective father-in-law, then

the mayor of Oita City, for his bride. (It was the custom then to use a matchmaker as an intermediary.) This direct approach was to characterize his later political instincts, as he brought local officials together for economic development purposes, bypassing national governments.

At MITI, Hiramatsu rotated through many posts and departments. In the 1950s, in charge of industrial relocation, he traveled abroad to study how this was being done elsewhere. Hiramatsu was responsible for the enactment of Japan's Industrial Location Act. In 1964, he was appointed director of MITI's Industrial Environmental Protection Division, giving him an early exposure to the problems of preventing and remediating industrial pollution.

In 1969, as director of the Electronics Policy Division at MITI, he promoted alliances for supercomputer development and research and development in electronics, with the goal of national self-sufficiency. Hiramatsu also promoted the software industry, the internationalization of Japan's computer industry, and innovative financing mechanisms to promote the computerization of Japanese companies.

Hiramatsu served as deputy director-general of the National Land Agency, encouraging migrants to overcrowded Tokyo to return to their hometowns. He recruited Nippon Steel, Sony, and Toshiba to establish offices and factories in Oita Prefecture. He then returned to Oita himself, in the appointed capacity of prefectural Vice Governor. In this capacity, he encouraged rural residents not to rely on central government for solutions to their problems but rather to be self-reliant.

According to Ordoñez (1995), Hiramatsu attributes his success in Oita to these three things:

(1) his father's motto, "Perseverance Is Power"; (2) his understanding of the power of the computer from his work at MITI; and, lastly, (3) the credo of his father-in-law Mayor Ueda, "Do what is right, and convert Negative to Positive through action" (para.31).

The population of the prefecture is 1.25 million people. Its capital, Oita City, is 80 minutes by air from Tokyo. In the 1500s, this region's strategic location in northeast Kyushu made it an important international trading post. Commerce with China and Europe (principally Portugal) brought exposure to foreign culture. However, Oita Prefecture remained relatively poor until the late 20th century, relying mostly on traditional primary resource industries. Ordoñez (1995) continued as follows:

Hiramatsu changed all that. Rather than going through the bureaucracy, the governor started by taking the untraditional route of talking directly to the people. He initiated the Isson Ippin ("One Village, One Product") campaign. He asked communities to identify and work on a local product in which they could excel, and which would make them economically self-sufficient and proud. The "One Village, One Product" Movement was further broadened in

1993 into what Hiramatsu calls the "One Village, One Style" Movement.

The cultivation of regional products and cultures opened up new avenues of cooperation between Oita and the rest of the world. Hiramatsu chaired the first Kyushu-Asian Summit for Local Authorities, also called the Asia Kyushu Regional Exchange Summit, in 1994.

Hiramatsu [has] offered local governments around the world a new model for planning local economies and revitalizing lag-behind regions. The "One Village, One Product" Movement has been studied and copied in such faraway places as Louisiana and Los Angeles in the United States; Languedoc-Rousillon, France; Kedah, Malaysia; in the Calabarzon (Cavite, Laguna, Batangas, Rizal, and Quezon) provinces of the Philippines; and in Shanghai and Wuhan, China. Variations on Hiramatsu's now famous theme include "one factory, one product"; "one village, one treasure"; and "one person, one idea" (pp. 37-40).

Hiramatsu advocates international involvement on the part of local governments and direct interaction among such governments. His book, *Think Globally and Act Locally* explains his views on internationalization, decentralization, and regional pride. To advance these views, he has set up international exchange programs (including a sister-city program with Austin) with cities in many countries and has encouraged foreign language instruction. In addition, he leads the Toyonokuni-zukuri Juku, training schools for revitalizing rural areas and for challenging young people to think globally and act locally. Hiramatsu's educational vision has further resulted in the four-year Ritsumeikan Asia Pacific University, which opened in Beppu City in 2000 with enrollees coming from all parts of Asia.

Hiramatsu recognized it was not enough to turn local products into exports. To attract new industries to Oita, he worked to increase the prefecture's allure for high-tech manufacturing companies. These projects included the Kenhoku-Kunisaki Technopolis to provide easy access to air transport, Soft Park for software companies, Greenopolis, a Riverpolis, and a Marinopolis. In the latter, "fish, tiger prawns, and sea bream line up to listen to music as they eat. This allows for easier cultivation and harvesting. This unique sonar feeding system was the result of a cooperative research effort between shipbuilding and electronics companies" (Ordoñez, 1995, para. 51).

The result is "Silicon City." It has been supplemented by Hiramatsu's urban-regional planning vision, which includes new centers and industrial parks, new urban cultural facilities, transportation (air, rail, port, and highway) and other infrastructure enhancements, and tourism promotion. Oita is now ranked highly for its positive child-raising environment, recreation opportunities, and economic, cultural, and political vitality.

Governor Hiramatsu was awarded the 1995 Ramon Magsaysay Award for Government Service by the Philippines' Magsaysay Foundation, for his selfless service to the peoples of Asia.

The Godmother and Godfathers: Newer Regions

Jim Teece: Ashland, Oregon, USA

Ashland, Oregon, is the neglected notch in the high-tech belt stretching from San Jose, California, through Portland and Seattle and up to Vancouver, British Columbia. It is famous only for its Shakespeare Festival and its retirement communities, but Jim Teece does not want it to remain that way.

Teece, now 43 years of age, came to Oregon from Arizona in 1992, looking for a place with a good quality of life, where he could make a positive difference. There is no question that he has done so; in Ashland, he has built a highly-regarded and successful software company, operated a new business incubator, been elected President of the Chamber of Commerce and Ashland's Favorite Businessman, wired the entire city with fiber optic, and drawn considerable press attention. *Oregon Business Magazine* named Teece one of Oregon's top 20 business leaders of 2001, and he served as southern Oregon's representative on the Board of Directors of the Software Association of Oregon.

A digital artist in his spare time, Teece brings high tech to the Shakespeare fest and to Ashland's Center for Visual Arts, in the form of digitized sound and light shows. When an *Oregon Business Magazine* journalist asked Teece about his education, he replied, "It is continuous" (Leaders, 2001, 3).

The same magazine reported that:

Jim Teece likes to describe himself as 'chief visionary officer and technology scout.'" *Oregon Business* went on to note Teece's instrumental role in attracting high-tech companies to Ashland's "Silicon Orchard," his volunteer work helping develop the Ashland Fiber Network, and his management philosophy: "Stand with [employees], sleeves rolled up, and be honestly willing to help—rewriting code, making coffee or just getting out of the way (Leaders, 2001, 5).

Teece regrets the inability of Rogue Valley companies to secure financing, seeing this (now that the fiber optic is taken care of) as a principal barrier to growth for these and future companies in the area. He considers that he was fortunate to sign a contract with Apple at a time when he was working with two others out of a spare bedroom in Glendale, Arizona. He was also lucky in moving to

Ashland in 1992: "Little did we know that Ashland would become a high-tech haven with a one-gigabit fiber network connecting us to the Internet on a T3" (<http://www.projecta.com/News.asp?NewsID=73>, paragraph 10).

Teece told *Oregon Business Magazine* about his dream "to create a world-class resort for a high-tech workforce, a 24/7 operation that facilitates education and fun," which combines his passions for technology, art, and education, and leverages Ashland's attractions (Leaders, 2001, 9).

Teece serves¹⁶ on several technology-related committees of the Ashland Chamber of Commerce and on the Southern Oregon University Regional Advisory Board and the Jefferson Public Radio Listeners Guild Board. In addition, the Ashland Economic Development committee, the Ashland Fiber Network (AFN) Technology Advisory Group and the Ashland Public Schools Technology Task Force have benefited from Teece's participation. Teece is president of the Rogue Valley Chapter of the Software Association of Oregon and the Southern Oregon Telecommunications and Technology Council, and serves on other university and hospital boards. (Wurtz, 2001, 5)

Hans Lim A Po: Suriname¹⁷

Suriname, the only Dutch-speaking country in continental South America, is home to 400,000 people. (An equal number of people of Surinamese background now lives in the Netherlands). The population shows a mix of backgrounds: Native American, Dutch, Indian, Indonesian, Chinese, and African. Many have been educated overseas. Mostly jungle, the country has not developed tourism to the extent that its neighboring countries have done. The main industry is bauxite extraction. Modernization is needed, and the potential of the nation's extreme biodiversity is recognized.

Hans Rudolf Lim A Po was born in Paramaribo, Suriname, in 1940. Following his primary and secondary education in Suriname, he studied law and finance at the University of Leyden in the Netherlands.

From 1963 to 1980, Mr. Lim A Po conducted a private law practice in Suriname. During that period he was a member or chairman of the National Labour Mediation Board the first (1975) and second (1980) Constitutional Committee, the National Boundary Dispute Settlement Committee (1970-1980), and a number of corporate boards. He also taught at the University of Suriname and the Centre Etude Industrielle of Geneva and published various articles on legal topics.

In 1980, Mr. Lim A Po joined Royal Dutch Shell's mining arm, Billiton International Metals, as Managing Director of Billiton Maatschappij Suriname. He was transferred to Billiton's Central Office in 1986 and worked in The Hague from 1986-1996. His last position was in Lon-

don where he was Group Legal Counsel for Billiton plc with worldwide legal responsibilities.

After retiring from Shell in 2000, Mr. Lim A Po moved back to his home country to establish the FHR Lim A Po Institute for Social Studies, which serves the community as an academic and professional training-ground and platform for debate on societal issues. Research activities carried out by the Institute under Mr Lim A Po's guidance have focused on ethics of poverty reduction, business ethics, and social dialogue. The Institute conducts postgraduate courses in international relations and business management in association with The Netherlands Institute of International Relations, Clingendael, the Institute of Social Studies in The Hague, and the Maastricht School of Management in the Netherlands.

Mr. Lim A Po named his institute after his father, also a lawyer. It is his dream to turn the FHR Institute into Suriname's first private university with a research capability.

Mr. Lim A Po has also resumed his membership and chairmanship of Suriname government commissions, his lecturing at the Anton de Kom University of Suriname, his board memberships, and his consulting, writing, and publishing.

Claudine Cassar: Malta¹⁸

Malta is an island nation of 400,000 inhabitants, located in the Mediterranean between Sicily and Tunisia. A spectacular tourist destination rich in history, Malta has no natural resources to speak of. Malta's centuries of alternately prospering and being conquered as a result of its strategic location are over, and it is about to fully join the European Union. It is struggling to overcome a history of statism, in order to compete in a globalizing, deregulated economy.

Claudine Cassar is Managing Director of Alert Communications Ltd, the largest and fastest-growing web application company in Malta. She is also one of the founders of Securicash Ltd, an online payment gateway for debit and credit card transactions. The *Malta Financial & Business Times* calls Alert and its subsidiary Securicash "one of the most successful operations in the island's history of knowledge-based entities. Its larger than life portfolio includes [the Maltese government domain name] gov.mt in its ranks and other, large commercial entities" (Vella, 2002).

Ms. Cassar, now 30, built the companies from a start-up capital of 250 Maltese lira (about US\$700). "At the age of 22, it was hard getting financial assistance from banks. Being a woman also did not help much, especially within the IT world" (Vella, 2002, 9). She is planning expansions into North Africa, Italy, and the United Kingdom. According to Vella, she emphasizes the overseas activity will be marketing only, with the firms' payroll remaining predominantly in Malta.

Ms. Cassar posted this comment on an online discussion board:¹⁹ "I started Alert Communications when I was 22... I was not well off. Forget spending money on the weekends. I used to buy a Coke!" She concludes, "If someone really wants to start a business, nothing will stop them."

But, she believes, there is a lot that can help them. "Thanks to organisations such as IPSE [the Institute for the Promotion of Small Enterprises] and the Kordin Business Incubation Centre, many young entrepreneurs can finally find their way into managing their own company. Unfortunately, there seems to be little awareness of the services these agencies are offering" (Vella, 2002). Indeed, it was a chance encounter with an organization called Young Enterprise that first exposed this young science and engineering student, lighting her entrepreneurial fire.

Ms. Cassar studied business and computing in Malta and international marketing in Glasgow. She is now a doctoral candidate in management at Maastricht School of Management in the Netherlands.

She has turned her commitment to education toward helping young entrepreneurs set up their own Internet-related operations, via the Youth for Internet Awards organized by Alert Communications (Vella, 2002). The award competition, emphasizing uses of the Internet to benefit business and society, has turned into an incubator of sorts, with at least one winner going commercial with the help of the Youth for Internet prizes of cash, services, and equipment.

Alert does considerable pro bono work, creating websites for charities and NGOs. Ms. Cassar and her husband, a doctor, also spent three months in Peru, where she set up a computer lab. The lab conducted job training for the populace of Arequipa, where unemployment, alcoholism, and violence against women are unfortunately common (Vella, 2002). The courses continue today.

Ms. Cassar is a member of Malta's Computer Society and a director of the Malta Institute of Management (Vella, 2002). She is a member of the Executive Committee of the National Council of Women and serves on the National Information Society Advisory Council (NISCO) and the Malta Council for Science and Technology, a government advisory body.²⁰

Her international activities include the European expansion of Alert, plus a newly opened portal for Egypt, www.egyptvoyager.com, which attracts more than 3000 visitors per day. Ms. Cassar notes, "I had the chance of working for KPMG in London, but the big city did not turn out to be my kind of place. Following my Master's in Glasgow, I decided to come back," forgoing the opportunity to work in a foreign country in favor of the kind of life Malta can offer (Vella, 2002).

Alert tends to sweep the Malta Web Awards each year (Vella, 2002). Ms. Cassar has been named Malta's Best Entrepreneur in Information Technology.²¹

Dozens of articles by Claudine Cassar appear on the Web, with titles like "Setting up an Online Business,"

“The Essence of Entrepreneurship,” and “The Gender Digital Divide.”

According to the Computer Society of Malta,²² Alert Communications has made a commitment to contribute to Maltese Society. Ms. Cassar works with the Computer Society to promote and develop Malta as an ICT hub in the European/Mediterranean region.²³ She says, “My experience showed me how important it is to foster business interest amongst young people with new ideas. It is very important for young people to be able to start up their own business” (Vella, 2002).

Alfred Huang: Adelaide²⁴

Former Lord Mayor of Adelaide (2000-2003), Alfred Huang is the first Chinese-born person to be elected mayor of an Australian state capital. He has been an energetic promoter of South Australian education. Huang holds a master’s degree in engineering, an MBA, and an honorary doctorate. He is an adjunct professor at the University of South Australia’s International Graduate School of Management.

Born in Sichuan, China, Huang lived as a child in Shanghai and in Indonesia. He traveled to Australia to study civil engineering at the Royal Melbourne Institute of Technology University. He remained in Australia working as an engineer and project manager. He served as state manager of a government construction agency.

Huang was elected to the Adelaide City Council in 1992. He soon became Deputy Mayor and, in 2000, was elected Lord Mayor of Adelaide. Huang promoted Adelaide as an education center and advocated closer ties with Asia. He brought senior managers from the Beijing government for training in Adelaide and increased the total number of Chinese students in Adelaide from 6,000 to 9,000.

Following his term as Lord Mayor, Huang was appointed to the South Australian government’s China Cluster—advising the State Premier and his government on relevant issues and relations.

Huang believes it is important for the South Australian government to continue to develop close partnership that is not just trade-related. He appreciates the efforts of the Prime Minister to improve the relationship between Australia and its neighboring countries in the Asia Pacific region. As a major democracy in the region, he believes, Australia needs its own independent foreign policy and should develop a national image of being a good neighbor.

He believes Australia needs a larger number of migrants, as many parts of the country are under-populated with an ageing population. “We can support and need the critical mass of a larger population. We need more skilled young migrants and should take in more refugees,” Huang says. “I want Adelaide to be known as a university city, like Boston or Oxford” (Wong, 2005).

Huang was awarded an honorary doctorate by the University of South Australia (UniSA). UniSA’s Pro Vice Chancellor for Research and International, Professor Ian

Davey, says, “Alfred Huang has been a tireless promoter of Adelaide as a vibrant, multicultural city with a world class education system and significant intellectual capacity in research and development.”

Professor Huang was honored in the 2003 Queen’s Birthday Honours List as a Member of the Order of Australia for service to local government, business, and commerce, with special mention of his education, trade, civic, multicultural, and social welfare initiatives.

Theoretical Background

This section highlights theoretical literature from the fields of social networks, entrepreneurship, leadership, and alliance management that bears on the characterization of godfathers.

Social Influence

The literature of social influence—as influence results from patterns of who talks to whom and as it occurs outside the realm of business organizations—was quiescent from the mid-1950s (Hovland & Weiss, 1954; Katz & Lazarsfeld, 1955) until the 1962 first edition of *Diffusion of Innovations* (Rogers, 1995). Rogers’ presentation of the diffusion curve and the innovator, early adopter, early majority, late majority, and laggard segments has been widely cited. Each of these segments is progressively more socially conservative and more resistant to change. Rogers explained the roles of change agents and opinion leaders. Each of these types possesses unusual domain knowledge and maintains communication links across the segments, thus building credibility with diverse audiences. Rogers’ best example of an opinion leader was a magazine or newspaper editor.

Granovetter (1973, 1983) revitalized the subject by showing its ability to generate surprising and useful insights in additional areas of sociology. The power of influence models was extended by Coleman’s (1988) investigation of “social capital” (people’s propensity to form new trust-based associations), by new advances in the mathematical understanding of communication network topologies (Barabasi, 2003), and by the recognition that “network density” reinforces trust and social constraint (Granovetter, 2005). The latter point has given rise to “affinity” research (Reagans, 2005), which has shown how communication links originate because of the communicators’ sense of closeness (in demographic or other social dimensions) and, in turn, reinforce that sense and, in fact, make the communicators more similar on those dimensions for which convergence is possible. Late additions to the literature include Keller and Berry’s (2003) account of research at Roper Starch Worldwide Inc.’s Roper Center for Public Opinion Research and Gladwell’s (2000) popular but closely reasoned study of social contagion, which introduced the roles of mavens, connectors, and salesmen.

Entrepreneurship

We have mentioned the godfathers' fit with Cunningham and Lischeron's (1991) "great man" entrepreneur category. The godfathers also exhibit the typical psychological features of entrepreneurs,²⁵ as described by Deakins and Freel (2003) and Crijns (2005).

Leadership

According to Lin (2006), strategic leaders recognize opportunities, make decisions concerning the innovation process, see to it that strategies have been drawn, and ensure that the strategies are effectively implemented by managers. Transformational leaders, Lin (2006) continues, focus on leaders' relationships with followers. Transformational leaders help followers see the importance of their tasks and connect task outcomes to organizational goals. Transformational leaders gratify followers' higher-order needs, motivate selfless acts that benefit the organization, and spur followers to transcend their self-perceived limitations.

Clearly, godfathers of economic development play both leadership roles.

Alliances

The godfather's work involves building formal and informal alliances. Lynch (1993) used the term "godfather" to describe someone within an organization who creates an environment of permission and empowerment for alliance formation and maintenance, "typically an aging leader who provides the role model for championing, and who sets the corporate culture for risk taking so that the lower-level champions have corporate support" (p.194).

Analysis of the Biographical Data

Perhaps most interesting are the ways in which the godfathers' characteristics do not match theoretical expectations. It should hardly be surprising that such multifaceted individuals are not fully described by existing theory. This section summarizes the less-expected characteristics of the eight "established" godfathers, points out the ways their biographies fail to fully match the hypothesized characteristics of Table 3, and fills in details missed by the referenced theories.

Five of the eight have been elected officials. However, if an elected official, the godfather served for an extended time or for multiple terms.

Four have military connections or service. Terman and Kozmetsky, in particular, turned these connections into contracts benefiting their regions.

Only one (Kozmetsky) was an immigrant to his region. Six were prodigals, having returned after work, military, or study experiences abroad. Naidu and Terman were na-

tive (Terman arriving in the Valley in early childhood), but were technology-oriented sons of prominent citizens.

Insofar as data are available, all seem to have had long, stable marriages. No dynasties were evident, except in the case of Singapore's Lee. The other godfathers' offspring had little interest in the parents' multifaceted roles.

Four are or were engineers. One studied mathematics, and the others law, economics, or accounting. Surprisingly, all but two were educated in Boston, Palo Alto, Paris, or Cambridge. Several sought out outstanding mentors and role models, a notable example being Terman's study under Bush.

Also of note are the ways the godfathers choose their staffs and immediate subordinates. Some of these choices were matters of political necessity, and the godfathers are nothing if not politically savvy. Some of the godfathers gambled on unknown quantities, people whose high energy levels exceeded the real achievements on their CVs. However, subject to these exceptions, the godfathers were and are strict meritocrats. This made them pioneers in the employment of ethnic minorities. (To be sure, this was easier in multicultural Singapore, Brazil, south Texas, and Suriname than in the more homogeneous Japan, Oregon, or Malta.) Kozmetsky and Cassar have been particularly energetic in promoting women to positions of authority.

All eight established godfathers bet their careers on, and caught the wave of, electronics and information technology.

Other characteristics listed in Table 3 were borne out by the research.

Discussion

Keller and Berry (2003) maintained that one in ten members of the U.S. population is an influencer. This is roughly equal, in percentage terms, to Rogers' "early adopters," and therefore is a characterization much too general to explain the godfather phenomenon. The godfathers are certainly influencers, though, and fit most of Keller and Berry's descriptors: materially comfortable but "generally not the richest... educated but generally not the most educated..." Influencers, Keller and Berry continue, have "restless minds" and take an "activist approach to life," have "a network of contacts broader than the norm" extending across social boundaries, and are "looked to by others for advice or opinion"²⁶ (page 31).

Gladwell's "connectors" maintain dense networks that are also intense. That is, not only do their networks contain many communication links, but these links are reinforced by frequent use. Moreover, connectors are near-compulsive about building new links. Gladwell emphasizes that connectors not only know many people but know many *kinds* of people. He characterizes "mavens" as masters of detailed information in a domain (or often more than one domain), who are eager to share their knowledge with others, and his "salesmen" are particularly persuasive or

“contagious” transmitters of a trend. The godfathers discussed in this paper exhibit all the characteristics of connectors, and several of the godfathers are also mavens. They are dedicated to selling their vision, but they may not be skilled salesmen.

In other ways, godfathers do more than the opinion leaders, influencers, connectors, mavens, and salesmen of the literature. Godfathers are superconnectors. They join organizations and networks but also *bring organizations and networks to them*, by founding institutions, creating networks of organizations, and making conference centers available to many organizations. Godfathers surround themselves with mavens and salesmen and keep these mavens and salesmen close, increasing the intensity of the godfathers’ own network connections and increasing the “contagiousness and stickiness” (in Gladwell’s terminology) of the godfathers’ own ideas. Godfathers leverage their own networks exponentially by connecting with other connectors.

Godfathers’ networks are inclusive. George Kozmetsky often said, “My network is your network.” However, a superconnector’s network size quickly becomes too large for cognitive and practical maintenance. Because of his reputation, network members compete for access to the godfather, introducing an effective but nonmonetary price mechanism that remedies the network size problem. Persistent callers with good ideas pass the godfather’s gatekeepers, gaining appointments or return emails.

Godfathers have dense network connections within the community’s conservative majority. They also connect with the community’s innovators and with innovators and connectors in distant communities. (In this way, they are influencers, connectors, and opinion leaders in the sense of the above-cited literature. Rogers defined an opinion leader as a member of the majority with more external network connections than most of the majority; the opinion leader is more worldly and a better, more frequent communicator than most of his fellows in the community. Nonetheless, he is not so far out on the social fringe that he loses his credibility.) A godfather is far more externally connected than Rogers’ exemplary opinion leader, the trade magazine editor. The godfather may well be more internally connected as well. If the godfather is not a native son, these internal connections with the majority may be difficult to build. Wealth helps; patience and persistence help even more.

Gladwell (2000) and other writers have implied that connectors, mavens, and salesmen are connectors, mavens, and salesmen because of their basic personalities; they “can’t help it.” For such people, connecting, knowing, and selling are ends in themselves. Godfathers (whether they can help it or not, which makes no difference here) harness connecting, knowing, and selling to their visions for their regions. A godfather deliberately builds his network to serve his vision, cultivating dense connections among the conservative majority²⁷ and (ei-

ther simultaneously or later) with the innovators. This is why becoming an effective godfather may take decades and why other publications (e.g., Phillips, 2006) urge persistence as the way to transform regions. It is also why a godfather, patiently effecting change from the inside, is a true radical.

This deliberate approach to networking, and the godfathers’ understanding of the relationship between social networking and economics, allows the godfather to spot sparse networks that should be denser and fill them in for regional advantage. Granovetter (2005) aptly stated, “Thus, the actor who sits astride structural holes in networks (as described in Burt, 1992) is well placed to innovate” (This nice phrase paints the godfather as a sort of arbitrageur of social capital.) (page 46).

Well placed, yes; but, the godfather’s ultimate success depends on the several other factors described in this paper, including entrepreneurial drive and leadership style. The godfathers and godmother also feel a strong sense of mission, sometimes linked to their psychological history and historic circumstance. They have entrepreneurial and CEO-type personalities: charismatic, visionary, persistent, and detail-oriented. Because of immigrant status, tech-orientation, or prodigal journeys, they see things differently from the local majority, are not totally embedded in the views of the majority, and are not afraid to rock the boat.

Conclusions

Because the godfathers operate in many areas and across many kinds of social, organizational, and geographic boundaries, it is hardly surprising that no extant theory has fully described their *modus operandi*. Indeed, we have shown that there is commonality but not uniformity in the lives and actions of the godfathers described in this paper, and that these roles and actions cross category boundaries established by the literatures of social networks, entrepreneurship, leadership, and alliance management.

We have suggested an extension of social network theory to note the unique characteristics of a tiny but highly influential minority: the godfathers who drive technological and economic change in regions. Our attempted extension of social network theory and our attempted link between network theory and entrepreneurship theory are tentative, based on a small sample. Researchers on this topic are unlikely to find large samples; godfathers are, by definition, rare. Yet godfathers play important, even transformative, roles in major economies.

How does this research help the godfathers and the godmother in the newer regions? The research points out the value to them of networking with established regions and with each other and provides clues to plugging resource gaps in the newer regions. It may also illustrate some characteristics (of the eight established godfathers) to be emulated or even provide personal role models for the newer godfathers.

Further research might focus on the differences between regions that benefit from a godfather and those that do not. More clues may be gathered from more detailed biographies than we have been able to achieve in this paper. The current author's expertise is in technology management and entrepreneurship; input from experts on managerial psychology could extend the research in useful directions.

Further research may also reveal whether the characteristics of the godfathers apply also to highly effective people in a variety of pursuits unrelated to economic development.

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Footnotes

- 1 For this reason there are far more "brokers" than godfathers.
- 2 Boston and Washington, D.C. grew techno-corridors without a leading godfather. Boston's formidable educational infrastructure and Washington's federal procurement apparatus were of sufficient size to create the respective technopolis rapidly and without a godfather's intervention.
- 3 This phrase is due to musician Willie Nelson, an Austin resident.
- 4 Our comments on godfathers as entrepreneurs, however, are consistent with the results of Lux (2005) concerning politically savvy entrepreneurs' use of social capital.
- 5 Biographical material condensed from: www.sophia-antipolis.org/index1.htm www.mediamente.rai.it/mediamentetv/learning/ed_multimediale/english/bibliote/biografi/1/lafitte.htm; www.frontplaces.com/sophia/who.html and especially: www.2100.org/indWhosWho/personnalites/pe_lafitte.html
- 6 Biographical material condensed from: www.tsmc.com/english/tsmcinfo/c030501a.htm www.conference-board.org/publications/biographies/biography.cfm?id=245, Saxenian (2001) www.gs.com/our_firm/media_center/articles/press_release_2001_article_918920.htm. See also: www.marquiswhoswho.com www.businessweek.com/it100/2005/executive/TSM.htm
- 7 Encyclopædia Britannica. Retrieved February 28, 2006, from <http://www.britannica.com/eb/article?tocId=9342055>
- 8 http://www.gs.com/our_firm/media_center/articles/press_release_2001_article_918920.htm
- 9 www.princeclausfund.nl/urbanheroes/lerner/eng/bio.htm
- 10 www.pubtheo.com/
- 11 Compiled from Answers.com (<http://www.answers.com/topic/lee-kuan-yew>), Day (2000), and the Wikipedia (http://en.wikipedia.org/wiki/Lee_Kuan_Yew).
- 12 This profile draws selectively from <http://en.wikipedia.org/wiki/> as well as the other references noted.
- 13 This profile draws on Cooper, Gibson, Phillips and Thore

(1997) and Fred Phillips' conversations with George Kozmetsky, Ronya Kozmetsky, and Charles Holt. It also paraphrases material found at www.ic2.org.

14 This profile draws from <http://www.narafans.com>, www.deeshaa.org/2004/05/12/ and Biswas (2004).

15 This biography of Governor Hiramatsu is largely summarized from Ordoñez (1995). It also draws on the present author's conversations in the early 1990s with Gov. Hiramatsu and his staff, the Oita City Mayor's office staff, and George Kozmetsky (who greatly admired Governor Hiramatsu).

16 <http://www.projecta.com/News.asp?NewsID=73>, Paragraph 5, and <http://projecta.com/news.asp?newsid=52>

17 <http://www.fhrinstitute.com/people.htm>, and Phillips' conversations with Hans Lim A Po.

18 The author thanks Dr. Ludovico Alcorta, Ms. Cassar's doctoral advisor at Maastricht School of Management, for alerting him to some elements of Ms. Cassar's biography.

19 <http://www.eforesee.info/maillinglists/malta-ict/msg00062.shtml>

20 http://www.education.gov.mt/ministry/committees/science_tech.htm

21 <http://www.unece.org/operact/gallery/mt/mt-gal.htm>

22 <http://www.csm.org.mt/loader.asp?CorporateID=0;0>

23 <http://www.csm.org.mt/pdf/Jan03/Meeting%20Report.la.pdf>

24 Compiled from the University of South Australia's news service (<http://www.unisa.edu.au/news/2003/151203.asp>) and Wong (2005).

25 Proactive, and assertive; able to see and act on opportunities; takes calculated risks; has high internal locus of control; creative; needing autonomy; tolerant of ambiguity; visionary; deviant or nonconformist; persevering; able to deal with failure; high in energy; hard working; emotionally stable; conceptually adept at problem solving; charismatic; goal-oriented rather than career-oriented; integrative.

26 Keller and Berry (2003) also maintain influencers are successful in their careers but "not at the top of industry" and most are not elected officials. As it would be impossible for ten percent of a population of interest to be captains of industry or occupy elected positions, we dismiss these two characteristics as tautological and not pertinent to this discussion of godfathers.

27 This may look, to a casual observer, like social climbing. Social climbing is the pursuit of personal wealth or status. Godfathers, in contrast, enjoy making connections for their own sake, and do so with the regional vision always in sight.

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