FY2015

Annual Business Value Report

Office of Enterprise Technology

Maricopa County, Arizona

CIO MESSAGE

I am pleased to present OET's third annual Business Value Report, which highlights many significant accomplishments from FY2015. This year focused on the successful completion of several large, complex capital projects designed and implemented as part of OET's strategic plan to improve the reliability, security and performance of the County's technology infrastructure.

Accomplishments include the successful completion of a multi-year capital project to upgrade most of the County's network infrastructure and move County employees onto the new and improved network. The result is improved reliability and availability, increased bandwidth, stronger security, capacity to grow the business on demand, and improved manageability of the network to ensure Maricopa County and our employees can continue to serve our customers with confidence.

This year also represented the completion of foundational improvements targeted to support OET's plans to improve overall service delivery to the 55 departments and over 14,000 employees of Maricopa County. These improvements included the completion of a detailed study and ultimately the selection and procurement of a new Service Management System (SMS) to support OET's Service Catalog and associated cost allocation strategy. The new system will provide departments with the necessary information, transparency, clarity, and metrics to improve and manage costs.

In partnership with leading industry experts, OET also completed the move of its data center to a world-class data center colocation and established an Optical Network Service ring that connects County campuses to a scalable, redundant, and secure 100GB network. This investment sets a long-term foundation of support for departments and enables speed to market, adaptability, and a reliable technology stack – we have a best in class collocated data center, network, and have greatly simplified services.

Although we are proud of these accomplishments, as we complete the final year of our strategic plan, our focus will shift to consistent service delivery, reduction of operational expenditures, further strengthening of information security, customer and public facing Digital Government Strategy and speed to deliver solutions for our customers.

In closing, I extend my appreciation to the Board of Supervisors, County Management, elected and appointed officials for their tremendous support and collaboration through this exciting and transformative year.

"Serving as the County's Chief Information Officer and leading an organization of talented and hard-working professionals dedicated to excellence and the delivery of measurable and positive business outcomes for the County is humbling. We will continue to focus on our vision to be recognized as a first-class technology organization by the customers we serve. "

David L. Stevens, CIO
Maricopa County

TABLE OF CONTENTS

02 CIO Message

04 OET By the Numbers

06 OET Support for County Priorities

08 First-class Service

10 Solutions for the County

12 Recognition

14 Financial Management

15 The Year Ahead

OET BY THE NUMBERS | FY2015

CUSTOMER SERVICE CENTER

24,000 + Emails Processed / **500** Walk-up Customers Served

37,000 + Calls Answered by Agents

- 48,000 tickets opened (annually)
- 70% first call resolution
- 50% of calls related to password related events (password resets; account locks)

$1,614,388

Overall 3 year operational savings generated through smart investments in technology solutions that drive down long-term operational costs

FY13: $972,026

FY14: $233,606

FY15: $408,756

214 EMPLOYEES

VACANCY TRENDS:

FY13: **40%**

FY14: **22.5%**

FY15: **11.7%**

TRAINING INVESTMENTS:

FY13: **$142,247**

FY14: **$181,646**

FY15: **$205,821**

Turnover Rate: **2.3%**

20,000

Devices including laptops, tablets, and PCs

1,200

Mobile Devices Activated

Data Center Virtual Environment

90% **-** of servers have been virtualized

99.9999% **-** Up-time for virtual servers

99.836% **-** Up-time for enterprise storage

VoIP MIGRATION

44% of users Migrated to VoIP

57% of Video Conference Rooms Completed, 62 of 108 rooms!

POPULATION 3.9 MILLION

9,221 SQUARE MILES

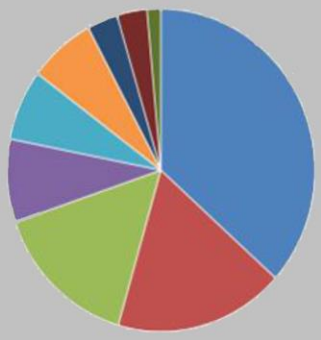
60% OF THE STATE'S POPULATION

4TH LARGEST COUNTY IN THE COUNTRY

HOME TO 4 OF THE TOP10 FASTEST GROWING CITIES IN THE NATION

OET SERVICE LINE TOTAL COSTS

- Enterprise Services
- GIS Services
- Customer Support Services
- Collaboration & Group Services
- Wireless Radio Services
- Business Solutions Development Services
- Business Applications Services
- Personal Workspace Services
- Security & Compliance Services



55
Maricopa County Departments

14,100
County Employees Supported by OET

$4,003,511
Savings from three year renegotiated Microsoft Enterprise License Agreement

Annual savings created through Countywide VMWare Enterprise License Agreement
$714,000

PUBLIC SAFETY RADIO

8,592 Work Orders Completed

99.81% Radio Network Uptime

96.43% Work orders completed In 2 days

GIS / WWW

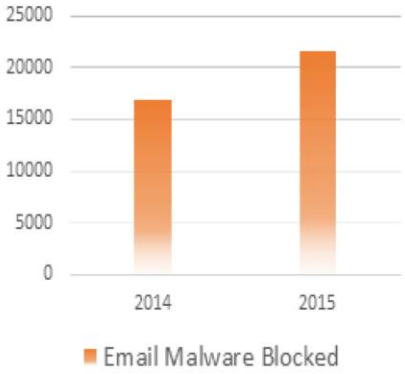
14,112,482
GIS Map Requests

99.836%
GIS System Uptime

46.1 Million
Annual visits to County websites

99.5%
Availability of County websites to the public

MALICIOUS EMAIL BLOCKED

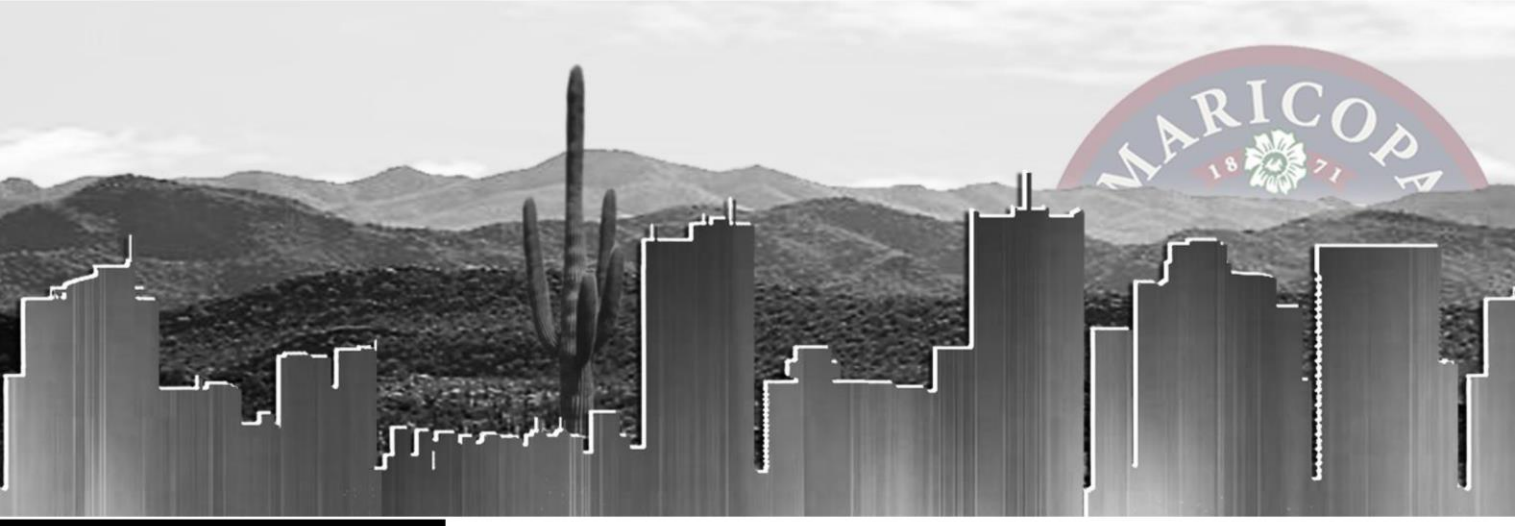


34.1 Million
Emails Sent Annually

37.3 Million
Emails Received Annually

45.3%
Of emails are blocked as potential threats!

NETWORK AVAILABILITY
92.36%



OET SUPPORT FOR COUNTY PRIORITIES

OET PRIORITIES:

GREAT PEOPLE

Build and retain a professional, energetic, and engaged team

CYBER SECURITY

Strengthen the County's information assets

IMPROVED RELIABILITY

Ensure reliability and access to services

SMART INVESTMENTS

Deliver solutions that reduce total cost of ownership

FIRST-CLASS SERVICE

Exceptional service to all customers, all the time

Safe Communities

Supported through access to timely, integrated, and cost-effective smart justice system.

Regional Services

The County will provide best-in-class regional services, both mandated and of concern to citizens, while coordinating with municipalities, other local jurisdictions, and community-based entities to consolidate services and avoid duplication, when applicable.

Government Operations

The County will deploy an effective and efficient infrastructure to implement streamlined policies and procedures to improve delivery of services and promote a healthy workplace and a fully engaged workforce.

Growth and Economic Development

The County will be innovative in leveraging its resources, adaptive in its regulatory policies and practices, and proactive in its public relations to attract, promote, and support the growth of business enterprises to produce a vibrant and balanced regional economy.

Fiscal Strength and Responsibility

The County will continue to efficiently manage County resources and engage in effective fiscal planning with integrity and transparency to promote financial stability and economic prosperity for Maricopa County residents.

Improving safety through investments in cybersecurity that improve the County's information security posture, reduce cyber threats and mitigate risk to the County.

Improving the reliability of emergency response communications through the design and implementation of a new Public Safety Radio System.

Integration of technology solutions across all departments within the County and development of solutions with regional stakeholders to share data and create efficiency through collaboration and partnership.

Inter-governmental Agreement (IGA) with the Town of Wickenburg for technology services including Network and Systems Administration support, PC/LAN support, and Public Safety Radio services.

Enhancing government operations through the implementation of the County's first Enterprise Resource Planning (ERP) system.

Improving government operations through service and price transparency with the development of OET's Service Catalog and implementation of an Internal Service Fund (ISF).

Growth and Economic Development through innovative technology solutions that support the County and Departments as they engage the public and regional stakeholders, including websites, data exchanges, and digital government opportunities that enhance customer interactions.

Continued focus on smart investments that lower total cost of ownership and improve management of operations, including implementation of a new Service Management System (SMS) that incorporates IT Service and Financial Management.

Three year operational savings of $1,614,388

COUNTY MISSION

The mission of Maricopa County is to provide regional leadership and fiscally responsible, necessary public services so that residents can enjoy living in a healthy and safe environment.

COUNTY VISION

The County's vision is citizens serving citizens by working collaboratively, innovatively, efficiently and effectively. The County will be responsive to our customers while being fiscally prudent.

OET VISION

To be recognized as a first-class technology organization by the customers we serve.

OET MISSION

To provide proven, innovative, and cost-effective technology solutions to County departments so they may transform their operations to best serve their customers and citizens.

CUSTOMER CENTRIC

Focused on customer needs and expectations

RESPONSIVE

Timely service to resolve issues and fulfill requests

DEPENDABLE

Reliable, steady and trustworthy – our customers can count on us

PREDICTABLE

Customers can expect first-class service every time

RELENTLESS

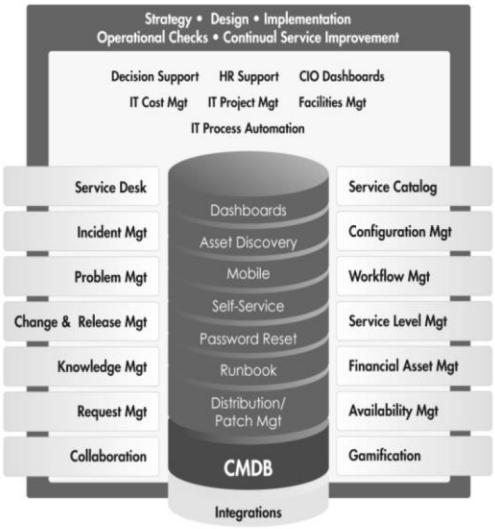
Enduring commitment to fulfill all requests and resolve all issues with absolute determination

Service Management

OET is committed to first-class service, recognizing our customers expect timely, dependable, and responsive service – every time. To support these expectations, OET completed several projects necessary to establish the appropriate foundation of processes and automation to provide our customers with improved service, including:

- **Service Catalog** – which will provide all County departments with improved transparency for technology services and costs.
- **Cost Allocation & Transparency** – to associate all costs to the newly defined Service Offers within the catalog and development of an Internal Service Fund (ISF).
- **Service Management System (SMS)** – selection and procurement of a new SMS through Axios Systems and BMC, two Gartner leading companies for IT Service Management.

The new SMS will provide the full complement of IT Service Management including online service catalog, self-service (e.g., password resets), mobility, and financial management. The new system has the capability to support all County departments with detailed reporting on the services they receive, including service level management and pricing, so they can make informed decisions on the services they utilize to improve their operations and lower costs.



FIRST-CLASS SERVICE

"Quality in a service or product is not what you put into it. It is what the customer gets out of it."

- Peter Drucker

Digital Government

OET secured approval to migrate the current Maricopa County public facing website (www.maricopa.gov) to a hosted Content Management System (CMS), including design and branding solutions. Key objectives of this project include:

- Develop a consistent Maricopa County Branding and design.
- Transition the current Maricopa County external web sites from the current in-house infrastructure to a hosted cloud based content management system.
- Improve visibility and use of social media.
- Local Content Management capabilities.

Live Streaming of BOS meetings

Led by the Chairman of the Board of Supervisors (BOS), BOS meetings are now available to watch live from anywhere an Internet connection is available. Meetings are also recorded and available for later on-demand viewing. These new features enable the public to eliminate travel time and costs, lessen pollution and make the meetings more accessible and convenient to all. As part of this project, OET set the foundation for closed captioning and high definition broadcasts.

Personal Computer Refresh

OET worked with OMB, Finance, Office of Procurement Services, and other County IT Departments to replace 5,086 desktops and 838 laptops that were over 5 years old, 50% of which were over eight years old.

MCESA Data Center Move

OET and MCESA partnered to move their data center resources into the County's new colocated data center, resulting in $755,755 savings over six years. Additionally, OET created a virtual environment for MCESA that provides even greater reliability, improved performance, and long-term cost savings.

Public Safety Radio System Replacement

After completion of Sharing Agreements with other governmental agencies and the acquisition of various land parcels via lease and/or purchase agreements, the project has entered into the civil construction of new buildings and towers that will house the infrastructure radios.

Public Safety Radio Replacement

To date, 5,621 of the 6,414 County owned portable hand held and mobile in vehicle radios have been refreshed over the past four year period. OET Wireless Systems will replace the remaining 793 units this upcoming fiscal year, completing this phase of the project. These new radios will work on the current radio system and the new system currently under construction, as well as other public radio systems within the region.

Unified Communication

OET advanced its Unified Communications (UC) through the successful implementation of the UC technology and expansion of the Avaya Voice over Internet Protocol (VoIP) telephone system. Many County employees may now utilize their computer as a telephone, conduct interactive meetings similar to those conducted with WebEx and similar services, and participate in meetings remotely from their cellular phones with video, audio, and presentation services. Examples of this technology in use include interviews for out of state candidates reducing travel costs and time while still providing a more interactive experience.

Many offices are utilizing virtual conference rooms to collaborate and share documents on line with other County employees and contractors who are located at different facilities across the valley (and in some cases across the Country).

SOLUTIONS FOR THE COUNTY

IMPROVED RELIABILITY

OET, in partnership with several national leaders in technology, completed the move of its downtown data center to an externally hosted, Tier 3 data center. This facility will also support the colocation of multiple County data centers in early FY2016.

This facility, a purpose built data center, provides a **100% uptime guarantee** for provided services and will improve the availability and reliability of the County's data center resources. The new facility will also **decrease total cost of ownership** and provide capacity for growth without the need for capital construction of County facilities.

Additionally, OET completed a multi-year capital project (Network Refresh Program – NRP) investing in the replacement of end-of-life network equipment resulting in **improved network reliability** to ensure all employees have access to their applications.

INCREASED BANDWIDTH

Implementation of the County's Optical Network Services (ONS) ring connects the major campuses for the County through a 100GB system that can handle current demands and accommodate future growth over the next several years. As a result, the County's network can support the increasing demands from Departments related to the development of new and improved systems ranging from new websites, new line of business applications, and electronic document management.

Constables – Savings through Mobility

OET worked to support a strategic initiative for the Constables to provide them with a reliable mobility solution for connectivity from the field to access the electronic document management system without the need to travel back and forth to their office. Early savings estimates indicate a reduction in overall fuel costs of 32% and an average reduction in miles travelled of 335 miles per month, saving employee time, reducing exposure to potential accidents, reducing air pollution, and reducing wear and tear on vehicles.

Town of Wickenburg IGA

OET completed a detailed study of the Town's IT operations in response to their request for assistance. The study included a review of all major IT service operations, which led to the joint approval of an IGA for OET to extend IT Services at no cost to the County in support of the Town as they develop their own IT service resource capabilities.

RDSA Task Force Initiatives

The RDSA task force was commissioned by the Board of Supervisors and consists of RDSA employees partnering with several community interest groups. Several solutions were developed and delivered including:

- Email of Inspection Results Report directly to the business owner to ensure timely communication; and
- Audit processing and reporting to enable working collaboratively with permit holders in a more efficient and effective manner

Foreign Trade Zone Request

At the request of the Assistant County Manager, OET completed the first phase of a new web application to handle requests from local business developers to join County foreign trade zones, which provides benefits to both the local business and the County through tax advantages and job growth. The application replaced an existing manual process.

OET is focused on partnering with County Departments to understand their business challenges in order to identify solutions that will improve their operations and their engagement with customers and citizens. Technology solutions are developed through careful analysis, including research and consultation with industry experts, to ensure the end result is an application or system that exceeds industry standards based on technology architecture, implementation capability, service and support.

Geographic Information Services (GIS) Merger

The Flood Control District (FCD) and MCDOT GIS Division was merged with the OET GIS office in January of 2015. This merger represents bringing together talent under the supervision of OET's GIS Office to leverage the diverse experience of the new team.

This merger will also promote the use of GIS to help solve challenges faced by other county departments, while the GIS team continues to provide exemplary service to FCD, MCDOT and other departments throughout the County. In addition, this will increase the opportunity for standardized training and enhanced collaboration, creating a diverse GIS group with mature skillsets.

Human Services Department (HSD)

OET worked with HSD to analyze data that correlates teen births by zip codes and other relevant data readily viewed through a map. This data will assist the Department in potentially securing approximately $10 million in federal funds over the next five years.

MCSO Aviation Division

OET GIS provided geo-reference TIF files of several County parks for MCSO's Android tablets. These maps included contours, trail mileposts, trail names and locations, and park boundaries. Once created, these maps were made available for use by their rescue pilots. With these maps rescue pilots are now able to locate lost hikers at night as opposed to using nothing but night vision goggles and thermal imaging infrared cameras.

These maps increased the safety of rescue pilots and their ability to find lost hikers within Maricopa County parks.

Environmental Services Cutting Edge Program

This program was developed to use analytics to verify the locations and check data consistency and accuracy of 35,000 health permits. With this information in GIS, OET was able to create the Cutting Edge Program Map application allowing the public to readily and easily search and view the location of program participants. Before this application, this information was not readily available to the public for ease of use and access.

This GIS map application helps the Environmental Services Department bring awareness to food safety standards, consistent food safety practices, and proactive food safety monitoring systems resulting in improved public health safety.

INFORMATION SECURITY

OET implemented a Security Operations program to identify risks, a Cyber Assurance program to manage those risks, and a Security Architecture capacity to remediate the root cause of risks which were identified.

Information Security Results

- There were more than 21,358 electronic mail messages identified which targeted County employees with malware and were blocked using security investments.
- There were 10,121 attempts to compromise County assets, which were responded to by the Information Security Operations Center.
- The implementation of advanced malware detection, resulted in an 87% decrease in the risks associated with malware.
- There were 6 attempts to disrupt Maricopa County services via threat actors, all of which were blocked.

Improved Network Defenses

The following security controls were implemented to improve the resiliency of the County's enterprise architecture.

- Malware Detection and Remediation, which mitigates the risk of malware using behavioral analysis of network activity.
- Denial of Service Protection has been implemented to provide the County with the ability to respond to such attacks.
- Data Loss Prevention technologies and processes have been deployed to reduce the likelihood that the County will leak sensitive information.
- Department risk assessments to increase awareness of Cyber risks and promote behavior that reduces it.
- Draft Enterprise Incident Response plan vetted by the Department of Homeland Security and leading vendors.

2015 PREMIER 100 AWARD

Computerworld Premier 100 spotlights 100 leaders from both the technology and business sides of companies for their exceptional technology leadership and innovative approaches to business challenges.

OET is honored that our own CIO, David L. Stevens, was recognized this year as a recipient of this award, placing Maricopa County in the top tier of information technology leadership amongst organizations including PayPal, Raytheon, GE, Avnet, and Intel Corporation.

Mr. Stevens was one of only three state and local government CIOs chosen for this award.

NACo ACHIEVEMENT AWARDS

OET, working with several departments in the County, is pleased to have been recognized again this year for achievements in Cyber Security and technology innovations for the Medical Examiner and Office of Vital Registration.

As identified in OET's vision statement, OET seeks to be recognized as a first-class technology organization by the customers we serve. We are pleased to have been recognized in many ways, including several national awards for our contribution in supporting County departments.

Medical Examiner – Digital X-Ray

The Office of Medical Examiner (OME) has greatly benefited by the installation of a digital x-ray PACS viewing solution. The VizTek products allow OME staff to use increased x-ray resolution to improve positive identification of bodies, assess trauma prior to examination, and enhance evidence retrieval.

The ability to access x-ray images in digital format is a significant advantage to the doctors, technicians and investigators. In the original analog solution, each x-ray image had to be chemically processed before viewing. With the digital x-ray, the image is available to view in just a few seconds. Multiple images and angles can be captured in digital format at a fraction of the cost and time of the current analog equipment.

Digital x-ray images are quickly processed and can be examined simultaneously at multiple locations, improving collaboration efforts. The upgrade of the digital technology has directly improved the effectiveness and ability of OME staff to provide the citizens of Maricopa County with accurate and timely death investigation information.

Human Remains Release Form (HRRF) – Office of Vital Registration

Driven by limitations and shortcomings with the previous manual system, the Maricopa County Office of Vital Registration and OET developed a solution to improve the HRRF process. This essential form captures information allowing responsible parties (such as funeral homes and the Office of the Medical Examiner) to transport the remains within the state. The HRRF also contains pertinent medical information that is considered when determining a cause of death. This helps to eliminate the possible destruction of evidence by cremation or burial as well as ensure that a potential public health concern does not exist.

The solution automates the receipt and data entry of HRRFs and significantly streamlines the processing of HRRFs. The result is an annual savings of more than $86,000. Additionally, the solution supports the County's efforts towards a "greener government" by drastically reducing the use of paper.

RECOGNITION

Cyber Security – Capability Maturity Model

OET's Information Security team established a Maricopa County Capability Maturity model based on its Cyber Security strategy and best practice standards identified by the National Institute of Standards and Technology (NIST), in order to demonstrate the ability to address Cyber Security threats through the identification, management, and mitigation of cyber threats.

The program provides County leadership with a method to measure the effectiveness of investments made in Cyber Security. Furthermore, leadership is able to make high level risk based decisions and as a result, Maricopa County has been able to drive improvements to its Cyber Security portfolio, while systemically articulating the effectiveness of investment.

Counties around the United States can adopt this method to conduct a gap analysis of their Cyber capabilities and leverage it to determine if investment should be applied based on their risk profile.

Cyber Security Strategy

Maricopa County Information Security has adopted the National Institute of Standards and Technology (NIST) Cyber Security Framework and created a portfolio of programs designed to address each element within the framework. This approach is represented through three programs: Security Operations, Cyber Assurance and Security Architecture.

The overall program has proven to be very successful through increasing visibility into what the Cyber Threat is by more than 700%. This increase in visibility has put the County in a position to repel more than 10,000 attacks that were launched against it in the last year. Furthermore, the County is able to quantify through metrics, how it is performing against the threats that it is aware of, with dashboards and measurements to demonstrate the impact of success.

NACo National Association of Counties
The Voice of America's Counties

CUSTOMER FEEDBACK

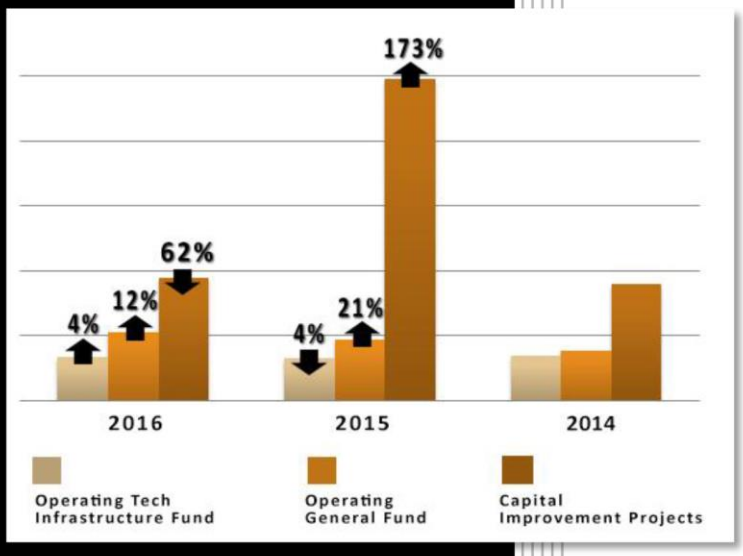
"I just wanted to thank you for the foresight in making the Gartner resources available to the county. I have been using the research rather extensively in the past few months. We are looking at several new projects and I have found the information to be very relevant and useful." – Ron Bitterli, Director – Information Technology Group, Clerk of the Superior Court's Office

"I just wanted to let you know that your team has been great to work with. I put through a bunch of tickets to fix issues here and there and they have all taken care of very efficiently." - John Ryan, Risk Management

FINANCIAL PERFORMANCE

OET is committed to smart investments that lower overall operating costs long term. Each investment opportunity goes through a rigorous business, technical and financial review to determine overall value to the organization in terms of service improvement and total cost of ownership.

FY15 OVERALL PERFORMANCE:



Fiscal Year 2015 represented the final year of OET's planned infrastructure improvements. As a result, capital investments have decreased by 62% from FY15 to FY16. These improvements set the foundation for service excellence and long-term cost reductions moving forward.

OET completed several initiatives and projects resulting in significant savings, including the following:

Phoenix and Scottsdale IO Sales Tax Savings

As a result of completing the data center colocation project, OET and the County realized a **savings of over $380,000** from qualifying purchases under the State of Arizona's Computer Data Center Program established with A.R.S. 41-1519, allowing tax exemption of equipment installed at the data centers.

Microsoft Enterprise License Agreement (ELA)

OET renegotiated a three-year ELA with Microsoft resulting in **savings of $4 million** for the County. This was accomplished through collaboration with the IT Leadership Roundtable, including representatives from other information technology departments across the County.

VMWare Enterprise License Agreement (ELA)

OET worked with several departments including Human Services, RDSA, MCESA, and the Assessor's Office to negotiate a three-year ELA with VMWare resulting in over **$700,000 of savings**.

RDSA Server Move

The merger of OET and RDSA information technology departments provided opportunities to improve service and reduce costs, including the move of RDSA computing equipment from a leased space to the County's Scottsdale IO data center, resulting in **$755,755 savings** over six years.

F5 Migration

OET migrated load balancing services from the existing Cisco ACE platform to the F5 environment. This migration resulted in a **savings of $200,000** because maintenance contracts were no longer necessary and existing technology was utilized to complete the integration.

FY2016… THE YEAR AHEAD

Digital Government, Customer Service Excellence, Lower Costs, Service and Price Transparency, and Strategic Direction

Digital Government

OET will implement the first phase of the County's digital government initiative to migrate the current Maricopa County public facing website (www.maricopa.gov) to a hosted Content Management System (CMS), including design and branding solutions.

Enterprise Resource Planning (ERP)

OET will continue its work to support the Office of Management and Budget, Department of Finance, and the Office of Procurement Services in the development and implementation of the County's first ERP system scheduled for July 2016.

Service Management System (SMS) and Internal Service Fund (ISF)

Working with County Management, OET will complete the establishment of its ISF and implementation of its new SMS. This will provide detailed pricing for all OET services with OET's newly established Service Catalog to create service and price transparency for all County departments.

Bandwidth

OET will complete its planned objective to significantly increase bandwidth at County sites, including adding four times the bandwidth of current Internet circuits and 48 existing MOE circuits, improving 75 sites from 1.5Mbps to 30 Mbps, and five additional sites from 56k or 1.5Mbps Frame Relay circuits to 30Mbps MOE circuits.

Chambers Remodel

Working with the County's Facilities Management Department (FMD), OET will complete the renovation of the Chambers Building to significantly improve the work environment for OET employees and customers who visit OET's office.

Virtual Desktop Infrastructure (VDI)

OET will implement a VDI infrastructure to support up to 2,000 users over a four year period, supplementing the traditional desktops and laptops. Benefits of VDI include:

- Enables anywhere, anytime, any device access to applications
- Centralized Management / Faster resolution of PC related issues
- Improved data security

Lower Operating Costs

FY2016 will focus on leveraging foundational improvements from the past two years to lower OET's overall operating costs through improved management enabled by newly established service and financial management

Development of FY17-19 Strategic Plan

OET will develop its next Plan focused on leveraging the successful completion of its FY14-16 Plan, covering foundational improvements, to identify aggressive goals for the County to leverage emerging technologies that enable the County to capitalize on digital government opportunities.

Office of Enterprise Technology

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