

BEA and Federal Information Technology Management Reforms

In December, 2010 The Office of Management and Budget (OMB) announced a 25-point implementation plan to restructure federal information technology in order to help remove the barriers that consistently get in the way of successful project management and execution. The 25 points are based on five broad changes to agency IT to 1) adopt light technologies and shared services; 2) align the budget and acquisition process with the technology cycle; 3) strengthen program management; 4) streamline governance; and 5) increase engagement with the IT community.

BEA fully supports, and has been an early adopter, of many of the goals of the Office of Management and Budget's 25 point plan for IT management reforms across the Federal Government. In light of the rapid and continuous changes in the national economy, the Bureau of Economic Analysis continues to face considerable challenges in adapting existing measurements to the new economy. The Bureau recognizes that a major component in meeting this challenge is efficiently utilizing information technology. Below is a short list describing BEA support for major components of OMB's plan. The list details specific actions BEA has taken to ensure the efficiency and effectiveness of our information technology operations.

***Steve Landefeld, Director
Bureau of Economic Analysis***

Consolidate data centers.

BEA's mainframe data center was closed in 1998. Since that time all Bureau computing requirements have been centrally supported by a single local area network (LAN). All of the Bureau's IT infrastructure components are managed by BEA's Chief Information Officer. BEA fully supports and actively participates in the Federal Data Center Consolidation Initiative (FDCCI).

Shift to a "Cloud¹ First" policy.

Within BEA's centralized IT environment, we continue to evaluate alternative means of providing critical services more efficiently in order to avoid unsupportable future cost increases. BEA continually evaluates opportunities to implement cloud computing within the framework of the Bureau's requirements for maintaining (1) the integrity and timeliness of our critical data on economic activity, and (2) the confidentiality of our company level source data.

BEA actively participates in the Interagency Committee on Statistical Policy (ICSP). The committee has engaged the National Opinion Research Center (NORC) to set up a pilot cloud environment to investigate opportunities presented by cloud technologies. The objective of the

¹ Cloud computing is a model for enabling on-demand access to a shared pool of IT resources, such as servers, networks, or applications. Users may access IT services and data from the cloud without control over the technology infrastructure that supports these services and data.

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pilot is to gain an understanding of how statistical agencies may take advantage of cloud technologies, given confidentiality requirements.

Network server virtualization (one or multiple logical servers on the same physical box) is the cornerstone of BEA's strategy to contain infrastructure costs while also supporting environmental sustainability. We continue to have ongoing success with virtualization, and we are currently at a 6:1 ratio of logical to physical servers. The adoption of this "private cloud" technology increases the efficiency of our operations and, at the same time, increases the redundancy/availability of our critical infrastructure components.

BEA will continue to seek opportunities to leverage cloud technology. During FY2010, we moved non-critical applications for collecting web site usage statistics and web satisfaction statistics to the cloud using software as a service². We are currently investigating utilizing the cloud to facilitate sharing of research with academic and international organizations.

Utilized shared services.

BEA has a long history of utilizing shared services to support functions not related to BEA's core mission of producing timely estimates of economic activity. BEA does not maintain administrative IT systems; rather, BEA uses accounting, human resources, and acquisition systems and services provided by larger Department of Commerce organizations. This strategic partnering reduces duplication, provides cost savings, and allows BEA to focus its limited resources on core mission-related functions.

In addition, BEA maintains ongoing dialog with other Federal statistical agencies to identify potential efficiencies and cross agency data sharing opportunities. BEA is working in partnership with the National Science Foundation (NSF) to study research and development assessments by multinational firms. BEA's CIO serves on the Department of Commerce CIO Council, which provides an avenue to identify ways in which BEA can take advantage of department-wide IT initiatives and strategies, share best practices, and utilize cost-saving procurement instruments.

Strengthen IT program management and utilize integrated program teams.

Over the last three years BEA has made tremendous progress in applying IT to increase staff productivity, compress processing timeframes, and to provide the foundation for substantial improvements in the analysis of statistics. This success in developing and implementing these improvements can be attributed to capable, formalized project teams. These multi-disciplinary integrated project teams consist of program office personnel, IT personnel, and leading external experts in database technology. Project teams are led by experienced managers who have received formal project management training. Many BEA managers and project team leaders have received Project Management Certifications. Additionally, BEA participated in the Office of Management and Budget initiative to design a formal IT program management career path.

² Three cloud-based service delivery models are Software as a Service [SaaS], Platform as a Service [PaaS], and Infrastructure as a Service [IaaS]

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All project teams receive oversight by members of BEA's IT Executive Steering Committee (ITESC), and the CIO. Team leads provide progress reports to the CIO on a weekly basis, and the CIO provides the ITESC with frequent updates, including written biweekly reports. This approach has been used successfully by BEA in modernization projects, evidenced by the fact that project teams have been effective in meeting annual modernization targets.

Design and develop a cadre of specialized IT acquisition professionals.

Contracting Officer's Representatives (CORs) play an important role in achieving successful contract outcomes. These individuals have important responsibilities in assuring contractors meet the performance requirements of contracts in terms of cost, quality, quantity, and schedule.

To ensure that technical and program requirements of BEA's acquisitions are effectively meeting the Bureau's needs, the Office of the CIO has several Federal Acquisition Institute Certified CORs who possess the training and experience necessary to meet all Department of Commerce requirements. An ongoing training program is in place for project managers and CORs to maintain competency and certification status.

Identify IT acquisition best practices and adopt government-wide.

BEA's IT contracts are relatively small. BEA seeks to minimize acquisition costs by using larger agencies' contracting offices and appropriate information technology contracts already in place across the federal government. BEA supports government-wide initiatives to lessen bureaucratic impediments that limit agencies' ability to utilize existing contracts. BEA currently uses Commerce contracts for Adobe, SAS, and Microsoft products, and secure internet services. BEA plans to take advantage of additional contracts as they become available.

Issue contracting guidance and templates to support modular development.

BEA has had tremendous success in using the agile, or iterative, development approach to break down the development of a software application into smaller chunks. Integrated project teams made up of dedicated resources that possess needed business and technical expertise design, develop, and test code in repeated cycles, or iterations. Requirements are validated and re-prioritized with each iteration.

This methodology mitigates some of the highest project risks related to user involvement, system requirements, and project scope. The iterative development process also mitigates budget-related risks as the highest priority requirements are addressed first. Finally thorough testing of each iteration ensures that quality is embedded in the end product and that all project team members have the same understanding of project requirements.

BEA's first success in using agile development resulted in the development of a high performance GDP benchmark processing engine which reduced processing time of this statistical component from 2+ days to 30 minutes. This tremendous reduction in processing

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time provides a dramatic widening of the analytical time window, and builds in the flexibility to adapt new, more robust, measurement methodologies. Thus, agile software development directly supports one of the Bureau's strategic challenges, to measure a constantly changing economy, by enabling processing systems to keep pace with the ongoing requirements for updated measurement methodologies. BEA continues to build upon this experience by applying agile software development methodology to other critical economic statistical processing processes.

Work with Congress to consolidate Commodity IT spending under Agency CIO.

BEA actively supports all initiatives to streamline the process of purchasing IT commodities. Within BEA, all information technology expenditures are made through the Office of the Chief Information Officer. BEA has had Bureau-wide standards for IT products for more than eight years. BEA continues to work with the Department of Commerce to identify opportunities to reduce commodity IT spending by using existing contracts for commodity products. BEA currently uses Commerce contracts for Adobe, SAS, and Microsoft products, and secure internet services. BEA plans to take advantage of additional contracts as they become available.

Reform and strengthen Investment Review Boards. Roll out "TechStat" model at bureau-level.

BEA has mature IT governance processes. Ongoing executive/management oversight of IT investments is provided by the CIO and the IT Executive Steering Committee (ITESC). The ITESC meets weekly or as needed for pertinent IT issues to be discussed and reviewed. In accordance with BEA's established IT investment review procedures, the ITESC reviews and approves all large projects that require significant investment (\$250,000 or more) or commit BEA to a particular technology or a change to current architectures. If projects do not meet these criteria for ITESC review, they must be reviewed and approved by the CIO. Biweekly highlights, which include projects updates, are sent to all ITESC members.