



IDC ExpertROI® SPOTLIGHT

WSSC Building on Oracle Engineered Systems to Become a Smart, Real-Time Utility Provider

Sponsored by: Oracle Corp.

Matthew Marden
August 2015

Overview

Washington Suburban Sanitary Commission (WSSC) is the eighth-largest water and wastewater utility in the United States, providing water and sewer services to more than 1.8 million residents in Maryland's Montgomery and Prince George's counties.

WSSC faces challenges common to utility companies, including aging infrastructures, strained capacity, and increasingly demanding customers and stakeholders. According to Chief Information Officer Mujib Lodhi, WSSC recognizes that IT must help it meet these challenges and improve its overall business effectiveness and efficiency.

In December 2012, WSSC released a five-year IT strategy outlining how it would leverage IT to address these challenges and ensure its success going forward. According to Lodhi, WSSC knew that its disparate legacy IT infrastructure posed a roadblock to achieving its objectives. As a result, it chose to consolidate its IT infrastructure using engineered systems, including Oracle Exadata, Exalogic, and Exalytics machines.

Lodhi described consolidation with engineered systems as a cornerstone of WSSC's five-year IT strategy. He cited substantial business benefits that the utility company is already achieving with these systems and credited them with providing the simplified and standardized IT architecture needed to cut costs, streamline and modernize business operations, increase agility, and provide better customer service. This means that these systems are helping WSSC meet its strategic goals: "*We want to be a smart, real-time utility, and engineered systems are allowing us to achieve that goal.*"

WSSC is already achieving significant operational improvements and cost savings. Databases and applications run better on the new Oracle machines, making hundreds of employees more productive on a daily basis. Meanwhile, the ability to deploy mobile applications faster and then run them is enabling WSSC to improve its customer service and make its mobile workers, including its inspectors,

Business Value Highlights

Organization: Washington Suburban Sanitary Commission (WSSC)

Location: Laurel, Maryland

Challenge: Drive greater business effectiveness and efficiency by having IT play a more strategic and catalytic role in the overall business

Solution: Three Oracle Exadata database machines, three Oracle Exalogic machines, two Oracle Exalytics machines

Five-Year Cumulative Benefits:

- \$29.12 million in discounted business benefits
- ROI of 345%
- Payback in 12.4 months

Other Benefits:

- 83% faster delivery of query results to users
- 50% higher application development team productivity
- 99% faster server deployment
- Replace 30 servers for every engineered system deployed

more productive. In addition, WSSC has reduced its datacenter footprint, with attendant savings in hardware, licenses, and energy costs, and reduced the time needed to manage and deploy IT infrastructure.

To quantify the benefits of deploying these Oracle engineered systems, IDC interviewed Lodhi and other IT managers at the utility company and asked questions about WSSC's operations before and after the company's Oracle deployment. Based on these interviews, IDC calculated WSSC's return on investment (ROI) from these Oracle products and projects that WSSC will achieve total discounted business benefits of \$29.12 million over five years, including a graduated deployment of the Oracle engineered systems, resulting in a five-year ROI of 345% and a breakeven period of 12.4 months.

"We want to be a smart, real-time utility, and engineered systems are allowing us to achieve that goal."

Implementation

When it was drafting its five-year IT strategy, WSSC still relied on a variety of legacy servers and systems to support its business operations. For example, it ran its Oracle database on close to 50 different hardware platforms. This complex IT infrastructure not only was time consuming and costly to manage but also hampered the utility company's ability to respond to changing business conditions.

WSSC considered upgrading its IT infrastructure in the context of the most significant challenges it perceives for the utility industry, including investing in upgrading its aging water and sewer infrastructure, coping with the pent-up demand for new and expanded services accumulated during the economic downturn, and meeting the demands of increasingly demanding and tech-savvy customers. It knew that addressing these challenges would require it to be cost effective, efficient, and more agile.

Lodhi acknowledged that addressing these sometimes competing challenges would not be easy but cited a guiding principle from WSSC's five-year IT strategy: "Intelligently deployed IT-based systems, business processes, and real-time data offer WSSC unprecedented opportunities to improve and even innovate the way business is managed and customers are served."

WSSC decided in 2012 that it would invest in upgrading its IT infrastructure to harness the power of big data analytics and implement a flexible, robust, and easy-to-manage IT infrastructure. It evaluated a number of IT infrastructure solutions, including standalone ones, but ended up converging its infrastructure with a single vendor, selecting Oracle database, applications, and analytics engineered systems on the strength of their integrated and optimized hardware, software, and network fabric.

WSSC began its Oracle deployment in 2012 with the installation of its first Oracle Exadata Database Machine. WSSC has since deployed two additional Oracle Exadata Database Machines, along with three Oracle Exalogic Elastic Cloud machines and two Oracle Exalytics In-Memory Machines. The utility will also deploy an Oracle Big Data Appliance in the next year to further drive its analytic efforts.

Because the engineered systems are pre-integrated by Oracle, WSSC has been able to deploy each within three days using two members of its IT staff. For Lodhi, fast deployment was an important benefit of using engineered systems and meant that WSSC could begin to benefit from their power much faster than if it had deployed a non-integrated solution. After its initial deployment, WSSC migrated its legacy mainframe functions to an Oracle Application infrastructure running on Oracle Exalogic Elastic Cloud and supported by Oracle Exadata Database Machines. WSSC is also now using Oracle Exalytics In-Memory Machines to develop business intelligence applications and to combine mobile applications with analytics and GIS capabilities.

Benefits

Lodhi explained that WSSC is already better able to meet the challenges it faces since deploying these engineered systems. He said: "Our use of Oracle Exadata, Exalogic, and Exalytics is part of a holistic effort to turn WSSC into a smart, real-time utility company.

We want to do this with analytics, mobility, and cost efficiency, and these systems are helping us accomplish this." Lodhi stressed that these integrated machines are driving these benefits even as they serve as a fundamental component of a technology fabric needed for the next 5 to 10 years to meet longer-term challenges.

Lodhi and his colleagues provided examples of how WSSC's applications, databases, and services are performing better on Oracle engineered systems. WSSC relies on Oracle databases for day-to-day operations and strategic decision making, and its employees are benefiting from optimizing performance of these databases with Oracle Exadata Machines. As a result, hundreds of employees who use key databases every day save time and are more productive, while WSSC's management has more timely and robust insights on which to base business decisions.

"Our use of Oracle Exadata, Exalogic, and Exalytics is part of a holistic effort to turn WSSC into a smart, real-time utility company. We want to do this with analytics, mobility, and cost efficiency, and these systems are helping us accomplish this."

Meanwhile, business stakeholders at WSSC have noticed how these Oracle engineered systems are minimizing paperwork and supporting new applications and processes that improve workflow and drive operational efficiencies. According to Lodhi, this is changing perceptions of IT at WSSC: "We're now building business trust, and the business side looks at IT as really supporting them and helping to support new business value through innovation."

These Oracle engineered systems are also supporting WSSC's mobility and big data analytics initiatives. For example, the utility company can now support and bring to market much faster new mobile applications that improve communications between its office and field employees. According to Lodhi, WSSC's inspection teams are already saving substantial time on a daily basis, thanks to a mobile application that provides directions to and information about incidents, and WSSC intends to roll out additional productivity-enabling apps for inspectors in the next year. Meanwhile, WSSC employees can run more complex data queries faster, which results in time savings and obtaining analytical outputs that help identify substantial cost inefficiencies in areas such as procurement.

WSSC is also using mobile applications and online technology powered by its Oracle engineered system infrastructure to better serve its customers. New mobile applications make it easier for customers to pay bills and communicate with WSSC about issues such as leaky hydrants or service problems. Meanwhile, WSSC call center operators can now respond better because of dashboards running on these Oracle machines that update call center performance information every half hour, compared with using static spreadsheets. Lodhi says that WSSC intends to continue to look for ways to connect with customers that expect real-time two-way communications with their utility providers.

WSSC also benefits from having a highly reliable and consolidated IT infrastructure foundation. It has experienced no instances of unplanned downtime attributable to these Oracle machines, even as it expands its application base and use of analytics. Further, WSSC has decommissioned 30 servers for every Oracle engineered system deployed, thereby saving on capital and operating costs. In addition, the scale-out architecture of these Oracle machines allows WSSC to accommodate strong growth in storage and applications while consolidating and streamlining its database operations.

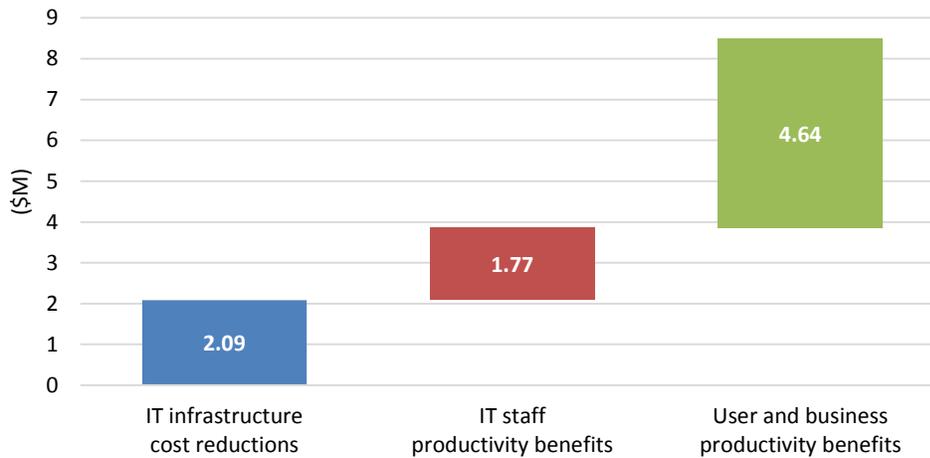
WSSC's IT staff saves time and operates more efficiently because of the ease of managing these Oracle engineered systems. Having a consolidated infrastructure with one vendor means that the firm's IT staff has fewer platforms, servers, and environments to learn and manage and fewer contracts to negotiate and monitor. In addition, consolidating applications on fewer machines has made it easier to standardize processes and procedures. Further, provisioning of additional server and storage capacity takes far less time, meaning that applications are deployed faster to support employees and customers, thereby making the application development team more productive.

Quantifying the Benefits

IDC quantified the business benefits that WSSC will achieve and investment costs it will incur over a five-year period based on its interviews with Lodhi and other IT managers. IDC projects that on average, WSSC will realize benefits worth \$8.50 million per year over five years (see Figure 1).

FIGURE 1

Average Annual Benefits



\$8.50 million in total annual benefits

Source: IDC, 2015

User and Business Productivity Benefits

WSSC is making users more productive through improved database and application performance, extending mobile application use and driving business analytics with its Oracle engineered systems. IDC calculates that the resulting productivity gains and cost savings will have an average value of \$4.64 million per year over five years, based on the following benefits:

- Supporting inspector teams with mobile applications to improve their productivity
- Using built-in tools to make WSSC's analytics team 25% more efficient (Users will wait an average of 5 minutes instead of 30 minutes for queries to be completed.)
- Improving the performance of WSSC's call center team by 11% with dashboards and analytics
- Saving time for hundreds of users of business-enabling databases as a result of improved database performance
- Identifying cost efficiencies in procurement and customer billing as a result of improved analytical outputs and the deployment of mobile applications

IT Staff Productivity Benefits

Thanks to having a consolidated IT infrastructure and pre-configured Oracle engineered systems, WSSC's IT staff must spend less time managing the server environments and carrying out patches. WSSC's IT staff is now spending less time maintaining its server environments and on patching operations. In addition, by leveraging automation and templates enabled by these Oracle engineered systems, WSSC's IT team is able to deploy server resources in less than an hour compared with almost two days before. Taken together, these efficiencies free up substantial amounts of IT staff time for the utility company, time that can be reinvested to developing applications and services that enable WSSC's employees to better serve the customer base.

Beyond reducing the time needed to "keep the lights on" for WSSC's datacenter environment, these Oracle engineered systems have also enabled the utility company's application development team to become much more productive. Servers for testing and production can be spun up in minutes rather than hours, giving developers the compute resources they need much faster, thus enabling their work. As a result, WSSC's application team is 50% more productive on average, as it deploys applications to users and customers faster and deploys more applications per year.

IDC calculates that in total, WSSC's IT staff will realize time savings and productivity gains worth \$1.77 million per year over five years.

IT Infrastructure Cost Reductions

Oracle engineered systems provide WSSC with a much consolidated datacenter infrastructure from which to drive its efforts to serve its customer base. According to the utility company, for each Oracle engineered system it has deployed, it has been able to decommission 30 servers, with attendant cost savings in terms of server and network hardware, power, and facilities. IDC projects that in total, WSSC will lower its IT infrastructure costs by an average of \$2.09 million per year over five years.

Return on Investment

IDC calculates that WSSC will earn discounted benefits worth \$29.12 million over five years by deploying Oracle engineered systems, including Oracle Exadata Database Machines, Oracle Exalogic Elastic Cloud, and Oracle Exalytics In-Memory Machines, compared with a discounted investment of \$6.55 million. As a result, IDC projects that WSSC will earn a five-year ROI of 345% and will break even on its investment in 12.4 months (see Table 1).

TABLE 1

Five-Year ROI Analysis

Benefit (discounted)	\$29.12 million
Investment (discounted)	\$6.55 million
Net present value (NPV)	\$22.57 million
Return on investment (ROI)	345%
Payback period	12.4 months
Discount rate	12%

Source: IDC, 2015

IDC conducted several interviews with Lodhi and other IT managers at WSSC to quantify the benefits and investment associated with its use of the Oracle engineered systems discussed in this document and created an ROI analysis from the results.

IDC calculates the ROI and payback period in a three-step process:

1. Measure the financial benefits directly resulting from the solution, including decreased IT infrastructure costs, increased IT staff and user productivity, revenue enhancements, and operation cost reductions since deployment.
2. Ascertain the total investment.
3. Project the investment and benefit over five years and calculate the ROI and payback period. The ROI is the five-year net present value (NPV) divided by the investment. Payback period (expressed in months) is the time required to pay back the initial investment and establish a positive cash flow. To account for the time value of money, IDC bases the ROI and payback period calculations on a 12% discounted cash flow.

About IDC

International Data Corporation (IDC) is the premier global provider of market intelligence, advisory services, and events for the information technology, telecommunications and consumer technology markets. IDC helps IT professionals, business executives, and the investment community make fact-based decisions on technology purchases and business strategy. More than 1,100 IDC analysts provide global, regional, and local expertise on technology and industry opportunities and trends in over 110 countries worldwide. For 50 years, IDC has provided strategic insights to help our clients achieve their key business objectives. IDC is a subsidiary of IDG, the world's leading technology media, research, and events company.

Global Headquarters

5 Speen Street
Framingham, MA 01701
USA
508.872.8200
Twitter: @IDC
idc-insights-community.com
www.idc.com

Copyright Notice

External Publication of IDC Information and Data – Any IDC information that is to be used in advertising, press releases, or promotional materials requires prior written approval from the appropriate IDC Vice President or Country Manager. A draft of the proposed document should accompany any such request. IDC reserves the right to deny approval of external usage for any reason.

Copyright 2015 IDC. Reproduction without written permission is completely forbidden.

