

# Fragmentation and Concentration in the New Digital Environment

*A Report of the 2013 Aspen Institute  
Roundtable on Institutional Innovation*

By Richard Adler



THE ASPEN INSTITUTE

*Communications and Society Program*

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*This report is written from the perspective of an informed observer at the  
Aspen Institute Roundtable on Institutional Innovation.*

*Unless attributed to a particular person, none of the comments or ideas contained  
in this report should be taken as embodying the views or carrying the endorsement  
of any specific participant at the event.*

# Foreword

The Aspen Institute Roundtable on Institutional Innovation is a series of annual roundtables that address how organizations can strategize for success in the constantly changing digital environment. Each year, 20 to 25 diverse business and academic leaders bring their vast knowledge and experiences to arrive at new insights on the particular focus of that year's session.

Against the backdrop of the many changes wrought by the digital disruption, "Fragmentation and Concentration in the New Digital Environment" maps the effects of the digital revolution on the business environment, the nature of work and the role of leadership in navigating the organization through the constantly changing landscape.

From John Hagel's dissection of the functions of a firm (infrastructure management, product innovation, customer service management or CSM) to Thomas Malone's "design, make, sell," participants explored how to account for the twin forces of concentration and fragmentation. Hagel sees the first and third functions (infrastructure and CSM) as concentrating due to economies of scale and scope, while the product innovation function appears to be fragmenting. Similarly, but in different terms, Malone sees infrastructures concentrating while delivery of services are fragmenting.

Using example after example, author Richard Adler explores each of these concepts. He then recounts presentations on how two large companies, Salesforce and Google, have tried to stay nimble and innovative—growing rapidly while staying true to their corporate cultures and values. These stories and concepts all move towards a description of the emerging collaborative economy of platforms and new ecosystems. In this new world, trust and reputation are indispensable ingredients. Leaders understand this and evangelize these and other core values to their organizations to guide them through the turbulent digital waters.

## Acknowledgments

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addition, we thank Richard Adler for weaving the Roundtable's dialogue, background readings and his own independent research into a concise and coherent report.

Finally, I thank Kiahna Cassell, Senior Project Manager, who managed the Roundtable throughout, and Tricia Kelly, Assistant Director of the Communications and Society Program, for her review and help in producing this report.

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July 2014

FRAGMENTATION AND CONCENTRATION IN  
THE NEW DIGITAL ENVIRONMENT

*Richard Adler*



# Fragmentation and Concentration in the New Digital Environment

## A Report of the 2013 Aspen Institute Roundtable on Institutional Innovation

*By Richard Adler*

A. A violent order is a disorder; and  
B. A great disorder is an order. These  
Two things are one.

– Wallace Stevens, *Connoisseur of Chaos*

An empire long united must divide; an  
empire long divided must unite.

– Luo Guanzhong,  
*Romance of the Three Kingdoms*

### **The Shape of Things to Come: Two Views of the Future**

In 1987, back at the dawn of the Internet age, two studies were published that provided perceptive looks at the evolution of electronic networks and the impact that they would likely have on the way business is conducted in the U.S. and globally. Both studies concluded that rapidly evolving information technologies were helping to break down old hierarchical business structures in favor of new, more decentralized models of economic activity.

The first of these was a report titled *The Geodesic Network*.<sup>1</sup> It was prepared as part of the first triennial review of the telephone industry that was mandated as part of the Modified Final Judgment. This judgment resulted in the 1984 break-up of AT&T and the creation of the seven “Baby Bells.”<sup>2</sup> The judicial review was intended to examine the state of competition in the telecommunications industry and determine whether the restrictions placed on the Bell Operating Companies (BOCs) at the time of the break up should be maintained, modified

or eliminated. Known as the Huber Report (after its author, Peter Huber), the 600-page study was commissioned by the Department of Justice to supplement its own review of the industry. Because Huber happened to be a thoughtful analyst and a good writer (he was a lawyer with a doctorate in electrical engineering and had served as a clerk to Justice Sandra Day O'Connor), the report was quite readable and became a surprise best seller (the first edition quickly sold out and had to be reprinted). One reviewer described it as “a comprehensive, refreshingly different, indeed lyrical, overview of telecommunication network technology and market structures in the U.S.”<sup>3</sup>

The main thesis of Huber's report was that the proliferation of computer-based intelligence was having a transformative effect on the architecture of the national public telecommunications network. According to Huber, the network was evolving from a hierarchical structure to one that resembled a geodesic dome in which control (most notably in the form of switching capacity) was increasingly distributed among multiple participants and end users. While most of the report focused on the public switched telephone network (PSTN), Huber recognized the growing importance of computer-driven data services and stated that “getting the regulation of data communications right will be enormously important for economic prosperity and national security in the age of information.”

Huber did not foresee the emergence of the Internet, which would become the dominant telecommunications network (eventually eclipsing the PSTN) with virtually no government regulation, but his essential insight proved right. The old pyramidal structure of networks was disappearing in favor of a distributed architecture that involved both a relatively small number of very large firms that provided the basic infrastructure, as well as many smaller firms that operated in the nodes of the network, and took advantage of its capabilities to do business in new ways. In other words, the evolution of telecommunications technology was supporting both concentration and decentralization of businesses at the same time.

The second study, also published in 1987, proved even more prescient. In an article on “Electronic Markets and Electronic Hierarchies,”<sup>4</sup> authors Thomas Malone, Joanne Yates and Robert Benjamin looked at the likely impact that networked information technology was having

on the way business is conducted. The authors began by distinguishing between two alternative ways of “organizing economic activity”—markets and hierarchies. Markets coordinate the flow of goods or services in a value chain through the process of supply and demand among a group of buyers and sellers; hierarchies manage the flow of goods or services by coordinating each step through an established structure (such as a single firm). The authors then identified the strengths and weaknesses of each approach: production costs are usually lower in markets because buyers can compare different possible suppliers who compete for the buyers’ business and who can take advantage of economies of scale across multiple buyers. In hierarchies, production coordination costs are typically higher where such competition and economies of scale are absent. At the same time, coordination costs are typically higher in markets, because of the effort required to gather information from multiple potential suppliers, and are lower in hierarchies where options are fewer and less negotiation is usually necessary.

<b>Relative Costs for Markets and Hierarchies</b>		
<b><u>Organizational Form</u></b>	<b><u>Production Costs</u></b>	<b><u>Coordination Costs</u></b>
Markets	Low	High
Hierarchies	High	Low

Source: <http://is.esade.edu/faculty/wareham/Teaching/StratNetComp/Readings/Electronic%20Markets%20and%20electronic%20Hierarchies.pdf>

The main focus of the paper is to explore the effects that the growth of “new information technologies” is likely to have on these fundamental processes. Overall, since “the essence of coordination involves communicating and processing information,” these technologies are likely to make both markets and hierarchies more efficient. However, since IT is reducing the costs of coordination—on which markets have a disadvantage—the authors conclude that IT is likely to have a greater positive impact on markets than on hierarchies. Thus, “The overall effect of this technology will be to increase the proportion of economic activity coordinated by markets.” The rest of the paper is devoted to exploring how electronic markets and electronic hierarchies are likely to evolve and what specific types of business activities are most appropriate for each. In particular, the authors recommend that virtually all companies

should consider how they can participate in, or even create, new electronic marketplaces, but should also determine in what circumstances they should invest in building more efficient electronic hierarchies.

The paper ends with a vision of a future that is very different than the past:

If our predictions are correct, we should not expect the electronically interconnected world of tomorrow to be simply a faster and more efficient version of the world we know today. Instead, we should expect fundamental changes in how firms and markets organize the flow of goods and services in our economy.<sup>5</sup>

### **The View from 2013**

A quarter century after the publication of these two studies, a group of participants in the Aspen Institute Roundtable on Institutional Innovation gathered to explore the institutional landscape of 2013 and how it has been influenced by the continued evolution of technology. In many ways, the technology environment that has emerged goes well beyond even the most expansive visions of 1987—a global broadband Internet providing access to vast online libraries of information and services; pervasive wireless communications; a seemingly endless proliferation of intelligent devices that continue to get smaller, cheaper and more powerful; and the rise of social media that connect people in addition to machines and data.

But what are the social and economic implications of all this change? As John Hagel, John Seely Brown and Duleesha Kulasooriya of the Deloitte Center for the Edge note in a background paper prepared for the 2013 Roundtable, there is considerable uncertainty even about the basic direction of the changes that are taking place. There are, they point out, two fundamentally different views about where technology is taking us:

The first is that companies will fragment to smaller and smaller entities and even down to individual providers; the second is a “winner take all” world where only the largest survive.<sup>6</sup>

Hagel, Brown and Kulasooriya believe that both of these views are “too simplistic,” and that we live in a world in which “both of these narratives co-exist and are mutually reinforcing rather than conflicting.” But if this is true, the question remains: in what specific circumstances is fragmentation likely to dominate and when is concentration likely to prevail? And what are the implications of each for workers, for the economy and for society? These questions were the central focus of the 2013 Roundtable.

### **Mapping the Territory Ahead**

To provide a starting point for group’s exploration of this question, Thomas Malone, Professor of Management at MIT and the lead author of the 1987 paper on “Electronic Markets and Electronic Hierarchies,” presented a sort of road map that identifies the key environmental forces that are driving institutional change and traces their impact and their interactions. According to Malone, there are three basic technological developments that are altering the economics of business: cheap transportation, which is expanding the reach of a market for goods that can be served competitively from a single location; cheap (fast) communication, which makes it possible for ideas to travel faster and lowers the cost of coordination across institutional boundaries; and cheap automation, both for activities involving the production of physical goods, but increasingly for information-centric tasks, which makes it possible to substitute machines for human labor for almost any sort of task. Cheap transportation is a product of the combination of low-cost energy (mainly based, unfortunately, on the abundant availability of fossil fuels) and the development of highly efficient modes of mass transport. Cheap communications has been based on the continuous improvement in performance and falling costs provided by digital electronic media; while cheap automation is also being driven by ongoing improvements in digital technology.

Even more powerful than the impact of these factors individually has been their combined impact. For example, the combination of cheap transportation and cheap communications is shifting the nature of the markets in which companies compete: firms can take advantage of ever greater economies of scale as the practical limits to a single organization’s potential sphere of operation continue to shrink. As

markets expand, they become more volatile and competition grows, which increases the need for rapid innovation. And thanks to cheap communication, the cost of information falls, allowing more people to get access to information, which also drives innovation. Similarly, the combination of cheap communication and cheap automation is driving major changes in how organizations function internally and externally. Outsourcing of non-core activities becomes more attractive as coordination across boundaries becomes easier and less costly. But at the same time, digital technologies are contributing to the creation of “digital businesses,” which can enjoy increasing returns to scale and benefit from network effects that can lead to natural monopolies.

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**As markets expand, [firms] become more volatile and competition grows, which increases the need for rapid innovation.**

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The bottom line is that this environment is conducive to both the creation of more large companies and more small companies. As internal costs go down, scale economies increase and companies get bigger; as coordination costs fall, production can fragment, with more work being outsourced to small, specialized companies. An enterprise like Wal-Mart can succeed by building an intensely integrated retail delivery system that has made it the largest private employer in the country. By contrast, eBay has been able to flourish with a relatively small number of employees by building a platform that allows millions of individuals to buy and sell goods.

### **Peers, Inc.**

What we are seeing, according to Robin Chase, Founder and Chief Executive Officer of Buzzcar, is nothing less than a phase shift from one model of the firm, which prevailed for at least a century, to a new model, which she described as “Peers, Incorporated.” The former (and current) industrial model is all about enjoying the benefits of scale: striving to be as big (and standardized) as possible in order to reap the benefits, scale economies and reduce transaction costs. The Internet has

transformed the costs of engaging with small players (individuals and/or local companies). The new emerging collaborative economy delivers on the best of small and large through this new Peers Incorporated collaboration. The large entities fund multi-year projects that involve the aggregation of many diverse parts, give economies of scale and establish rules regarding standards and consistency. The “Peers” deliver on localization, customization and specialization. Each side of the partnership is providing what the other side either cannot or does not like to do. Making use of excess capacity (wherever it is found) also binds the economics of the two sides. The result is an organizational structure that can deliver innovation at very low cost, resource efficiency and value maximization on assets and the ability to scale very quickly. While the key strength of the old model was the ability to realize economies of scale, the new model is more agile: able to experiment, adapt, iterate and evolve quickly to changes in the market.

<b>Peers Incorporated</b>	
<p><b>INDUSTRIAL STRENGTHS</b></p> <ul style="list-style-type: none"> <li>– Large investments</li> <li>– Multi-year efforts</li> <li>– Aggregation of many parts</li> <li>– Diverse technical expertise(s)</li> <li>– Standardization</li> <li>– Brand Promise (trust)</li> <li>– Global</li> </ul>	<p><b>INDIVIDUAL STRENGTHS</b></p> <ul style="list-style-type: none"> <li>– Small investments</li> <li>– Short-term sporadic efforts</li> <li>– Delivery of small services</li> <li>– Single specific expertise</li> <li>– Customization, specialization</li> <li>– Personal social networks</li> <li>– Local</li> </ul>

Source: Robin Chase

## **A Brave New World—with Glitches**

One thing is certain: the combination of cheap transportation, cheap communication and cheap automation is producing sweeping changes that are having big impacts on the economy, on society, and, especially, on the nature of work. In the old, hierarchical world—the world of “the organization man”—jobs were largely standardized. Now, according to Irving Wladawsky-Berger of Citigroup, the whole nature of what a job is, is being redefined. If creative people were stymied in the old construct, that polarity is being reversed: now, the most desirable workers are those who have the ability to work creatively and

autonomously. Instead of being a small cog in a big machine, every individual potentially has the ability to leverage powerful resources to do their jobs in new, more productive ways.

Technology is empowering individuals, providing them with more opportunities for freedom. It is also helping to shift innovation from large enterprises to much smaller entities. For decades, space exploration was the exclusive domain of massive government agencies like NASA; now, much of the cutting edge of new approaches to exploration are coming from entrepreneurial ventures like SpaceX, the company founded by Elon Musk, who is also responsible for Tesla.

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**...we need to shift from thinking in terms of mechanistic models of business to biological models. – John Clippinger**

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Though we can clearly see that big changes are happening, it is nearly impossible to foresee with any degree of clarity the kinds of jobs people will be doing in the future. One hundred years ago, some three-quarters of Americans were farmers; today it is less than two percent. Trying to predict what kinds of work people will be doing 30 years in the future is as difficult as it would have been to imagine jobs as web site developers or online community managers three decades ago. John Clippinger, Co-Founder and CEO of ID3, noted that the rate of change is likely to accelerate still further, making it even more difficult to anticipate what will happen. He proposed that we need to shift from thinking in terms of mechanistic models of business to biological models. Rather than conceptualizing work in terms of defined inputs and outputs, it is more useful to use an ecological model where individual actions can affect an entire system in far-reaching ways. Rather than trying to “plan” in systematic ways that assume the existence of a stable structure that can be understood and reliably controlled, it may be more effective to focus on preparing to respond to changing conditions by staying attuned to the feedback from one’s actions.

Young people get it. They recognize that the world is changing fast and that they need to change with it. Millions of them want to move to

the new economy and are reinventing work. They are finding new ways to collaborate, working to solve problems in their local communities or globally. In many cases, they are doing useful things, even if they are not making a lot of money. They may be contributing to Wikipedia or participating in open source communities. But they are not looking for a traditional job. As Robin Chase put it, “My father had one job in his career. I will have seven jobs over my working life. My kids are doing seven different things all at once.”

Technology is enabling new ways to work. One of the things it can do is give businesses access to talented workers wherever they may be. More than 160,000 companies have hired workers through oDesk, which matches employers’ needs with people with the right skills and allows them to work remotely. While people used to need to travel to their jobs, now work can travel to where they are. The technology even makes it possible for people to keep their jobs while moving from one location to another.

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**The organizations that flourish in this new environment will be those that...empower their workers to function more autonomously.**

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But it is not enough to just invent new jobs. We also need to reinvent old jobs. The organizations that flourish in this new environment will be those that recognize this new reality and empower their workers to function more autonomously. Surprisingly, one of the organizations that has moved decisively in this direction is the U.S. military, which recognizes that the nature of warfare has changed fundamentally: no U.S. plane has fought with another plane since 1974; there have been no engagements between naval fleets since World War II. In the age of terrorism and asymmetrical warfare, the armed forces have endeavored to transform themselves to support the autonomy of decision-making, to collapse communications and command systems and to enable fast learning at all levels. (One dramatic example: the Special Forces team that went after Osama Bin Laden had virtually complete autonomy to act, even though they were being watched in real time by the Commander-in-Chief and top military leaders.)

Finally, and perhaps most fundamentally, technology is provoking a shift in how young people construct their identities. According to John Seely Brown, for most of the 20th century, Americans based much of their identity on what they wore and what they owned. But for Millennials in the U.S. who are growing up in an intensely connected world, identity is much less a matter of physical possessions and more a matter of what they create and share and what they contribute that others can build on. Financial capital is not the only type of capital that matters today; social and intellectual capital are at least as important. The key factor that determines individual success in this world is a sense of agency, the ability to set goals and mobilize the resources needed to reach them.

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Education has always been and is still critical in preparing young people to succeed in the world, but the traditional school system is based on the old 19th century model of a factory where groups of young people move through the system grade-by-grade, acquiring knowledge in a more-or-less lockstep fashion. Unfortunately, such a system can take away students' sense of agency. One hopeful sign of change are kids who are "hacking education," using the technologies at their disposal to create their own "learning networks" that allow them to pursue their own interests.

### **The Rise of Platforms**

One of the most distinctive manifestations of the new tech-enabled environment, and a critical means for creating value, has been the rise of platforms—a resource that may originally be created by a single entity, but is made widely available for others to build on by con-

tributing their own content. In this sense, a platform can serve as the nucleus for a much larger ecosystem of innovation. One place where the transformative power of this approach has been clearly manifested is in the IBM Corporation. For much of its existence, according to Irving Wladawsky-Berger who worked at Big Blue for many years, the company operated on the principle that the only products that it needed were those that it invented. But it eventually recognized that it could not continue to operate completely independently in a world of constant change. It has remade itself as a “platform” company that acquires and integrates smaller companies that have developed new, innovative products, providing them with the resources to operate on a larger, global scale.

In fact, platforms that can be used by many people to create new kinds of value are one of the key mechanisms that allow big enterprises to coexist synergistically with smaller organizations. eBay, in the example cited previously, created a platform that supports millions of independent businesses. More than one thousand companies built businesses on the platform provided by Salesforce.com, which makes it possible for even a small company to create new products and deliver them to a large number of customers at relatively low cost. Peter Schwartz, Senior Vice President of Salesforce, describes this as an ecosystem that allows mutually beneficial collaboration between a large central organization and many smaller participants, including individuals.

Like the idea of platform, the concept of standards also plays a large role in shaping economic growth. Joe Justice, Founder and CEO of Wikispeed, noted that the development of standardized pallets and shipping containers in the 1950s had a transformative impact on global trade by making it easier and cheaper to transport goods anywhere in the world, and made the U.S. the least expensive country in the world to ship freight.<sup>7</sup> Standards have also been critical to the development of the Internet and the World Wide Web. But the danger of standards is that they can stifle progress if they become overly rigid. We need to make sure that standards remain sufficiently agile to support continued innovation around them.

## **Making the Grade**

But it may be unrealistic, even under the best of circumstances, to expect that everyone will be able to make the transition from the old, hierarchical world of work to the new networked world. After all, not everyone is above average. Jon Taplin, Director of the USC Annenberg Innovation Lab, noted that not everyone can or even wants to be creative. Many people want jobs that are structured and predictable. But these are precisely the kinds of jobs that will most likely be eliminated by “cheap automation.” Foxconn, the Taiwan-based manufacturer that assembles iPhones and many other electronics products, currently employs 1.2 million workers and has about 10,000 robots in operation. But last year, the company announced that it planned to install one million new robots in its factories. By the time this happens, its workforce is likely to be considerably smaller. By the same token, the good manufacturing jobs at places like Ford and GM that paid well and only required a high school diploma are also going to be eliminated by automation. And while the initial wave of automation affected relatively structured, repetitive jobs, the next wave of smarter automation is likely to impact higher level jobs.

## **Fragmentation and Concentration**

To help consider where technology is likely to encourage greater concentration of economic activity and where it is likely to promote fragmentation, it can be useful to look at what essential roles are typically carried out by business enterprises. According to Deloitte’s John Hagel, most companies engage in three different types of activities, which he described as “an unnatural bundle of functions”:

- First, almost all businesses are responsible for “infrastructure management”—the operations that are involved with manufacturing and logistics, including the task of managing a supply chain that runs from acquiring inputs to distributing finished goods (or services) to customers. These activities may be routine, but they are often high value: for many companies, the ability to manufacture and distribute high quality products efficiently represents an important competitive advantage over rivals.

- The second basic function is product innovation and commercialization, which encompasses product development and marketing. Typically, this function puts a premium on creativity and, at least in theory, is critical for the ability of companies to respond to the needs of the market.
- Finally, companies need to manage customer relationships by providing them with such things as product support or even advice that can make them better consumers (and more loyal customers). This category also includes getting input that can be important in tracking customer satisfaction and identifying opportunities for new product offerings.

In reality, the economics, the skills and the cultures required to be successful in each of these types of business activities are quite different, and keeping them all in one organization virtually requires that each is sub-optimized. At the same time, the pressure of competition puts a premium on performing all of these functions as well as possible: if quality is compromised in any one of these areas, the marketplace consequences can be severe.

***Infrastructure Management.*** Of the three categories, the first has already seen the most change. The stripping out of infrastructure management through the process of outsourcing is a familiar story that has been unfolding for decades. The outsourcing of manufacturing has led to the transfer of millions of jobs from higher wage locations to lower wage areas. Other infrastructure tasks, such as the physical transportation of goods, has long been outsourced: while many companies maintain a fleet of trucks, few if any operate their own railroad or airline. And very few firms mine the raw materials that go into their products.

Since infrastructure management can benefit from powerful economies of scale, there are strong forces at work that encourage concentration. Consider Foxconn, the Taiwan-based company that is responsible for manufacturing approximately 40 percent of all consumer electronics products in the world. The company has grown entirely by providing high quality, low cost manufacturing; it makes no products under its own brand. Foxconn has some 1.3 million employees, which makes it one of the five largest private employers in the world.<sup>9</sup> Its largest factory complex, located in Shenzhen, China (known as “Foxconn

City”), consists of 13 factories that cover more than a square mile of land and employ several hundred thousand workers, many of whom live in on-site dormitories operated by the company.<sup>10</sup> Foxconn also operates large factories in other low-wage countries including India, Malaysia, Brazil and Mexico.

On the other hand, new technologies such as 3D printing could disrupt the tendency toward concentration in manufacturing. In the future, what gets transported may not be manufactured products but rather the algorithms that direct a 3D printer to create a particular product. The example that is often cited to illustrate this change is the case of an airliner somewhere on earth that needs a replacement part. Rather than having to wait for that part to be shipped from a warehouse that maintains an inventory of parts, the instructions are sent electronically to a remote printer that creates a new part just when and where it is needed. While there may indeed be future cases like this, it is likely that the economies of scale provided by large scale manufacturing will continue to prevail for many mass market products.

**Product Innovation.** By contrast, fragmentation is more likely to occur in product innovation/commercialization, which is driven by the “economies of skill.” Large organizations tend to foster bureaucratic structures where rules and prescribed procedures proliferate. Among the policies that work against innovation in the corporate world are agreements that assign all ownership rights to inventions and ideas developed in the course of workers’ employment to their employers. In an op-ed in *The New York Times*, University of San Diego School of Law professor Orly Lobel explained that the scope of “this ownership runs deeper than inventions and artistic works, extending to skills, ideas and professional ties—tacit knowledge and social relations that cannot be subject to patent or copyright...that corporations lay claim to at increasing rates.”<sup>11</sup> To explore the impact of these restrictive agreements, Lobel and a colleague ran a series of behavioral experiments in which participants were asked to solve various problems. Subjects who were told that they were “free to perform similar work for other ‘employers’ in the virtual workplace” of the experiment spent more time working on the assigned problems and made half as many errors than a second group who were asked to relinquish any ownership of work done in the experiment.<sup>12</sup>

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**...fragmentation is more likely to occur in product innovation/commercialization, which is driven by the “economies of skill.”**

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Since creative people often prefer to work independently or in smaller, more flexible work environments, many large companies have sought to collaborate with smaller, more entrepreneurial firms, either by forming partnerships or through acquisitions. A growing number of large companies have recognized the limits of their ability to innovate on their own and have made use of open competitions to solicit innovative ideas from anyone who wishes to contribute. For example, InnoCentive, which enables companies to post problems and offer rewards for the best solutions, has attracted more than 250,000 “solvers” who have submitted more than 30,000 solutions to more than 1,400 challenges since 2001, earning more than \$9 million in rewards. Interestingly, the majority of winning solutions came from people who had not previously won any previous awards and who often lacked the kinds of credentials or experience that “experts” in the various fields would be expected to have.<sup>13</sup>

***Customer Relationship Management.*** The third category is the one that most companies consider their core competency. But in reality, there are relatively few companies that are strong in this category. An example of a business that depends on strong customer relationships is a financial service provided by a personal financial advisor who has the ability to make investment advice based on knowledge of individual customer’s circumstances and goals. Currently, such a service is available only to the affluent, but technology is making it possible to expand this type of service to a larger mass market.<sup>14</sup> Netflix, which knows a lot about its subscribers’ viewing preferences and uses that knowledge to suggest other content that customers will like, is also in the customer relationship business, as are tech companies like Google and Facebook that have the ability to regularly collect large amounts of data on user behavior and utilize it to improve their products. And, as USC’s John Taplin pointed out, Netflix and Google have begun to move into content creation, where margins tend to be higher, based on their deep

knowledge of customer preferences. (By contrast, many traditional content producers may find themselves at a disadvantage in competing with these new players, because they do not have millions of customers regularly telling them what they like and are interested in.)

The dynamics of concentration and fragmentation will also be shaped by the particular nature of various sectors. Industries like financial services, travel and health care, where customers are routinely required to make choices among multiple competing products, are particularly suited to the expansion of customer services business. In health care, for instance, people may begin with questions about insurance, but they also have questions about wellness and the impact that their lifestyle choices have on their health. Because of the importance of health decisions, people are likely to seek advisors whom they can trust. Traditionally, this has been the exclusive role of doctors, but new players are entering the field, including peer-to-peer networks that allow patients to exchange information about shared medical problems. In the travel industry, the proliferation of options has given rise to specialized services like Expedia, Travelocity and TripAdvisor, which make it convenient to get access to a variety of choices, including information on price and ratings from other travelers, in order to make a reasonably informed choice.

Another type of company that excels in customer relationship management is Li & Fung, a Hong Kong-based company that acts as a broker linking apparel designers and retailers with a network of more than 15,000 manufacturers, many relatively small, located around the world. Li & Fung does not make anything itself, nor is it involved with designing goods; its strength is based on its ability to know its customers well and ensure that their most critical needs—in terms of cost, quality and speed—are met reliably.

A very different type of company, Apple does not manufacture its own products, but it has succeeded by excelling in both designing innovative products and in managing customer relationships. Its commitment to innovation has enabled the company to move from its initial focus on building personal computers to creating music players, smartphones, and tablets, each of which fundamentally restructured these product categories. And the company has recognized that the value of all of its products is determined by the entire customer experience with

those products, ranging from an initial purchase decision through on-going product support. Whether Apple can continue to base its success on continuous product innovation even as it grows larger remains an open question.

While Hagel's first function, infrastructure management, can take advantage of economies of scale, this third category is largely driven by economies of scope, based on the advantages that accrue to companies that are able to amass large amounts of information about customers and markets. Both of these functions are likely to experience greater concentration, driven by economies of scale and scope, while product innovation is more likely to see greater fragmentation.

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**As long as businesses are driven by short-term  
profitability, we are not likely to maximize  
social value.**

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*Relationships, Innovation and Health.* Bob Brook, Distinguished Chair of Healthcare Services at the RAND Corporation, pointed out how a focus in the health care field on building customer relationships at the expense of other functions has led to less than optimal results from a social point of view. For example, he pointed out that hospitals that provide great customer service have been successful in attracting patients to facilities that are expensive and provide poor quality service otherwise. (One of the weaknesses of the health care system in the U.S. is that it does not provide access to reliable information about the quality of care offered by different providers, although efforts are underway to increase the amount of useful health data available to consumers.) Other parts of the healthcare system suffer from similar distortions: Large pharmaceutical companies have made a lot of money by convincing doctors to prescribe their products rather than less expensive but equally effective generics. Rather than innovating, these companies have based their strategies on building strong relationships with their customers. Perhaps the most important question we should be asking, at least in the area of health, is what system is best designed to deliver not just profits but real value to customers. As long as businesses are

driven by short-term profitability, we are not likely to maximize social value. In the case of health care, some 40 percent of the services delivered do not actually improve our health.

***Differentiating Dynamics.*** Irving Wladawsky-Berger noted that economies of scale and scope are relatively straightforward factors and are directly linked to the size and reach of an organization. Economies of scale involve performing routine tasks, including the ability to produce large numbers of standardized products, efficiently and predictably, while economies of scope are the result of amassing a depth of experience in a market, which makes it possible to understand customer preferences or have expertise in regulatory processes. Even though these latter capabilities are not easily automated, they benefit from the size of a company.

Thomas Malone proposed a different three-part framework to describe the core functions of an enterprise—Design, Make, Sell—which are parallel to but not identical to John Hagel’s three categories of business activities. Malone suggested that all three types of activity may be subject to both concentration and fragmentation, and that in each category we could see a concentration in underlying infrastructure and fragmentation in the delivery of products or services. For example, an engineer may be creative but still may need a large infrastructure to support his activities. High-quality customer relationships may be dependent on big data sets, but may be delivered by an independent agent who is provided access to the data he or she needs. In fact, we may see the emergence of concentrated infrastructure and fragmented delivery of services in all three categories. We have already seen how the widespread availability and relatively low cost of virtually unlimited computer power in the cloud (typically supported by very large data centers that definitely benefit from economies of scale) has led to a proliferation of small companies that are able to leverage this highly concentrated resource.

Finally, crowdsourcing may be emerging as an extreme version of fragmentation. At one time, it seemed as if there would be a role for personal curators for the content on the Net (Yahoo began by performing this function), but crowdsourcing through platforms such as Twitter have proved to be more effective, allowing each individual to select the guides he or she finds most useful. And as noted above,

online peer-to-peer networks have become trusted sources of information about medical issues and treatment alternatives. These sites have also become valuable sources of information that can be used in research. In an example of collaboration between large and small entities, Genentech announced in April 2014 that it was forming a five-year partnership with PatientsLikeMe that will give Genentech access to data provided by the site's participants. Genentech announced that it would "use PatientsLikeMe's network to both inform patients about clinical trials and iterate clinical trial design with patient input."<sup>15</sup> And Wikispeed, the venture founded by Joe Justice, is exploring whether it is possible to use crowdsourcing to design and build a high performance automobile.

### **The Secrets of Being Big and Innovative**

There is general agreement that small companies, especially when they are in start-up mode are often highly innovative, both out of inclination and necessity. Most start-ups are motivated to do something new, to bring something new to the marketplace, which requires innovation. Because everything a start-up does is for the first time, it is necessary to invent all sorts of things, which requires innovation. And the relative lack of structure of small companies means that there are few rules or structures that inhibit innovation. It is perfectly normal to expect everyone involved to pitch in and do what needs to be done, with little regard for titles or qualifications. As companies grow and mature, however, the freedom to innovate typically gets circumscribed. In extreme cases, where bureaucratic systems dominate, innovation may require heroic effort.<sup>16</sup>

So, how possible is it for organizations to get large, even very large, and remain innovative? The Roundtable heard from representatives of two iconic tech companies—Salesforce.com and Google—founded within a year of each other, both highly successful and widely recognized for their ability to grow and continue to innovate. In both cases, the presentations focused on the culture of the organizations and how it encourages, even demands that all employees pursue innovation.

**The Salesforce.com Story.** Founded in 1999, Salesforce.com has grown into a sizeable company with more than 12,000 employees and

annual revenues of more than \$4 billion. In 2012 and again in 2013, Salesforce.com was ranked by *Forbes* as the most innovative company in the world,<sup>17</sup> which suggests that the company is doing something—or several things—right. The company has set a goal of reaching \$15 billion in annual revenues while keeping its culture and values intact.

Peter Schwartz explained that he was attracted to the company because it represented an entirely new type of organization. Under the leadership of founder and CEO Marc Benioff, Salesforce.com has been built around a series of strategies and values that support engagement and promote innovation at every level of the company:

- **Transparency:** every employee is encouraged to watch the meetings of top management, including their decisions on budgeting. Through the company's internal social network, employees are able to comment on what they are seeing and hearing in real time. As a result, "everyone knows everything that is happening in the company. There are no internal secrets."
- **V2MOM Planning Process:** The acronym stands for:
  - o Vision—what you want to accomplish over the next 12 months
  - o Values—why your vision is important
  - o Methods—what you are going to do to achieve your desired goals
  - o Obstacles—the challenges, problems, and issues that need to be overcome to be successful
  - o Metrics—how you will know if you have met your goals.

The acronym describes the elements of a planning process, developed by the Salesforce founder, which is intended to create clear alignment around goals, strategies and tactics throughout the company.<sup>18</sup> Each year, an overall V2MOM is presented to the company's top 400 employees, debated, redone and then agreed to, with the rest of the company watching the process. Then every employee develops their own version of V2MOM and publishes it for review and comment by the entire com-

pany. Discussions focus mainly on methods, what everyone is going to do to reach their goals. The result of the clarity that the process produces is a high level of autonomy for every employee, with relatively less need for vertical control. The company has no organization chart and job descriptions can change in a period of months or weeks, depending on what is going on.

- **Generosity:** The company relies on its own enterprise social network, Chatter, to allow employees to communicate and help one another. The network gives everyone in the company access to what everyone else knows. For example, Schwartz used Chatter to get a dozen good examples for a presentation he was preparing in just a few hours.
- **Adaptability:** Salesforce.com puts a premium on the capacity to change to meet changing conditions. The ability to adapt to a current reality is more important than preserving existing systems or relationships. The environment inside the company permits autonomy and recognizes and rewards initiative.
- **1/1/1 Philanthropic model:** One percent of the company's equity is used to fund charitable contributions, one percent of every employee's time (six days per year) is donated to support good causes, and one percent of the company's products are provided free to non-profit organizations. According to the Salesforce.com Foundation that administers the program, "Since our founding, we have given over \$53 million in grants, 580,000 hours of community service, and provided product donations for over 20,000 nonprofits."<sup>19</sup> The company has also actively encouraged other companies to adopt this model for its own philanthropic activities. Schwartz explained that this policy works as an effective "sorting mechanism" for employees: those who do not like it or are uncomfortable with an emphasis on generosity leave the company.
- **Power of Platform:** Even though Salesforce has been identified as the world's most innovative company, in fact, it actually

creates almost nothing. Its most important innovation is to build a platform that allows users to innovate on it, to create new applications that others can pick up and use. Salesforce.com launched its AppExchange in 2006. By 2011, the exchange reached one million downloads and two million in 2013.<sup>20</sup>

**The Google Story.** Perhaps the quintessential success story of the past several years is Google, which was founded in 1998 (one year before Salesforce.com) and has annual revenues of \$60 billion, which represents approximately one-third of total worldwide spending on online advertising, and more than ten percent of all advertising expenditures globally. Jeff Huber, Senior Vice President at Google (no relation to Peter Huber), followed Peter Schwartz by describing Google's "top ten secrets of innovation."

1. **Have a mission people know and care about.** From the company's earliest days, its founders stated that its mission was "to organize the world's information and make it universally accessible and useful." While the way the mission has been pursued has evolved from organizing Web pages to creating Gmail and Google Maps (both of which Huber worked on), the core mission remains unchanged and proves to have universal appeal.
2. **Start with users' problems.** Even though most people cannot tell you what they want that they do not have, they can tell you what their problems are. The company's most successful products have all been based on solving its users real problems.
3. **Hire generalists, not specialists.** Because the company is growing and changing so fast, it is very difficult to identify a specific set of skills that are needed to fill a specific role. As a result, job descriptions are stated generally. To decouple the hiring process from a specific role the company follows a policy of "late binding" where job assignments are not made until after someone is hired. The amount of structure in the company is kept to a minimum, and employees are expected to take the initiative in taking on projects that need to be done or tackling problems that need to be solved.

4. **Data-based transparency.** An all-company meeting takes place every week. Every three months a meeting is held in which the results of the previous quarter are reviewed and top priorities for the next quarter are outlined. Virtually all corporate information is accessible on the company’s intranet (with the exception of two groups: Android, to protect confidentiality agreements with partners, and Google X, to protect the freedom to explore new initiatives that the company may or may not decide to pursue). OKRs—statements of Objectives and Key Results—“cascade down from the top of the company to individual divisions and teams.” This methodology, which Google adopted from Intel, includes formulating ambitious but measurable objectives, while Key Results identify precisely how progress toward meeting the objective will be measured.<sup>21</sup>

Elements of an OKR
<p>The Objective</p> <ul style="list-style-type: none"> <li>• is ambitious</li> <li>• feels a tad uncomfortable</li> </ul>
<p>The Key Results</p> <ul style="list-style-type: none"> <li>• clearly make the objective achievable</li> <li>• are quantifiable</li> <li>• lead to objective grading</li> </ul>

Source: [www.businessinsider.com/googles-ranking-system-okr-2014-1](http://www.businessinsider.com/googles-ranking-system-okr-2014-1)

5. **Small teams that demo and iterate.** Even though Google now has more than 50,000 employees, its product teams are kept very small. For example, the core team responsible for Gmail consists of 15 people. Within Google X, teams range in size from one to two people up to six. There is a strong emphasis on demoing ideas rather than talking about them. The company is rigorous in culling ideas to pursue: there are a number of internal mechanisms, both from the top down and the bottom up, to kill projects that are not sufficiently promising. In the early stages of a project, it is acceptable to do “hacky” things

that are not polished or complete, but Google knows that when it launches a new product, it is likely to be quickly adopted by large numbers of users, which means that it must be very robust at launch.

6. **Twenty percent time.** Anyone in the company, and especially engineers, are free to use 20 percent of their time to pursue their passion. They can use the time to develop and demo an idea and recruit others to work on it. Employees can use their time in different ways—by taking one day a week or saving up time in order to dedicate a full week to a personal project. This approach has been the source of many successful ideas, including Google News, which was originally developed after 9/11 by a research scientist to help himself keep up on news stories happening around the world.<sup>22</sup>
7. **Portfolio model.** The company allocates 70 percent of its resources on its core activities, 20 percent on adjacencies, and ten percent on “crazy new ideas.” At both the company and the individual level, the ten percent for crazy ideas serves as a “forcing function” to maintain an edge that keeps people from becoming too comfortable.
8. **Set high expectations but measure progress.** A typical rejoinder to a new idea from the company’s founders is, “You aren’t thinking big enough.” But no matter what is being proposed, it is necessary to measure results regularly.
9. **Provide a platform for others.** Much of Google’s success is based on providing platforms on which others have been able to add value by creating new applications. Google Maps and Google Earth each attracted more than one million developers who made use of the geographical information they provide to develop uses linked to specific locations. The Android operating system is used by 50 different manufacturers who use it to power their mobile devices. Google Play, the online marketplace for Android apps, has more than one million apps, nearly all created by third parties, that have been downloaded more

than 50 billion times. Google Glass, one of the company's newest ventures, was explicitly designed as a platform for the development of apps for wearable devices. When prototypes of the device were first made available to developers in April 2013, Google also released an API to facilitate the development of apps.

10. **Set expectations.** At Google, the expectation is that innovation is the rule, not the exception. When considering a new idea, everyone is encouraged to ask, "Is this something that only Google can do?" Even when there are other similar examples in the market, the goal should be to try something new, to do something distinctive.

There are obviously similarities between the two lists, especially in terms of keeping all employees aware of and aligned with the firms' goals and engaged in and challenged by their work. To do so, both companies are deeply committed to maintaining transparency in almost every aspect of their operations. Both employ planning processes that put a premium on explicitly defining goals and establishing clear metrics for measuring progress toward those goals, which maintains individual accountability. Both see themselves in the platform business, which gives others, including users, a stake in the success of the company. And both are remarkably open with sharing the "secrets."

But does this approach to operating carry over to other companies? How feasible is it for an "ordinary" company to adopt these strategies, and if they do, how likely are they to lead to success?"

Irving Wladawsky-Berger suggests that, "You can only be a child for so long, then you need to grow up." Over time, companies acquire a legacy based on brands, customers and ways of operating. Companies need to evolve to adapt to the circumstances they find themselves in. IBM, famously, went through a major transformation after it went through its "near death experience" in 1993, when the company lost \$8.1 billion, the largest annual loss in corporate history to that date.<sup>23</sup> Under the leadership of CEO Lou Gerstener, IBM changed its fundamental business strategy from leasing large computer systems to focusing on software and systems integration. As a result, IBM remains one of the largest and most profitable companies in the world. It was ranked by *USA Today* as

the most innovative company in the world, based in part on the fact that it was awarded more patents than any other company in 2013.<sup>24</sup> At the same time, Wladawsky-Berger noted, other companies who had good CEOs have been unable to make the transition and have tumbled from the ranks of leading companies.

Jeff Huber maintained that there is a “strongly wired fear of legacy”—and its power to favor conservative decision-making—within Google. The company is committed to cannibalizing itself, to be the first to come out with the next generation of a product, even at the expense of the existing product. Initiatives like Google X are intended to help the company keep its edge, the result of a conscious decision to keep investing in “crazy things” that just might pay off or change the world.

But will even Google be able to stay like Google and will Salesforce stay like Salesforce as they continue to grow? Thomas Malone pointed out that as companies get bigger, it gets harder and harder for them to “keep weird ideas going,” which may just turn out to be their next major success. No one really knows the formula for keeping the virtues of a start-up intact as a company matures.

One key seems to be to preserve a company’s core values even as it grows and changes, which is easier to do when a company is being led by a strong, charismatic leader. John Seely Brown noted that companies where founders continue to play a conspicuous leadership role, which is still the case at both Google and Salesforce, seem to be “surprisingly insulated” from the demands of Wall Street for predictable results and steady growth. Amazon, another company where the founder remains very much in charge, has made moves that were deeply unpopular with investors, yet the company has been able to do well in the long run. In some cases (like Facebook and Google), the structure of stock ownership gives founders with a large ownership stake power that leaders of older companies do not have.

It is also true that investors can provide companies with a sense of discipline that can be useful. Ken Cukier, Data Editor of *The Economist*, recalled that 25 years ago, Japanese companies were poised to dominate the world economy. There was a whole cadre of companies created after World War II, with strong leaders who had access to cheap capital and virtually no pressure from stockholders. What seemed at the time to be huge advantages, however, turned out to be deficits when the

Japanese economy turned down and the companies, without the discipline that outside investors would normally bring, stagnated. Once the firms' founders left, the companies could not maintain their discipline, and slowly went broke (though most of them continue to function).

One of the strengths of capitalism, after all, is supposed to be the process of creative destruction that continually winnows out the enterprises that are no longer viable and creates space for the emergence of new ventures. As Irving Wladawsky-Berger commented, it is up to the marketplace to decide that a company is more valuable as a carcass to feed start-ups than as a going concern. Part of the discipline of the marketplace is to keep you paranoid: you may be doing well at the moment, but one day, your time will be up and you will need to make way for others.

But, as Robin Chase added, capitalism is also about becoming a monopoly. Google and Amazon have become natural monopolies. For the moment, they face no serious competitors and no one is willing to fund a potential competitor to them. But what will happen if the tech companies that are doing well now encounter real difficulties? Do they have the resilience to change? It has been suggested that one reason that Apple has held on to a vast amount of cash (\$160 billion as of March 2014) is that it had gone through its own near-death experience in the mid-1980s, and is now institutionally averse to taking actions that would make it vulnerable again.

Can a company's long-term view get it through short-term problems? Peter Schwartz's job at Shell involved articulating a long-term vision for the company. They developed and then announced their strategy, which was largely driven by the value of a barrel of oil. Even when that value went down, the company was not punished by Wall Street, since it retained trust in the company's viability over time. But Google has been successful with a very different approach: rather than having a long-term plan, it puts its faith in its ability to keep iterating quickly to respond to both opportunities and challenges.

Unfortunately, many established companies do not do a very good job of expressing their values. There are some outstanding companies that have strong, well-articulated values (Johnson & Johnson, Procter & Gamble, American Express), but they are exceptions. In fact, David Kirkpatrick, Founder and CEO of Techonomy Media, cautioned

about assuming a direct causal linkage between a company's culture and its commercial success. He suggested that successful companies like Google, Salesforce and Apple may be the result of flukes—having the right product at the right time—that produced the extraordinary resources that enable them to pay for the culture they want. In other words, their economic success may be responsible for their distinctive cultures, rather than the other way around.

### **Toward a Collaborative Economy**

Are Salesforce.com and Google outliers in the current economy or are they bellwethers of a fundamental shift? Jeremiah Owyang, an Industry Analyst and Partner with the Altimeter Group, believes that we are moving toward a “collaborative economy” that will require companies to move toward either becoming a platform provider or participating in platforms provided by other companies.

The Collaborative Economy is an economic model where ownership and access are shared among corporations, startups and people. This results in market efficiencies that bear new products, services and business growth.

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**...we are moving toward a “collaborative economy” that will require companies to move toward either becoming a platform provider or participating in platforms provided by other companies. - Jeremiah Owyang**

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According to Owyang, we are now entering the third phase in the role of media in business. In the first phase, the “brand experience era,” corporations used media to deliver messages about their brands to consumers, a largely one-way process that was intended to shape purchasing behavior (the classic function of advertising). In the more recent “customer experience era,” social media emerges to give consumers

more power by enabling them to share experiences and opinions about brands. And now we are entering the “collaborative economy era” in which individuals are able to exchange goods and services directly. This sort of sharing has been appearing first in areas where high cost products are often idle: even at the peak of rush hour, some 90 percent of all cars are parked; most second homes are used rarely by their owners, while many first homes have unused space. The peer-to-peer connections made possible by social networking along with the emergence of online payment and e-commerce systems have simplified the process of monetizing these resources through ride sharing services such as Lyft and RelayRide and home sharing services like VRBO and Airbnb. The impact of this evolution is likely to be significant on companies that cling to more traditional models of production and distribution. Owyang cites a study that found that each car that is used for ride sharing has the potential to replace 9-12 private vehicles.<sup>25</sup> Companies that do not want to suffer from disintermediation need to join the trend and devise ways to support collaboration with and among their customers and partners.

These ventures may be just the first step in a broader movement that will lead to many different kinds of network-enabled collaborations. In the near future, according to Owyang, we will see platforms that allow people to co-ideate, co-fund, co-build, co-distribute, co-market, co-sell and co-revenue share all sorts of goods and services. The collaborative economy will even impact the way companies are organized and operate: the relationship between employers and employees will be redefined as the definition of a workforce becomes more “porous”; the location of the workplace will become less fixed as offices become available on-demand; and the distinction between employees and customers will blur as companies tap into user communities to define and even fund and develop new products through crowdfunding and crowdsourcing mechanisms. Owyang concludes that companies that try to hold on to traditional models are likely to suffer from disintermediation, while those that are willing to “let go” of established ways of operating and embrace new models of collaboration are likely to thrive.<sup>26</sup>

## **Creating Synergies: Platforms and Ecosystems**

As they explored the future of the firm, the Roundtable participants returned, as they had in previous meetings, to considering the purpose of a business enterprise that was first articulated by Ronald Coase in 1937 in his classic paper on “The Nature of the Firm” (which also provided a starting point for Thomas Malone’s 1987 paper cited above). Coase noted that even though it is theoretically possible to obtain all sorts of goods and services at the lowest cost in open markets, there are transaction costs associated with doing so, and bringing more components of a business into a single entity can reduce these costs and make it easier to get work done. Therefore, to achieve maximum efficiency, it makes sense to do as much as possible within an enterprise. However, as firms continue to expand, the overhead costs of managing a large, diverse enterprise increase, and at some point, a firm will reach a point where further growth is not profitable. A well-run firm will strike a balance between what is done inside and what is done externally.

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**Effective leaders need more than just analytical skills; they need to have passion and commitment, the ability to motivate others.**

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As we move into a digital economy, Wladawsky-Berger sees more aspects of business being carried out through networks rather than hierarchies. Since, as Malone had predicted, the Internet has dramatically reduced the cost of obtaining goods and services, it now makes sense to recalibrate the balance between internal and external operations and think about the role of the firm in a new, more dynamic way:

Companies need to focus their energies on their true point of differentiation instead of squandering competitive advantage by dispersing focus and investment. Given the intense, global and unpredictable nature of competition, firms need to realistically assess their strengths across the board. They need to decompose their organization into its key component parts so they can understand what is truly differentiating—where

the organization has strengths and weaknesses—and then make decisions about how to build, buy or partner for world-class capability. They should essentially become an aggregation of specialized entities with complementary interests—expanding, contracting and reconfiguring themselves in a way that best adapts to or even anticipates market dynamics.<sup>27</sup>

This shift brings with it the challenge of what Wladawsky-Berger called, “distributed management.” As companies disaggregate and reconfigure themselves, they will find themselves increasingly managing operations that are distributed across a network of interconnected firms and individuals, which is best described as an ecosystem. Such a structure is more complex than more traditional models of the firm and call for highly skilled managers.

The challenge for managers in the new economy goes beyond managing complex processes; it also involves leading people. Effective leaders need more than just analytical skills; they need to have passion and commitment, the ability to motivate others. And it is not just a matter of leading one’s own employees, but all of the participants in a company’s extended ecosystem.

Unfortunately, the track record for managing highly complex activities, such as large-scale software development projects, is not good.<sup>28</sup> Peter Schwartz suggested that the ability to lead an ecosystem, which involves the ability to marshal fragmented resources into a coherent whole, is a new kind of skill that is not part of the traditional training for managers. But, today, the lack of these skills can be literally disastrous: the 2010 oil spill in the Gulf of Mexico can be traced back to the ineffectiveness of BP in leading its ecosystem of multiple players who needed to work closely together to maintain safe drilling operations on the Deepwater Horizon.

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Wladawsky-Berger argued that the U.S. is, in general, better at “distributed leadership” than other countries where more hierarchical models persist. What is the basis for America’s advantage? Robin Chase proposed that America’s strength in this area derived from a democratic political system that has required different groups to find ways of collaborating constructively. Ken Cukier suggested that America’s advantage could go back to the country’s colonial period, where settlements without a royal leader had no choice but to govern themselves. Charlie Firestone of the Aspen Institute added that the U.S. is a nation of immigrants and strivers who understood the need to work together in order to get ahead.

***The need for trust.*** One of the critical requirements for a well-functioning ecosystem is to build trust among the participants. But how can long-term trust be built in an era of rapid change? Part of the answer is personal relationships: leaders of large enterprises can make things happen quickly if they have created a network of personal connections and built a reputation for being trustworthy. Trust can also be developed through a shared culture and shared values that can create a coherent whole out of a collection of separate entities. And there are mechanisms developed to build trust such as eBay’s reputation system and LinkedIn’s chain of personal referrals. Yet another approach to building trust is what Terry Young, Founder and CEO of sparks & honey, called “radical transparency” which essentially treats all members of an ecosystem as if they were all employees of the same firm.

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oDesk is an online service that matches employers with freelance workers to perform specific tasks. Founded in 2005, the company has signed up more than five million freelancers and attracted more than one million employers. In addition to matching jobs and job seekers, oDesk makes it possible for “distributed teams to work together and

help instill trust in work happening via the Internet,” according to oDesk CEO Gary Swart. Swart believes a key to the success of the company is the ability for individual workers to develop a reputation based on the work that they have done via oDesk that is visible to potential employers. As workers build a good reputation, they can move quickly from jobs that pay \$5 per hour to earning \$50 per hour, based entirely on the quality of their performance. It is, in other words, a meritocracy where quality is what matters.

***From platform to ecosystem.*** What oDesk has done is to provide a platform that enables millions of individuals to find work from a million different employers. Salesforce created a platform on which many small companies are able to build and distribute applications that are useful to enterprises that rely on Salesforce’s core CRM and collaboration tools. Google’s Android and Apple’s iOS mobile operating systems represent platforms that offer a way for app developers to easily reach a majority of smartphone users.<sup>29</sup> Facebook has become a platform that has become a vital tool used by a billion people to maintain their social networks.

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**...a platform is a set of enabling standards or  
resources that connect people.**

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A platform is a system that provides value to its users by reducing transaction costs that previously made it too costly to do things that people wanted to do. John Hagel added that, from a technical point of view, a platform is a set of enabling standards or resources that connect people. Although the most well-known platforms are digital, they need not necessarily be technologically based. For example, Li & Fung uses little technology other than faxes and the telephone to orchestrate a large global network of apparel manufacturers.<sup>30</sup>

No matter how they operate, all platforms are critical tools in building and maintaining an ecosystem of participants who connect to collaborate, co-create, co-build or co-distribute together. According to Jeff Huber, the classic definition of an ecosystem is “a community of living and non-living things that interact as a whole system” through mechanisms such as incentives and feedback loops.

While a platform, once it is built out, may be able to function more or less automatically (in fact, it is through the automation of functions that platforms can drive down transaction costs), a unique and compelling characteristic of an effective platform is its ability to scale. As Robin Chase noted, the more that interactions with an ecosystem can be “platformized,” the easier it will be for participants to interact with that ecosystem. But ecosystems also need strong leadership to operate effectively. Leaders are typically the creators and operators of the core platform, and take a key role in building the ecosystem around it. They also take responsibility for maintaining the quality of a platform, which means making sure that it does not grow too complicated to use.

It is helpful when a platform is embodied in the person of a charismatic individual—Marc Benioff at Salesforce, Larry Ellison at Oracle, Sergey Brin at Google, Jeff Bezos at Amazon, and Jimmy Wales at Wikipedia. When something goes wrong, it is the leader who takes responsibility to fix it: one of the reasons for Amazon’s success is that it stands behind the transactions that take place on its platform, even if they involve third parties. The same is true of American Express that takes responsibility for the experience of its users.

***A taxonomy of ecosystems.*** Not all ecosystems are created equal. John Hagel identified a dozen different kinds of ecosystems, each of which has its own distinctive characteristics. At one end of the spectrum are “centralized” ecosystems in which a single large entity takes responsibility for organizing and maintaining connections within the ecosystem. Classic examples are the “collection” model represented by P&G’s Connect + Develop initiative through which the giant consumer products company opened up its in-house innovation process to outside companies that offered resources that P&G did not have, but included no provisions for making connections among the participants. Another model for a centralized ecosystem is illustrated by Goldcorp, a large multinational mining company that released geological data on an Ontario mine to outsiders and invited participants to enter a contest to identify the most promising excavation sites.

At the other extreme are what Hagel describes as “self-organizing” ecosystems in which participants collaborate around a shared goal without having a clearly identified leader and that typically lack “defined standards, forums, barriers to entry or rules for participa-

tion.”<sup>31</sup> Examples include “grassroots” ecosystems such as the group of construction companies that collaborated to develop methods to make use of a novel building material and a “pack” ecosystem represented by the informal collaboration of young surfers who shared experiences and techniques for riding big waves.<sup>32</sup> Typically, these ecosystems function for a finite period of time and disband once the goal that brought it into being has been accomplished.

Between these two extremes are what Hagel calls “sequenced” ecosystems, such as Li & Fung, which orchestrates the elements of a value chain that links apparel manufacturers at one end and designers and retailers at the other end; and “facilitated” ecosystems that are typically maintained by a single party but permit participants to collaborate with each other in multiple ways around a common goal. (An example is the Apache Foundation that serves as a hub for developers who participate in the community responsible for the open source Apache web server software).

The main difference among these models is their dynamism. “Static” ecosystems retain a hierarchical structure and exist largely to serve the needs of the central organizer. Dynamic ecosystems provide a significant opportunity for accelerating participant performance improvement—whereby all participants get better faster by working together on a larger and larger scale. It is this latter type of structure—represented by the process network, web, open development, community and pack ecosystems—that provides something genuinely new and valuable: support for collaboration that can lead to unprecedented levels of performance and progress. According to Hagel, these dynamic ecosystems:

are highly scalable and enable a high degree of interaction among participants. In addition, they have the potential to foster deeper trust-based relationships, and/or create the incentives necessary to attract a wide and diverse group of participants.

An ecosystem is larger than an individual company, even if one firm is responsible for building and maintaining it. Dale Dougherty, Founder and CEO of Media Maker, noted that in the most successful ecosystems, control is not tightly held, but is shared, allowing participants to self-organize in ways that meet their individual needs. In such

a distributed model, the role of the leader is to serve as a recipient for feedback and ensuring that that feedback is used to make necessary changes to keep the whole functioning in an optimal way.

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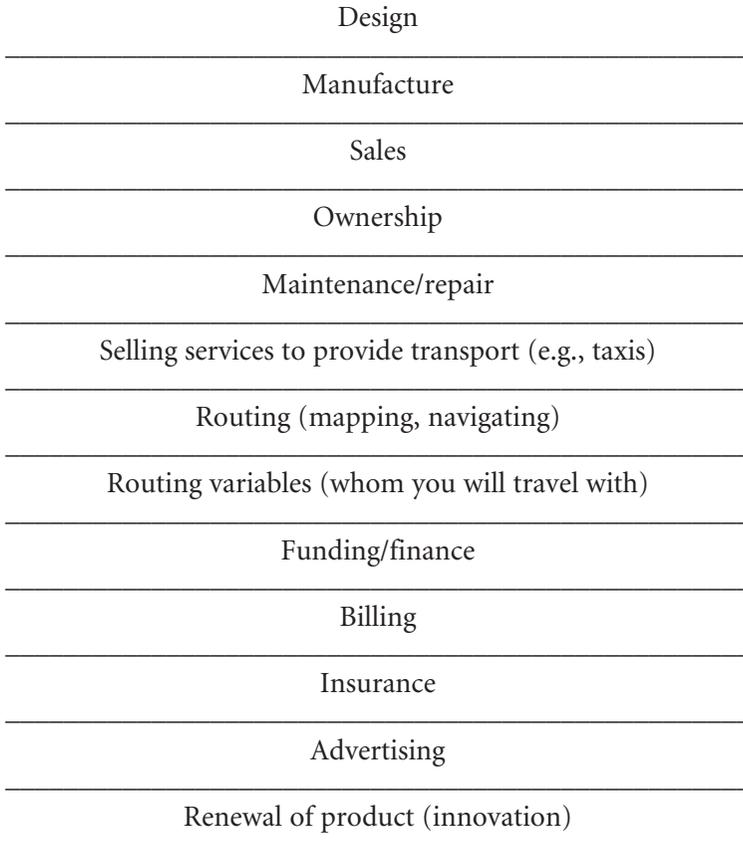
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*The ecosystem of the automobile.* This taxonomy does provide a means of categorizing a wide range of collaborative initiatives across multiple sectors. But can the model be used to understand what is happening in a specific industry or economic sector, or used to predict where that sector might be going? To explore these questions, the Roundtable participants focused on one specific sector: the automobile industry that was highly fragmented in its earliest days (when there were scores of independent car manufacturers), but evolved into one of the most highly concentrated manufacturing sectors, long dominated by the Big Three auto makers who controlled approximately 15 percent of the whole U.S. economy. Eventually, they were joined by a handful of giant global car makers who expanded the range of choice for consumers but did not really change the prevailing industry structure. In recent years, however, there have been several developments that suggest that the industry is about to experience major disruption—the 2009 bankruptcy and government rescue of GM and Chrysler; the emergence of new players such as Tesla and Wikispeed that are proposing to change the definition of what a car is and how it is made and sold; the advent of ride sharing services; and the rapid advancement of the technology for self-driving cars.

What happens to the ecosystem of the automobile if the system of mass production that was pioneered and perfected by auto makers from Henry Ford to Toyota gives way to more decentralized, more customized, perhaps even more participatory manufacturing? What happens if a majority of Americans stop considering owning a car a necessity? What happens if the car changes from a product to a service? What does the industry ecosystem look like if car ownership becomes an optional lifestyle choice, if cars are able to drive to us and take us

where we want to go and if the cost of using a car depends on our willingness to share it with others?

To help explore these questions, Thomas Malone offered an analysis of the structure of the automobile industry that describes a series of functional “layers”:



Each of these layers involves a substantial amount of activity; some are multi-billion dollar sectors in their own right (e.g., auto insurance alone accounts for nearly \$200 billion in revenues annually<sup>33</sup>). Some of these functions are likely to experience greater concentration, while others will undergo fragmentation. Although virtually all sectors are vulnerable to disruption, it is to be expected that entrenched interests will resist change. Taxi companies have already raised objections to

services that enable sharing of private cars, while car dealers in several states have attempted to block Tesla's selling cars directly to consumers (just as hotel operators are challenging the legality of services like Airbnb). And it is likely that the gating factor on the take up of self-driving cars is more likely to be legal and regulatory considerations rather than technical feasibility. Joe Justice of Wikispeed proposed that one way to address regulatory barriers is to focus on what he called "test-driven legislation" that does not protect a particular technology or business structure but rather provides a system in which any solution that can meet a specified performance test is deemed to be legal.

Another way to accelerate change is to create a compelling vision of a future that is different—and better—than the present. One of the most skilled practitioners of this art has been the automobile industry itself. GM's Futurama exhibit at the 1939 World's Fair, which was designed by Norman Bel Geddes, is described as "grandest of all predictions, an enormous scale model 'city of 1960,' which promised a network of national highways for middle-class businessmen to drive home to their wives."<sup>34</sup> The popularity of Futurama is credited with helping to build support for the Federal Interstate Highway system that was constructed after World War II (the new system was also sold on the basis of its role in making it easier to move tanks and other military equipment around the country).

***Beyond the car.*** In fact, the ecosystem of automobiles is much larger than just the industry that makes and sells them. Cars have had enormous impact on cities and the built environment. The rise of global megacities and the growing awareness of the costs of carbon-based economies provide further evidence that a new vision is needed for the world of tomorrow. A number of progressive cities have already begun to visualize different futures for themselves. Technology companies such as IBM and Cisco are actively promoting the concept of "Smart Cities" where technology is used to improve the efficiency of all urban systems, including transportation. While he was mayor, Michael Bloomberg supported a number of initiatives to make New York a healthier city that included reducing traffic and pollution through imposing congestion pricing and expanding support for electric vehicles. And Park Won-soon, the mayor of Seoul, Korea, articulated a new vision of that city as "the City of Sharing" that would, among other things, dramatically change the role of the automobile in the

urban environment (see “Is Seoul the Next Great Sharing City?”). The vision leverages the fact that Seoul is generally ranked as the top city for broadband service in the world<sup>35</sup> to support a social and economic transformation based on sharing and collaboration.

### **Is Seoul the Next Great Sharing City?**

Imagine this scenario: You wake up in a bustling city and have breakfast with the guest you rented your spare room to. You then ride in a shared car to your job where you give tours of the city to out-of-towners. On your lunch hour you participate in a public transportation flash mob and after work you swing by a tool sharing center to finish a project. Once home, you enjoy a community meal at your neighbor’s apartment and spend the evening packing for a trip using borrowed luggage that you found via your smartphone.

One of the great megacities of the world, Seoul, South Korea, is positioning itself to be a model city for sharing. A new, city-funded project called “Sharing City, Seoul” aims to bring the sharing economy to all Seoul citizens by expanding sharing infrastructure, promoting existing sharing enterprises, incubating sharing economy startups, utilizing idle public resources, and providing more access to data and digital works.

Created in September of 2012 as part of the Seoul Innovation Bureau’s plan to solve social, economic and environmental problems in innovative ways, the Sharing City is a move to better the lives of Seoul citizens through sharing. It’s also a way to maximize the city’s resources and budget.

*Source: <http://ourworld.unu.edu/en/is-seoul-the-next-great-sharing-city>*

In fact, the most compelling unit of analysis may not be a specific industry or economic sector, but one that embraces a larger context. John Clippinger suggested that by focusing our analysis on existing sectors, we may be reifying old structures rather than thinking about what could be. For example, it might be an interesting exercise to look broadly at the city as a platform for collaboration and innovation.

Another important perspective is that of the individual who is presumably at the center of most if not all of the changes going on. One of the most consequential results of the digital revolution has been the shift in the locus of power from large institutions to individuals. Ultimately, it is the empowered consumer who stands to benefit from the expansion of choices that are occurring in one sector after another.

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While we are able to get glimpses of a future that is dramatically different from the current reality, we still lack a compelling vision of a new economy, a new culture. What is needed, according to John Hagel, is a “shaping strategy” that has the power to mobilize support around a common vision. As an inspirational model, he cited the story of Malcolm MacLean, the American businessman who invented the shipping container in the mid-1950s, established a company, which became Sea-Land Services, to build and operate the ships that could hold the containers and built ports that could load and unload the ships efficiently. He then spent several decades convincing shippers and other key players to reconstruct the entire shipping industry around a better way of operating. MacLean not only had to contend with the inertia of an industry that had operated the same way for a long time, but also had to overcome the fierce resistance of the Longshoremen’s Union whose livelihood was based on unloading cargo by hand. When MacLean died in 2001, Secretary of Transportation, Norman Minetta, commented that MacLean was responsible for modernizing the process of loading and unloading ships that was “was previously conducted in much the same way the ancient Phoenicians did 3,000 years ago.”<sup>36</sup>

Other, more recent examples of shaping strategies that have helped catalyze large-scale change include Bill Gates’s persistent evangelism for the power of personal computers; Dee Hock’s radical vision for a virtual, decentralized organization to offer credit to individuals that led to the trillion dollar VISA empire; Li & Fung, the Hong Kong-based enter-

prise that recruited thousands of small suppliers to serve the apparel industry by envisioning a global network that benefited all participants; and Marc Benioff's eloquent advocacy for the future of software as a service that helped to change the economics of the industry and establish Salesforce.com as a ubiquitous platform for large enterprises and for millions of individuals. In the end, even in the age of amazingly powerful technologies, there is still no substitute for the power of an individual to lead and to inspire others.

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**In the end...there is still no substitute for  
the power of an individual to lead and  
to inspire others.**

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## **Conclusion**

A lot has changed in the quarter century since 1987. Twenty-five years ago, the Internet was largely restricted to college campuses and research labs. E-mail systems were isolated from each other, and electronic links between companies had to be set up through commercial network providers. Only a tiny fraction of the public was online, and virtually all of them were restricted to slow, dial-up connections. The invention of the World Wide Web, which fueled the evolution of the Internet into a true mass media, was still several years in the future. Yet, the potential power of network connections was already becoming evident.

We now live in a world in which almost everyone can be online at any time through pervasive broadband networks, both wired and wireless. Social media and e-commerce are everyday realities. But the implications of this dramatic evolution are still to be fully understood. Many new institutions have been created to provide new services, and many older organizations have recognized that they need to change in order to operate successfully in this new environment. It is becoming clear that in this highly connected world, everyone is part of an ecosystem—or multiple ecosystems—and that learning how to collaborate effectively with others has become a critical survival skill. But just how organizations should change, how far-reaching the process of

re-invention needs to go, and in what directions, remains unclear. In particular, questions remain about when it makes sense for a firm to unbundle services and get more focused, and when it make sense to get larger. This exploration will continue.

## Endnotes

1. Peter W. Huber, *The Geodesic Network: 1987 Report on Competition in the Telephone Industry*, Funded by the Antitrust Division of the U.S. Department of Justice, January 1987.
2. The seven Baby Bells, which provided local phone service, were Ameritech, Bell Atlantic, Bell South, Nynex, Pacific Bell, Southwestern Bell and U.S. West, along with AT&T, which was limited to long distance service. Today, Ameritech, Bell South, Pacific Bell and AT&T are parts of Southwestern Bell (which renamed itself AT&T after acquiring that company in 2005); while Nynex was acquired by Bell Atlantic (which changed its name to Verizon in 2000 after merging with GTE); and U.S. West became part of CenturyLink.
3. A.M. Rutkowski, "The Geodesic Network: Impact of the Huber Report," *Telecommunications*, Vol. 21, No. 4, April 1987, pages 38-45.
4. Thomas Malone, Joanne Yates and Robert Benjamin, "Electronic Markets and Electronic Hierarchies," *Communications of the ACM*, Volume 30, Number 6, June 1987, pages 484-497, <http://is.esade.edu/faculty/wareham/Teaching/StratNetComp/Readings/Electronic%20Markets%20and%20electronic%20Hierarchies.pdf>.
5. Ibid.
6. John Hagel, John Seely Brown and Duleesha Kulasooriya, *Future of the Corporation (The Institutional Landscape of the Future)*, Background Readings for the Aspen Institute Roundtable on Institutional Innovation, Aspen, Colorado, July 8-10, 2013.
7. Marc Levinson, *The Box: How the Shipping Container Made the World Smaller and the World Economy Bigger* (Princeton University Press, 2006).
8. Michael Kan, "Foxconn to speed up 'robot army' deployment," PC World, June 26, 2013, [www.pcworld.com/article/2043026/foxconn-to-speed-up-robot-army-deployment-20000-robots-already-in-its-factories.html](http://www.pcworld.com/article/2043026/foxconn-to-speed-up-robot-army-deployment-20000-robots-already-in-its-factories.html).
9. Top companies: Biggest employers, CNN Money, <http://money.cnn.com/magazines/fortune/global500/2012/performers/companies/biggest>.
10. According to Wikipedia, estimates of the number of workers employed at Foxconn City in Shenzhen vary from 230,000 to 450,000. Among the products it manufactures are Apple's iPads and iPhones, Amazon's Kindle, Microsoft's Xbox, Sony's PlayStation, and Nintendo's Wii. <http://en.wikipedia.org/wiki/Foxconn>.
11. Orly Lobel, "My Ideas, My Boss's Property," *The New York Times*, Monday, April 4, 2014, [www.nytimes.com/2014/04/14/opinion/my-ideas-my-boss-property.html](http://www.nytimes.com/2014/04/14/opinion/my-ideas-my-boss-property.html).

12. On Amir and Orly Lobel, “How Noncompetes Stifle Performance,” *Harvard Business Review*, January-February 2014, <http://hbr.org/2014/01/how-noncompetes-stifle-performance/ar/1>.
13. For a more detailed description of the rationale and operation of InnoCentive, see the report of the 2011 Aspen Roundtable, Richard Adler: *Institutional Innovation: Oxymoron or Imperative?* Aspen Institute, 2012, [www.aspeninstitute.org/publications/institutional-innovation-oxymoron-or-imperative](http://www.aspeninstitute.org/publications/institutional-innovation-oxymoron-or-imperative).
14. Ron Lieber, “Financial Advice for People Who Aren’t Rich,” *The New York Times*, April 11, 2014, [www.nytimes.com/2014/04/12/your-money/start-ups-offer-financial-advice-to-people-who-arent-rich.html](http://www.nytimes.com/2014/04/12/your-money/start-ups-offer-financial-advice-to-people-who-arent-rich.html).
15. Jonah Comstock, “PatientsLikeMe signs five-year data access deal with Genentech,” *MobiHealth News*, April 10, 2014, <http://mobihealthnews.com/31960/patientslikeme-signs-five-year-data-access-deal-with-genentech/>.
16. A classic example of the challenges that have to be overcome to introduce an innovation – even one with obvious benefits – is the story of the heroic struggle by one young naval officer to convince the U.S. Navy to adopt a simple innovation that radically improved the accuracy of ship-mounted guns. The story was originally told by Elting Morrison in his study of *Men, Machines and Modern Times* (MIT Press 1966). For a summary, see the 2011 Roundtable report, *Institutional Innovation: Oxymoron or Imperative?*
17. “The World’s Most Innovative Companies,” *Forbes*, August 14, 2013, [www.forbes.com/innovative-companies](http://www.forbes.com/innovative-companies).
18. For an explanation of the value of V2MOM by the founder of the company, see Marc Benioff, “How to Create Alignment Within Your Company in Order to Succeed,” *Salesforce.com* blog, April 9, 2013, <http://blogs.salesforce.com/company/2013/04/how-to-create-alignment-within-your-company.html>.
19. Share the Model, [www.salesforcefoundation.org/about-us/sharethemodel/](http://www.salesforcefoundation.org/about-us/sharethemodel/).
20. Alex Williams, “Salesforce Is A Platform Company. Period,” *Tech Crunch*, September 30, 2013, <http://techcrunch.com/2013/09/30/salesforce-is-a-platform-company-period>.
21. Jay Yarrow, “This Is The Internal Grading System Google Uses For Its Employees,” *Business Insider*, January 6, 2014, [www.businessinsider.com/googles-ranking-system-okr-2014-1#ixzz2zBWoCCI9](http://www.businessinsider.com/googles-ranking-system-okr-2014-1#ixzz2zBWoCCI9).
22. Staci D. Kramer, “Google News Creator Watches Portal Quiet Critics With ‘Best News’ Webby,” *Online Journalism Review*, September 25, 2003, [www.ojr.org/ojr/kramer/1064449044.php](http://www.ojr.org/ojr/kramer/1064449044.php).
23. Steve Denning, “Why Did IBM Survive,” *Forbes*, July 10, 2011, [www.forbes.com/sites/steve-denning/2011/07/10/why-did-ibm-survive](http://www.forbes.com/sites/steve-denning/2011/07/10/why-did-ibm-survive).
24. Michael B. Sauter, Alexander E.M. Hess and Thomas C. Frohlich, “The Most Innovative Companies in the World,” *USA Today*, January 18, 2014, [www.usatoday.com/story/money/business/2014/01/18/most-innovative-companies/4581161](http://www.usatoday.com/story/money/business/2014/01/18/most-innovative-companies/4581161).
25. Beth Buczynski, “Does Car Sharing Really Reduce Vehicle Ownership?” *Shareable*, August 6, 2011, [www.shareable.net/blog/does-carsharing-really-reduce-vehicle-ownership](http://www.shareable.net/blog/does-carsharing-really-reduce-vehicle-ownership).

26. For an extended version of this argument, see Jeremiah Owyang, *The Collaborative Economy*, The Altimeter Group, June 4, 2013, [www.slideshare.net/Altimeter/the-collaborative-economy](http://www.slideshare.net/Altimeter/the-collaborative-economy).
27. Irving Wladawsky-Berger, "The Nature of the Firm in the Digital Economy," July 29, 2013, <http://blog.irvingwb.com/blog/2013/07/the-nature-of-the-firm-in-the-digital-economy.html>.
28. Studies have found that many large-scale software projects run over budget and fail to meet expectations. For example, one study found that on average, large IT projects ran 45 percent over budget and seven percent over time, while delivering 56 percent less value than predicted. Michael Bloch, Sven Blumberg and Jürgen Laartz, *Delivering large-scale IT projects on time, on budget, and on value*, McKinsey & Company, October 2012, [www.mckinsey.com/insights/business\\_technology/delivering\\_large-scale\\_it\\_projects\\_on\\_time\\_on\\_budget\\_and\\_on\\_value](http://www.mckinsey.com/insights/business_technology/delivering_large-scale_it_projects_on_time_on_budget_and_on_value).
29. Jordan Kahn, "Smartphones are now a 95% Android-iOS global duopoly," 9TO5MAC, February 12, 2014, <http://9to5mac.com/2014/02/12/smartphones-are-now-a-95-android-ios-global-duopoly-w-android-closing-in-on-80-by-itself>.
30. For more about the structure and operations of Li & Fung, see John Hagel, John Seely Brown and Scott Durchslag, *Orchestrating Loosely Coupled Business Processes: The Secret to Successful Collaboration*, 2002, [www.johnhagel.com/paper\\_orchestratingcollaboration.pdf](http://www.johnhagel.com/paper_orchestratingcollaboration.pdf).
31. Amit Sahasrabudhe, Holly J. Kellar, Vijay Sharma and Bill Wiltchko, *Performance ecosystems: A decision framework to take performance to the next level*, Deloitte Center of the Edge, 2012, [www.deloitte.com/assets/Dcom-UnitedStates/Local%20Assets/Documents/TMT\\_us\\_tmt/us\\_tmt\\_performanceecosystems\\_060712.pdf](http://www.deloitte.com/assets/Dcom-UnitedStates/Local%20Assets/Documents/TMT_us_tmt/us_tmt_performanceecosystems_060712.pdf).
32. The story of the big wave riders, who used video to record their latest exploits and immediately posted them online, is told in John Hagel III, John Seely Brown and Lang Davison, *The Power of Pull: How Small Moves, Smartly Made, Can Set Big Things in Motion*. Basic Books, 2010.
33. "An Analysis Of The U.S. Personal Automobile Insurance Market Part 1," Trefis, December 5, 2013, [www.trefis.com/stock/hig/articles/218036/an-analysis-of-the-u-s-personal-automobile-insurance-market-part-1/2013-12-05](http://www.trefis.com/stock/hig/articles/218036/an-analysis-of-the-u-s-personal-automobile-insurance-market-part-1/2013-12-05).
34. Elliott Kalan, "The Original Futurama: The Legacy of the 1939 World's Fair," *Popular Mechanics*, March 11, 2010, [www.popularmechanics.com/technology/engineering/architecture/4345790](http://www.popularmechanics.com/technology/engineering/architecture/4345790).
35. Stacey Higginbotham, "The Top 10 Cities With the Best Broadband," GigaOm, May 25, 2010, <http://gigaom.com/2010/05/25/the-top-10-cities-with-the-best-broadband>.
36. Cargo Intelligence Security and Logistics Association, [www.cargointelligence.org/members/join.html](http://www.cargointelligence.org/members/join.html).

# APPENDIX

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## Aspen Institute Roundtable on Institutional Innovation

### *Structural Tensions and Synergies in the New Digital Environment*

Aspen, Colorado · July 8-10, 2013

#### Roundtable Participants

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## About the Author

Richard Adler is a Distinguished Fellow at the Institute for the Future, Palo Alto. He is also President of People & Technology, a consulting firm located in Silicon Valley. His research has focused on the impact of new technologies on fields including business, education, healthcare and aging.

Richard is the author of reports from each of the previous Innovation Roundtables: *Connecting the Edges* (2013); *Institutional Innovation: Oxymoron or Imperative?* (2012); *Solving the Dilbert Paradox* (2011); *Leveraging the Talent-Driven Firm* (2010); and *Talent Reframed: Moving to the Talent Driven Firm* (2009). Other reports he has written for the Aspen Institute include: *Rethinking Communications Policy* (2012); *Updating Rules of the Digital Road: Privacy, Security, Intellectual Property* (2011); *News Cities: The Next Generation of Healthy Informed Communities* (2011); *Media and Democracy* (2009); and *Minds on Fire: Enhancing India's Knowledge Workforce* (2007). He is also the author of *After Broadband: Imagining Hyperconnected Worlds* (Wharton, 2012) and *Healthcare Unplugged: The Evolving Role of Wireless Technology* (California HealthCare Foundation, 2007).

Richard is Fellow of the World Demographic Association and serves on a number of local and national boards. He holds a BA from Harvard, an MA from the University of California at Berkeley, and an MBA from the McLaren School of Business at the University of San Francisco.



# The Aspen Institute Communications and Society Program

*[www.aspeninstitute.org/c&S](http://www.aspeninstitute.org/c&S)*

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The Program's projects range across many areas of information, communications and media policy. Our activities focus on issues of open and innovative governance, public diplomacy, institutional innovation, broadband and spectrum management, as well as the future of content, issues of race and diversity, and the free flow of digital goods, services and ideas across borders.

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The Program's Executive Director is Charles M. Firestone. He has served in this capacity since 1989 and is also a Vice President of the Aspen Institute. Prior to joining the Aspen Institute, Mr. Firestone was a communications attorney and law professor who has argued cases before the United States Supreme Court. He is a former director of the UCLA Communications Law Program, first president of the Los Angeles Board of Telecommunications Commissioners, and an appellate attorney for the U.S. Federal Communications Commission.



## **Previous Publications from the Aspen Institute Roundtable on Institutional Innovation**

*(formerly the Aspen Institute Roundtable on Talent Development)*

### *Connecting the Edges (2013)*

*Connecting the Edges* is the report from the 2012 Roundtable on Institutional Innovation. In the current economic environment, growth and underemployment are two outstanding national, indeed international, problems. While technological advances and globalization are often cited as instigators of the current plight, they are also beacons of hope for the future. The report concludes that by integrating the core of an organization with the edge, where innovation is more likely to happen, we can create dynamic, learning networks. 46 pages, ISBN Paper: 0-89843-589-7, \$12.00 per copy

### *Institutional Innovation: Oxymoron or Imperative? (2012)*

*Institutional Innovation: Oxymoron or Imperative* is the report of the 2011 Roundtable on Institutional Innovation. It explores the consequences of the growing disconnect between the fundamental design of most firms and the capabilities of the business infrastructure in which they operate. The report, written by Richard Adler, captures the insights of the participants with a focus on identifying conditions that are favorable to institutional innovation and maximizing the effectiveness of institutional leadership. 63 pages, ISBN Paper: 0-89843-572-2, \$12.00 per copy

### *Solving the Dilbert Paradox (2011)*

*Solving the Dilbert Paradox* is the volume resulting from the 2010 Aspen Institute Roundtable on Talent Development. This “Dilbert Paradox” finds expression in wasted opportunities for organizational learning, collaboration, and access to knowledge and ideas outside the corporate hierarchy. The report, written by Richard Adler, captures

the insights of the participants during the conference and details how some large organizations, as well as start-ups and small companies, are experimenting by giving employees new opportunities to maximize innovation. 48 pages, ISBN Paper: 0-89843-545-5, \$12.00 per copy

*Leveraging the Talent-Driven Organization (2010)*

*Leveraging the Talent-Driven Organization* details how a number of firms are using social networking tools to open up communication, collaboration and learning across boundaries, and leveraging these tools to develop new products and real-time solutions for customers. The report, written by Richard Adler, is the result of the Inaugural Roundtable on Talent Development. 48 pages, ISBN Paper: 0-89843-519-6, \$12.00 per copy

*Talent Reframed: Moving to the Talent-Driven Firm (2009)*

*Talent Reframed: Moving to the Talent-Driven Firm* offers new rules for organizations seeking to attain and develop a talented workforce amid a rapidly changing and increasingly globalized business environment. The report, which sets the premise for a new series of Aspen Institute Roundtables on the Talent-Driven Firm, explores how organizations can build talent by relying less on traditional command-and-control structure and more on horizontal collaboration and shared learning. The report, written by Richard Adler, also features a white paper by John Hagel and John Seely Brown. 46 pages, ISBN Paper: 0-89843-498-X, \$12.00 per copy