

The Global Wave of Entrepreneurialism

**Harnessing the Synergies of Personal Initiative,
Digital Technologies, and Global Commerce**

David Bollier, Rapporteur



The Global Wave of Entrepreneurialism: Harnessing the Synergies of Personal Initiative, Digital Technologies, and Global Commerce

The Report
of the Seventh Annual Aspen Institute
Roundtable on Information Technology

David Bollier
Rapporteur



THE ASPEN INSTITUTE

Communications and Society Program

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Foreword

For the past six years The Aspen Institute's Roundtable on Information Technology has brought together leaders, academics, and experts in the information and communications fields to address an aspect of the communications revolution and its impact on societies, organizations, and individuals. During that time, the Roundtable has examined such subjects as electronic commerce, sovereignty, communities and personal identity. In each case, participants explore how the new information technologies and networks are impacting a particular field. The observations of each are suggestive of a new Digital Age.

At the same time, however, another over-riding trend has emerged that has impacted similar phenomena. That trend is a new emphasis on entrepreneurialism, to differing degrees worldwide; indeed, some call this an Age of Entrepreneurialism.

The Seventh Annual Aspen Institute Roundtable on Information Technology, convened by The Aspen Institute Communications and Society Program, sought to explore the inter-relationship between these two trends, that of digitalization and networking, on the one hand, and that of entrepreneurialism, on the other. To what extent could we have one "age" without the other? That is, could the information technological world have developed into such a formative element of our society without a strong dosage of entrepreneurialism? Or, for that matter, would entrepreneurialism have gained such a foothold in the minds and spirits of individuals throughout the globe without the new information and communications technologies? And what are we to make of the combination—the co-evolution—of the two?

To address these and related questions, the Roundtable, 28 individuals from the United States, China, Spain, England, Bangladesh, and Venezuela met at The Aspen Institute in August, 1998. Participants are listed in the Appendix to this volume. What follows is a report of this meeting by journalist/author David Bollier. The report is designed to give the reader an understanding of the concepts and insights discussed at the Roundtable in accessible and meaningful fashion. That is, it is not "who said

what” nor is it a report approved by each participant. Rather, it is the observation of the rapporteur, quoting some of the participants at times for spice and emphasis. The following paragraphs provide a flavor of the content of Bollier’s report.

Roots of Entrepreneurialism

Some of the most important characteristics of entrepreneurialism have their foundations in the personal traits of the entrepreneur. Optimism and faith in the future, coupled with a self-confidence to bounce back after failure, are often seminal characteristics of the entrepreneurial personality. Some attribute greed as the motivating factor for entrepreneurship, while others suggest quite the opposite, that it is service to society that is the true motivator, or a drive to succeed regardless of monetary reward.

Individual personality traits are important, but are only part of the picture. Some cultures tolerate the failure necessary to entrepreneurialism more than others do. Liberal American bankruptcy laws allow a new start and permit entrepreneurs to recover from failed experiments without social stigma. European laws and culture do not seem to have had the same effect, perhaps accounting for the smaller extent of entrepreneurialism there compared to America.

Government can both foster the growth of entrepreneurialism as well as put boundaries on its excesses. Antitrust, consumer protection, securities laws, research and development, and other governmental measures have helped create trust for markets, stability for financing, and new research in risky fields. While many entrepreneurs want the government out of their way, the role of government in establishing a milieu for entrepreneurialism, both positive and negative, cannot be ignored.

New Elements—Venture Capitalism and Information Technology

Also helping to spur the growth of entrepreneurialism around the world has been the growth of venture capitalism—funding sources willing to take the economic risk along with the entrepreneur. The Report includes a discussion of how the increase in venture capital-

ism has fueled innovation and underscores the fact that new ideas produce few benefits without adequate capital. Additional discussion ponders whether this symbiotic growth of venture capitalism and entrepreneurialism is sustainable over the long haul.

The exponential growth of information technology and the Internet are new elements that also add to entrepreneurialism worldwide. One of the most important factors in allowing new entrants into the global market is the decrease in infrastructure costs, making use and acquisition of new technology less expensive for new businesses than for traditional players. And while the technology forms the basis for much of today's entrepreneurial activities, the effects of using technology provide more insight into why entrepreneurialism has exploded. The report examines how knowledge is no longer the exclusive domain of existing companies and how the outward migration of knowledge has become a new avenue for business and wealth creation.

The Effects of Culture

Whether it is national or organizational, entrepreneurs cannot escape the effects of culture on their actions. The Roundtable participants discussed national and regional cultural differences that support or hinder entrepreneurialism. The report examines the cultures of a number of countries with respect to the encouragement of entrepreneurialism. Interestingly, even poor countries with little modern infrastructure can become seedbeds for entrepreneurialism in comparison to those countries whose politics and national cultures do not support failure and change.

Organizational culture can take advantage of entrepreneurialism or be hurt by it. Organizations that insist on doing things as they always have been done, or that fail to understand that they no longer have exclusive dominion over information, are bound to be left behind. Existing firms incapable of reacting quickly to market changes may find that current employees with the entrepreneurial spirit leave to become their competitors. Participants noted, however, that having a good idea is not enough — implementation is still important, and implementation requires organization. The key to success will likely be a blending of the traditional strengths of the organization with risk-taking and support of innovation.

The report concludes by stating that the growth of entrepreneurialism and digital technologies will have its problems. Expansion and the bare acquisition of profit may have to be tempered by government intervention. Countries, while wanting the benefits of entrepreneurialism, may learn that prosperity comes at the price of national culture. Governments may find that old ways of control are ineffective in a world of global information technology. Obviously, a generally high level of prosperity will not affect all people in a given society equally. Whether global entrepreneurialism presages worldwide adoption of free trade and political and social freedoms is still open to debate.

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June, 1999

The Global Wave of Entrepreneurialism: Harnessing the Synergies of Personal Initiative, Digital Technologies, and Global Commerce

Future historians may call this period the entrepreneurial age. Rarely has such an explosion of new business ventures, technological innovation, and cultural experimentation swept across diverse cultures of the globe simultaneously. Government leaders in Beijing and Singapore, Warsaw and Caracas, Moscow and London are looking to business mavericks to energize their economies. Multinational companies are eager to instill entrepreneurial values within their workforces to boost their competitiveness. On the periphery of such power centers, meanwhile, entrepreneurs large and small are remaking entire sectors of the economy and creating high-tech boomtowns in San Jose, California; Bangalore, India; Cambridge, England; Austin, Texas; and many other places.

What most distinguishes this rich explosion of entrepreneurialism may be its global scope. Like a crustacean shedding an exoskeleton, societies around the world are shaking free of Communist restraints, autocratic rule, government restrictions, and inherited traditions—and embracing distinctly new patterns of economic, political, and social life. Fueled in significant part by global commerce and Internet-driven communications, individual freedom, social openness, and entrepreneurial zeal are ascendant in many nations. The phenomenon has many faces: the lace-making firm in the Czech Republic that uses the Internet to find buyers from around the world; the Norwegian student who recruits hundreds of hackers worldwide to develop Linux (a widely respected, free operating system); the American-educated Bangladeshi who returns to his homeland to bring state-of-the-art cellular telephony to remote rural villages.

This report seeks to explore provocative questions raised by the remarkable outpouring of entrepreneurialism in the 1990s. How does this wave of entrepreneurialism differ from previous

paroxysms of business innovation? What is nurturing this economic and cultural outpouring? How is it related to the Internet? Why is it often resisted?

One conclusion of this report is that the global upsurge in entrepreneurialism has a lot to do with the proliferation of digital technologies and the Internet. Combining these tools with individual creativity can release powerful synergies. The outcomes are social, cultural, and personal—as well as economic. Nations that encourage entrepreneurialism improve their material well-being and tend to generate new opportunities for individual betterment. Entrepreneurialism also tends to challenge barriers of ideology, social caste, and tradition and engender new demands for political freedoms.

Yet the grand drama that is now unfolding—a complex interplay among multinational firms, entrepreneurs, technology, national economies, politics, and culture—also raises perplexing questions. For example, why are some geographic regions teeming with start-up businesses, especially in high technology, while others remain moribund? Why are some nations renowned for their entrepreneurial prowess, while others seem culturally indifferent or hostile to business innovation? Why are some companies so consistently adept at anticipating market demands and responding flexibly, while others are more rigid, sluggish, and unimaginative? Finding provisional answers to these questions could help nations and businesses encourage entrepreneurial success and the economic, social, and personal benefits that typically result.

The themes and insights in this report are based on discussions among 28 leading technologists, business executives, venture capitalists, entrepreneurs, academics, and writers at the Seventh Annual Aspen Institute Roundtable on Information Technology. (The Appendix contains a list of conference participants.) The conference, sponsored by the Aspen Institute Communications and Society Program, took place August 20–23, 1998, in Aspen, Colorado. The author is grateful to conference participants for their insights, while exonerating them from any responsibility for this text.

The Traits of An Entrepreneur

At the heart of entrepreneurialism are the personal creativity and enterprising initiatives that a person brings to the market-

place. Is there an archetype or taxonomy of qualities that defines an entrepreneur? What exactly is an entrepreneur, and what personal trait does he or she exhibit?

An entrepreneur, conference participants agreed, is someone who tries to actualize a personal vision for redefining certain aspects of life, especially by marketing new products and services. Entrepreneurs are willing to take personal risks to fulfill their goals. They possess supreme self-confidence and optimism about the future. They show persistence and courage in the face of adversity. They tend to appreciate the deeper, long-term dynamics of a given domain. All of these qualities are oriented toward the entrepreneur's core mission: the development of innovative products and services that will support a flourishing business and—the entrepreneur hopes—generate a great deal of money.

The owner of a small business is not necessarily an entrepreneur. Opening a new coffee shop is not entrepreneurial except in the broadest sense. The inventor of a *different kind* of coffee shop may qualify as an entrepreneur, however. Case in point: Howard Schultz, who created the Starbucks concept of premium coffees, innovative drinks, attentive service, and a stylish, hip mystique. As this example suggests, the real entrepreneur is the businessperson who reconceptualizes a product or service or invents an entirely new market. Henry Ford, King C. Gillette, and Alexander Graham Bell became legendary entrepreneurs by conceiving, manufacturing, and selling utterly novel products that changed important aspects of American life: inexpensive, mass-produced automobiles; disposable razor blades; and the telephone, respectively.

Americans have an abiding fascination with the personal characteristics and talents that enable entrepreneurs to come up with original ideas and then turn them into wealth. George Gilder, a writer on entrepreneurship and president of Gilder Technology Group, argued that the successful entrepreneur has three essential virtues: service to others, humility, and faith and commitment in his or her vision. Entrepreneurs give to others by envisioning a socially useful innovation, Gilder suggested; whatever personal wealth or benefits accrue to them are puny compared to the larger societal benefits.

“A selfish entrepreneur will not succeed,” Gilder contended, because entrepreneurs “have to have an imaginative understand-

ing of what other people want. We've seen all too many entrepreneurs who really are too obsessed with their own interests and special visions, who never accomplish anything—not only because they may not be able to cooperate with others but also because they can't grasp the nature of the marketplace they have to serve. Ultimately, it is service to others that makes the moral center of enterprise.”

Mike Maples, ambassador to Microsoft, countered that simple greed is a more influential motivation for entrepreneurs than selflessness: “An entrepreneur sets out to do something, and the means of winning is solving a real problem for people. But that is not the motive,” said Maples. “Most entrepreneurs don't start off with social responsibility high on their list.” Gilder's reply: “Greed is the desire for wealth that you haven't earned; entrepreneurship is based on wealth earned through serving others.” An entrepreneur is “a revolutionary hero in some sense,” Gilder continued, “because leadership implies orientation toward others.... Entrepreneurship is the opposite of greed.”

Whether the entrepreneurial impulse constitutes greed or public service, the more consequential point may be that some societies honor it, whereas others do not. Edward Tian, president of AsianInfo (an Internet/intranet company based in Beijing), explained that in China, at least, social responsibility is a motivation for many entrepreneurs. Although the Chinese Communists had no place for entrepreneurs, “They did have a role for sacrifice for one's country and aspirations to become a hero and revolutionary.” As China opens up, said Tian, “These qualities are becoming important cultural elements for entrepreneurialism. Entrepreneurialism in China has a great sense of responsibility—to do something for your country, do something larger than oneself.”

Although the external cultural forces that shape entrepreneurialism can be enormously influential, the inner psychological needs of an individual remain primary forces, argued Morton Meyerson, chairman and CEO of 2M Companies, Inc., and former chairman and CEO of Perot Systems Software. Whether the motive is greed or altruism, Meyerson believes, “Entrepreneurs bring their personal needs to bear. Those with powerful personas and drives make a difference. The need for power is also enormous. The

need for recognition is enormous. I believe it supersedes the drive for wealth—or may be another way of expressing it.”

It was unclear to Meyerson whether entrepreneurs are really out to earn money or to find meaning for themselves. Such questions preoccupy the biographers of John D. Rockefeller and William Randolph Hearst as they probe how personal character intersects with the contingencies of history, technology, and business opportunity. Economist Joseph Schumpeter had a useful insight on this point: “Successful innovation is a task entirely of its own, a feat not of intellect but of will. It is a special case of the phenomenon of leadership.” In short, entrepreneurship will always be surrounded by a significant measure of mystery.

Environmental Factors That Nourish the Entrepreneur

The folklore of capitalism typically portrays entrepreneurial success as an individual achievement. This interpretation is reflected in the hardy American cultural archetype, the self-made man—to which *Time* magazine devoted an entire issue on December 8, 1998. “Builders and Titans of the 20th Century” featured the stories of Henry Ford, Walt Disney, Akio Morita, Sam Walton, and Bill Gates, among dozens of others.

All of this attention to successful individuals tends to obscure environmental factors—societal support mechanisms that contribute to entrepreneurial endeavors. These factors include the basic legal structures of civil society that allow a marketplace to function; financial mechanisms that actualize entrepreneurial vision; family and ethnic networks that provide investment capital, labor, and moral support; educational institutions that generate research, skilled workers, and managers; and government programs that provide subsidies or infrastructure support. A more elusive but influential factor is the cultural milieu that sustains—or deters—the would-be entrepreneur.

The celebrity of individual entrepreneurs generally overshadows the environmental factors that make their success possible, said John Vincent C. Nye, associate professor of economics and history at Washington University in St. Louis. Nye calls successful entrepreneurs “lucky fools.” He contends that they emerge only

because “society both creates individuals and fosters the structures in which the ‘lucky fools’ will continue to grow.”

The story of Henry Ford is an illustrative example, Nye said: “The textbook story is that Ford invented mass production. But that’s wrong. People knew about mass production at the time of Henry Ford. The big debate was whether people would buy cars in large quantities if you made them cheap enough. Expert opinion at the time was that companies had to go ‘up market’ with luxury cars because not enough Americans would buy cheap cars to justify mass production.” Not only was conventional wisdom arrayed against Ford, according to Nye; Ford himself was an implausible champion of a contrarian idea, having bankrupted two companies and shown himself to be inept at personal relationships. In short, Nye said, by the reckoning of his contemporaries Ford “seemed like a fool.”

By focusing on Ford as an individual, said Nye, we can easily lose sight of the factors that contributed to his success—and the wider impact his initiatives had. The real beneficiaries of Ford’s success, said Nye, included not just Ford and its customers but General Motors, which adopted the same mass-production ideas and took the lion’s share of the car market. As an economic historian, Nye is prompted to ask: “What is it about the society that makes Henry Fords possible? And what is it about the structure of institutions that draws on the strength of a Henry Ford and builds upon it? That may be one of the frameworks we can use to understand entrepreneurs. Think about how institutional structures foster or injure that creative spirit.”

How Governments Foster Entrepreneurialism

Bill Janeway, managing director of E.M. Warburg, Pincus and Company, offered a succinct review of government functions that support entrepreneurial activity. First, Janeway said, the basic institutions of civil society must be in place. This infrastructure includes a legal regime for contracts, along with enforcement mechanisms; intellectual property law that enables entrepreneurs to reap rewards from their creativity; bankruptcy laws to equitably resolve business failures; and a tax regime that will not excessively deter individual initiative (better yet, a tax regime that affirmatively encourages entrepreneurialism).

Second, the state often plays an important role in helping to finance risky entrepreneurial ventures, Janeway said. The Tudor regime in Great Britain, for example, granted monopoly franchises to the East India Company and the Virginia Company to develop the economic potential of those colonies. The U.S. government subsidized the construction of the transcontinental railroad through land grants to the Union Pacific Railroad, according to Janeway, to help make “a risk-taking activity financially feasible in capital markets that were absolutely not oriented toward building railroads into the wilderness where there was no commerce.” The U.S. government’s investments in creating the Internet, similarly, underwrote large infrastructure risks that capital markets were not prepared to shoulder; once the new infrastructure was established, however, it engendered a great deal of entrepreneurial activity.

Finally, said Janeway, the state plays an important role in setting boundary conditions that set socially acceptable limits to entrepreneurial behavior, such as laws against fraud and anticompetitive business practices. “The boundary conditions on entrepreneurial activity essentially arose in the late 19th Century when customers and small competitors of the emerging giants of the second Industrial Revolution invoked the political process to offset what they were losing in the marketplace,” said Janeway. “Whether it was the Interstate Commerce Commission or Federal Trade Commission or Sherman Antitrust Act, these measures were popular and populist responses to entrepreneurial success.”

One important question, according to Janeway: When does the political response to successful entrepreneurial activity in the marketplace thwart innovation and competition, and when does it invigorate it? Schumpeter worried that the cartels of “trustified capitalism” would submerge and dampen the entrepreneurial impulse. Other commentators, however, took a more sanguine view about the ability of competitors and new technologies to overcome concentrated market power.

The dance between markets and politics, though inevitable and necessary, often produces unintended results, Janeway pointed out. “The excesses of cutthroat capitalism, which made new companies very hard to finance, were dealt with by way of cartels,” he said. “The German chemical industry entered into market-

sharing agreements that allowed them to assume the risks of investing in world-class plants, which others, in a more open market, didn't dare invest in—or if they did, wound up losing their shirts. In the United States, a populist movement banned cartels. The consequence was the unified trust monopoly corporation, rather than multiple companies. So there was a law of unintended consequence here in the dynamics between the marketplace and political behavior.”

Notwithstanding the government's support for new infrastructure investments, entrepreneurs generally believe that the most constructive action that government can take is to “get out of the way.” This philosophy was the central tenet of the Reagan and Thatcher governments; despite adverse social consequences that some observers lambasted, this philosophy often is credited with fostering entrepreneurial activity—or at least fortifying major corporations.

Royce Holland, chairman and CEO of Allegiance Telecom, Inc. of Dallas, Texas, pointed out that Moore's law—which predicts that either computing power will double or prices will fall by half every 18 months—has worked in an unregulated industry (computers) but not in a regulated industry (telephony) that had barriers to entry until the mid-1980s. Now that similar market barriers and regulations are falling in the European Community, we are likely to see new infusions of competition and innovation there, Holland said. Measures such as the General Agreement on Tariffs and Trade (GATT) and the North American Free Trade Agreement (NAFTA) that lower global barriers to trade also are important in opening up opportunities to entrepreneurs, he argued.

The Rise of the Venture Capitalist

Although an entrepreneur may be a catalyst for change, vision and energy count for nothing without economic backing. The point made again and again by business historian Alfred Chandler, according to Janeway, is that “invention without investment is economically meaningless.” The entrepreneur must not only have a great idea, Janeway noted, but he or she also must “attract the restless, questing capitalist to his [or her] proposed innovation as a source of gain radically beyond what is available in the regular

transactions of the market economy. From this vantage point, the entrepreneur distinguishes himself [or herself] from the inventor: The entrepreneur is, precisely, the one who succeeds in attracting capital to bring the work of the inventor to market (that the two roles may be played by one individual is beside the point).⁷¹

This point is important: To succeed, entrepreneurs must be able to mobilize investment capital. Throughout history, in fact—in milieus as diverse as the classical world, China, and Great Britain in the 16th, 17th, and 19th centuries—many technological innovations have languished for want of capital. In light of this history, Janeway said, “The emergence during the past 25 years of the professional venture capitalist as a financial partner for the technologically innovative entrepreneur appears as no less than a fundamental discontinuity in the history of capitalism.”

Business titans such as J.P. Morgan, John D. Rockefeller, and Henry Ford feared entrepreneurs and innovation as impertinent threats to their market power. Today, by contrast, there are ample supplies of investment capital for entrepreneurs, at least in high-technology sectors. When the National Venture Capital Association was formed in 1973, its founding members that year raised less than \$500 million. In 1998, members of this U.S. trade group raised and invested \$14 billion. Meanwhile, venture capital funds in other nations have gained in popularity: Venture capital investment in Germany increased by a factor of six in 1997 over the previous year; in Great Britain, the increase was threefold. Although venture capital investment in France has remained essentially stagnant, Italy saw an increase of 50 percent in 1997. Today there is even a fledgling European stock market that did not exist two years ago.

The proliferation of venture capitalists working in tandem with entrepreneurs has nourished a remarkable explosion of new business ventures and innovation. On the other hand, this could prove to be an epiphenomenon that may not last. Esther Dyson, chairman of EDventure Holdings and publisher of the newsletter *Release 1.0*, sees “too much [venture capital] money chasing too few deals, and lots of overpriced companies with management having little experience.”

Janeway broods as well that “what appears to be a fundamental change in the dynamics of capitalism and its power for transforming the market economy may prove, in the great retrospect, to be no more than another speculative bubble.... In historical sweep, it’s important to bear in mind how much new innovation is funded not by any rational process but as a kind of outgrowth of speculative bubbles that happen to fasten onto something that would ‘make everything different’—from canals to railroads to electrification to radio to NASA to the Internet.” Janeway ruefully noted “the extent to which the financing and transformation of invention into enterprise by way of investment is, despite everything, still intimately tied to the ‘animal spirits’ of Keynes’ casino.”

However rational or mindless the investments may be, it is important to draw the linkage: The growth of the entrepreneurial culture over the past generation has been symbiotically related to the rise of venture capital. Indeed, plentiful financial support for new entrepreneurial ventures is testing the limits of just how much business innovation can be metabolized by the marketplace, prudently managed, and sustained over the long term.

How Information Technologies and the Internet Are Spurring Entrepreneurialism

One of the most important accelerators of entrepreneurial culture in the 1990s has been the ongoing revolution in information technologies (IT) and the expansion of the Internet. Although the precise means by which this acceleration occurs are not fully understood, there are a number of compelling theories and much anecdotal evidence.

The plummeting cost of bandwidth clearly is a primary driver. “In 1990,” Royce Holland noted, “you could carry 8,000 simultaneous conversations over a fiber pair. Today you can carry more than 2 million conversations over that same fiber pair. In fact, you could put every telephone line in the United States over one fiber optic cable consisting of about 170 fibers. That is absolutely incredible!” Data transmission at the rate of one trillion bits per second is currently possible through a single fiber; Gilder reports that data transmission speeds eventually will increase to three trillion (or three bits per hertz over 1 terahertz lines).

This vast expansion in transmission capacity greatly alters the advantages of economies of scale in the marketplace, Holland explained. It helps smaller companies compete at the margins through greater efficiencies. As a result, large, well-established companies like IBM, AT&T, and Bell Atlantic do not necessarily enjoy competitive advantages they had long taken for granted.

Cheaper bandwidth also hurts “legacy companies” because it forces product capitalization, said Holland. “Today, the cost of carrying a phone call from Los Angeles to New York in a traditional telecommunications environment is around eight cents—versus about 20 cents a few years ago. Over the Internet, using Internet Protocol-based technology, it’s around two cents.” Thus, newcomers to a market sector enjoy much cheaper capital costs as they enter established markets.

Cheap bandwidth also makes distributed computing on a global scale increasingly cost-efficient. This efficiency, in turn, vastly expands the scope of labor and consumer markets, enabling opportunistic entrepreneurs to out-compete rivals by slashing the overhead costs of existing distribution chains, find cheaper sources of labor abroad, and cultivate new pools of consumers. Not only does this situation allow newcomers to undercut established companies, it makes possible entirely new business models. In short, by *restructuring* the terms of competition in markets, IT and the Internet are opening novel opportunities for entrepreneurs. Venture capitalist Jerry Murdock of Insight Capital Partners contended that the growth of the Internet “will lead to greater individualization and greater dissolution of local rules, which will foster entrepreneurialism.”

The phenomenal increases in bandwidth, combined with equally impressive cost reductions, are starting to change the whole idea of what electronic networks can accomplish. “In the distributed computing world, where knowledge is the value that is created, what is an entrepreneur—or for that matter, a company?” asks Glenn Osaka of Hewlett-Packard Company. “Is a company a web of high-value knowledge workers who form for the purpose of creating some value, and then break apart? The ‘highest value’ people in the IT industry today tend to work without a sponsor; they move to whatever job they want—whatever creates the most value—to maximize their returns. It’s a different model.”

As bandwidth costs approach zero—a scenario that the Lucent Corporation reportedly projects will occur within 10 years—the economic incentives that affect how corporate workforces are organized and where global investments are made will change. “There are tremendous differences in labor costs worldwide,” noted Iqbar Quadir, an entrepreneur who helped found GrameenPhone (a cell phone network in Bangladesh). “If the cost of communications, especially very large-volume communications, goes down to zero, we could easily have businesses that could co-produce from very different parts of the world.” That arrangement could reduce the gap in labor costs, although it also might generate new political tensions in wealthier nations.

Cheap, efficient electronic networking on a global scale already is having profound implications for how organizations function internally and intersect with vendors. Hermann Hauser, director of Amadeus Capital Partners in Cambridge, England, related the story of how Advanced Rendering Technology (ART)—a small English company involved in a ray-tracing acceleration—made an unlikely connection with a Hollywood studio via the World Wide Web. “ART was the first company to figure out parallel ray tracing, a computer-intensive process that allows the rendering of *Toy Story*, the animated movie, in a day,” Hauser said. “The process works 1,000 times faster than previous processes. When this five-man company put up a Web site, within one week we had all the Hollywood studios ring up. They said two things: First, ‘You can’t do this. We’ve been trying for the past five years to get fast ray tracing; this can’t be done.’ And second, ‘Just in case you’ve come up with something, we want to buy one of your machines’—which, depending on what you need, sell for between \$1,300 and \$50,000.”

This story is not just about an unlikely business connection made across the world via the Internet. What is noteworthy is that the person at the Disney studios who discovered the ART technology was not a vice president—who might normally make such connections—but “a lower-level guy who had trouble with the ray tracing in his rendering studio,” according to Hauser. “He was connected to the ART Web site by the community on the Internet that shared information about the latest issues in ray tracing.”

The subtlety of this story should not be lost; it is fraught with implications for how organizations may have to function in an electronically networked global economy. “Whenever a company creates informal coalitions, often on a global basis,” said Iain Anderson of Unilever PLC in London, “these coalitions are operating outside the normal processes of command-and-control because the decisions employees are taking individually are at a low enough level to be outside the trigger points for command-and-control mechanisms. But as a coalition of decisions orchestrated informally, they may represent very powerful sources of emergent structure,” Anderson said. “And these coalitions tend to be made up of younger managers. It’s in part that experience that leads me to believe that one of the consequences of the networked world and the networked corporation is a slow and steady transfer of power to more youthful managers.” The loosening bonds of corporate hierarchies and the fluidity of what is “inside” and “outside” a company is creating greater opportunities for resourceful entrepreneurs offering superior products.

Some theorists laud the Internet for its ability to bring together disparate people and ideas in novel, unexpected ways. “The Internet is the big machinery for the recombination of ideas,” said Juan Moran, CEO of Meta4 in Las Rozas, Madrid. “This sort of change, which once occurred within corporations, is happening outside of companies through the Internet. The market for knowledge-creation is migrating *outside* of companies, not inside—opening up lots of new opportunities for knowledge-creation in different companies and societies. Companies are losing control over knowledge-creation as new connections are made through the Internet, evolving without any kind of direction. It’s very difficult to define the boundaries of the company and where the intellectual property should be stored efficiently.”

Although the theoretical dimensions of this change remain speculative, the practical experiences of business managers and entrepreneurs confirm that a new collective process of knowledge generation and sharing is emerging via the Internet. Emilio Figueredo, president of Venezuela Analítica Editores C.A. in Chacaito, Caracas, cited French cyberculture philosopher Pierre Lévy, who has developed a thesis about the creation of an *intel-*

ligence collective. According to Figueredo, “Lévy says that this is the first time in human history in which everyone can simultaneously share information and everybody knows something—a development that will foster change and entrepreneurialism.” (Lévy has elaborated on his theories about the metaphysics of cyberculture in his book, *Becoming Virtual: Reality in the Digital Age* [Pierre Levy, Robert Bononno Translator, 1998].)

The advent of component-based software applications may accelerate these dynamics even more, said William Coleman, a computer scientist who is chairman and CEO of BEA Systems of San Jose. Component-based applications represent a new software paradigm in which software becomes a collection of components residing in distributed locations and used as needed. “The key thing that Windows did was to enable client-server computing. In a period of a few years, in the early 1990s, all programming on PCs went from hand-crafting to assembling,” Coleman said. “That has never happened on the distributed server side because there hasn’t been a software model. But two models are coming: Com+ from Microsoft, which will be in place in a few years, and Enterprise Java Beans from Sun.”

“The whole concept of what is software—when it’s really assembled components shared over unlimited bandwidth—will mean that you will do your computing where the data are,” Coleman continued. “It will drive the world to a much more distributed computing environment. The definition of what is a software program and how you distribute it, what is a software company and what is a system integrator, will change. We haven’t even begun to see the impact of the Internet.”

However transforming these changes may be, Nye cautioned, we should not overemphasize the impact of the Internet, no matter how sophisticated it gets. “The Internet is a dramatic improvement in communications *of a very thin kind*,” Nye said. “It is still very thin gruel in some markets. Look at stock trading. There is still an enormous premium for having a seat on the New York Stock Exchange. Why has that not been bid away? Because there are some markets in which face-to-face communication is still needed. Look at what happens in the labor market. In many countries, there is a two-tier labor market. [One tier consists of] a class of pro-

professionals such as lawyers, professors, and software developers, who are comfortable living almost anywhere in the country; there is a kind of national or international culture that supports that lifestyle. Conversely, I meet lots of people in St. Louis who've never moved beyond Missouri and Illinois in their whole lives."

Nye argued that prognosticators need to consider the issue of "tradable" and the "nontradable" because the Internet does not enable both equally. "You're getting some markets in which the Internet is driving costs dramatically down and threatening the way that governments, businesses, and groups do business. In these markets, the Internet is enormously powerful," Nye said. "But there are other markets in which the Internet is just too 'thin' as a communications medium, or not rich and experienced enough, to substitute for local, nontradable transactions. The world is splitting along the lines of markets that will be very localized versus markets in which even small leverage on the margins of communications and bandwidth blow them wide open, virtually overnight."

Big Companies, Small Entrepreneurs: Which Does a Networked Marketplace Favor?

Only a few years ago, as the Internet began to prick the consciousness of mainstream businesses, there was a great, perhaps naïve, optimism that the Internet would be the great equalizer. Anyone with a good idea could have direct access to consumers because there would be no middlemen. Sellers would encounter no "friction" in reaching consumers. Competition would intensify, entrepreneurs would proliferate, and innovation would flourish.

Although this scenario appears to hold generally, it is now clear that the situation is considerably more complex. Larger companies enjoy all sorts of competitive advantages—from greater financial resources to brand recognition to geographic reach. Smaller companies may be capable of greater flexibility and speed, but they do not have the sheer scale and resources of established businesses. This dichotomy raises the question: In a networked marketplace that tends to subvert many traditional advantages of size, does the size of an enterprise matter?

For Maples, the issue was less about size than who can move

the fastest. “Today SAP [a company that specializes in comprehensive business applications software] is held up as an unbelievable success story,” Maples said. “The advantage they bring is a process that’s already in place, a GUI [graphical user interface] front end, and all your data together. But the problem with the SAP model is its rigidity. You have to work the way that its application works.” Maples believes that large companies with the biggest stake in the old business architectures are most at risk of being harmed by more flexible, effective upstarts. Yet this risk is partially offset by the fact that big companies have the largest customer bases, so they have more time to navigate transitions to new models.

John Seely Brown, corporate vice president and chief scientist at Xerox PARC, believes that large corporations are certainly capable of innovation—but generally within a limited spectrum. “If the innovation involves fundamentally changing the business model of the firm or the architecture of the revenue of the firm,” Brown said, “forget it. If you look at disruptive technologies that fundamentally transform a market or the infrastructure of work—for example, packet-based communication or electrification—then you need an ecology of experiments in which failure is mandatory. You have to be willing to try out all kinds of new ideas in order to see what works and what doesn’t. That’s one of the important roles of entrepreneurs.”

Hosting entrepreneurial risk-taking, iconoclasm, and failure can be inherently difficult for large companies. Osaka recalled that a psychological testing profile of him predicted he would fail in a big company because of his “total disregard for history and the current practices of how things are done.” Because employees in large companies tend to be well-compensated and more secure, they also tend to be more averse to risk-taking and protocol-smashing. Moreover, flirting with failure is generally impossible within large corporations, noted Holland, because “you’ve got a fairly tight set of boundaries on the upside and downside. The entrepreneur can’t live with these constraints.”

The new metrics of success favored by IT and the Internet pose new quandaries for large companies. Should they adopt organizational processes based on order and security, or should they

commit themselves to the speculative advantages that future innovation may bring? Sometimes customers like a product from a large company that *doesn't* give them any choices, said Eric Schmidt, chairman of the board and CEO of Novell. "The innovator and entrepreneur tries to create choices for customers. There seems to be a huge gap in our society between those who—for whatever reasons—purchase from people who provide order and those who purchase from people who provide innovation."

"It's just the familiar story of *The Empire Strikes Back* versus *The Rebel Alliance*," said Janeway, "with rebellions breaking out all across the galaxy." Janeway professed "great sympathy for the guys at IBM 10 years ago who couldn't believe that large-scale enterprises would abandon the assured delivery, reliability, scalability, and security of host-terminal computing that IBM provided." IBM reaped huge monopoly rents from this business model, Janeway acknowledged, "yet they really did deliver what they said they were going to deliver—and it was orderly."

That scenario has changed radically since the 1980s. "Today, there is *one* successful PC company—Dell," Janeway said. "A year ago, Dell shot its restrictive software implementation right between the eyes—called it off midstream—because Dell realized that the process it would be using to run the business could not be successful three years down the road. Dell said, 'We don't know what the new process will be, but we know we'd better not lock ourselves in.' There may be a timely lesson there," Janeway noted. "Those who are 'buying order' today will be 'innovated' into real trouble tomorrow."

A major strategic shift made by Union Pacific management exemplifies this trend of decentralizing authority and communications. "Union Pacific had radically centralized control systems for running a railroad," Janeway said, "relying on hundreds of people using computer systems to tell the guy at headquarters what was going on." This rigid centralized system led to huge operational snafus through the southwestern United States, making it difficult for months to move freight cars from Texas to California. To remedy this problem, Union Pacific recently announced a fundamental decentralization of management and reduced reliance on information systems—returning to a man-

agement/communications model like that of 100 years ago, Janeway noted. The new model will give employees at train depots and traffic junctions authority to make on-the-spot decisions in response to real-time events. In essence, the company's leadership renounced a more restrictive model because it had proved too brittle and unresponsive to managing the fluid, changing circumstances of the railroad business.

Notwithstanding these examples, Nye warned that it may be too early to tell which model—centralized order or decentralized innovation, or some complex blend of the two—will work better. “Historically, we can't seem to predict the ways in which centralization or decentralization will take place. This is not new to the Internet. Look at what happened to department stores when malls came. On the one hand, malls imposed real order and economies of scale. On the other hand, malls also provided an environment that allowed the boutique store to revive.” The mall made both genres of retailing possible under one roof: the economies of scale of shopping at one place—which was the appeal of department stores—and the charm and diversity of small individual stores, which had almost died out.

Because the Internet is so new, Nye suggested, predicting its ultimate impact is difficult. For some businesses, the Internet will have powerful centralizing effects and may even foster oligopolies, whereas in other markets and businesses its effects are likely to be decentralizing and competitive. The real challenge, of course, is identifying which paradigm will emerge—and why.

One promising new model of business enterprise that creatively transcends the large company/small entrepreneur paradigm, according to Janeway, may be Cisco Systems, supplier of networking equipment and network management for the Internet. “This business,” he said, “identified a major market discontinuity, mobilized relevant technology, and then deliberately focused its efforts on *not* trying to invent everything in sight but to build a corporate culture and structure of management that could thrive on *selecting* from the ferment of new ideas and venture-backed innovations. It chose those innovations that were ‘good enough’ to bring into a larger business and gain the advantages of ‘trustified capitalism.’”

This scenario troubled Schmidt because it suggests a more

complex, predatory model for entrepreneurial innovation. At the very least, Schmidt said, we must abandon our romanticized notions of the entrepreneur: “If you believe that the purpose of the entrepreneur is to create one of five choices that the monopolist can then acquire, what happens to the other four? Is it the case that 80 percent of entrepreneurs’ jobs is, in fact, to serve as farm teams for companies that will acquire them? If so, okay: I can organize myself around that model. But that’s not what we’re talking about. We’re still mythologizing the romantic notion of the brilliant entrepreneur who goes and changes an industry.

“My argument,” Schmidt continued, “is that monopoly effects make it harder and harder and harder. We’re entering a period in which globalization leads to these enormous network effects. In practice, it appears that entrepreneurs are now operating in the presence of these globalizing monopolies, call them what you like. Cisco has actually grown to that position. Our model in 1995 was that the Internet was going to create 1,000 new companies and that it would be a completely new marketplace structure. But in fact, the large, existing players figured out the Internet almost as fast as the little itty-bitty companies, with some exceptions.”

Schmidt suggested that the real-life dynamics of large company/small entrepreneur interaction is distinctly feudal: “Kings [large companies] get themselves organized and have princes who compete with them, primarily through assassination. Kings try to kill the princes in their local economies—their country or continents—and meanwhile, the kings exchange bribes, sisters, whatever, in order to provide necessary agreements to advance their interests. After they’ve eliminated all the princes through some process of destruction, they turn on each other. Is that the model?”

Janeway’s riposte: “Kings get old and die. That’s why I raised the idea that Cisco is a new phenomenon. Cisco overcame the problematic ability of a successful enterprise, through several generations, to be able to renew itself. It’s one thing to innovate on the margin. It’s another to set out to cannibalize your existing, primary source of cash flow. IBM has done a phenomenal job on the periphery of its business. It has become the most successful integrator and outsourcer in the world today. At the inside of the business, however, there is zero growth, and virtually the entire cash

flow is generated from the rest of the business—the installed base of mainframe and AS/400 computers.”

Culture As a Seedbed For Entrepreneurialism

Clearly, entrepreneurialism is the product of individual traits and talents, as well as external factors such as government programs and policies, the availability of venture capital and networking technologies, and the peculiar circumstances of specific markets. Still missing from the analysis, however, is an assessment of social and cultural factors that foster entrepreneurial activity. Although this realm of inquiry may be murky and intangible, cultural influences are undeniably germane. This section of the report examines how the cultural norms of a society, an urban region, and individual business organizations can greatly affect whether entrepreneurial innovation flourishes or withers.

Entrepreneurialism as a Social Enactment

As much as we associate entrepreneurs with individual genius and tangible products, their real achievements also are social in character. As Scott Cook, chairman of the executive committee of the board of Intuit, put it, “Entrepreneurship is a social phenomenon; it’s not a technology.” Entrepreneurship is not the solitary act of an individual but the *interaction* of an individual visionary with society in a special way.

A 1997 book, *Disclosing New Worlds*, by Spinoza, Flores, and Dreyfus, provocatively explores this theme. The authors argue that “the entrepreneurs worth thinking about are the ones who are sensitive to how the problem that they sense has its roots in our pervasive way of living, our lifestyle, either in our culture as a whole or in some more or less self-contained domain.”² The entrepreneur, they write, is doggedly focused on “anomalies” in the environment, which prompt him or her to:

...discover where our culture was misunderstanding work most crucially and how he could insert his thinking into that crucial misunderstanding. This kind of activity is one of those poorly understood, necessary,

and very risky things that an entrepreneur does. The entrepreneur seeks to insert her understanding into that domain where she can maximize both the strangeness and the sensibleness of her product.³

The challenge facing a nation, a region, or a business enterprise is how to provide an hospitable environment for such entrepreneurs to obsess about “anomalies” and then create new products and businesses. How does one encourage iconoclasts to “insert their thinking into cultural misunderstandings” and thereby improve a nation’s well-being? Is it possible? Or is the systematic encouragement of idiosyncratic ideas an oxymoron?

Lawrence E. Harrison, in *Who Prospers? How Cultural Values Shape Economic and Political Success*, identifies four fundamental factors that he believes “facilitate or suppress the expression of human creative capacity.” These factors are the degree of identification with others in a society—the radius of trust, or the sense of community; the rigor of the ethical system; the way authority is exercised within the society; and attitudes about work, innovation, savings, and profit.⁴

Historically, many of these preconditions for entrepreneurial behavior have been met within families or ethnic traditions. Nye proposed that we consider families and ethnic groups as important “mediating institutions” for the cultivation of entrepreneurial virtues. “When you think of family businesses in Jewish or Chinese traditions,” he said, “they are often successful because they provide a framework for lives in a world hostile to them. Families and ethnic groups may be quite helpful in providing a form of protection in a chaotic world in which the state is predatory or completely unreliable.” By providing a matrix of mutual trust, high ethics, and a strong work ethic, family-run businesses stand a better chance of succeeding in poorly organized societies. When the formal institutions of the market improve, however, and family businesses continue to operate in insular, self-protective ways, the entrepreneurial value of family and ethnic affiliations may become liabilities, Nye noted.

Whether entrepreneurialism is family-based or not, it will flourish only if there is a tolerance for failure, conference participants agreed. “The system has to support the failures as well in order to have the successes occur,” Osaka said. “If you don’t support the failures, then nobody tries, and therefore you don’t get the inno-

vation.” Figueredo noted with admiration that “the whole of American culture is based on risk and looking to the future. In Venezuela, by contrast, losing a risk means losing position. The consequences are more severe.”

As a culture, the United States has a historical advantage over many other nations in this respect, Janeway suggested. “In this country—uniquely in the world until very recently—bankruptcy laws were written by debtors. In Britain, they were written by creditors.” This situation is emblematic of a larger theme in American life: that the United States is the country of the second chance. People who go bankrupt, who get embroiled in suffocating families, who mess up their lives, can always “light out for the territory” in the style of Huck Finn and begin anew.

This attitude is socially unacceptable in many European and Latin American countries, where business failure carries a distinct stigma and there is little tradition of “moving on.” In such societies, recovering from the stigma of failure may not be easy—which naturally discourages potential entrepreneurs from trying something new. Curiously, the Internet may be eroding the social stigma of failure in local communities by showcasing successful entrepreneurial role models.

“In a country like China,” Tian noted, “we don’t have role models for entrepreneurs. But that’s how the Internet is very powerful. We see the power of Steve Jobs and Apple Computer and how he became a role model for a generation. The same thing is happening on the Internet as Netscape, Oracle, Amazon.com, and Yahoo succeed. This sends a very powerful message to young people that they can do something.” Tian said that he knows two would-be entrepreneurs in China who, inspired by American high-tech entrepreneurs, are saving their money in order to launch a Chinese search engine on the Web. “They say they want to become the Yahoo of China,” he said.

Another Chinese entrepreneur—Mian H. Jiang, chairman of Shanghai Alliance Investment, Ltd.—asserted that market competition helps erode the concept of failure: “The beauty of this competition is that failure today is not necessarily future failure because you always have the chance to come back and become a winner.”

Entrepreneurship and National Culture

The great historian of capitalism, Fernand Braudel, astutely noted that capitalism does not exist in a social vacuum but must be supported by a culture if it is to function. “The preserve of the few, capitalism is unthinkable without society’s active complicity,” Braudel writes. “It is of necessity a reality of the social order, a reality of the political order, and even a reality of civilization. For in a certain manner, society as a whole must more or less consciously accept capitalism’s values.”⁵

The style with which a society accepts or dissents from the exigencies of capitalism—the particular way it structures capitalist dynamics—matters a great deal, however. Braudel sees this issue as a matter of how the various “ensembles” of a society—its economy, politics, culture, and social hierarchy—fit together:

The economy can only be understood in terms of the other “ensembles,” for it both spreads itself about and opens its own doors to its neighbors. There is action and interaction. That rather special and partial form of the economy that is capitalism can only be fully explained in the light of these contiguous “ensembles” and their encroachments; only then will it reveal its true face.⁶

Entrepreneurialism has flourished across history in many different places, and then died. It once flourished in China, in Germany during the 19th century, and in postwar Japan. “Each society has its own channels through which individual ambition can be achieved,” Braudel writes. “Each society has its type of success.” Any grand unified theory explaining the rise and fall of entrepreneurialism is likely to be fatuous. Therefore, this report is content to survey some of the more interesting cultural inflections of entrepreneurialism today.

The United States. The United States has long been a haven for entrepreneurs. American culture stresses personal improvement, loves novelty and change, excels at technological ingenuity, and celebrates the making of money. America’s cultural diversity and openness to immigrants has also contributed to its entrepreneurial vitality. “The United States as a society allows the outsider to come in and bring intellectual capital to our economy in large

measures,” noted Jerry Murdock of Insight Capital Partners. The infusions of fresh and different sorts of immigrant talent are constructive, Murdock said, chiefly because U.S. business generally operates as a meritocracy. In principle, it wants to reward the most talented people, regardless of their ethnic or national backgrounds, if only to enhance their companies’ competitive strength.

The United States also benefits from the intelligence of its consumers and, in general, the fair and open character of its markets. These factors are important because incentives for inventing a better widget will not exist in a society in which consumers cannot exercise the power of making informed choices. Entrepreneurialism is less likely to flourish if there are insufficient quantities of reliable consumer information, if consumers do not have practical choices, or if oligopolies control entry into markets and the pace of innovation. Ranjit Singh, vice president of the Internet Business Unit at the Xerox Corporation, noted that the presence of “intelligent consumers will determine if a market can develop” and in so doing support entrepreneurship. “In countries where consumers are not very intelligent, the market will stay stagnant,” Singh said.

European nations. Although generalizing about national character is risky, some European nations are emphatically more entrepreneurial than others. In general, smaller nations tend to be more international in perspective and more resourceful in pursuing their economic opportunities, according to Dyson. By contrast, the larger nations—such as Germany, France, and even Great Britain—are more resistant to change and less internationally minded. In any case, the adoption of the Euro, the common European currency, will help integrate the economies and cultures of eleven European nations while giving its entrepreneurs a larger stage on which to build their business empires.

“The people of Hungary, Poland, or Sweden know they’re not the center of the world,” Dyson noted, “so they have a history and culture of looking at the world economy as outsiders. So they’re more likely to see the Internet as a real opportunity for economic growth and overcoming their small-nation status.” On the other hand, Sweden—despite its international perspective—is not especially entrepreneurial. Sweden is famous for its highly developed

social welfare programs. The cultural mindset that has given rise to an extensive government role in society makes Swedes wary, if not hostile, to ideas such as variable compensation and stock options.

Dyson also noted “mysterious cultural differences between countries” that reveal something about their entrepreneurial characters. Hungary and Poland have programs for teaching the Internet in schools, for example; the Czech Republic does not. On the other hand, Hungary and the Czech Republic have privatized their telecommunications companies, which observers see as supporting entrepreneurialism. Dyson further explained that the Czech Republic has “an Anglo-Saxon view of capitalism and free markets”—meaning open, quality-driven competition—but a very Communist version of “murky markets,” in which “you can trade freely, but you don’t know whom you’re trading with.”

Spain. Spain is a country of subsidiaries, not headquarters, according to president and COO of Meta4 Joaquin Moya-Angeler. Because Spain is small, Spanish companies often design products for international markets. Although this attitude makes for a more complex design process, over the long term it is probably making Spanish companies more competitive by making them globally oriented. The amount of venture capital in Spain has been fairly small but is now growing, chiefly from foreign sources of capital, Moya-Angeler noted.

“Spain has the same basic intellectual brainpower as elsewhere,” added Moran, “but it doesn’t have the same employee mobility. Employees have greater loyalty to their firms and are reluctant to change jobs.” Other cultural norms impede the growth of entrepreneurialism in Spain. Although the situation is changing, banks, for example, still have trouble understanding the economic value of intellectual capital: “They want buildings, not CD-ROMs,” Moran said.

Absent the socio-psychological influence of fast-growing companies, employees often do not understand the rules that prevail in the global economy. Employees are skeptical of stock options, for example, “because it’s often perceived as vague promises of future wealth,” Moran said. This attitude is exacerbated by the lack of a legal framework to embody employees’ stock option plans, which are routinely used to encourage entrepreneurialism

in Silicon Valley and elsewhere.

Great Britain. In modern times, Great Britain has not been renowned as a hothouse for entrepreneurs. High tax rates, strict rules for hiring and firing, limitations on management buyouts, and labor-friendly social measures have impeded enterprising businesspeople. The Thatcher government attacked many of these issues and tried to culturally validate the idea of entrepreneurship. This paradigm shift has been difficult, reports *The Economist* magazine, because it “has long been a commonplace among some academics that British culture has developed an ‘anti-industrial’ bias.”⁷

With the election of Tony Blair as prime minister, this situation may be changing. Blair wants to pursue a “third way” that resembles President Clinton’s approach, by using government policy to foster new business ventures while not abandoning traditional government efforts to address social needs. Blair also wants British schools to teach entrepreneurship—a proposal that many observers consider problematic but surely is symbolically important. If new investment in entrepreneurial ventures is any indication, the United Kingdom may be turning a corner: Venture capital investment there increased threefold in 1997 over the previous year.

Bangladesh. In this impoverished nation, government bureaucracy, incompetence, and cronyism are among the chief barriers to economic development. Because so much of the basic infrastructure that developed societies take for granted—a national telephone system, reliable roads, and so forth (not to mention rudimentary structures for competitive markets)—is so deficient, it has been difficult for entrepreneurialism to develop in Bangladesh.

Yet this nation’s poverty and underdevelopment does not mean that profitable businesses of significant size cannot be built. Quadir, a Bangladeshi working as a venture capitalist in the United States, realized that advanced technologies are becoming less expensive and more user-friendly. So he returned to his homeland to establish GrameenPhone, a cellular telephone network for Bangladesh. An unabashed “social entrepreneur,” Quadir explained that this business has great strategic value in the economic development of Bangladesh because each new telephone

is expected to increase Bangladesh's gross national product by \$6,000 per capita—this in a nation in which per capita income is only \$250 and there are only three telephones per 1000 people.

Creating the new venture involved a complex saga to secure investment capital and government approval. Now, however, as the fledgling network expands, the impetus for entrepreneurialism is palpable. The person who owns the only cell phone in her village has become an entrepreneur in her own right, selling access to the phone; farmers in remote villages can use telephones to check market prices before journeying to the city, enhancing their income; and countless other economic and personal transactions that were previously impossible can now be arranged.

One basic lesson from Quadir's achievement is that although government barriers to new business ventures may be formidable, they are not insuperable, especially as new technologies proliferate. Moreover, even poor, underdeveloped societies can sustain entrepreneurial ventures; they require different, more creative business models, as well as persistence and venturesome investors.

The Importance of Regional Culture

One of the great paradoxes of globalization is that as technologies erode local distinctions—making for a more level, homogeneous playing field around the world—the relative importance of regions as crucibles for economic development is growing. John Herron, Jr., chairman of Zoologic (a New York City-based software company), asked, if this era of ubiquitous communications allows jobs and companies to be scattered across the globe, “Why is the leadership of so much Internet technology still being exercised by the west coast of the United States?” Why, he wondered, is Silicon Valley turning out so many entrepreneurs, while other regions do not?

The answers revolve around a basic truth about entrepreneurialism: that entrepreneurship ultimately is a social act. As such, the cultural climate in which the would-be entrepreneur lives and breathes matters. The local culture—its values, customs, social norms, and more—helps determine the kinds of people an entrepreneur will encounter in fortuitous ways, the kinds of business deals that can be imagined and arranged, and the very kinds of

novel ideas that can take root and grow. “In Silicon Valley, you can’t have breakfast, lunch, or dinner without overhearing some amazing conversation about what somebody has just done,” Brown noted. “This creates a kind of local implicit benchmark. You’re constantly benchmarking where you are relative to other people.”

Anderson agreed: “When I’m in Mountain View, California, my productivity of thought is greater by at least one order of magnitude than elsewhere. It is perfectly reasonable to have an idea late Friday afternoon and by next Tuesday to have something on your desk because someone has worked all weekend to find an answer. In the U.K., by next Tuesday you’d have no response from anybody about anything. There’s a barrier somewhere in Europe, a lack of synapse. We need to get the ‘thermodynamics’ right.”

A consortium of business entrepreneurs, academics, and city officials in Cambridge, England, is attempting to do just that through a new civic coalition, the Cambridge Network. This organization is devoted to solving the region’s problems in transportation, infrastructure, education, and image in an attempt to boost entrepreneurial ventures, especially in high-technology sectors. Its attempt to emulate the regional culture of Silicon Valley is reflected in its moniker for the region: the Silicon Fen.

Stephen Friedman, senior advisor at Marsh & McLennan Risk Capital Corporation, agreed that the regional concentration of entrepreneurs and resulting social vitality are indispensable. “A critical mass of talent in a given area makes all the difference,” Friedman said, citing the examples of Austin, Seattle, San Diego, and Silicon Valley. “Even in the direst days of non-entrepreneurialism in Britain,” he added, “Lloyd’s of London acted as a magnet for people, and that resulted in a cross-fertilization of people. Changing a region’s culture and ecosystems is key to creating change agents.”

Silicon Valley is a much-studied regional environment for these very reasons. Perhaps the most extensive inquiry into the regional dynamics of entrepreneurialism is Annalee Saxenian’s 1994 book, *Regional Advantage: Culture and Competition in Silicon Valley and Route 128* (Harvard University Press, 1994). Saxenian argues that Silicon Valley blossomed as a high-tech center more than the Route 128 region of Boston because of its decentralized,

cooperative industrial system; Route 128, by contrast, came to be dominated by independent, self-sufficient corporations that had less informal social contacts and collaboration.

Another reason for the tremendous success of Silicon Valley may have to do with its longevity. “It used to be that money drove entrepreneurialism, but now the money and technology are available,” Coleman noted. “The reason that Silicon Valley is creating so many companies is we’re now into our second and third generation of entrepreneurs. There is a socialization about being in an entrepreneurial environment. It’s infectious.” Thus, the benefits of an entrepreneurially robust region seem to grow over time; the values and traditions of business innovation become more established and socially respected. The younger generation of entrepreneurs can learn from previous generations and their lessons of towering success and crushing failure.

Another reason that regions have become so important to entrepreneurial success, according to Brown, is that personal interaction creates opportunities for informal learning, cooperation, and stimulation. Much of this synergy can occur only on a tacit level, he noted; such synergy is “something that the Internet is not good at, but a geographic region is.... If you really want to transform culture, you have to do that through tacit interactions as opposed to explicit interactions, to a very large extent. The structures that enable a dynamic knowledge-flow in the tacit dimension tend to occur in a region. And that has a tremendous amount to do with what creates the learning for entrepreneurship.”

Brown also noted the important role universities have in catalyzing regional entrepreneurialism. “In the past, we thought of these things as science parks,” Brown said. “I think we’re going to see the transformation of science parks into learning parks. Regions are going to become *learning* parks for tacit knowledge. When that begins to happen—coupled with the Internet, which provides infinite reach of those learning—you’re going to find something quite magical happening. So to attack entrepreneurialism, you have to look simultaneously at mediating institutions and regional level. That’s how you affect culture.”

Blending Organizational Culture with Entrepreneurialism

If entrepreneurialism is a social act that occurs in a culture—rather than merely ingenuity in engineering or marketing—then a central, recurring challenge is how to nurture entrepreneurialism in the context of a business organization. This challenge is an “oil and water” phenomenon: Organizations tend to prize rules, procedure, and stability; entrepreneurs by definition are restless visionaries and rule-breakers.

Yet organizations and entrepreneurs need each other. Entrepreneurs cannot actualize their visions without the resources of an organization, and organizations cannot innovate and compete if they do not embrace the entrepreneurial impulse in some fashion. As the Internet shortens the “feedback loops” of marketplace trends affecting companies, the need for organizations to incorporate entrepreneurial values into their cultures has grown more urgent.

The ability of organizational cultures to *implement* entrepreneurial ideas may be the signal challenge, Dyson suggested, because the faster information flows, the harder it becomes for the creator of new ideas to exploit them. “The first guy in the market is the first one to have his idea stolen,” Dyson said. “So the value goes to the company that manages to build a cadre of employees who can actually implement the good ideas that are out there and free for the taking. The ability to manage people—much more than the ability to innovate—is going to be key.”

Although Maples agreed that strong management may be important, he pointed out the countervailing reality: that “the highest rewards go to the people who *initiate* a new idea, not to those who deliver.” An entrepreneur who assembles 10 people around an idea can make a lot of money by starting a new company, Maples noted, particularly if it then goes public. The people who then come in and must deliver on that idea make much less money. For example, he said, “An entrepreneur who starts a company may own 10 percent of the company. If he hires a CEO, that person may get 3–4 percent of the company. This is what is causing more and more people in large companies, or smaller companies in second stages of development, to roll out to become entrepreneurs. The idea, not the execution, is being rewarded.”

Fueling this trend, according to Herron, is the fact that large companies often do not reward the people within their ranks who initiate a new idea. The big rewards, he said, “go to the people who are at the right place at the right time.” If equity in a company is a form of institutional memory, then the functioning of large companies is “completely ahistorical,” Herron said. By contrast, smaller companies use their equity as a form of organizational memory and reward.

Dyson conceded that the relative rewards paid to creators versus implementers are “dynamic—they go up and down.” Yet she insisted that leadership, management, and organizational culture remain key to creating value over the long term: “My team is the value, and not necessarily the founder. The guy who creates the idea doesn’t necessarily create the value; it’s the guy who carries it out.”

Whatever short-term gains entrepreneurs may reap by selling out early rather than implementing their vision, the consummation of entrepreneurial ideas clearly requires another constellation of skills. The successful entrepreneur increasingly needs to be more than just a creative inventor, a skilled mobilizer of venture capital, and an astute student of the market and the culture. Somehow, the entrepreneur also must find ways to meld these skills with strong leadership and organizations. A new idea must be carried forward by a leader who can manage the diverse functions of an organization operating in a global marketplace and motivate a workforce constantly to innovate and contribute.

This daunting array of skills may be one reason so many companies are intent on building robust, flexible corporate cultures. No single individual can possibly have all the skills needed. An organization that can decentralize the leadership, intelligence, and creativity of its employees, yet somehow mobilize its decentralized resources to work together, can unleash significant power. As Anderson said, “In the networked environment, the opportunity occurs—perhaps for the first time—to disperse leadership in new ways, so that economically meaningful acts of leadership can now come from different parts of an enterprise. To be productive, however, this [dispersed leadership] requires a more clearly articulated sense of vision and mission. If that is true, then it underscores the importance of management of people. In particular,

careful attention to the nature of qualities of leadership in this new environment will be very rewarding.”

Corporate culture, then, becomes a new tool for harnessing entrepreneurial energies within the context of an organization: the circle squared, in a fashion. The alchemy of creating an effective organizational culture—let alone one hospitable to entrepreneurialism—remains somewhat conjectural, however, illuminated more by examples than by theories. Conference participants agreed that leadership is key because it sets the “success metrics” to which employees will aspire. The qualities business leaders endorse through their actions (as opposed to their words) are likely to affect how people behave throughout the enterprise—and, ultimately, how well the organization performs.

Conclusion

The scope of the entrepreneurial revolution—if it has indeed reached that threshold—is likely to expand in coming years, if only because its effects on a nation’s material well-being, social relations, and political freedoms are so invigorating. The expansion of the Internet, other electronic technologies, and global commerce are likely to provide further impetus to this worldwide transformation.

The power of entrepreneurialism is likely to face some stiff tests as well, however—particularly in reconciling its core profit-making goals with larger social and democratic goals. “Capitalism is unthinkable without society’s active complicity,” Braudel reminds us.⁸ In many instances, of course, the economic vitality that entrepreneurs help generate is entirely complementary with social and civic progress. Economic growth creates jobs and tax revenues, diminishing the social needs that government must address while providing it with more money to meet the needs that remain. In the case of “social entrepreneurs” whose businesses directly address basic social needs and market demands in one fell swoop—of which GrameenPhone in Bangladesh is emblematic—the outcome is a laudable “win-win.”

In other instances, however, entrepreneurial goals may conflict with the social and political traditions of a society, causing painful dislocations. Some nations with well-developed social welfare programs, for example, would like to foster entrepreneurialism

but are reluctant to endure the political, social, and ecological disruptions that can accompany unfettered intercourse with global markets. Other nations, such as Great Britain and the United States, are attempting novel “third ways” that try to blend support for business (low taxes, minimal regulation, free trade) with the basic social protections of a civilized society (consumer protection, environmental standards, humane labor practices).

The economic change driven by entrepreneurs necessarily comes in fits and starts and is subject to all sorts of unexpected historical contingencies, so the potential for societal disruptions and political contention is great. A stunning stretch of prosperity in the United States, for example, has not mitigated income disparities between the top and bottom quartiles of the population; indeed, these disparities have grown worse. A similar gap in wealth between the world’s rich and poor countries is likely to be troublesome.

Optimists argue that digital technologies and free trade have the potential to mitigate such inequalities of wealth and development—but will they? Will the impressive prosperity generated by large businesses and entrepreneurs actually trickle down to the bottom quartiles? Or will inequalities of income, social class, and political power only grow worse and become structurally entrenched? The entrepreneurial revolution offers great potential to rejuvenate the economies, social well-being, and democratic vitality of societies around the globe. Its ability to do so over the long term, however, may depend on how well it orchestrates the diverse elements that foster entrepreneurialism.

Entrepreneurialism is not just about technology, capital investment, business organization, and free markets, after all. It also is a matter of providing hospitable cultural spaces to nurture individual initiative. It is the conceit of the United States, at least, that open, democratic societies with basic human rights, political liberties, and social equity offer the best environment for advancing the entrepreneurial cause.

Notes

1. Presentation by William H. Janeway, "Situating the Entrepreneur in the Context of Capitalism and the Market Economy," Marshall Scholar Symposium Panel on "Economic Activity and the Entrepreneur," University of Michigan, May 30, 1998.
2. Charles Spinosa, Fernando Flores and Hubert L. Dreyfus, *Disclosing New Worlds: Entrepreneurship, Democratic Action and the Cultivation of Solidarity* (MIT Press, 1997), p. 41.
3. Charles Spinosa, Fernando Flores and Hubert L. Dreyfus, *Disclosing New Worlds: Entrepreneurship, Democratic Action and the Cultivation of Solidarity* (MIT Press, 1997), p. 47-8.
4. Lawrence E. Harrison, *Who Prospers? How Cultural Values Shape Economic and Political Success* (New York: Basic Books, 1992), p. 10.
5. Fernand Braudel, *Afterthoughts on Material Civilization and Capitalism*, translated by Patricia Ranum (Baltimore, Md.: John Hopkins University Press, 1977), p. 62.
6. Ibid.
7. "Entrepreneurs to Order," *The Economist*, March 14, 1998.
8. Fernand Braudel, *Afterthoughts on Material Civilization and Capitalism*, translated by Patricia Ranum (Baltimore, Md.: John Hopkins University Press, 1977), p. 62.

APPENDIX



The Seventh Annual Aspen Institute
Roundtable on Information Technology

***Information Technology and The Entrepreneurial Spirit:
Redefining the Information Age***

August 20-23, 1998 • Aspen, Colorado

Conference Participants

Iain Anderson

Vice Chair

Unilever

David Bollier

*Independent Journalist and
Consultant*

John Seely Brown

*Corporate Vice President, Chief
Scientist, and Director*

Xerox PARC

Xerox Corporation

William Coleman

Chairman and CEO

BEA Systems, Inc.

Scott Cook

Intuit, Inc.

Esther Dyson

President

EDventure Holdings

Emilio Figueredo

President

Venezuela Analítica

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Stephen Friedman

Senior Advisor

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Capital Corporation

George Gilder

President

Gilder Technology Group

Hermann Hauser

Director

Amadeus Capital Partners

John Herron, Jr.

Chairman

Zoologic, Inc.

Note: Titles and affiliations as of date of conference

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William Janeway*Managing Director*E.M. Warburg, Pincus and
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Michael Maples*Ambassador*

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Morton Meyerson*Chairman and CEO*

2M Companies, Inc.

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Note: Titles and affiliations as of date of conference

About the Author

David Bollier is an independent journalist and consultant with extensive experience in electronic media, consumer advocacy, public policy and law. A long-time collaborator with television writer and producer Norman Lear, Bollier works closely with The Business Enterprise Trust, a nonprofit organization that examines socially innovative business leadership. He also writes frequently about the civic and social implications of emerging electronic media. The author of five books, including *Aiming Higher* (1996), Bollier is a graduate of Amherst College and Yale Law School.

About the Communications and Society Program

The overall goal of the Communications and Society Program is to promote thoughtful, values-based decision making in the fields of communications, media, and information policy. In particular, the Program focuses on the implications of communications and information technologies on democratic institutions, individual behavior, instruments of commerce, and community life.

The Communications and Society Program accomplishes this goal through two main types of activities. First, it brings together leaders of industry, government, the nonprofit sector, media organizations, the academic world, and others for roundtable meetings to assess the impact of modern communications and information systems on the ideas and practices of a democratic society. Second, the Program promotes research and distributes conference reports to decision makers in the communications and information fields, both within the United States and internationally, and to the public at large.

Topics addressed by the Program vary as issues and the policy environment evolve, but each project seeks to achieve a better understanding of the societal impact of the communications and information infrastructures, to foster a more informed and participatory environment for communications policymaking, or to promote the use of communications for global understanding. In recent years, the Communications and Society Program has chosen to focus with special interest on the issues of electronic democracy, lifelong learning and technology, electronic commerce, the future of advertising, Internet policy, and the role of the media in democratic society.

The Program also coordinates all of the activities of the Institute for Information Studies, a joint program with Nortel Networks, and engages in other domestic and international initiatives related to communications and information technology and policy.



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