

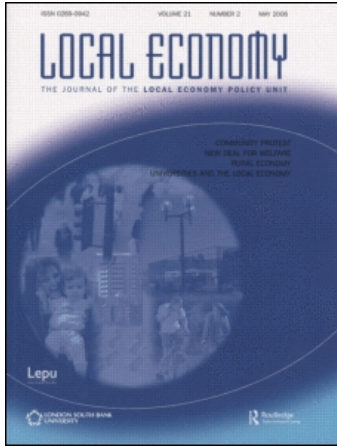
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IN PERSPECTIVE

Obama's Innovation Policy: Can the New Directions Hold?

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In the US, 'industrial policy' is a dirty word. In fact, former White House Chief of Staff John Sununu famously and regularly bragged that 'We don't do industrial policy'. While some may claim America doesn't 'do industrial policy', that assertion is only true because America instead does 'technology policy', 'innovation policy' or 'competitiveness policy'. Washington has been and will continue to be quite active in terms of supporting leading business sectors and promoting innovation, entrepreneurship and competitiveness. The level of activism and types of programmes differ across Presidential Administrations, but no recent Administration – even the most conservative – has adopted a true hands-off policy.

In terms of rhetoric, the Obama Administration has been more open to activist policy intervention than all of its recent predecessors. This pattern is most evident in the massive response, via efforts like the economic stimulus package and auto industry bailout to the economic downturn that greeted President Obama upon entering office in early 2009. However, in non-emergency situations, the Obama Administration's policy innovations have been more evolutionary than revolutionary. Several interesting policy experiments are underway, but massive shifts in policy have not yet been put into place and the long-term survivability of these experiments remains an open question.

This article examines America's recent history with industrial policy as well as the tentative new directions being pursued by the

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Obama Administration. It argues that the Obama team's current approach, which relies heavily on pilot projects and one-time funding models, is unlikely to foster necessary long-term changes in how the US supports and nurtures innovation. A structured approach that helps to establish a more permanent framework for a consistent innovation policy – the American version of industrial policy – is needed.

Recent History

Over the past several decades, policymaker interest in industrial policy measures¹ has waxed and waned in response to two primary factors (Atkinson, 2005; Hughes, 2005). First, political ideology plays a role. Democratic Administrations have been slightly more open to new policies when compared to their Republican counterparts. For example, the Clinton Administration entered office with very aggressive programmes for supporting defence conversion and promoting new technologies such as next generation vehicles. In contrast, George W. Bush regularly called for the elimination of the many technology policy programmes operated at the US Department of Commerce.

While political ideologies matter, economic circumstances matter even more. Interest in industrial policy has tended to be most robust at times when policy elites were greatly concerned about overall American economic competitiveness. The strongest flurry of interest emerged in response to the Japanese economic challenge of the 1980s, followed by similar debates during the recession of the early 1990s and in the face of the current economic downturn. These broader concerns about competitiveness have tended to trump ideology, as many new policy directions, such as the creation of the Sematech semiconductor consortium and the creation of the Federal manufacturing partnership programmes, occurred under Republican Presidents Reagan and George Bush, Sr.

The Obama Innovation Strategy

Given this history, one would expect an aggressive industrial policy approach from the Obama Administration. Obama and his team entered office at a time of great economic uncertainty, promoting a vision of a more activist and effective role for government. Obama's 2008 campaign platform presented an activist agenda and his officially announced innovation policy followed up on these promises (US National Economic Council, 2009). The September 2009 Strategy for American Innovation

¹ As noted, US policy makers frequently use the term 'industrial policy' in a pejorative sense to imply favouritism for certain sectors for firms. I define industrial, or innovation policy as those policies 'that explicitly aim to promote the development, spread, and efficient use of new products, processes, services, and business or organizational models' (see Ezell and Atkinson, 2010).

presents what some observers have called ‘a rich matrix of policies, initiatives, and programs focused on innovation as a driver of productivity and economic growth and as a means for addressing key problems facing US society’ (Kahin & Hill, 2010). The strategy represents a new direction in that it takes a comprehensive and holistic view of technology and innovation. It sees innovation policy as more than a set of programmes to stimulate key industries or sectors; it sees innovation as a solution to many pressing challenges, such as improving healthcare and enhancing environmental sustainability. Obama’s strategy focuses less on specific technology and more broadly on wider processes of innovation. This represents a substantial shift from past technology debates which have focused on target support for ‘strategic industries’, such as semiconductors, HDTV or advanced manufacturing.

While the strategy embraces a new mindset, it does not call for major new programmes or major shifts in policy directions. Indeed, White House officials have gone to great lengths to portray this strategy as a middle-of-the-road approach. They contend that current policies ‘strike a balance’ where government helps set the rules of the game while businesses and individuals determine how best to spur innovation (Farrell & Kalil, 2010; Atkinson & Ezell, 2008).

Key Themes in the Obama Innovation Strategy

The current US innovation strategy is built around three planks:

- *Investing in the building blocks of innovation:* this set of strategies focuses on increasing Federal research and development (R&D) spending, efforts to improve America’s education system and investments in new infrastructure like the smart grid and high-speed rail.
- *Promoting competitive markets that spur productive entrepreneurship:* this broad category includes new export promotion programmes, regional cluster strategies and open government initiatives.
- *Catalyzing breakthroughs for national priorities:* this effort targets significant Federal investments toward major national challenges such as clean energy, healthcare information technology and next generation batteries.

This broad strategic guidance is, in some cases, so broad and diffuse that it provides very little direction for policymakers seeking to implement this vision. Certainly, physical infrastructure and K-12 education are key components of the nation’s innovation ecosystem. However, simply identifying these links and supporting new investments in these areas does not constitute an industrial policy, a technology policy or an innovation policy.

In reality, the Obama Administration has only just begun following through on the commitments embodied in its campaign promises and the 2009 innovation strategy. The 2009 economic stimulus package provided

the first, and most substantial, opportunities as the American Reinvestment and Recovery Act (ARRA) supported a \$18.3 billion increase in R&D spending at key Federal agencies such as the Department of Energy, the National Science Foundation and the National Institutes of Health. ARRA funds have also been deployed for the Department of Education's Race to the Top programme and for various infrastructure programmes such as high-speed rail and broadband deployment.

Beyond this initial, and likely one-time, down payment, the Obama team has not yet built a strong framework or system for managing Washington's innovation policies. Still, policymaking is moving forwards. Within the broad strategic guidance found in the 2009 strategy, several themes characterise the actual practice of Obama-era innovation policies.

Open Government and Information Technology

In keeping with his campaign's effective use of the Internet and new social media, President Obama has also made these communications tools a core part of his innovation agenda. Indeed, Obama is the first President to put information technology (IT) at the core of his innovation policies. This commitment was embodied in his decisions to formally designate the first White House Chief Technology Officer (CTO) and the Chief Information Officer (CIO). The CIO focuses on the management and oversight of Federal IT spending, while the CTO has a broader mission of 'using technology to bring innovation to the American economy'.²

In practice, both the CTO and CIO offices have devoted significant time and resources to issues of how best to use IT to serve government customers and to improve transparency, collaboration and participation in government. For example, Obama's Open Government Initiative directs all Federal agencies to create new systems for more open information-sharing, collaboration and citizen participation.³

Grand Challenges

While the Open Government Initiative focuses on the day-to-day work of government agencies, the Grand Challenges of the 21st Century effort aims higher.⁴ This effort seeks to generate momentum and enthusiasm akin to that accompanying the efforts to put a man on the moon or to sequence the human genome. The White House has solicited public input on leading 'grand challenges' and has already begun to tackle big

² <http://www.whitehouse.gov/issues/technology> (accessed 25 October 2010).

³ <http://www.whitehouse.gov/open> (accessed 25 October 2010).

⁴ <http://www.whitehouse.gov/blog/2010/02/04/grand-challenges-21st-century> (accessed 25 October 2010).

challenges in engineering such as developing carbon sequestration methods or making solar energy more economical.⁵

This focus on big challenges characterises the Obama Administration's approach to clean energy, where a host of Federal agencies are tackling different approaches to this multi-faceted challenge. Obama's Fiscal Year 2011 budget includes a host of new programmes addressing these issues (Diaz *et al.*, 2010). They include funding for ARPA-E, an energy research programme modelled on the Pentagon's DARPA programme, and billions of dollars to test new approaches to nuclear energy, battery development and smart grid technologies. This effort also includes investments in regional research centres and innovation hubs where multi-disciplinary research teams come together to tackle pressing energy-related challenges.

Innovation Pilots

Finally, the Obama Administration is funding dozens of pilot efforts and demonstration projects. One of the more striking aspects of the Obama policies is the use of innovation funds across a host of different Federal agencies and issue areas. Nearly every Federal agency now operates an innovation fund of some sort. The Race to the Top Fund, a \$4 billion competition to promote education reform, is the best known of such efforts. The White House also manages its own small (\$50 million) Social Innovation Fund to invest in non-profit organisations using new approaches to tackle pressing social challenges.

Other Federal agencies operate innovation funds targeted to their core missions. For example, the National Aeronautics and Space Administration (NASA) has used its fund to back projects related to space exploration. The Economic Development Administration's i6 competition will provide \$1 million seed grants to six regions that develop new approaches to promoting regional innovation and entrepreneurship.

Potential Future Directions: Will the Experiments Hold?

While the Obama team has introduced some new concepts, such as the Open Government Initiative, and backed some major new investments (thanks to one-time economic stimulus funds), its innovation policies are not charting bold new paths. They represent an about-face when compared to the approach of George W. Bush, who eschewed any positive industrial policies, but they align fairly closely with policy directions charted under the Clinton Administration and, to a lesser extent, the first Bush Administration.

Therein lies the danger, at least for those who believe Washington must make a robust commitment to supporting innovation and technology

⁵ <http://www.engineeringchallenges.org> (accessed 25 October 2010).

development. The Obama Administration's new initiatives are laudable but they remain diffuse and unorganised. Signature initiatives emerge as demonstration projects or as one-time competitions. Key leaders, such as the White House CTO and CIO, operate with limited resources and no power – beyond the bully pulpit – to direct and manage on-the-ground implementation.

The absence of continuity and a real political dialogue about US innovation policies places all of these initiatives at great risk in the event of a changed political environment, tight budgets or the emergence of other policy priorities. Over the past several decades, numerous innovation policy-focused initiatives have suffered this fate. The Clinton Administration's signature Technology Reinvestment Project, which invested in dual-use technologies, was quickly scuttled after the Republican Congressional takeover in 1994. Commerce Department programmes, like the Hollings Manufacturing Extension Partnership, barely survived eight years of neglect under President Bush. And even Bush's own regional innovation effort, the Department of Labor's WIRED (Workforce Innovation in Regional Economic Development) programme has been eliminated in the wake of Democratic control of the White House and Congress.

In the face of current concerns about the US Federal budget deficit and growing domestic opposition to key planks of the Obama agenda, a repeat of past patterns could result. Promising inroads have been made, yet long-term persistence of these policies is uncertain.

If the Obama team hopes to finally 'put innovation policy front and center' (Atkinson, 2009), it should consider several possible approaches. At the most basic level, it must invest in programmes that support innovation and technology development. Many existing programmes, such as the Hollings Manufacturing Extension Partnership, have been starved for funds for a decade. This pattern is slowly being reversed, as the Obama Administration has begun increasing the budget for these programmes.

At the same time, the Obama team needs to move innovation policy out of the experimental phase. Too much of the current innovation policy is built around pilot projects, one-time investments or one-time competitions. These initiatives can only persist when they become institutionalised within Federal agency budgets and when agency leaders view innovation as a core part of the organisational missions.

Finally, the Obama Administration should consider the development of an institutional home for innovation policy. Washington analysts regularly debate whether innovation policy should be managed by the Commerce Department or by a new entity such as the proposed National Innovation Foundation (Kahin & Hill, 2010; Atkinson & Wial, 2008). Regardless of the ultimate authority over innovation policies, the benefits of this new institutional home are significant. It will provide continuity and permanent recognition that innovation policy is a core part of any government's 21st century policy agenda.

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