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WASHINGTON, DC

Submitted Comments Regarding Federal Competitiveness Policies and Programs: 2014

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Bureau of Industry and Security

Surveys

Competitiveness Enhancement Needs Assessment Survey

Office of Science and Technology Policy

Strategic Plan

Suggested Approach to Revising “Strategy for American Innovation”

THE GEORGE WASHINGTON UNIVERSITY

WASHINGTON, DC

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OIRA Case Officer for Bureau of Industry and Security
Office of Management and Budget
Washington, DC
Via OIRA_Submission@omb.eop.gov

To whom it may concern,

I appreciate the opportunity to respond to the request for comments regarding the proposed Bureau of Industry and Security (BIS) Competitiveness Enhancement Needs Assessment Survey Program data collection, as published in the *Federal Register* on September 15, 2014. As a research professor at the George Washington Institute of Public Policy, George Washington University, I focus on federal policies that support U.S. economic competitiveness. From that perspective, I support the intention of the proposed information collection to facilitate business access to useful federal assistance and applaud BIS's effort to aid firms in taking advantage of available resources. I offer several observations that I hope will enhance the proposed effort. The subjects of my comments are survey justification, distribution, and design and administration.

Survey Justification

My comments on justification of the proposed survey concern its authorization and the impacts of prior surveys.

➤ Authorization

For two reasons, I suggest that OIRA ask BIS to reaffirm and restate the authorization for the proposed information collection. First, while the ICR Supporting Statement, section A.1, indicates that the information collection is required under Executive Order 12919, in March 2012 President Obama revoked E.O. 12919 and replaced it with E.O. 13603.

Second, on September 26, 2014, President Obama signed the reauthorization of the Defense Production Act of 1950 (DPA). P.L. 113-172, originally filed as H.R. 4809, makes several changes in the DPA.

Consequently, I suggest that OIRA ask BIS to determine that the proposed survey is in fact authorized by E.O. 13603 and the DPA as newly amended. On the fairly reasonable assumption that the survey remains authorized, I suggest that OIRA ask BIS to note the sections of E.O. 13603 and the DPA that provide the basis for the proposed survey.

➤ Impacts of Prior Surveys

The [webpage](#) for OMB Control Number: 0694-0083 indicates that the BIS survey has been carried out on a regular basis for two decades. Thus, I imagine that BIS has an extensive history of the impacts of the survey—in terms of the number and percent of firms that obtained assistance through the survey and in terms of the impacts of that assistance. Consequently, I suggest that OIRA ask BIS to support the justification of the proposed survey by demonstrating the value of previous efforts.

If appropriate, OIRA also might consider a condition of clearance that directs BIS to systematically collect information on future survey impacts. As one option, OIRA might suggest that BIS look into an agreement with the Census Bureau's Center for Economic Studies (CES) to use the [Longitudinal Business Database](#) (LBD) to determine the growth of firms assisted by BIS relative to unassisted ones. CES has conducted similar studies for other federal business assistance programs, including the Manufacturing Extension Partnership, the Minority Business Development Agency, and the U.S. Commercial Service. Congress recently approved a Census budget initiative to provide this kind of evaluation service to federal programs.

Moreover, I believe that CES would find the content of the BIS survey of significant interest for its own research purposes. Consequently, I can imagine that CES might be willing to conduct an impact evaluation of the BIS needs assessment program at no cost in exchange for allowing the survey records to permanently reside in the LBD.

Survey Distribution

The ICR Supporting Statement, p. 2, indicates that the BIS Office of Technology Evaluation (OTE) “plans to distribute 8,000 surveys to small firms located in states adversely affected by economic downturns and program terminations as well as manufacturers in critical industries that support U.S. national security.” However, the Supporting Statement does not describe the process by which it plans to select survey recipients. As a consequence, I encourage OIRA to ask BIS to describe its firm selection process and the reasons why this process is optimal for achieving the survey's aim.

Given the frequent industrial base assessments and competitiveness evaluations carried out by OTE and the Defense Department's Office of Manufacturing and Industrial Base Policy (MIBP), it seems likely to me that BIS has an extensive list of defense-related firms that are good candidates for federal assistance. I suggest that OIRA ask BIS to indicate the extent to which BIS and MIBP assessments and evaluations serve as the source for the proposed survey's distribution list.

The Supporting Statement says that BIS has expanded the survey's scope beyond that of defense-related firms to firms “adversely affected by downturns and program terminations.” I suggest that OIRA ask BIS to justify this broadened scope in two ways. First, BIS might indicate

how the scope expansion beyond defense-related firms is authorized by E.O. 13603 and the DPA. Second, as firms hit by economic downturns and program terminations are served by multiple other federal business assistance programs (e.g., the Economic Development Administration, the Small Business Administration, the Manufacturing Extension Partnership Program, the Minority Business Development Program), BIS might indicate why it, rather than these other agencies, should serve as the point of outreach.

I'm pleased to read that the proposed survey will be administered online. In light of the survey's immediate electronic accessibility and its extraordinarily low cost, OIRA might consider directing BIS to distribute survey invitation letters on a rolling, opportunity-driven basis over the three-year period of clearance, rather than a one-time effort of fixed size. In this way, BIS would be in a position to maximize the number of firms informed of opportunities for federal business assistance.

Survey Design and Administration

I have several suggestions for improving the design of the survey instrument.

- I recommend updating the calendar years, as the draft instrument covers 2005 through 2008. (It looks like the same instrument was submitted to OIRA in 2008, 2011, and 2014, without change. The expiration date says 2011, rather than 2017.)
- I suggest that OIRA direct BIS to revise the survey to reflect the full breadth of services currently offered by federal business assistance agencies. For instance, I suggest adding [supply chain management](#) and [workforce development](#) to Section II.
- If OIRA finds a BIS-CES cooperative arrangement of interest, it might consider directing BIS to work with CES to align survey categories and language with other [Census business surveys](#), including the Economic Census, the Annual Survey of Manufactures, the Business R&D Survey, and the Survey of Business Ownership. In this way, the results of the BIS survey can be readily integrated with other records in the LBD.
- Moreover, Census has substantial experience testing and understanding how businesses respond to various types of survey design. OIRA might suggest that BIS work with the Census Bureau's Usability Laboratory to determine if the flow and wording of questions might be improved.
- The draft survey asks the respondent to email or mail the survey results to BIS. OIRA might direct BIS to create a system that electronically captures the responses and obviates the need for the respondent to manually submit them and BIS to manually record them.
- If BIS creates an electronic survey response mechanism, it could consider automating its assessment and facilitation assistance. That is, based on the respondent's set of answers, the BIS website could suggest programs appropriate to the respondent's needs. For instance, if a firm indicated its desire for assistance in

talent management, the BIS site could automatically direct it to the NIST Manufacturing Extension Partnership [SMARTalent Program](#). BIS still would follow up with the respondent to see if it could be of further assistance and still would be able to take credit for its matchmaking efforts.

I appreciate the opportunity to provide comments on the BIS Competitiveness Enhancement Assessment Survey and hope you and BIS staff find them helpful.

Sincerely,

A handwritten signature in black ink that reads "Andrew Reamer". The signature is written in a cursive style with a large initial 'A'.

Andrew Reamer
Research Professor

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WASHINGTON, DC

Suggested Approach to Revising *A Strategy for American Innovation*

Andrew Reamer, Research Professor

September 23, 2014

The 2011 version of *A Strategy for American Innovation* is structured around a set of beliefs about the contribution of innovation to the nation's economic well-being and the factors that bring innovation about. Upfront, the report states "Innovation . . . is the foundation of American economic growth and national competitiveness." It then identifies policy and programmatic actions the Obama Administration is taking to enhance three sets of factors that stimulate innovation:

- Building blocks – education, scientific research, physical infrastructure, and information technology
- Market mechanisms – Research and Experimentation Tax Credit, intellectual property policy, entrepreneurship, antitrust, regulatory review, open Internet, and export promotion
- Sectoral investments – clean energy, biotechnology, nanotechnology, advanced manufacturing, space applications, health care technology, and educational technologies.

The 2011 strategy indicates a recipe of various policy and program ingredients that, collectively, would serve to catalyze American innovation and, therefore, competitiveness. As a well-articulated recipe, the strategy by need was fixed in a moment of time, late 2010-early 2011. Essentially, the document appears to be a reporting of the types of efforts the Administration was undertaking four years ago and how and why they were all tied together. Beyond its educational value, its post-release use seems to be primarily as a reference document, less so providing day-to-day guidance or principles for Administration decision-makers.

I wish to suggest an approach to U.S. innovation strategy that differs in several aspects from the prior effort. As I'll discuss later, I can offer resources and ideas for implementing this approach.

- 1) As a general principle, I suggest that OSTP and the NEC develop and implement a U.S. innovation strategy that mirrors the innovative processes it aims to stimulate, i.e., one that is entrepreneurial, information-based, flexible, adaptive, collaborative, and responsive.
- 2) To provide the public with a better understanding of the importance of innovation, I would like to see the rationale for an innovation strategy grounded in an in-depth,

literature-based discussion of the role of innovation in national economic development and competitiveness. The 2011 report simply asserts the relationship.

- 3) To guide and justify the component parts of the strategy, I would like to see discussion of current understandings of the innovation process, the important role of general purpose technologies (GPTs), and the various factors that affect the rate and nature of innovation. Recent academic research has done much to advance understanding of these dynamics. The 2011 report asserts a set of beliefs regarding the connection between various factors and innovation. While I share these beliefs, I believe that a review of the literature will yield a broader, more nuanced, and more justifiable framework for action.
- 4) I suggest the U.S. innovation strategy be derived, to the extent possible, from an understanding of:
 - a) U.S. capacity for innovation relative to other nations;
 - b) global markets and U.S. competitive positions in those markets, particularly regarding research and development;
 - c) the nature and characteristics of U.S. private and public organizations that carry out innovation;
 - d) the current U.S. policy infrastructure, including:
 - the parts of the U.S. Code that set forth congressional findings, mandates, priorities, principles, and reporting requirements regarding innovation and competitiveness;
 - the units of the federal government now actively involved in promoting innovation—including agencies, federal advisory committees, and congressional committees and caucuses; and
 - findings regarding the efficacy of various federal efforts to promote innovation; and
 - e) other nations' policy and programmatic efforts to stimulate innovation.

My experience is that strategic plans are most effective when they target specific issues and opportunities based on a detailed understanding of real-world conditions.

- 5) As the federal government currently isn't organized to produce and integrate such research and analysis, I'd like to see the strategy document describe how the government plans to organize such capacity.
- 6) I suggest that the document make full and appropriate use of all policy tools, including facilitation and information, not only the traditional ones of money programs (grants, tax credits and subsidies) and regulation. As each policy tool is

appropriate in particular circumstances, and some policy tools tend to be much less expensive and flexible than others (e.g., information and facilitation as compared to grants and regulation), I further suggest that the document take care to choose the most cost-effective tool for each issue or opportunity.

- 7) I encourage the document to emphasize the role of the Office of Science and Technology Policy and the National Economic Council in engaging and coordinating a network of public, nonprofit, and private sector actors in the strategic planning and implementation process. I believe that leveraging the work and interests of other organizations would serve to multiply the effectiveness of a relatively small strategic planning process by several orders of magnitude.
- 8) I suggest that the document emphasize an ongoing process for strategy development and implementation in light of ever-changing global conditions of competitiveness, distinct from providing a fixed strategy. The speed of change in global markets outstrips the ability of any government to produce a formal list of strategic actions that remains complete and fully pertinent for several years.
- 9) I encourage the document to place the Administration's strategy in historical context by providing a brief summary of the federal government's efforts to stimulate innovation from George Washington and Alexander Hamilton through the present. Some assert that the federal government should not concern itself with making intelligent choices about investing the nation's resources to promote innovation. I believe the Administration can make an effective counterargument on the basis of both Schumpeterian economic theory and historical precedent.

I can offer the following resources and ideas for carrying out the approach suggested above:

- ["The Impacts of Technological Invention on Economic Growth – A Review of the Literature"](#) provides an overview of research findings regarding the role of invention in economic growth and the factors that drive invention. The paper is organized by six realms--economic history, innovation accounting, macroeconomic analysis, microeconomic analysis, economic theory and models, and future scenarios.
 - For present purposes, I think this analysis would be helpful in terms of items 2 and 3 above.
 - OSTP and the NEC could regularly update their understanding of the field by engaging the academic community through such means as RFIs, roundtables, and communication with academic associations.

- ["Indicators of the Capacity for Invention in the United States"](#) looks at the standing of the U.S. relative to other nations regarding invention/innovation outcomes and the building blocks of invention capacity (per the literature review)—including R&D, human capital, patent policies, free trade, entrepreneurship, labor market churning, societal values and attitudes, and national innovation agency and strategy.
 - This analysis could be used for item 4a above and could be updated annually.
- ["Efforts to Measure Trade in Value-Added and Map Global Value Chains: A Guide"](#) provides an overview of fast-moving international efforts to map global value chains (GVCs) and measure trade in value-added (TiVA) so that, for the first time, U.S. firms and policy-makers can see the place and competitive role of U.S.-based establishments in the global economy, by industry and business function, including R&D.
 - This is pertinent to item 4b above.
 - While U.S. representatives have participated in these international efforts, at present its primary statistical agencies are not actively pursuing collection and publication of such information.
 - Consequently, I encourage OSTP and the NEC to discuss with the Commerce Department's Economics and Statistics Administration options for the preparation of this form of data.
- Businesses involved in research, development, and innovation—I encourage OSTP and the NEC to speak with the Center for Economic Studies (CES) at the Census Bureau regarding opportunities for fruitful analysis of the CES [Longitudinal Business Database](#) (LBD) to better understand the nature of and factors influencing R&D and innovation in U.S. business establishments. The LBD combines firm-specific data from all Census business surveys, including the [Business R&D and Innovation Survey](#) carried out on behalf of the National Science Foundation.
 - This is pertinent to item 4c above.
 - As part of such an effort, I believe it'd be useful to determine, to the extent possible, the influence of participation in NSF cooperative R&D programs (e.g., the [Industry & University Cooperative Research Program](#)) and business R&D consortia registered with the Justice Department Antitrust Division under the National Cooperative Research and Production Act (see attached list of consortia examples).

- U.S. Code sections relevant to federal innovation policy—Earlier this year, I asked my research assistants to comb through the U.S. Code to identify congressional findings, priorities, mandates, principles, and reporting requirements regarding federal competitiveness and innovation efforts. We found a very large number of pertinent sections and it's clear there's very little coordination and integration among them. As the U.S. Code is a primary vehicle for federal innovation policy, it seems to me that OSTP and the NEC should have a complete understanding of relevant existing statutes so that they can respond to the Administration's current legal responsibilities and are in position to propose useful revisions, additions, and deletions.
 - This proposed effort is pertinent to item 4d above.
 - I'd be pleased to provide OSTP and the NEC with examples from our database and share the full database once review is complete.
- Federal innovation efforts—I have a draft set of profiles of over 50 federal programs in the executive branch and working lists of federal advisory committees and congressional caucuses.
 - This is pertinent to item 4d above.
 - I'd be pleased to share these documents with OSTP and the NEC. They can be easily updated on a regular basis.
- Other nations' strategies for promoting competitiveness and innovation—Earlier this year, I asked my research assistants to use the Internet to identify other nation's current strategies for promoting competitiveness and innovation.
 - This is pertinent to item 4e above.
 - I'd be pleased to share this work, which is rough at present, with OSTP and the NEC.
- Federal capacity for research and analysis—In item 4, I suggest that the U.S. innovation strategy be created on the basis of in-depth knowledge of innovation processes, global markets and value chains, U.S. research organizations and innovative capacity, and federal innovation policies and programs. While this is a substantial amount of knowledge, I believe the federal government's capacity to obtain and maintain it can be carried out through a network of existing offices of federal economists, facilitated by the Science and Technology Policy Institute (STPI).
- Federal statistical system—I suggest that the OSTP/NEC innovation strategy document emphasize the importance of modest investments in the federal

statistical system to provide the types of data useful to businesses, students, workers, education and training institutions, and governments in making decisions that influence the nation's capacity for innovation and competitiveness. As data are a public good, improved statistics can be a low-cost, high-impact means of positively influencing millions of decisions on a regular basis.

- Advances in information technology are enabling statistical agencies to explore opportunities to increase the value and lower the cost of federal statistics through using non-traditional sources of data, including webscraping, matched datasets, administrative records, modeling, and synthetic data. (See recent presentations by senior staff from the [Bureau of Labor Statistics](#) and the [Census Bureau](#).)
- Since 1998, the Secretary of Labor has been mandated by Congress ([29 USC 491-2](#)) to create and maintain a national system of employment and occupational statistics so that students, workers, and educators can make effective labor market decisions. However, the Labor Department has yet to fully fulfill this mandate, which was just reaffirmed with the passage of the Workforce Innovation and Opportunity Act (WIOA), section 308. Full implementation of Section 491-2 would do much to promote the development of the U.S. STEM workforce.
- Opportunities exist for judicious investments in new federal statistics gathered through the traditional means of surveys, particularly in the realms of trade, prices, and occupations.
- I suggest that the strategy emphasize the importance of maintaining and advancing U.S. statistical strengths relevant to innovation, particularly with regard to
 - the [Economic Census](#);
 - the [Business R&D and Innovation Survey](#);
 - the new [Microbusiness Innovation Science and Technology Survey](#);
 - other surveys of the [National Center for Science and Engineering Statistics](#);
 - [Occupational Employment Statistics](#);
 - the [Occupational Information Network](#) (O*NET);
 - the [Competency Model Clearinghouse](#);
 - the [American Community Survey](#);
 - the [Local Employment Dynamics Program](#);
 - BEA's [Industry Economic Accounts](#), including the [Innovation Account](#); and
 - the [Statewide Longitudinal Data Systems Grant Program](#).

- I'd be pleased to discuss specific opportunities for maintaining and improving federal statistics pertinent to innovation and STEM workforce.
- ["National Nonprofit Organizations that Inspire and Enable Invention and Invention-based Enterprises"](#) provides profiles of 59 organizations in six categories--young inventor encouragement, independent inventor encouragement, invention development and commercialization, inventor recognition, intellectual property, and invention and innovation policy.
 - This is pertinent to item 7 above.
 - As the documents suggests, I believe that federal convenings of these various groups could have a significant positive effect on the nation's capacity for innovation.
- U.S. innovation strategy in historical context—To provide political justification and demonstrate options for action, I strongly suggest that the innovation strategy document ground present-day activity in the context of history. Innovation strategy has been an explicit part of federal policy since George Washington's first term. Examples include:
 - Treasury Secretary Alexander Hamilton's famous 1791 report on manufactures, prepared due to President Washington's interest in encouraging manufacturing, domestic inventions, and the transfer of new technologies from abroad.
 - The U.S. Army initiative's, begun in 1815, to develop a "uniformity system" for manufacturing standardized, interchangeable parts.
 - Creation of the National Bureau of Standards in 1901 to create standards, carry out materials research, and serve as a source of state-of-the-art technical information for manufacturers and engineers.
 - In the 1910s and 1920s, federal-business R&D collaborations in the aeronautics, steel, ceramics, glass, and petroleum industries.
 - In 1919, the Navy Department's effort to have General Electric, Westinghouse, and AT&T join forces to create the Radio Corporation of America, which soon dominated radio manufacturing worldwide.
 - This is pertinent to item 9 above.
 - I'd be pleased to provide historical examples for possible use in the strategy document.

In conclusion, I hope OSTP and NEC staff find the above suggestions and information of value. I'd be pleased to discuss any aspect of this memorandum with staff at their convenience. I may be reached at areamer@gwu.edu and (202) 994-7866.