

# CONNECTING the EDGES

By Richard Adler



THE ASPEN INSTITUTE

A REPORT ON THE 2012 ASPEN INSTITUTE ROUNDTABLE  
ON INSTITUTIONAL INNOVATION

# Connecting the Edges

*A Report of the 2012 Aspen Institute  
Roundtable on Institutional Innovation*

By Richard Adler



THE ASPEN INSTITUTE

*Communications and Society Program*

Charles M. Firestone

Executive Director

Washington, D.C.

2013

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# Foreword

The Aspen Institute Communications and Society Program convenes a number of different roundtables to address issues involving the impact of the digital revolution at the cutting edges of societal, democratic and business institutions and values. One of the newest in these series looks at institutional innovation—how institutions need to adapt to meet the changing needs of their organizations, their constituent parts and the ecologies they live in.

As much of the world has faced problems recently in their economies—leading in some cases to societal unrest—many point to the need for economic growth as the way out, and to innovation as a means to that growth. In the United States, for example, the business engine for growth has slowed over the past decade at least, leading to concerns about the future of jobs, both in numbers and quality. Forward thinkers call for greater innovation in both the business and public sectors to jumpstart growth and progress.

This Roundtable series is premised heavily on the work of John Hagel and John Seely Brown, leaders of the aptly named Deloitte Center for the Edge. Their research, and the Aspen Roundtable itself, focuses on ways to encourage creativity and innovation through collaboration, social networking and interactions of all kinds, particularly at the edge of organizations, where, as our rapporteur says, “The weight of inertia is less inhibiting and where disruptive initiatives are more likely to be tolerated.”

Digital network technologies are disrupting the cores of many organizations—from the entertainment and information businesses to perhaps the last bastion of resistance, our educational institutions. At the edges of these organizations, we find the greatest (some say only) innovative measures—that is, invention turned into action. This conference looked not only at that phenomenon but also how these edge networks connect both to each other and to the cores of their organizations.

## Acknowledgments

I would like to thank the Deloitte Center for the Edge for being our senior sponsor for the Roundtable and in particular, John Hagel and

John Seely Brown for their leadership, suggestions and assistance. In addition, we thank EMC Greenplum for their sponsoring contributions to the Communications and Society Program, and 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 Williams, 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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Washington, D.C.  
April 2013

# Executive Summary

America's democratic, capitalist system has produced an unprecedented level of prosperity for this country. But the engine of growth responsible for this prosperity, which has been based on incessant innovation and continuous renewal, has slowed in recent years. The result has been a growing economic disparity that is leaving a substantial portion of the population behind. What is needed now is a new wave of innovation that embraces the public as well as the private sector that generates enough good jobs to allow all workers to do well.

Innovation is rarely a solo activity. It most often takes place within networks that bring people together in ways that encourage creativity and allow good ideas to be turned into action. The place where innovation is most likely to flourish is not at the core of organizations but at the edge where the weight of inertia is less inhibiting and where disruptive initiatives are more likely to be tolerated.

Digital network technologies are creating new possibilities for collaboration outside the confines of traditional institutions. These new capabilities not only threaten to disrupt many existing business enterprises but also educational institutions that find themselves challenged by the rise of Massively Open Online Courses and other non-conventional forms of learning. In each case, it is at the edge of organizations where the most exciting developments are taking place, where new ideas, new technologies and new ways of working are being combined in promising ways. If we are going to re-start vigorous, inclusive economic development, and ultimately realize the full potential of new ways of doing things, we need to learn how to foster edge institutions that will accelerate innovation and find more effective mechanisms for linking the edge to the core.

*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.*

# CONNECTING THE EDGES

*Richard Adler*



# Connecting the Edges

## A Report of the 2012 Aspen Institute Roundtable on Institutional Innovation

*By Richard Adler*

### **The Economic Imperative**

For the past five years, the Aspen Institute Roundtable on Institutional Innovation has been exploring the challenge of ensuring that organizations remain healthy and competitive in the 21st century. Previous reports from the Roundtable describe the far-reaching changes in the environments in which commercial and non-profit enterprises operate and the ways that those enterprises might usefully respond to these changes.

As documented in Deloitte's *Shift Index*, there has been a steady, long-term decline in the overall economic performance of business enterprises as a result of their failure to adapt to operating in a hyper-connected, rapidly changing world.<sup>1</sup>

Through their work at the Deloitte Center for the Edge, John Hagel and John Seely Brown have argued that to survive in this new environment, organizations need to move from a 20th century “push” model in which success is based on achieving economies of scale—a model that was appropriate to a world in which markets were relatively stable and predictable—to a 21st century “pull” model based on scaling continuous learning to keep pace with a constantly evolving marketplace. Key to achieving this transformation is empowering all employees—not just the top leadership, but everyone in an organization—to take on challenges and solve problems that will allow them and their organization to keep learning and growing. Engaging workers' passions through such challenges is key to sustaining the kind of extreme performance that has become a necessity for institutional survival.

The starting point for the 2012 Roundtable on Institutional Innovation was the difficult realities of the current economic environment and the urgent need to increase the rate of economic growth, not only in the United States but across the globe. What is at stake is not just the survival of many existing enterprises but the economic well-being of a substantial portion of the U.S. population. What will allow firms, organizations, networks and the individuals within these ecosystems, to keep growing and developing? Are there new strategies for growth that can benefit both individual organizations and the economy as a whole? And where are these new strategies most likely to be developed and implemented?

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**...the most conducive environment for innovation  
is often at the edge of organizations....**

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One place where radical change is not likely to be welcomed is at the *core*—of an enterprise or a network or an economy—because of the inertia of legacy systems and the need to meet expectations of producing consistent, predictable results. By contrast, the most conducive environment for innovation is often at the *edge* of organizations, where less is at stake and experimentation (and the possibility of failure) is more likely to be tolerated. But in order to have substantial impact, innovations eventually need to be brought into the core (or to grow into a new core). The purpose of the 2012 Roundtable was to explore the relationship between core and edge and identify ways in which they can be more effectively connected in order to accelerate the process of positive change and re-ignite vigorous, inclusive economic growth.

### **Schumpeter's Gale**

Michael Crow, President of Arizona State University, began the discussion by pointing out that the United States is the home of a great deal of innovation and is itself “an institutional innovation of enormous magnitude.” America’s capitalist, democratic system represents a fundamental systems innovation in how a society is organized. Through its belief in progress, its openness to new ideas and change,

and its commitment to the ideal of freedom, the U.S. has produced unprecedented economic prosperity for its citizens (and for millions of non-citizens as well). The mechanism that has powered this economic success story has been what Crow described as “Schumpeter’s Gale”—the constant pressure exerted by a free marketplace that brings about the death of enterprises that are unable to compete effectively, clearing the way for the birth of innovative new enterprises. This process of “creative destruction” (described by economist Joseph Schumpeter), driven by the entrepreneurial spirit, is the force that drives growth.

Unfortunately, the gale that has been responsible for our economic prosperity has diminished in recent years. Danger signs are apparent in many places. The country’s persistent high unemployment rate is directly related to the failure of the economy to create enough new jobs. And, according to Michael Crow, the economic situation of a substantial portion of the population is increasingly dire. If you divide the U.S. population into three roughly equal strata, you will find the top 100 million are doing reasonably well (with the top one percent doing considerably better than that); the middle 100 million experiencing little if any improvement in their economic situation in the past several decades and often finding it difficult to hold on to what they have; and the bottom 100 million in serious trouble, falling further and further behind the rest of the population in terms of income, educational attainment and health status. In Arizona, the gap between the top and bottom segments of society is growing at the fastest rate in history, a trend that is being replicated in much of the rest of the country. In fact, a significant portion of those at the bottom come from families that have no income at all.

What will it take to revive economic growth enough to bring prosperity to everyone? Although Schumpeter focused on the role of creative destruction in the private sector, generating sustained inclusive growth will require innovation in all sectors. This includes government, which is typically seen by free market advocates as an obstacle whose influence must be diminished to allow growth to happen. (In the memorable words of Ronald Reagan, “Government is not the solution to our problem; government is the problem.”) But rather than creating barriers to innovation by attempting to control markets through rigid regulation, is it possible for government to be a positive force in fostering innovation? New models for more adaptive, pro-growth approaches to

regulation—based on new ideas about how technology-driven markets operate—are emerging from the field of evolutionary economics, but have not yet been widely adopted.<sup>2</sup> For these ideas to take hold, government must recognize that the traditional models of regulation are no longer adequate and it must undertake a process of innovation in its own operations that it has not previously done. Other components of the society, including education, also need to be reinvented. But where does innovation come from and how can it best be nurtured?

### **Core vs. Edge: Where does Innovation Happen?**

According to Geoffrey West, Distinguished Professor and Past President of the Santa Fe Institute, innovation is inherently social. It is heavily influenced by how people cluster and interact with each other. Institutions are, in fact, places that bring people together for various purposes, including, possibly, innovation. But the key to understanding innovation is how people interact through their social networks. Innovative institutions nurture the development of networks that foster creativity by helping people think and work in new ways and, particularly, by encouraging serendipity. But institutions that are rigid and hierarchical can stifle innovation. And, in the Internet age, free-standing networks can support connections and collaborations as well or better than traditional institutions. As John Seely Brown noted, when people outside of an institution can do what an institution does, then that institution is in trouble.

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**...the key to understanding innovation is how people interact through their social networks.**

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One of the basic premises of the Aspen Roundtable is that innovation is often pursued most vigorously at the edge—of enterprises or of societies—because edges do not have the same burden of expectations for reliable performance that the core must deliver. Edges are also free of the need to work within legacy systems that form the core of most organizations. There is, of course, an important role for the core in providing efficiency and consistency of operations, particularly in publicly traded

companies that must meet the expectations of investors for reliable results, and in companies in areas like financial services, transportation or health care that people rely on to deliver predictable services every day. But institutions that want to remain innovative need to recognize the value of edges, and they also need better mechanisms to move innovation from the edge to the core, where the biggest payoff can be realized. John Levis, Global Chief Innovation Officer for Deloitte, pointed out that even though there is more innovation happening in the world now than at any other time in history, we lack efficient routes to move innovation from the edge to the core of an enterprise.

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**...edges do not have the same burden of expectations for reliable performance that the core must deliver. -John Levis**

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## **The Role of Education**

Of all social institutions, none is more important than education in driving social mobility. We count on education to equip workers with the capabilities that employers need as well as to produce an informed citizenry. But to paraphrase Ronald Reagan, is education part of the solution or part of the problem? Unfortunately, education—especially higher education—is mainly serving the most affluent segment of society while excluding a large portion of the population for whom it could provide a path out of poverty. Michael Crow noted that students from families in the top quartile economically have a greater than 80 percent chance of earning a bachelor's degree, regardless of their academic qualifications, while students from the bottom economic quartile have a less than 10 percent likelihood of graduating from college.<sup>3</sup> Moreover, the gap between rich and poor in college graduation rates has widened substantially, from a 34 percent difference in the 1970s to more than 70 percent today.<sup>4</sup>

But are educational institutions still necessary to support learning? The emergence of online education, including Massively Open Online Courses (MOOCs), generated a lot of attention as a promising new

means of expanding access to educational resources.<sup>5</sup> Jerry Murdock, Co-Founder of Insight Venture Partners, noted that the next wave of technology innovation will make possible \$10 feature phones that support web access and can potentially provide virtually universal access to online education. Michael Crow agreed that we need a massive influx of technology to provide affordable learning solutions for everyone. But it is an open question as to whether the existing educational establishment will be willing to accept non-traditional methods of learning. Will elite educational institutions agree to give credit for online courses? Will employers consider credentials earned online as equivalent to those earned the old fashioned way? Crow warned that he could foresee a future in which “rich families send their kids to elite institutions while poor families send their kids to warehouses full of computers” for their education.

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**The next wave of technology innovation will make possible \$10 feature phones that support web access and can potentially provide virtually universal access to online education.**

*– Jerry Murdock*

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John Seely Brown noted that two key ingredients of education are communities of practice and credentialing, both of which are being disrupted by new technological alternatives. First of all, learning is not a solitary pursuit, but happens within communities of practice in which students interact with peers, work with mentors and learn by observing the methods of advanced practitioners in a field. Historically, schools have provided access to these communities, but now students can find online communities that they can join or even build their own communities—a capability that Jack Stephenson, Director of Mobile, E-Commerce and Payments for JP Morgan Chase, described as “a powerful force that can change everything.”

Until now, established educational institutions have enjoyed a virtual monopoly on the ability to offer credit for their courses and grant degrees. However, this is beginning to change. As evidence accrues for

the effectiveness of online courses, mechanisms are being developed to provide credit for online learning, often based on students taking an independently administered, proctored final exam.<sup>6</sup> Even more significantly, the dominance of traditional academic credit is being challenged by a movement to evaluate students based on the specific skills they have acquired rather than the number of course credits they have accumulated.

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### **More than 80 percent of learning actually takes place outside of school.**

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Peter Smith, Senior Vice President for Academic Strategies and Development at Kaplan Higher Education Group, pointed out that schools are typically not very good at promoting innovation. Nor do schools have a monopoly on education—more than 80 percent of learning actually takes place outside of school. According to research conducted in the 1960s, adults spend an average of 700 hours per year in self-directed “learning projects” directed at acquiring a new skill or new knowledge.<sup>7</sup> With the emergence of MOOCs and other forms of online learning, much of which is available at no cost, it is increasingly easy to for individuals to pursue learning tailored to their personal interests outside of educational institutions.

### **New Realities for Business: From Transactions to Relationships**

To what extent are new technologies changing the rules that determine where and how innovation happens? The impact of technology, and particularly of network technology, is not confined to the edges of enterprises. As competition became global and the speed of change increased, the environment in which organizations operate changed in ways that are re-shaping how business is conducted. Traditionally, firms engaged in transactional work. In fact, the fundamental rationale for the existence of companies, as first articulated by Ronald Coase in 1937, is that they lower the cost of transactions by bringing individuals together to work within a single structure.<sup>8</sup> In addition, much of the

business of business involves conducting transactions with customers and with other firms in a value chain. But in the new, more competitive environment, are transactions enough to sustain a competitive advantage? Do work and commerce need to move from a transactional focus to a focus on building and maintaining deeper multi-dimensional relationships? And to what degree is developing the right relationships critical to sustained innovation?

Luke Lonergan, Chief Technology Officer at EMC Greenplum, addressed these questions by enumerating some of the ways in which “network effects,” made possible by the spread of the Internet, have changed the rules of business by radically altering the flow of information and the economics of attention. He described some of the ways that social networks are changing behavior and the new ways in which human behavior can be studied.

### *The Facebook Effect*

As of the spring of 2012, Facebook had attracted more than 700 million users who created online identities and generated some 69 billion “network links” among themselves (by the end of 2012, the number of Facebook users was reported to exceed one billion<sup>9</sup>). This vast infrastructure has created opportunities for some interesting experiments. For example, in late 2011, Facebook, in partnership with Spotify, introduced the ability for users to “share” the music they were listening to with friends (and follow the music others were listening to). In less than three months, Facebook users had shared more than five billion songs.<sup>10</sup>

In early 2012, Facebook agreed to put an organ donor check box on its site. This not only made it easy for people to become donors, but allowed them to share their decision with family and friends, potentially encouraging them to follow suit. On the first day that the check box was introduced, organ donor registries received more than 6,000 new sign-ups, a 15-fold increase compared to the 400 sign-ups that these registries receive on a typical day. Although the number of daily registrations fell off after an initial flurry of activity, a Facebook spokesperson indicated that in the first four months of the program, “more than 275,000 Facebook users in several countries...used the organ donation tool and shared with their friends and family that they are organ donors.”<sup>11</sup> One of the most striking facts about this campaign

is that its costs were close to zero since it was able to leverage the huge reach of Facebook's platform.

Networked digital technologies are providing unprecedented opportunities to explore human behavior through the analysis of the enormous amount of data that they generate and provide relatively low cost access to. Geoffrey West noted that platforms like Facebook represent a uniquely valuable resource for psychologists and social scientists. Similarly, cell phones can be seen as a new kind of "detector" constantly generating potentially valuable information on their users, which now includes almost everyone. West described how he is using cell phone data to support his research on the "metabolism" of cities, and particularly how a variety of factors scale with the size of cities. His research shows that there is a strong correlation between the population of a city and factors ranging from size of the police force or the number of AIDs cases to the number of patents produced annually by residents.<sup>12</sup> Using data from Portugal and the UK, West has found that the same kind of scaling occurs when he looks at who is calling whom on their cell phones in relation to the size of different cities.

Another area where the Internet and social networking are bringing about big changes is in the field of sales, where old paradigms and old assumptions are being directly challenged. Luke Lonergan cited a few examples that illustrate the demise of business as usual:

- ***The End of Solution Selling.*** For many decades, offering "solutions" to customers was regarded as the best way to sell complex products. Sales people who could develop good relationships with their customers and help them solve their problems were generally top performers. Solutions sales worked because many customers needed outside help in solving problems, but with the rise of the Internet and social networking that has changed. With so much information available online, customers can do their own research and have often made a buying decision before they call a supplier. A study published in a special section of the *Harvard Business Review* on "smart selling" found that the top performing salespeople today are "challengers" who are in the business of "disruption enablement."<sup>13</sup> That is, they do not attempt to get to know a customer's problems then offer solutions, but bring customers new ideas and new

perspectives that can help them to anticipate challenges or significantly improve their businesses. This new style of selling is based on providing useful insights to organizations that are open to innovation: the salesperson as a catalyst for change.

- ***The End of Commission Selling.*** There is no cow more sacred than a salesperson's commission as a motivator to successful performance. However, in another *Harvard Business Review* article on "smart selling," Daniel Pink argues that financial compensation is not the most effective motivator for people engaged in sales that involve "complex, creative, conceptual endeavors."<sup>14</sup> Pink cites recent psychological research that shows that while "contingent rewards" like commissions work well for relatively straightforward "algorithmic" tasks, they are much less effective for the type of non-routine work that psychologists describe as "heuristic." Now that the simpler, more routine aspects of selling can be automated, the key skills for successful sales people increasingly involve "curating and interpreting information instead of merely dispensing it. Identifying new problems along with solving established ones. Selling insights rather than items."
- ***The End of Slow Selling.*** In the past, major companies enjoyed economies of scale that most of their customers did not have. As a result, they could dominate their relationships and anticipate, if not control, demand for their products. No longer: now customers are steering demand for products. As sales cycles get shorter, product developers cannot work in isolation but must be much closer to their customers, which means that companies need to focus on building platforms for interaction as much as on creating products.

As these examples suggest, successful enterprises must be constantly engaged in a process of creative destruction, abandoning old business models and old assumptions about what works and embracing new ones. Start-ups do this by necessity: they need to find an unoccupied niche by filling an unmet need or by operating in a novel way. The big question is whether existing institutions can adapt to this new, more dynamic environment.

Ellen Levy, Managing Director of Silicon Valley Connect, commented that transactions are being decoupled from relationships. While transactions are not going away, the creation of platforms that support the development of relationships on a global basis are becoming more important. Thanks to platforms like Facebook or LinkedIn, it is now simple to connect with and partner with virtually anyone in the world.

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**...transactions are being decoupled from relationships. – Ellen Levy**

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*Building Trust*

A key to effective relationships is trust. No matter how many people we may be connected to physically, we are not likely to interact with them actively if we do not believe we can trust them. In many traditional societies, the process of building a level of trust that is a requirement for doing business together can be an elaborate and time consuming process. But in a rapidly moving networked world, we need to develop methods for building what Maryam Alavi, Vice Dean at the Goizueta Business School at Emory University, described as “swift trust.” One place that has perfected this art is the movie industry: it is possible to assemble a crew of disparate people to work on a new film who within a few hours can function as if they had worked together for life. The secret is that every individual on the team, whether in front of the camera or behind it, has a specific role based on established traditions of their craft. Trust is placed in the practice of these crafts, not of individual people.

Business-to-business (B2B) relationships have always involved a relatively high degree of trust. While there has been an increase in the need to establish trust swiftly between business partners, the bigger change has taken place in the world of business-to-consumer (B2C) relationships. With individuals having much greater access to information, the balance of power has shifted. Consumers no longer need to place their trust in the companies they do business with. But the question remains of where they will place their trust: In their peers? In brands?

Richard McAniff, former Co-President and Chief Development Officer of VMware, commented that brands need to find new ways to build trust. One way to get customers to identify with the brand is through “purpose marketing” campaigns that are designed to demonstrate the values the brand supports.<sup>15</sup> A recent example of how one brand is doing this is the “Loads of Hope” campaign sponsored by P&G’s Tide detergent. When a natural disaster—such as Hurricane Sandy—happens somewhere in the country, Tide sends a fleet of vans equipped with washers and dryers to the site that can be used to wash clothes of local families at no cost. According to the company, the program has “cleaned over 58,000 loads of laundry for families affected by disasters.”<sup>16</sup> Other examples include Coca-Cola’s campaign to create a safe haven for polar bears in the high Arctic<sup>17</sup> and Benetton’s Unhate Foundation, launched in 2012 to combat discrimination and prejudice by supporting dialog and promoting diversity.<sup>18</sup>

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**...we tend to trust people or institutions that are willing to listen to us and are responsive to our needs. – Laura Bailyn**

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Laura Bailyn, Senior Director at the Markle Foundation, noted that we tend to trust people or institutions that are willing to listen to us and are responsive to our needs. Another vital contributor to trust building is transparency that allows people to see what an organization stands for and how it acts. Tide’s “Loads of Hope” campaign is a good example of a deliberate effort to demonstrate the kind of caring (connected to the nature of the brand) that inspires trust. By contrast, the reason that many people do not trust government is that it is perceived as unresponsive to people’s needs.

### *Can Governments Really Change?*

Commercial brands and companies may be open to acting in new ways that will keep them relevant to customers. But is the government capable of acting in new ways? Carmen Medina, Specialist Leader at

Deloitte, noted that governments are creatures of law, which tends to make them inflexible. Because of their political nature, governments also act as “protectors of ideology,” which further contributes to inertia. And the sheer size of government bureaucracies makes them places that favor rules and discourage spontaneity. There is perhaps no major institution today that is more dysfunctional than the U.S. Congress, which seems to be acting in ways that actually prevent innovation. It often seems that progress happens in spite of government rather than because of it. Medina suggested that the government’s “decision making power is overrated”—that what people themselves choose to do trumps what government decides should be done.

There have been a few recent efforts on the federal level to act in new ways that can break down the image of government as a stodgy, opaque monolith that functions according to its own logic. One pioneering effort is the “Peer to Patent” project at the U.S. Patent and Trademark Office (USPTO) that has been experimenting with opening the patent examination process to public participation. The USPTO has been fairly notorious for the size of the backlog of patent applications that has built up, reaching more than 700,000 applications by 2009.<sup>19</sup> The Peer to Patent project, initiated by Beth Noveck, Deputy Chief Technology Officer for Open Government in the Obama Administration, was designed to help reduce the backlog by bringing additional outside resources to bear on the time consuming process of reviewing applications. Members of the public with expertise related to a particular application were invited to supply relevant information and research that could be used by government examiners in making their decisions. According to the project’s website, “The process combines the democracy of open participation with the legitimacy and effectiveness of administrative decision making.”<sup>20</sup>

Another notable attempt to open up government and make it more agile is the Direct Project, sponsored by the Department of Health and Human Services (HHS). The project represents an experiment in bringing distinctly edge-like processes into a very large core organization. For many years, HHS had been working to create a comprehensive National Health Information Infrastructure (NHIN) to support the secure electronic exchange of information among health care providers. Because of the ambitiousness and broad scope of the NHIN, progress in its construction has been slow. In an effort to speed up the process,

HHS decided to experiment with developing one specific component of the NHIN—a standard for the direct exchange of health information between two parties—using a radically different method of development than typically employed by the government. Rather than creating a set of detailed specifications, then seeking a contractor to meet them, HHS invited any interested organization to participate directly in the development process. A wiki was set up to coordinate the project, along with a public code repository and an open blog that documented the project’s progress. More than 60 companies and organizations agreed to participate in the project, and a working standard was developed, tested and deployed in less than one year. Aneesh Chopra, then-U.S. Chief Technology Officer, described the Direct Project as a successful attempt to “bring the principles of start-up into government policy-making.”<sup>21</sup>

Finally, the Consumer Financial Protection Bureau (CFPB), which began operating in July 2011, took advantage of its newness to “bake in” openness and interactivity in its design and operations. The CFPB’s website is uncomplicated and is written in simple, non-technical language (a section describing a new initiative invites the public to contribute “your two cents on student cards and bank accounts”). The site also offers numerous ways for the public to connect with the Bureau: its home page prominently lists a toll-free phone number and one main menu item on the page is “Participate,” while another provides an easy way to “Submit a complaint.”

The CFPB’s commitment to openness goes even deeper than these publicly visible actions, and includes its approach to software development. According to Chris Willey, the CFPB’s CIO, the Bureau has adopted an open source philosophy “in every aspect of what we do,” which includes being an active participant in the wider open source community. For example, the agency is using GitHub to share code it creates with other federal agencies and with the general public.<sup>22</sup>

The federal government does seem to be making a deliberate effort to become more open and more social, and almost all major agencies are at least experimenting with using new media to connect to the public. A 2011 survey by the General Service Administration (GSA) found that 23 out of 24 federal agencies were engaged in using social media such as Facebook, Twitter and YouTube.<sup>23</sup> In addition to disseminating

information on these media, the agencies were also using them to seek input from the public and to respond to citizens' comments on posted contents. To encourage greater use of these tools, the GSA established a Center for Excellence in Digital Government, that "provides...support, training and solutions that help agencies deliver excellent customer service to the public via social media,"<sup>24</sup> and launched Challenge.gov, an online portal where agencies can post "challenges and prizes to promote [public participation in] open government and innovation."<sup>25</sup>

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**23 out of 24 federal agencies [a]re engaged  
in using social media.**

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In addition to using social media to support more robust public dialog, some large federal organizations are beginning to use social networks internally. In 2010, the U.S. Department of Transportation launched IdeaHub to enable its 55,000 employees to submit suggestions, vote on which are best and track their progress toward implementation.<sup>26</sup> And several federal agencies, including Homeland Security, the Environmental Protection Agency and the Department of Transportation are experimenting with the use of Yammer to improve internal communications and collaboration.<sup>27</sup>

### *Cities as Vital Edges*

Carmen Medina raised the possibility that we may be seeing "the hollowing out of national institutions" with more decision making power devolving to local and regional entities. After all, nations were originally confederations of city states. What if cities were able to offer a form a citizenship independent of a national identity? Network technology provides new capabilities that could enable such an unlikely possibility.

Cities are critical because according to Geoffrey West, "they have provided almost all of the innovation in the history of mankind." They act as "vacuum cleaners" that suck up creative people from all over a country and bring them together where they can meet and work with

other interesting people. While famous people have been born in every part of the world, including lots of small towns, they generally end up living in a few big cities—think of the people associated with Paris, London or New York. While cities generally tend to nurture innovation, some cities are more successful in doing so than others. When West compared 366 metropolitan areas in the U.S., he found that the higher and lower performing cities remained quite constant over time. For example, in 1960, San Jose was near the top of all cities in terms of the number of patents granted to its residents, and now some fifty years later, it is still outperforming other cities in this regard. West is now interested in finding out “what the DNA is that determines the status of individual cities.”

### **The Rise of Global Cities**

The entire world is rapidly urbanizing, which is a hopeful development for accelerating innovation globally.

- In 2008, for the first time in human history, half the world’s population lived in urban areas. Fifty years ago, 30 percent of the global population lived in cities, and a century ago it was 10 percent.
- In 1800, Beijing was the only city in the world with a population of one million or greater. By 1900, 16 cities had reached this figure, and by 2000, it was 378 cities. By 2025, there will be about 600 cities of one million or more worldwide.
- Today there are 19 megacities with populations of 10 million or more. Their number is expected to increase to 27 in 2025.<sup>28</sup>

Michael Crow noted that municipalities are the level of government where the most innovation is taking place. Arizona State University’s College of Public Programs is hosting an Alliance for Innovation whose purpose is to transform “local government by accelerating the development and dissemination of innovations.”<sup>29</sup> A few city governments are taking concrete steps to seek new ways of operating. For example, the

City of San Francisco recently established an Office of Civic Innovation whose mission is to “work with residents and local creative and tech-minded communities to collectively design new approaches to long-standing challenges in [the areas of] economic development, citizen engagement and government efficiency.”<sup>30</sup>

## **Developing Human Capability**

Cities have a life of their own (which is part of the secret of their resilience). But organizations have to be managed well if they are to survive, which means that they have to make maximum use of the resources they have, including their human resources. What will it take to create a more talented workforce? Are companies managing their workers in ways that bring out their best abilities or that frustrate and discourage them?

As documented in previous reports from the Institutional Innovation Roundtable and other Aspen projects, the old model of work that promised secure lifelong employment in return for loyalty and hard work has largely disappeared.<sup>31</sup> Maynard Webb, Founder of the Webb Investment Network, fondly recalled the comfort of “growing up” as a long-term employee at IBM, a company that sent silver spoons to new parents and where an executive’s power could be easily determined by the number of tiles in his office ceiling. That paternalistic world is gone. Pensions are going away, and job security is eroding. As employee longevity falls and organizations get flatter, middle managers are increasingly threatened. The traditional pattern of career mentoring that helped workers to advance no longer functions reliably and workers’ satisfaction with their jobs has steadily eroded. According to an annual survey conducted by the Conference Board, less than half of workers report that they are satisfied by their jobs today.<sup>32</sup> And, as John Hagel noted, the level of passion among workers is even lower: passion for one’s work is highest among the self-employed and lowest within large institutions.<sup>33</sup> What will it take to pull passionate workers back into these enterprises?

In the old paternalistic world, according to Webb, there were two types of workers: those who accepted the proposition that hard work and loyalty would lead to success, who were generally content with their roles as good company men or women; and disenchanting employees

who had an entitlement mentality and felt that they were not being sufficiently recognized or compensated for their abilities, and ascribed to someone else the power to determine whether they are a success or a failure (the “Dilbert syndrome”<sup>34</sup>). This classic dichotomy is becoming less and less common (though it is not yet extinct) as we have moved to what Webb describes as an “entrepreneurial” world that offers a new choice of roles. In this world, every employee needs to view themselves as the CEO of their own destinies. They still need to work hard, but need to recognize that working hard does not guarantee any sort of job tenure. It is every worker’s responsibility to manage their own careers, pursuing the opportunities that present themselves. Some workers may be confident enough to see themselves as aspiring entrepreneurs with the right stuff to go out on their own and start their own businesses. Webb noted that none of these roles are necessarily permanent and that workers often move from one to another: entrepreneurs who are successful may end up having their start-ups acquired and going back to work for someone else. If they feel underappreciated by their new employer, they may find themselves becoming disenchanted, which could be a spur to start the cycle over again. The bottom line here is that there is not much that workers can count on other than themselves and that career paths have become much more complicated and unstable than they were in the past.

### Webb’s Matrix

	<b>Paternalistic</b>	<b>Entrepreneurial</b>
<b>Meritocracy</b>	Company man/woman	CEO of your own destiny
<b>Entitlement</b>	Disenchanted employee	Aspiring entrepreneur

Although there is a strong case to be made for workers taking personal responsibility for their happiness on the job, some environments are more benign than others. One reason for worker dissatisfaction according to Carmen Medina, Specialist Leader at Deloitte, is the way they are managed—or mismanaged. All too often, creative workers with the most innovative ideas are treated as “heretics” within their organizations. Too many employers simply do not know how to

harvest the potential of these workers. Creative individuals are either driven out of the company or placed in “innovation cells” where they are effectively insulated from the rest of the organization. It would be much more effective to assign creative workers to corporate staff positions where they would be able to gain practical knowledge about how the organization really works and gain the experiences they need to be successful and productive over time.

### *New Ways to Work*

Are there new paradigms for work that are more appropriate to the new world of relentless global competition and constant change, that are more likely to produce satisfied rather than disaffected workers? There are a few examples of firms that have attempted to replace paternalism with a meritocracy that offers no tenure and few if any traditional corporate benefits but rewards superior performance. For example, eBay, where Webb was Chief Operating Officer, had a relatively small number of full-time employees, but made it possible for more than a million people to generate income as merchants in eBay’s marketplace. LiveOps, a company that Webb was recruited to run after he retired from eBay, has more than 20,000 independent contractors who provide telephone customer support from their homes. Unlike traditional call centers where workers are expected to show up on a regular schedule, LiveOps has no physical facilities and allows its workers to determine their own hours and choose the companies they support. Software automatically routes calls to the best performers, which provides a strong incentive for doing good work. The result is a high level of motivation and morale. John Hagel added that IKEA has spawned whole network of “IKEA hackers,” independent craftspeople who take its products and customize them.

Some older, more traditional companies have experimented with new ways of working. Bain & Company established an “externship” program that pays employees, typically in their third year, to spend six months working at another company or non-profit organization, in some cases in another country. In addition to broadening employees’ experience base, the externship provides them with an opportunity to make sure that they are happy at Bain before committing to a long-term career path leading to a partnership.<sup>35</sup>

Luke Lonergan noted that, at least within the “bubble” of Silicon Valley (which he acknowledged may be a unique environment that is not replicable elsewhere), workers are often motivated more by a job’s intellectual rewards than by financial compensation packages. Given the Valley’s “abundance mentality,” the most compelling reason to stay at a job is the opportunity it offers to learn and to work on interesting projects. Teresa Briggs, Bay Area Managing Partner for Deloitte, pointed out that start-ups rarely have a problem attracting people to work for them even though they generally do not pay well compared to larger companies.

A more entrepreneurial approach to employment may be generationally-related. Joaquin Alvarado, Chief Strategy Officer at the Center for Investigative Reporting, noted that the younger people he works with tend to be more capable of imagining a radically different future and are eager to take on difficult challenges, while older workers are more comfortable with incremental changes. Older workers have seen big changes, to be sure, but their response is typically to try to figure out how to cope with them rather than to capitalize on them.

But what about people who are not inherently life-long learners and may be less than eager to take on risks with their jobs? Will there be enough work for them? If we do not have an economy that is growing strongly, we are going to have a big problem finding work for everyone. Technology may be creating new ways of working and generating whole new categories of jobs, but these tend to require higher level skills that those at the bottom or even in the middle of the economy, who are not lifelong learners, may lack. This brings the discussion back to the central role of education.

### *New Ways to Learn*

The persistence of high unemployment even while many jobs go unfilled is a clear signal of a mismatch between the job skills needed by employers and the skills that workers currently have.<sup>36</sup> Our current educational system was largely designed to serve the needs of a work world that is rapidly vanishing, and failures to prepare students for successful careers can be found at all levels of education according to the Roundtable participants. Margarita Quihuis, Director of the Stanford Peace Innovation Lab, described K-12 education as functioning more

as a “sorting” mechanism than a system designed to teach real mastery. Some courses are made intentionally hard to support the sorting process. In the public schools in Palo Alto, for example, all sixth graders take a test that will determine the math courses that they will be eligible to take through high school. Students who do not score high enough are not admitted to computer courses which teach skills that are critical in a whole range of occupations (half of all students in the district have tutors to help them do better on these critical tests.) While parents of top students like the system, it is bad for minority students and for late bloomers.

The middle school and high schools are largely “clueless” about what they should be teaching: they are locked into traditional curriculums and are not able to respond to signals from the economy about what they should be teaching. Tayloe Stansbury, Senior Vice President and Chief Technology Officer at Intuit, suggest that trying to tackle K-12 education head-on may be a lost cause. It may be more productive to experiment with small, innovative projects at the edge than trying to change an institution as large as public education.

At the college level, we are failing to do a good enough job with either liberal education or technical training. Liberal education is failing to ensure that students know how to think for themselves and to be lifelong learners, while we no longer have a system of technical schools that can equip students with the skills to work in trades or in manufacturing jobs.

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**...higher education is producing too many students who are ready to graduate but are not properly prepared to work. – Peter Smith**

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The ultimate problem, according to Peter Smith of the Kaplan Higher Education Group, is that higher education is producing too many students who are ready to graduate but are not properly prepared to work. In fact, a college degree simply is evidence that an individual has accumulated enough credits to qualify for graduation, but a degree provides little information about the specific skills and knowledge that students

have acquired. A new movement is emerging to supplement or even replace traditional course credits with “badges” that attest to specific abilities (organizations that are supporting the movement include the MacArthur Foundation and the Bill and Melinda Gates Foundation).

If companies shift from just looking at applicants’ academic credentials to seeking to understand what they actually know and what their actual skills are, this movement could really gain momentum. Some institutions are beginning to experiment with “capacity-based education” that is based on a dramatically different approach to evaluating and documenting students’ accomplishments (see sidebar).

### **Competency-Based Learning and Capacity Profiles**

According to Paul LeBlanc, President of Southern New Hampshire University, the irony of the current credit-for-courses system is that “we are really good at telling the world how long students have sat at their desks [but] we are really quite poor at saying how much they have learned or even what they learned.”<sup>37</sup> So-called competency-based learning offers an alternative that is based on assessing and documenting students’ specific capabilities.

The Western Governors University, established in 1997, has pioneered the concept of competency-based education, while Northern Arizona University and the University of Wisconsin are developing similar programs.<sup>38</sup> LeBlanc’s school is preparing to launch the College for America which will offer an online, competency-based degree. What a graduate should know will be defined by 120 different competencies that are broken into 20 “task families.” For example, the “using business tools” family includes tasks like “can write a business memo,” “can use a spreadsheet to perform a variety of calculations” and “can use logic, reasoning and analysis to address a business problem.” When students pass tests on all the competencies within a family, “they will be deemed to have the knowledge and skills necessary to pass a 3-credit course.”<sup>39</sup>

Peter Smith believes that this approach could be carried even further by using technology to automate the assessment process

and customize an educational program for every individual learner. Assume, for example, that a young person decides that he or she wants to become an accountant. Using a web-based system, that person could, first, explore the prospects for employment in the field and the kinds of careers that the field offers. The system would also explain the types of skills that are required for success as an accountant. Next, the system would provide a battery of diagnostic tests to assess the student's aptitudes and current knowledge/skill levels. It would then perform a gap analysis in order to create a customized program of study that would prescribe particular courses or, perhaps, portions of courses that would provide the missing skills. Employers could be involved with determining the skill definitions and would thereby have an interest in recruiting students with the kinds of documented capabilities that would make them productive employees.<sup>40</sup>

The challenges extend beyond college: Maryam Alavi argued that graduate business schools need to be responsible for more than teaching specific skills, even though that is what many employers focus on in hiring decisions. They need to help students to develop holistically, in terms of higher-level skills like critical thinking, sense making and emotional intelligence. In an increasingly volatile world, schools need to prepare students not just for their first jobs, but for their second and third jobs as well. They need to produce life-long learners.

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**In an increasingly volatile world, schools need to prepare students not just for their first jobs, but for their second and third jobs as well.**

*– Maryam Alavi*

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Should work experience be built in to the education process? Unfortunately, colleges that offer such experiences find themselves “trapped in the second tier” of educational institutions. Michael Crow confirmed that work-study programs are generally viewed with suspi-

tion by elite institutions. Arizona State University created a School of Engineering that focuses specifically on teaching practical skills, and its graduates are able to command the highest starting salaries among engineering graduates. Nevertheless, the school gets “punished in academic ratings” because it produces “a different type of graduate.”

### *Learning on the Job?*

If our schools are not producing the right kind of workers, can companies take on the responsibility for providing workers with the skills and the motivation they need to be successful? Jack Stephenson acknowledged that many of his bank’s 250,000 employees probably do not have the optimal skills for the challenges that the organization is facing. Providing them with the training—or the retraining—that they need is a formidable challenge that has not been fully addressed.

In fact, large enterprises have all of the elements necessary to enable employees to become continuous learners, but they need to be organized to promote learning. The answer will almost certainly involve some unconventional solutions rather than formal training approaches. One strategy proposed by John Seely Brown would be for young people who are comfortable operating on the edge to be recruited to serve as reverse mentors for middle managers, and even senior managers, in large enterprises. At Deloitte, such a reverse mentoring program was instrumental in successfully introducing an internal social network in the organization. The initiative began when a senior executive posted a request for help on the company’s new Yammer network in understanding social media. Younger staff members responded by offering to share their knowledge, which inspired other senior staff to acknowledge that they also needed help. An account of this activity concluded that reverse mentoring has multiple benefits that include “[harnessing] the (often untapped) talent of rising stars, [increasing] the organization’s ‘superconnectedness’ by forming unlikely relationships and [exposing] employees to areas of the company outside their normal daily routine.”<sup>41</sup>

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**...the most effective learning does not happen  
alone but in groups.**

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Research has established that the most effective learning does not happen alone but in groups (studies conducted at Harvard found that the single best indicator of academic success was a student's ability to form a study group<sup>42</sup>). Teamwork in business, if mobilized properly, can be both a means to improved performance as well as a highly effective mechanism to support learning. Pivotal Labs has been a pioneer in the agile software movement for more than two decades. According to Luke Lonergan, the company's key innovation has been the practice of "pair programming" that involves developing software in cross-functional teams that often consist of one more experienced and one more junior participant. According to Pivotal, when "developers work together, they produce more code of higher quality. With two people continually refining ideas, the development flow is never broken; bad ideas get weeded out early, and progress is made consistently and rapidly. As the pairings rotate, knowledge is spread rapidly through the team, avoiding silos of knowledge and allowing for team growth, if needed."<sup>43</sup>

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### **What might a genius bar look like in a public school? – *Joaquin Alvarado***

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There may be radically different models for learning that we have not yet invented. Joaquin Alvarado asked what would happen if every enterprise had its own "genius bar?" What might a genius bar look like in a public school?

Geoffrey West concluded the discussion by considering whether corporations are inevitably doomed to perish. His research has shown that while cities are largely "immortal," organizations like corporations have a finite lifetime. Many cities have survived for centuries, even millennia (e.g., Alexandria, Jerusalem, Beirut, Damascus, Athens, Rome, Lisbon, Paris, Beijing, Xi'an, Varanasi), but few corporations have survived for even a hundred years. Cities like Hiroshima and Dresden have demonstrated the ability to recover from being virtually obliterated. And cities seem to have the ability to continue growing, almost without limit: as noted earlier, there are now nearly 400 cities in the world with populations of at least 10 million, and that number is projected to increase to more than 600 cities by 2025.

The key to the longevity of cities, West believes, is their diversity or “dimensionality.” Cities tolerate misfits and “crazy people” which contributes to innovation and ultimately makes them more resilient. But companies have a tendency to become “uni-dimensional” over time, which makes them less adaptable when their environment changes. Start-ups, because they are new and small, have little structure and lots of innovation. As they grow, they need to develop rules and build a bureaucracy to make sure that work gets done and products get delivered on time. But the rigidity that comes with bureaucracy stifles creativity and alienates the most passionate workers. It may be that a strong administrative structure is ultimately antithetical to innovation: big companies need it, but it is what kills them in the end.

### **Connecting the Edges**

Innovate or die seems to be the choice that faces every large enterprise. But if innovation happens at the edge, in small, peripheral groups where less is at stake than at the core or an enterprise, how can large organizations innovate fast enough to survive? What can they do to connect their edges to the core in ways that will allow vital innovations to be adopted on a scale that matters?

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### **The key to success is the ability to scale learning.**

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But why is continuous change mandatory today? Why is it not possible to survive by becoming the best at one thing and continuing to do it? The answer is that the underlying digital infrastructure in which businesses operate is not only changing continuously, but is changing at an increasingly rapid rate. Deloitte’s Shift Index has documented the impact of these changes—a steady, steep decline in the performance of large corporations that were designed to take advantage of the last great wave of innovation that rewarded the ability to scale manufacturing and distribution capabilities. In this environment, which was built on manufacturing and transportation, success was based on the ability to efficiently organize resources to meet forecasted demands. But in a rapidly changing environment driven by digital technology, the key to success is the ability to scale learning.

Are large corporations fated to perish like the dinosaurs that vanished within a very short period of time—perhaps a matter of years or even months—after the cataclysm that changed their environment? One obstacle is what John Hagel described as “the change paradox.” Precisely when the need to change becomes more urgent, organizations find themselves with fewer resources and less ability to change as a result of the erosion that has occurred over a period of years.

Based on past history, the prospects for institutions to accomplish major change are “abysmal,” with a success record of no more than 20 or 30 percent. Among the barriers to success are:

- A “big bang” mentality that assumes that worthwhile projects must “go for broke.” When the payoff from a fundamental shift in operating assumptions appears distant and highly uncertain, even while requiring a large upfront investment, undertaking such an effort can be difficult to justify.
- Focusing change efforts on the core of an organization. Precisely because this is where there is the most at stake, where an organization’s resources are most heavily concentrated, it is the place where change will be most strongly resisted. Since the core is where power resides, it is the place where people who have been successful in the existing system tend to migrate. The core also bears the heaviest responsibility for consistently producing the results that investors expect, making it a dangerous place to conduct experiments.
- A deeply entrenched belief that change is a rational process that assumes that if you place the right information in front of the right people, they will make logical decisions about what needs to be done. In fact, change is a political process that requires enemies to be neutralized and champions to be empowered. The change process is all about fear and hope, which are deep, powerful emotions.

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**The change process is all about fear and hope,  
which are deep, powerful emotions.**

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For anyone hoping to accomplish a major institutional transformation, a better strategy is to concentrate on the edge rather than the core. There are several reasons why working on the edge is more likely to succeed: first, edges tend to be ignored by the core. It is often possible to pursue major innovations for a long time without triggering the corporate immune system that will attempt to kill it off, especially if a new venture can demonstrate the ability to grow the overall pie rather than cannibalizing existing lines of business in the core. Also, edges of organizations tend to attract passionate people with the kind of questioning disposition that makes them good candidates for pursuing new and potentially risky ventures.

### *Finding the Right Edge, Using the Right Tools*

What are the characteristics of edge innovations that make them most likely to succeed? One good starting point is to create a platform that has the potential to scale rapidly. It is also helpful if such a platform can be created without requiring a large initial investment. One way to do this is by leveraging existing resources by attracting them from the core to the edge rather than trying to directly co-opt them.

There are few if any examples of complete transformation that began at the edge and eventually took over the core and remade it. But a new generation of technology is emerging—cloud, social, mobile, analytics—that can be used to accelerate change by providing powerful tools to rapidly build, test and launch new ventures without large upfront investments. John Hagel cited two notable initiatives that provide encouraging examples of how these technologies can be mobilized to create new edge ventures that can grow into large enterprises.

In 2006, Amazon launched Amazon Web Services (AWS) to offer customers access to the sophisticated digital infrastructure that it developed for its core e-commerce business. AWS is an edge undertaking in two senses: first, it represents an entirely new kind of venture for Amazon that started small (by leveraging computing capabilities that Amazon built for itself), but was able to grow into a line of business that generated an estimated \$1.5 billion in revenue by 2012.<sup>44</sup> Second, AWS succeeded by appealing to other edge businesses: according to a recent analysis, the value it offered was not about “moving existing compute and storage infrastructure and applications into AWS. Rather

it was more about enabling organizations to do new tasks that weren't previously possible or practical."<sup>45</sup>

Another innovation that began on the edge but grew to have a major impact on the core is SAP's Community Network (SCN). The new venture got its start when SAP's Co-Founder and Chief Executive Officer Hasso Plattner was seeking a way to break out of the company's insular, not-invented-here mentality that had grown up as the result of many years of success as the world leader in enterprise software. In 2004, SAP launched NetWeaver, a web-based service that represented a dramatically different way of delivering SAP's products to its customers. Because of this difference, Plattner saw NetWeaver as an ideal opportunity to experiment with new ways of doing business. SCN was one way to do this. Rather than having SAP take responsibility for all product support, the network allowed customers to connect with each other to share problems and solutions for using SAP software. Like AWS, SCN started small but rapidly grew larger. As it evolved, it pulled in more participants from the core of the enterprise and became a platform for deep relationships that were not anticipated initially (e.g., coders connecting via the network to collaborate on projects that add value to SAP's products). Today SCN encompasses two million users globally who can get a question answered on the network in an average of 17 minutes. What began as a relatively small edge experiment now represents a major resource and a key competitive advantage for SAP in its own right.

Roundtable participants cited several other "edge" projects that are attempting to spark big changes.

Jack Stephenson, Director of Mobile, E-Commerce and Payments at JP Morgan Chase, described his current role as being "very much on the edge" as he tries to introduce new mobile banking and social media services in a large, well established bank. On the one hand, these services have proved very popular with customers and produced real benefits. For example, the ability of customers to get answers to their questions and solve problems online has resulted in a substantial drop in calls to the bank's customer support center and branches. On the other hand, these services are sometimes "antithetical" to the bank's desire to protect customer information by sealing up data and restricting access as much as possible. The result of this clash of values between what customers want and what bankers are comfortable giving them is "hand to hand ground warfare" to bring about change.

Luke Lonergan, who co-founded Greenplum (a data analytics company) in 2003, has watched as development cycles for new or improved products lenthened as the company grew. In 2012, Greenplum acquired Pivotal Labs, a leader in agile software development, to help improve and speed up their own processes, but he has not yet seen as much impact as hoped for. While this acquisition was an attempt to leverage an innovative approach to development by establishing a new edge that operates differently than the company's core, he is still struggling to understand how best to connect the edge to the core of the enterprise to provide a catalyst for change.

### *Reinventing Higher Education at ASU*

One of the most radical and mature experiments in institutional transformation is taking place at Arizona State University. When Michael Crow became the President of ASU in 2002, he announced his intention to change the school in fundamental ways in order to create what he called the New American University, a process that would be guided by eight key “design aspirations.”<sup>46</sup> The first of these, “Leverage Our Place,” meant that the school should respond to the particular needs of the community in which it is based—in this case, the largest metropolitan area (Phoenix) in the state of Arizona.

#### **ASU's Eight Design Aspirations for a New American University**

1. Leverage Our Place
2. Transform Society
3. Value Entrepreneurship
4. Conduct Use-Inspired Research
5. Enable Student Success
6. Fuse Intellectual Disciplines
7. Be Socially Embedded
8. Engage Globally

Crow noted that virtually all higher education institutions in the U.S. are engaged in a competition to score as highly as possible in rankings of the “best American colleges and universities.”<sup>47</sup> The Ivy League schools are perennial leaders in these rankings, with Harvard, Yale and Princeton ensconced at the very top of the list, and every other institution in the country trying to emulate them in order to get as high a score as possible. Crow noted that these rankings are heavily influenced by a school’s “selectivity”—that is, the number of people who are rejected each year from the total pool of applicants. As a public institution that is responsible for providing education to a large segment of the state’s population, it did not make sense to Crow to follow this model or to try to compete with the Ivies or even with the most prestigious public institutions like Berkeley and Michigan that also pride themselves on their selectivity. Crow set a distinctly different goal for ASU: “combining academic excellence with broad access, promoting diversity, and meeting the special needs of underserved populations.”<sup>48</sup> This involved substantially increasing the number of students it serves by offering admission to all academically qualified students in the state (and being “punished” in the ratings for doing so by becoming less selective). In particular, the university reached out to actively recruit minority and economically disadvantaged students who have historically been excluded from higher education. From 2003 to 2008, the enrollment of low-income freshmen at ASU increased by 873 percent, and the school is now the largest research university in the United States.

ASU also made far-reaching changes in the way the school is organized. Under Crow’s leadership, more than 60 academic units were abolished, a number of new transdisciplinary programs were launched to address real-world problems (e.g., the Global Institute of Sustainability, the Biodesign Institute), and existing schools were reoriented to emphasize the pursuit of new approaches (e.g., ASU’s College of Nursing is now the College of Nursing and Health Innovation).

How has Crow been able to bring about such far-reaching changes? In a sense, Arizona State University could be considered an “edge institution.” For one thing, it is relatively new. Originally founded as the Tempe Normal School for the Arizona Territory, it became Arizona State College in 1945 and did not take on its present name until 1985. And when Crow arrived, ASU was better known for its athletic teams and its active social life than for its academic excellence.

Even so, driving and sustaining change of this magnitude takes a deep commitment: a good portion of Crow's time and energy continue to be devoted to "selling the vision" of a new model of higher education for Arizona. He speaks and writes extensively about what he is trying to accomplish<sup>49</sup> and makes a point of meeting personally with every new faculty member to ensure that they understand what he is trying to create at ASU. The eight design principles that are guiding the university's transformation are prominently posted in buildings across the campus.

Crow also acknowledged that deviating from the traditional model of higher education has generated jealousy, contempt and derision from critics and, at times, nearly provoked "actual combat." For example, the University of Arizona, traditionally the leading research university in the state, responded to the challenge to their model with "fixed bayonets." When skeptics suggest that the changes ASU has been making are jeopardizing the school's academic integrity, Crow points to a list of 150 indicators that measure the university's progress, including the high graduation rate of students and a substantial increase in research funding the school has attracted.<sup>50</sup> But Crow recognizes that not all schools can emulate what ASU has done: many leaders of other institutions who have visited ASU, after expressing admiration for what Crow has accomplished, have told him that although they "wish they could do it too, they would get killed if they tried."

### **Staying on the Edge**

Even in the most favorable circumstances, bringing about deep institutional change is difficult. Maynard Webb noted that virtually all successful executives have built their careers on seeking to be near the core, where budgets are largest and authority is concentrated. Start-ups may be "cool," but they operate on the edge out of necessity, and typically define success as either moving closer to the core (of an existing enterprise) or growing to the point that they can build their own core. It may well be that every successful organization must eventually take on core characteristics in order to consolidate power and reduce uncertainty, both internally and externally. But if they want to survive in a volatile world, organizations need to keep an edge mentality, remaining open to innovation even if it disrupts existing structures and business

models. We need organizations that are ambidextrous, that have the ability to construct platforms that connect the core to the edge in ways that benefit both. What is at stake is nothing less than the economic health of the country.

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**...to survive in a volatile world, organizations need  
to keep an edge mentality....**

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## Endnotes

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# APPENDIX





# Aspen Institute Roundtable on Institutional Innovation

## *Connecting the Edges*

Aspen, Colorado · July 29-31, 2012

### Roundtable Participants

**Richard Adler**

Research Associate  
Institute of the Future

**Maryam Alavi**

Vice Dean and Professor  
Goizueta Business School  
Emory University

**Joaquin Alvarado**

Chief Strategy Officer  
Center for Investigative  
Reporting

**Laura Bailyn**

Senior Director  
Markle Foundation

**Teresa Briggs**

Bay Area Managing Partner  
Deloitte, LLP

**John Seely Brown**

Independent Co-Chairman  
Deloitte Center for the Edge

**Michael Crow**

President  
Arizona State University

**Charlie Firestone**

Executive Director  
Communications and Society  
Program  
The Aspen Institute

**Sunil Garg**

President  
Exelon Power

**John Hagel**

Co-Chairman  
Deloitte Center for the Edge

**John Levis**

Global Chief Innovation Officer  
Deloitte

**Ellen Levy**

Managing Director  
Silicon Valley Connect

**Luke Lonergan**

Chief Technology Officer  
Data Computing Division  
EMC Greenplum

Note: Titles and affiliations are as of the date of the conference.

**Richard McAniff**

Former Co-President and Chief  
Development Officer  
VMware, Inc.  
and

Former Corporate Vice-President  
Microsoft

**Carmen Medina**

Specialist Leader  
Deloitte

**Jerry Murdock**

Co-Founder  
Insight Venture Partners  
and  
Trustee  
The Aspen Institute

**Peter Smith**

Senior Vice President for  
Academic Strategies and  
Development  
Kaplan Higher Education Group

**Taylor Stansbury**

Senior Vice President  
and Chief Technology Officer  
Intuit

**Jack Stephenson**

Director of Mobile, E-Commerce  
and Payments  
JPMorgan Chase

**Margarita Quihuis**

Director  
Stanford Peace Innovation Lab

**Maynard Webb**

Founder  
Webb Investment Network

**Geoffrey West**

Distinguished Professor and  
Former President  
Santa Fe Institute

*Staff:***Kiahna Williams**

Senior Project Manager  
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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: *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)*

The Communications and Society Program is an active venue for framing policies and developing recommendations in the information and communications fields. We provide a multi-disciplinary space where veteran and emerging decision-makers can develop new approaches and suggestions for communications policy. The Program enables global leaders and experts to explore new concepts, exchange insights, develop meaningful networks, and find personal growth, all for the betterment of society.

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.

Most conferences employ the signature Aspen Institute seminar format: approximately 25 leaders from diverse disciplines and perspectives engaged in roundtable dialogue, moderated with the goal of driving the agenda to specific conclusions and recommendations. The program distributes our conference reports and other materials to key policymakers, opinion leaders and the public in the United States and around the world. We also use the internet and social media to inform and ignite broader conversations that foster greater participation in the democratic process.

The Program's Executive Director is Charles M. Firestone. He has served in this capacity since 1989 and also as Executive 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)*

*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

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