

On September 23, 2011, Silicon Flatirons Center held a conference at the University of Colorado Law School to discuss innovation policy and national competitiveness during the current economic environment. The conference focused on three principal questions as to the role of government in spurring innovation and economic growth - (1) how it can enable the basic building blocks; (2) how it can support the development of entrepreneurial clusters and regional innovation; and (3) what strategies it can employ to advance national competitiveness in a global economy.

### **Panel I: The Building Blocks for Innovation: Historical and Economic Perspectives**

By: Nick Venetz, University of Colorado Law School, Class of 2014

Dean Phil Weiser moderated the first conference panel discussing the building blocks of innovation. The discussion began considering what America's policy of innovation is. Dr. Keith Maskus outlined federal research funding, deep financial markets, mobile executive and management personnel, and industry neural fiscal incentives as standards of American innovation policy. His comments concluded with a reference to the importance of the "randomness" and "animal spirit" in American society. Dr. F.M. Scherer slightly altered this description by noting that, in recent years, federal research funding has declined while private research funding has increased and continued to push innovation. Mr. Nicholas Carr questioned whether or not we could rely on private funding for basic research to develop technologies like the Internet.

Delving into the role of federal research funding more deeply, the panelists disagreed on certain aspects of government involvement, but they all agreed that the federal government has a place in funding basic research. Ms. Terrell McSweeney mentioned one issue the government was considering: whether the United States should continue its current policy of funding research and development or shift to funding research and development and demonstration, similar to the policy of China and other countries. Ms. McSweeney also made the point that, in addition to direct government investment, government regulation and procurement often drives private sector innovation. Dr. Scherer questioned the actual benefit of government support for basic research by pointing out that, oftentimes, links between federally funded basic research and innovation are distant. In additional support of this viewpoint, he highlighted energy technology, saying it was an example of spending lots of federal money and, seemingly, accomplishing little. Ms. McSweeney countered by arguing that energy innovation is unique due to underhanded competition from countries like China and that the policy is useful in addressing a wrong the market has yet to recognize, global warming. Dean Weiser then took a moment to discuss healthcare innovation specifically. Mr. Carr qualified the topic of healthcare innovation by noting that, because consumers are shielded from the costs, the effect of innovation in the marketplace is disrupted. Furthermore, he suggested that publicly driven healthcare innovation is difficult and, ultimately, the private sector will drive healthcare innovation.

Dean Weiser then asked if the deck was stacked against innovation and made mention of a saying used by the Vice President, "The future has no lobbyist." Again Mr. Carr shaped

the discussion by suggesting that, because there is no perceivable action like the space race and no grand historical story, it is difficult to promote innovation. Dr. Maskus countered by simply stating global warming is that grand historical story and that it is essential we engage more fully to keep up with its effects. Ms. McSweeney answered Dean Weiser's question more directly by asserting that innovation is very hard to present to the public from a policy standpoint and that it is difficult to make the need tangible. She went on to say that in the current fiscal environment, where the focus is on jobs and debt reduction, it is especially challenging. Dr. Scherer made the point that the space race built off military technology, but that its spillover benefits were elusive or even illusory.

The final topic the panel covered was how to build innovation infrastructure and protect America's investments in innovation. Dr. Maskus suggested that improvements could make research more purposeful and efficient, and ensure it benefited the originating country. Dr. Scherer then brought up a point that would come to be a central theme of the conference: change immigration policy to keep immigrants trained in science and technology in the United States. He suggested that by allowing these individuals to leave, America is losing the investment made in their skills and training while other countries gain innovative and educated personnel. Dr. Scherer then turned to the allowance of failure in innovation, advocating it be made more acceptable. Dr. Maskus agreed and reiterated the need to appropriately establish who pays and who benefits in future innovation. Mr. Carr emphasized the potential of the X-Prize and similar competitions for addressing well defined problems but considered it unlikely that disparate, unorganized functions will come together to innovate. From a policy standpoint, Ms. McSweeney touted the success of federal loan guarantees but conceded that the public's low tolerance for loss complicates this approach. She also noted that such policy action can be undermined by other countries and gave China's actions in the solar industry, described as unfair, as an example. Dr. Scherer concluded the topic and the panel by plainly stating the United States should initiate more "Buy American" policies.

## **Part II: Spurring Entrepreneurial Clusters and Regional Innovation**

By: Danielle Town, University of Colorado Law School, Master of Laws, Class of 2012.

Professor Brad Bernthal moderated the second panel discussion on spurring entrepreneurial clusters and regional innovation. He framed the discussion with three theories of why some regions are more innovative and hold a regional advantage. The first theory, economics theory, is associated with Alfred Marshall from the 1920s and describes regions with a concentration of firms that are able to obtain economies of scale by sharing infrastructure and labor pools, which creates an external economy and lowers the fixed costs outside the firm. The second theory, the sociology theory, traces back to AnnaLee Saxenian, who suggests that while Silicon Valley and Boston both have external economies, Silicon Valley still vastly outpaced Boston because of a "horizontal network" where there were porous boundaries between firms related to generally unenforceable non-compete clauses. Finally, Richard Florida created the geography theory, which posits that there is a "creative class" of people who create meaningful new

forms. People in the creative class choose to be around other creative people, prefer places where they can be outdoors, and like communities with a “tolerance for weirdness.” Professor Bernthal noted that none of these theories are mutually exclusive and asked the panelists to comment on whether those three theories seemed applicable to the communities in which they have worked.

David Cohen did not disagree with those theories, but also thought that there are a combination of factors in play. Entrepreneurs in the community lead the mentorship culture, and when those entrepreneurial leaders take a long view and have a sustained culture of mentorship, it has made a difference, even in New York City. Sharon Matusik described how her work in Santiago, Chile, where the culture discourages high-risk ventures, had to include reorienting how people think about investing. Lesa Mitchell thought the sociology and geography theories are both right, and that developing a “thick network” between cities is very important. Paul Washington would like to replicate all three theories in Denver, as well as develop incubators where entrepreneurs can freely innovate and hopefully draw attention and people to Denver. Mr. Cohen added that while about 70% of the companies TechStars has funded have not been from Colorado, about half of those companies have stayed in Colorado and they tend to be the stronger and faster-growing businesses.

Professor Bernthal then shifted to ask about whether there should be different approaches to innovation based on industry sectors. Ms. Mitchell responded that other than for segments that are highly capital intensive, no different approaches are needed. Ms. Matusik agreed that the important thing is the flow of information, rather than the sector. If the information is complex and meeting people in person facilitates communication, then geography matters and proximity will confer an advantage. Mr. Cohen commented that recruiting people with credibility in a sector will create a nexus in the region, and in the long-term will encourage a regional advantage. Mr. Washington pointed out that government has a unique position in that it can go into an undeveloped market to create excitement and try to encourage the flow of private capital. Ms. Mitchell agreed that government could take an important policy role, especially regarding immigration of entrepreneurs and the tangled web of regulation from state to state that slows innovation.

To promote a regional advantage, Mr. Cohen also concluded that raising awareness of your community is extremely important. When leaders promote their community, they essentially advertise the community to other innovators. While he believes it is partly serendipity that Boulder has such strong voices promoting it, that promotion also reflects a conscious effort to market the area and encourage an influx of innovators. Ms. Mitchell added that for a city to successfully continue to innovate, the entrenched dealmakers must move aside and allow new people in.

Several questions from the audience centered on how to create cultures of innovation in other countries. Mr. Cohen thought that learning from the success of other areas could inspire local innovators, and Ms. Matusik added that starting a mentoring program would be very helpful. Ms. Mitchell responded that some cultures have a strong bias against failure, and that needs to change. From the audience, Brad Feld commented that

mentorship is not geographically constrained and that mentors can come from outside the country. TechStars started out with half its mentors from outside of Boulder, and that model can work for other countries as well.

### **Panel III: Strategies to Promote National Competitiveness**

By: Julie Cuypers, , University of Colorado Law School, Class of 2014

The third panel addressed strategies to promote national competitiveness. The panel was moderated by Jonathan Sallet of O'Melveny & Myers LLP. Mr. Sallet opened the discussion by posing a question about whether global economies are truly competing in a zero-sum game, and whether we should be thinking about global economies in those terms. Robert Atkinson responded by pointing out that there are two parts to any economy: the traded part, and the non-traded part. Only the traded are in competition. All economies trade jobs, and the United States needs to trade low-value jobs for high-value jobs, he added. We can do this by attracting companies that employ a skilled, educated work force that will be paid more for more specialized work. James Manyika pointed out that the global economy is able to benefit as a whole; there is no need for the global economy to be a zero-sum game. He discussed the three dimensions of an economy: tradable sectors, finite natural resources, and human resources (skills, talent, and creativity). Companies make decisions about where to locate the several parts of their businesses based on these dimensions. Where these businesses locate affects where individuals go after completing their educations. People want to go where the interesting opportunities are. Richard Rapp responded by suggesting that institutions and culture, rather than competitiveness, are the main drivers of growth, and he cited the competition between the United States and Great Britain in the 19th and 20th centuries as a powerful example. Specifically, he noted that the United States had institutions in place, such as an open patent system, that helped to democratize invention, and a culture promoting entrepreneurship. Other countries did not have the same systems in place at the time.

Next, Sallet asked what it means to be competitive, and how the United States should think about jobs as it tries to create them in its own economy. Mr. Manyika spoke about past recessions and how the job market has historically responded to those recessions. In the past, he said, the job market would recover about six months after a recession, but starting in 1991, the job market began losing its ability to recover quickly after a recession. Mr. Manyika stated that it now takes about 67 months for the job market to recover from a recession. He said, this tells us that the "job creation engine" was in trouble before the recent recession, and tells us to look to Germany, which had a more difficult recession but managed to create more jobs than the United States. What is the United States doing differently? Mr. Manyika pointed out that there are some sectors (such as information technology) that are actually growing despite the general downturn in the economy, and these sectors might be a good place to start looking for ways to improve job distribution. Mr. Rapp suggested that the end of advanced public functions, the high school movement, and competition among universities led to a loss of skills and education in the United States after the 1970s. Mr. Jones pointed out that increases in productivity can decrease employment in some sectors (for example, agriculture) but that

dealing with those decreases differently may help. For example, in Germany, companies will reduce wages rather than lay off workers to save money until the economy picks back up.

To close the panel, Sallet asked, “If innovation is the key driver of economic growth, what is the single most important thing government can do?” Mr. Atkinson suggested that a more aggressive trade policy against mercantilism would protect against intellectual property theft going on in China. Mr. Manyika mentioned a heavy reliance on the private sector and suggested that more government funding for research would drive innovation. Mr. Rapp proposed that impediments to innovation determine the competitive success of nations, and if those impediments (such as monopolies) can be removed, innovation will thrive. Mr. Jones advocated for the benefits of improving institutions, such as public schools, and an immigration policy that would allow the United States to hold on to the talent of graduate students and entrepreneurs.