



Best Practices: A ProveIT Case Study — The City of Las Vegas Enables Better Business Decisions

**IDC Government Insights: United States Government Services
Delivery**

BEST PRACTICES

#GI229367

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IDC GOVERNMENT INSIGHTS OPINION

This ProveIT case study focuses on the city of Las Vegas, Nevada. Faced with numerous different financial and human resource systems, as well as applications specific to running city government, the city's IT department recognized an acute need to upgrade its technology infrastructure to standardize methodology around basic business processes, orchestrate disparate applications, and share data among operating units and constituents. The need today is greater than ever for governments to design systems to meet their strategic data requirements as they evolve over time — from managing across functional and organizational priorities to incorporating new data and revising existing data. Ultimately, this will assist government in meeting mission requirements, reducing overall costs, increasing transparency, and better serving constituents. IDC Government Insights believes that:

- As government entities focus on cutting costs, leveraging existing investments in applications, and increasing staff productivity, these initiatives require process management by creating layers of interoperability.
- As a process executes across organizations and applications, monitoring the status of the process and the work being handled within the process grows in importance.
- Interoperability and communicating status changes into a monitoring system require integration. Having strong integration capability, particularly integration based on service-oriented architecture (SOA), is critical for government entities that want to reduce overall costs, increase transparency, and better serve constituents through managing processes that cross multiple applications and business units.

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IN THIS STUDY

The city of Las Vegas is modernizing its legacy systems, integrating enterprisewide applications, increasing employee proficiency, and efficiently building and operating its systems. This ProveIT case study highlights the steps the city of Las Vegas took to enhance and streamline applications, enhance staff productivity, and improve business processes.

Methodology

Our methodology enables impact assessments to be comparable, consistent, and independent. Working with government and vendor personnel directly involved in the project, IDC Government Insights analysts gather relevant information on the project, examine a stated business issue in a government organization and the IT approach that it took to address it, and then provide our analysis of the approach — the solution's success in meeting the organization's stated goals; the project's impact on return on investment (ROI); the operational costs and business value of the solution; risk, or situational complexity; innovation, leveraging best practices for scalability, repeatability, and replicability; and the impact on delivery of an agency's mission, business processes, security implications, and lessons learned — and a look back at how to do it better.

This ProveIT case study is based on a series of interviews with Dr. Patricia Dues, Information Technologies Manager, City of Las Vegas, and Oracle executives.

SITUATION OVERVIEW

Business Needs

The city of Las Vegas, founded in 1905, is a municipality consisting of over 600,000 residents occupying 131 sq mi in southern Nevada. The city is one of the top tourist and business conference destinations in the United States, with over 37 million annual visitors. The Las Vegas city population is 600,000, and Las Vegas valley has over 2 million residents living in a land area of 117 sq mi.

The mission of the city of Las Vegas is to provide residents, visitors, and the business community with the highest quality municipal services in an efficient, courteous manner and to enhance the quality of life through planning and visionary leadership. The mayor and the Las Vegas City Council provide strategic leadership embracing a vision of a world-class, affordable, progressive city where citizens feel safe, enjoy their neighborhoods, and have easy access to city government.

The city manager is responsible for operations and manages 15 departments with 3,300 employees and a budget of over \$1.3 billion. Priorities include fiscally sound government, citizen engagement, and a pro-business environment.

Management Challenges

The city's CIO wanted to enhance and streamline human resource and financial applications across the entire enterprise. For example, the city collects revenue in approximately 20 different specialized systems, including applications that track and collect revenue from such sources as parking fees, permits, building inspections, and business fees. These specialized systems often caused dual-entry bookkeeping, resulting in attendant errors and delays in recognizing revenue. Because of these inefficiencies, as well as the inherent challenge to the IT staff to make these specialized applications work together, the decision was made to move legacy applications to a service-oriented architecture standards-based middleware. Strategies to implement adaptable integration of applications and business processes that cross IT departments and city operational functions were also set in motion.

The Solution

The city of Las Vegas began its successful IT transformation journey with upgrading its infrastructure, adding business process applications as well as government-specific process applications. Success depended not only on the quality of these applications but on the ability of the city to integrate these applications into business processes that better serve citizens while providing employee productivity. The additional steps that the city took to successfully implement this transformation include a vision of the future that was widely shared by city employees, and a governance structure that was designed for optimum communications, enablement, review, and leadership. Approximately 12 years ago, the city of Las Vegas began moving its legacy applications to applications running on Oracle Database. The city has since implemented enterprisewide Oracle E-Business Suite 11i Release 10 as a foundation that includes the following applications:

- Financials
- Internet expenses
- Purchasing
- Procurement
- Supplier
- Human resources management system

- Self-service human resources
- Learning management
- Payroll
- Time and labor
- Advanced benefits
- Inventory
- Workflow applications

Additionally, in 2005, the Water Pollution Control Facility, the Environmental Division of the Las Vegas Public Works Department, selected the Oracle Utilities Work and Asset Management solution to integrate asset management and maintenance with the city's enterprise resource planning (ERP) activities of purchase requisitions, purchase orders, receiving, invoices, employees, and so on. The city of Las Vegas subsequently implemented Oracle BPEL Process Manager, a component of Oracle Fusion Middleware, to integrate various applications and business processes at the Public Works Department with the back-office systems as well as to provide a seamless user experience to city employees.

Las Vegas has also implemented other enterprise solutions such as Hansen/Infor for asset and land management, customer service, and code enforcement operations; Class for leisure center program registrations and attendee tracking; and Detention's Offendertrak, the City Attorney's ProLaw and a custom-written courts case management application. Through the use of SOA middleware, these unique vertical applications are integrated into the city's database and ERP system.

THE BEST PRACTICES

Business Value and Lessons Learned

In assessing this IT deployment document, IDC Government Insights examines and evaluates the IT deployment impact on return on investment, risk, transformation, and innovation. IDC Government Insights analysts assess the technology solution impact on each of these critical areas and provide an analysis to assist other government entities pursue similar goals.

Return on Investment

IDC Government Insights maps this measure to business objectives and considers cost effectiveness, IT value to the enterprise, and/or IT value to government missions.

The City of Las Vegas Prove IT ROI Impact

The city's mainframe had been incurring costs averaging \$17,000 per month. Eliminating this costly mainframe solution and moving the city's applications to the Oracle E-Business Suite was the initial driving force for system upgrades. Not only has the city achieved the result of reducing annual maintenance costs, but by integrating the processing of payments from more than 20 revenue sources with Oracle Financial Applications, the city has reduced the dual-entry bookkeeping and attendant errors that occurred with its legacy system. The elimination of duplicate accounting systems provides managers with better and more accurate budget data in real time, enabling better informed decision making.

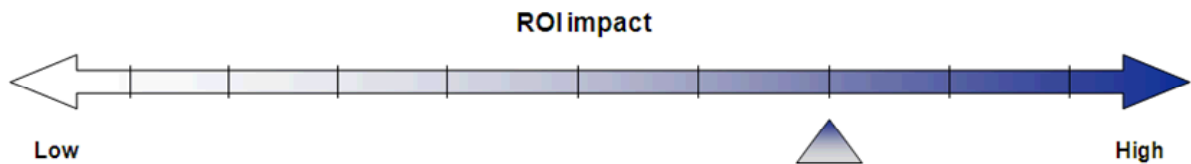
Today, transactions flow into the city's general ledger at the end of each day, allowing the city to immediately recognize revenue. "We used to have to post revenue first to the subsystem and then to Oracle Financials," says Dues. "Now it's a one-step input, and then the integration takes it away." Additionally the amount of time needed to close monthly books has been reduced from one month to less than one week.

The city has also automated and accelerated its purchasing processes, empowering end users while monitoring order processing in near real time to ensure that users take advantage of negotiated pricing.

The city had an "ah ha" moment that led to application repeatability and eventually to saving money and resources. Its Water Pollution Control Facility, which treats wastewater generated by more than 650,000 residents and businesses in Las Vegas and North Las Vegas, must ensure that it meets EPA-mandated water quality standards. The city typically purchased chemicals needed to treat the water based on previous years' use and didn't have a good handle on inventory or changing water usage requirements. By analyzing data obtained through sensors — such as the quality and volume of citizen water use — the city has been able to minimize inventory, automatically reordering chemicals when needed based on use and threshold of supplies, and continue to meet all mandated water safety standards. The reorder process occurs "behind the scenes" without user intervention, ensuring data accuracy between systems and improving efficiency. The success of city of Las Vegas in using technology to ensure quality of service while minimizing resources and saving money led to a deeper adoption of business analytics across its enterprise and enhanced its ability to use relevant, valuable information as a tool for improvement in supporting the city's initiatives and mission (see Figure 1).

FIGURE 1

The City of Las Vegas ROI Impact Assessment



Source: IDC Government Insights, 2011

Risk

IT solution deployment risk includes the situational complexity of the technology (such as implementation scale and legacy environment) and the executional complexity (cross-organizational governance, organizational culture, and program planning and management). The city of Las Vegas faced the risk of getting infrastructure right to ensure seamless integration. The city took on an enterprisewide system integrating all standalone applications to create a single source of data, supporting the city's unique business needs while supporting the operation of 20 different services.

The city minimized this risk by building a strong foundation of database technologies and a suite of applications required to effectively manage city business. Using SOA as the technical foundation for integrating applications allows the city to offload tasks that would have been specialized and time consuming to a standardized middleware application that interfaces applications with back-office processes and data. Oracle SOA Suite allows real-time data and process integration across Oracle and the non-Oracle applications that the city uses such as:

- Hansen/Info for asset and land management, customer service, and code enforcement operations
- Class for leisure center program registrations and attendee tracking
- Detention's Offendertrak, the custom-written case management application used by Las Vegas courts

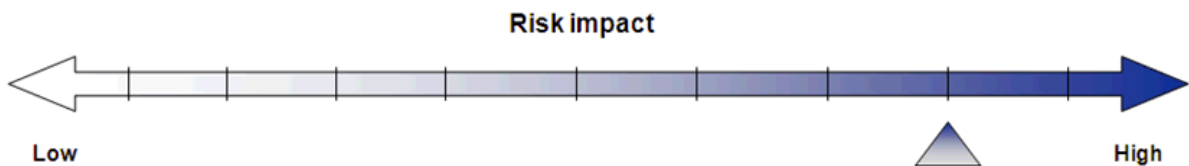
Deploying an SOA approach allowed Las Vegas to rapidly add on to or upgrade existing services and manage them with a unified infrastructure for events and services and cross-application end-to-end instance tracking — solutions that provide integrated governance and security.

To minimize program management risks, and knowing that executive commitment is critical for success, the city set up an Executive Technology Steering Committee comprising senior city management, business unit managers, and the enterprise program manager to guide the formulation, administration, and control of city information technologies policies, strategic projects, and systems development. The committee established a policy-driven, roles-based, process-centric, and continuously improving technological framework for delivering the most cost-effective services. The committee also worked to achieve a balance between the usefulness of performance data and the cost of gathering and maintaining the data, and it assisted with managing scope and budget and resolved cross-organizational disputes.

The city also established a knowledge transfer process of the integration tool. City IT staff were assigned responsibility for working side by side with Innowave, a member of the Oracle PartnerNetwork, so that the city's staff could pick up from where the consultants left off and continue to use this tool for other integration projects within the city. Due to this knowledge transfer process and the ease of use of the integration tool, city developers were able to ramp up on the technology quickly, thereby decreasing costs and ensuring long-term success for future city development efforts (see Figure 2).

FIGURE 2

The City of Las Vegas Risk Impact Assessment



Source: IDC Government Insights, 2011

Transformation

Transformation covers the impact on the delivery of a government entity's mission, business processes, and lessons learned. The city of Las Vegas historically used traditional data integration approaches that could take three to six months to complete. However, by switching to Oracle BPEL Process Manager, Las Vegas has transformed to a much simpler process, with typical interfaces taking weeks to build. This new process, including build, test, and rollout, is taking half the time traditional integrations take. Initially, Las Vegas had consultants create templates for integration interfaces, but to be even more efficient, now

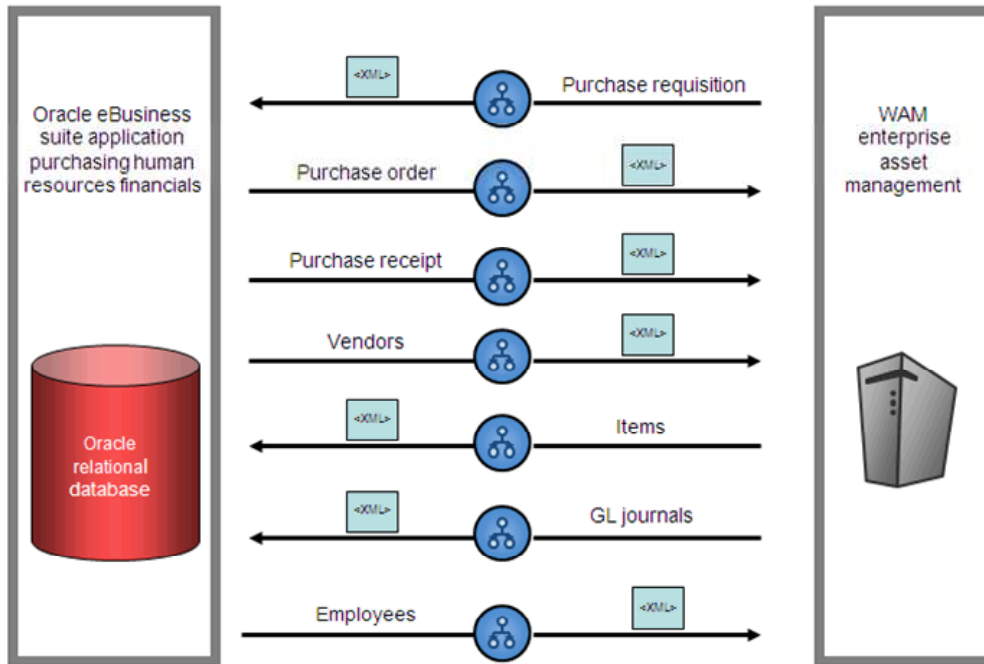
city programmers themselves modify existing interfaces when they need to do new data integrations. As Dues points out, "Once we build an interface in BPEL, we can reuse it. It's simplified the process and definitely saves us time." This saves consulting costs and the time of the city's IT personnel, who can now off-load tasks that formerly required specialized applications to a standardized middleware application. For example, instead of doing the billing as the city might have done previously within a specific application such as land management, a key application for the city that would require customization, the city uses BPEL interfaces to flow the transactions into Oracle E-Business Suite, allowing the software to manage the billing processes in the background. City employees don't need to learn purchasing or accounts payable applications associated with land management and can focus instead on the unique applications that are their specialty.

Figure 3 shows how this works. The primary approach for initiating the BPEL processes uses Oracle Advanced Queue (AQ) technology. Business events in both systems as well as scheduled PL/SQL concurrent programs within Oracle E-Business Suite populate the custom queue to launch specific BPEL processes. This precludes the city's work and asset management solutions from needing to communicate directly with the Oracle E-Business Suite since both communicate to BPEL through the shared queue. It also establishes a central location for initiating BPEL processes, which improves manageability. Since both systems are based on an Oracle database, database links are used to establish connectivity and move data between the two systems. For example, when a requisition is entered into the queue, it is entered with a predefined set of attributes that tells the requisition process specifics about that requisition. With this information, the BPEL process can automatically carry out its tasks.

Employees benefit by training and focusing only on the applications they need to do their job; they do not need to learn other applications such as purchasing or accounts payable, as these applications are handled automatically in the background. This approach expedites job training and readiness.

FIGURE 3

The City of Las Vegas Process Flow



Source: City of Las Vegas, 2011

Las Vegas has continued to transform its processes in an effort to better serve city residents while improving employee productivity (see Figure 4). In addition to freeing up staff to focus on their core jobs, the city also enables its employees to enter time cards, view their personal information, obtain W-2s, and update W-4 information online rather than manually.

FIGURE 4

The City of Las Vegas Transformation Impact Assessment



Source: IDC Government Insights, 2011

FUTURE OUTLOOK

Innovation

Innovation covers the solution's leveragability to gain value, including scalability, repeatability, and replicability. In addition to the city analyzing data obtained through sensors such as the quality and volume of citizen water use, and minimizing inventory by automatically reordering chemicals when needed based on use and threshold of supplies, the city brought a strategic view to leveraging other resources. IDC Government Insights believes that the city of Las Vegas also illustrated an innovative approach to future planning by participating in the Oracle Insight Program, a comprehensive business strategy development program in which Oracle business and IT strategy experts met in person with city staff over a period of days to identify critical objectives and challenges of their unique business needs. For example, Oracle experts interviewed various city users to determine their needs, any system constraints, and what updates might be required in the database. Within a few weeks after the discovery interviews, the Oracle Insight Program team then put together recommendations of best practices and supporting technologies, including time-to-benefit analysis and an implementation plan. The city also received an executive presentation with supporting information such as business benefits and value drivers to assist the city in building consensus among colleagues and senior management, and to help secure funding for recommended initiatives.

By participating in the Oracle Insight Program, the city was able to see a road map and better understand the steps needed to integrate business execution and management with sense and respond process automation. Because city business and IT employees were engaged in the process from the beginning, and needs were determined based on their input, the city easily gained consensus and alignment on next steps with business and IT teams. The city is now using this same process of interviewing users to determine needs and constraints prior to recommending best practices that include business benefits. The city has also become adept in building consensus with employees and managers, securing, and reporting on funding.

As the city of Las Vegas relies more on the timeliness and accuracy of the information housed in its database, it has become even more important to develop a means for extracting and reporting on all data. With this in mind, the city is moving to deploy a business intelligence solution to:

- Facilitate meeting strategic data needs as they evolve over time.
- Manage across functional and across organizational priorities and incorporate new data and revisions to existing data.

- Obtain the tools and technology to assist with this transition.
- Provide greater self-sufficiency to each member of the user community and enable members to do what they do best — manage their business.

Key to the successful adoption of business intelligence is executive support and a strong project team. As with all major initiatives, the city established a steering committee to assist with managing scope and budget and to resolve any cross-organizational disputes. This committee comprises senior city management, business unit managers, and the enterprise program manager. The city also established a project team made up of three primary groups: business users, business analysts, and the technology group. The project team includes individuals with specialized functional and/or technical knowledge/skills specific to business analytics: a project manager, business representatives, technical business analysts, and business intelligence tool architects and developers.

This combined team is identifying the sources and end products of the data, including dashboards, reports, mobile analytics, and ad hoc inquiries available on an as-needed basis to the end users. To accomplish these identified needs, the city has developed a road map with the following steps:

- Develop an enterprise business intelligence strategy.
- Establish data governance foundation.
- Complete key performance indicators identification and definition.
- Refine the key performance indicator process — detailing how information will be used.
- Release initial metrics.
- Refine management process and measures as necessary.
- Implement additional metrics.
- Begin rollout of business intelligence dashboards, reports, and analytics.
- Establish business intelligence competency center.

Long-Term Goals

Knowing that demand for information from employees and constituents is exploding, the city is architecting for growth with the following goals:

- Empower employees by providing real-time intelligence to every individual. Real-time intelligence with relevant, complete,

contextual information that is tailored specifically to each employee role will provide city employees timely insights to guide actions. By seamlessly integrating information directly within operational business processes, employees will be able to take fact-based actions to optimize decisions and business interactions, improving efficiency and responsiveness. Additionally the city is developing a system that is more responsive to ad hoc requests from internal users and will deliver insight that predicts the best next step, and deliver it in time to influence business outcomes.

- Support the city's core mission of providing municipal services/customer service by developing an integrated Web-based self-service tool with easy-to-use terminology, and by providing consistent, reliable, and more responsive information to all external users.

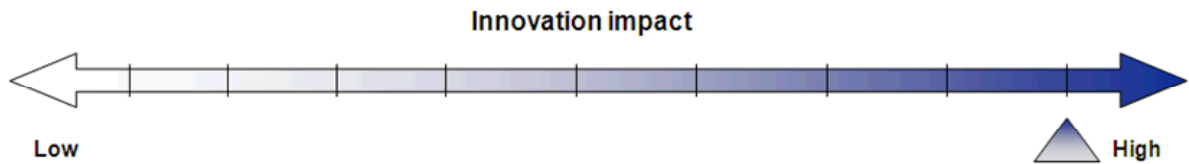
The final step in the business intelligence road map for the city of Las Vegas is to create a business intelligence competency center. This center will be established to:

- Consolidate best practice functions and services, allowing rapid, repeatable successes with deployments.
- Centralize competency and operational efficiency to maximize the use of technology resources and assets, and to accelerate higher adoption rates of the complete business intelligence life-cycle process.
- Provide strategic business intelligence deployment planning — accelerating rollout success.
- Provide a "single version of the truth" across the entire enterprise to improve user satisfaction and self-service.
- Enforce a business intelligence standard with the ability to identify future opportunities to leverage the city's intelligence capabilities.
- Train end users on how to use the intelligence tools and technology effectively.

The city of Las Vegas is committed to provide government employees the tools and information they need to run their business units effectively and efficiently based on accurate and timely access to information, and to provide constituents easy-to-use and reliable self-service (see Figure 5).

FIGURE 5

The City of Las Vegas Innovation Impact Assessment



Source: IDC Government Insights, 2011

ESSENTIAL GUIDANCE

Actions to Consider

In this post-recessionary era, government organizations' IT investments are heavily scrutinized for their ability to reduce operating costs and increase government program effectiveness — particularly in providing services to support constituents. Despite large investments in upgrading and/or replacing their IT infrastructure systems, many government entities still rely on legacy systems to deliver mission-critical services. Most governments have multivendor application portfolios and need to integrate across diverse product sets with middleware integration. Government organizations should consider the following:

- Rather than struggle with issues of integration, interoperability, and overall complexity in building and maintaining systems, government entities should look for ways to add applications and solutions to existing infrastructure investments through the use of SOA. Targets for SOA are common information views, reinforcing consistency, and simplifying the overall environment. Many organizations are looking to take advantage of new, emerging technologies, such as Web 2.0 or cloud computing, and to leverage third-party services and on-demand, software-as-a-service (SaaS) solutions. Government should choose a solution provider that can integrate diverse product sets across its own applications as well as other vendors' custom or packaged solutions. All can be enabled and optimized by SOA, so as governments upgrade their legacy systems, and integrate their government-specific vertical applications with horizontal process applications such as inventory reordering, billing, and payments, they are on a path of cost effectively driving to the future.
- Commitment to data governance is essential for success. Data governance, established by both practices and software, can help ensure that data policies are followed in the execution of

automated business processes. As access to, and movement of, data continues to proliferate in government enterprises, software that enforces data security as well as policies governing data change need to be enforced, ensuring consistent deployment of such rules wherever that data is available. Governments should adopt comprehensive data governance systems to ensure full data life-cycle control under existing policies and operating principles, including traceability of changes (through audit trails), and retention of database archiving tools for periods prescribed by law and regulations.

- Empower users and let IT focus on other priority tasks. Having the right infrastructure to ensure seamless integration also means that employees can better focus on their jobs and learn only the applications related to their job, whether that is in, for example, the courts system, providing services, or business licensing. Employees don't need to learn other applications such as purchasing or accounts payable, which are handled in the background. Employees can be trained on what they really need to do their jobs while the system does the processing work. This expedites training and allows employees to get up to speed faster, increasing productivity and job satisfaction. Instead of IT staff developing customized applications, they should build adaptable integrations that allow them to modify existing interfaces when new data integrations are needed, through technologies such as SOA.
- Obtain commitment from government executives as well as business unit leaders and users to articulate their needs and support transition to new systems.
- Leverage expertise and best practices from experienced consultants through such practices as knowledge transfer.
- Focus on your entity's core mission and ask your vendor to provide a comprehensive business strategy development program similar to the Oracle Insight Program to identify the critical objectives and challenges of your unique business needs. Integrate recommendations of best practices and supporting technologies, including time-to-benefit analysis and an implementation plan with business execution and management for an efficient business process.
- Look for reusability, increased ease of configuration, and flexible development interfaces as key attributes of your solution.
- Create strategic plans that include advanced analytics and business intelligence to improve functionality and operational performance and empower employees by providing real-time intelligence to every individual. Real-time intelligence with relevant, complete,

contextual information enables employees to take fact-based actions to optimize decisions and business interactions, improving efficiency and responsiveness. Additionally, a system that is responsive to ad hoc requests from users and delivers insight on the best next step in time to influence business outcomes provides greater self-sufficiency to each member of the user community and enables better business decisions.

LEARN MORE

Related Research

- *Business Strategy: Transcending Open Government to Smart Government* (IDC Government Insights #GI227222, March 2011)
 - *Business Strategy: Government Agencies Need a Systematic Approach to Managing Information* (IDC #GI226276, December 2010)
 - *Best Practices: A ProveIT Case Study — Financial Management Modernization at the USDA Positively Impacts Mission* (IDC #GI225090, October 2010)
 - *Business Strategy: Government Agencies Need Improved Performance Management to Successfully Implement Financial Management* (IDC #GI224326, July 2010)
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Synopsis

This IDC Government Insights report reinforces the fact that savvy government IT executives are collaborating with key stakeholders to develop strategic plans, selecting the right infrastructure to ensure seamless data integration, and empowering self-sufficiency for organizational users as well as citizens. "The city of Las Vegas has successfully integrated business process applications as well as government-specific applications to better serve citizens and improve employee productivity. The additional steps that the city took to successfully implement this transformation include a vision of the future that is widely shared by city employees and a governance structure that was designed for optimum communications, enablement, review, and leadership." — Adelaide O'Brien, research director, IDC Government Insights

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