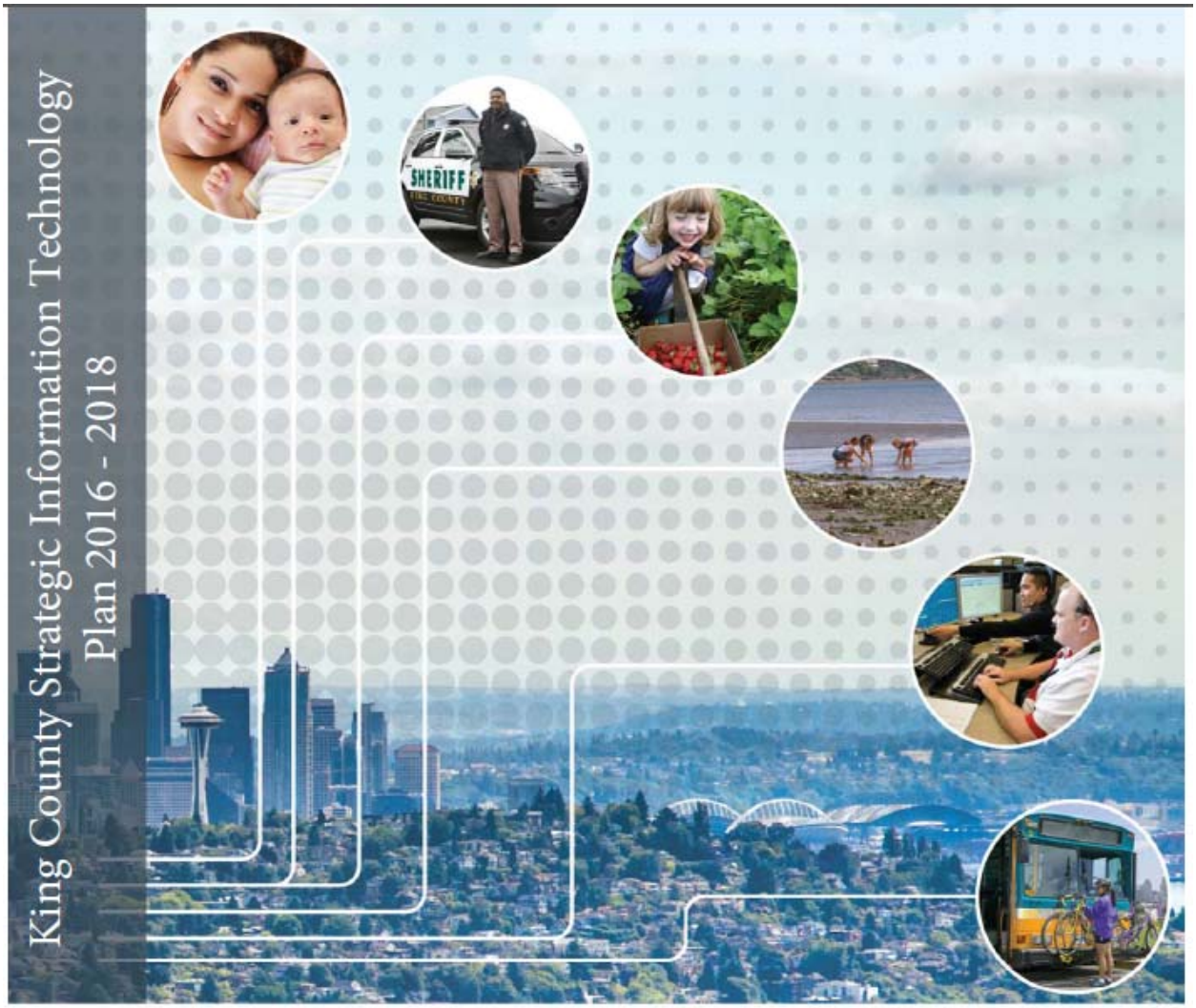


King County
Department of
Information Technology (KCIT)

KCIT *Building stronger communities through innovative information technology.*

June 2016

Executive Summary

A strategic information technology plan is critical to effectively align information technology services and supporting infrastructure with the strategic business goals of King County. This importance only grows as information technology becomes increasingly more embedded in the services King County provides and as innovations are making information technology solutions easier to access and more adaptable than ever before. At the same time, business system complexity is increasing as organizations are departing from the top down control structures and rigid procedures of the past by empowering employees to make more decisions around how services are produced and distributed. Residents expect improved customer service, expanded access to services, increased product adaptability and employees empowered to provide those services. Meeting these expectations requires improvement to King County service delivery empowered by increases in employee capabilities, innovations, and seamless integration and utilization of information technology solutions. This Strategic Information Technology Plan (SITP) anticipates these changing expectations and innovations and communicates King County's information technology vision to address them over the next three years. The goal of the plan is to align information technology activities and investments with business strategy and goals, resulting in improved King County service delivery to the public.

Pro-actively leveraging Information Technology enables higher-value, convenient and easier to deliver business services to King County residents.

Significant progress against our last strategic plan has established a solid foundation for the future. This foundation is enabling us to turn the corner from past strategies which were more heavily focused on infrastructure to enable an outward future focus on citizen value. By having robust and effective infrastructure in place, we now need to leverage those capabilities throughout the critical services King County delivers.

26 out of 30 outcomes in the 2013-15 Strategic Information Technology Plan met or exceeded expectations

The Strategic Information Technology Plan 2016-2018 sets this information technology vision by establishing five key objectives, supporting strategies and related outcome measures. The five key objectives – Digital Civic Engagement, Workforce Empowerment, Data Driven, IT Mobility, and Effective Digital Systems – are outlined with their benefits in Table 1 on the following page. [1]

The objectives for 2016-2018 were identified based on input from business and technology leaders from technology governance teams throughout King County. Each objective is further defined by describing our current situation as well as the future vision and direction for the objective. Strategies that contribute towards accomplishing the objective and related outcomes are also identified. Progress toward outcomes will be assessed and reported in annual updates. Finally, scenarios to better illustrate intended results have been created to better help a broader audience understand and share in the common vision. Details supporting this journey have been included as appendixes to this document.

[1] For reference, the previous 2013-2015 Strategic Technology Plan had four key objectives – Maturity, Modernization, Mobility, and eGovernment.

Information Technology Objective		Resulting Benefits
	Digital Civic Engagement – Leverage IT platforms and tools as a channel to increase the opportunities, convenience and audience engaging with government	• Increased citizen participation in government • Deeper, more impactful government presence in our communities • Faster and more convenient delivery of services to the public • Improved customer understanding and satisfaction with King County • Greater transparency of government operations • Increased equity of participation • Increased collaboration with regional partners • Reduced unit costs for government services
	Workforce Empowerment – Employees effectively using IT platforms and tools to drive business process improvements	• Significant and continuous business process improvements • Better employee engagement and collaboration • More positive work environment and increased ability to respond to and conquer change fatigue • Improved citizen value through higher levels of service and engagement
	Data Driven – Increased utilization of data to understand the current situation, analyze opportunities, measure results and make more informed initial and corrective decisions	• Better decisions in all aspects of government leads to a better run government • Reduced reliance on 'gut instinct' decisions which can carry un-intentioned biases • Reduced total cost of ownership for King County's information assets • Reduced risks related to information management • Better response to rapidly changing business needs, within and across agencies • Better enables ability to partner with external collaborators • Allow people to engage with King County where and when is best for them • Improved constituent access to data • Improved workplace efficiency through better performing business applications and reporting • Improved transparency and usability through increased integration and sharing of data

Information Technology Objective		Resulting Benefits
	IT Mobility - Free residents and employees to interact and transact business when and where most appropriate and convenient	• Re-designed business processes geared toward customer service and overall efficiency • Increased resident convenience when accessing services • Reduced costs related to staff moves from reduced/eliminated re-wiring and space consolidation related to open concept • More collaborative, open, dynamic office space and working environments • Increased business and IT productivity
	Effective Digital Systems - Increase value to customers by providing high quality digital systems to better meet their needs using standard components and continuous process improvement	• Capturing continuous improvement in the form of systems with higher quality, lower risk and better fit to customer needs • Decreased TCO (Total Cost of Ownership) and system failure for maintained systems through efficiencies, standardization, re-use and the ability to meter and rapidly scale resources up or down as needed • Faster speed to implement business process changes • Increased service quality due to increased standardization and reduced downtime • Reduced risk due to increased redundancy, geographic diversity, and commoditized, on-demand scaling of needed assets

Table 1 – Summary of Strategic Technology Objectives and Resulting Benefits

Contents

Identifying IT Strategic Objectives

The Strategic Information Technology Plan 2016-2018 provides a framework and guidance for technology investments that contribute toward accomplishment of strategic business goals. This plan is primarily driven by those goals and the needs of the King County agencies and departments tasked with accomplishing those goals for the residents of King County.

The objectives and supporting strategies provide a strategic framework that was initially identified by a governance team composed of 25 business and technology leaders representing separately elected agencies and executive branch departments throughout King County. This team met five times in the fall of 2015 and performed the following steps:

- Reviewed progress against the prior strategic plan and key areas to carry forward into the next plan
- Reviewed business strategic goals and compiled the core capabilities needed to accomplish them including the biggest challenges and opportunities related to those capabilities. This included discussion and homework at enterprise, strategy and agency/department levels.
- Transformed information technology (IT) themes into objectives that best addressed the strategic opportunities and needs discussed while considering King County IT's current state and IT industry trends. Common use case scenarios across the various goal areas as well as possible solution patterns were considered as part of this analysis. In addition, a Strengths Weaknesses Opportunities and Challenges (SWOC) assessment was performed for each objective. Results of these efforts can be seen in appendixes at the end of this report.

The following sections more fully describe the development of strategic information technology objectives.

Strategic Business Goals

King County's strategic goals, objectives and strategies are contained in the King County Strategic Plan 2010-2014 (KCSP) which was updated by Motion 14317 in March 2015. This plan contains seven countywide goals as identified in Figure 1. These goals were used in developing the information technology objectives contained within this strategic information technology plan and were included in directing governance sub-team activities.

In addition to King County's strategic goals, general societal drivers impacting King County have also been taken into account including:

14317 - Attachment A

Updated February 12, 2015 (revised)

King County Vision Statement, Mission Statement, Guiding Principles and Goals

Vision Statement: King County: a diverse and dynamic community with a healthy economy and environment where all people, businesses, and organizations have the opportunity to thrive

Mission Statement: King County government provides fiscally responsible, quality-driven local and regional services for healthy, safe, and vibrant communities

Guiding Principles:

Equitable and Fair	Address the root causes of inequities to provide for equal access to opportunities for all
Financially Sustainable	Align funding, policy and operational goals of King County government
Regionally Collaborative	Engage with partners, stakeholders, and public and private organizations to achieve goal
Quality Local Government	Provide effective, efficient local governance and services to unincorporated areas

Goals:

Mobility	Deliver a seamless network of transportation options to get people where they need to go, when they need to get there.
Safety and Justice	Provide for a safe and just community through proactive law enforcement and an accessible and fair justice system, while implementing alternatives to divert people from the criminal justice system
Health & Human Services	Improve the health and well-being of all people in our community
Economic Vitality	Increase access to family wage job opportunities throughout the county
Accessible, Affordable Housing	Increase access to quality housing that is affordable to all
Healthy Environment	Preserve open space and rural character while addressing climate change
Efficient, Accountable Regional and Local Government	Ensure that County government operates efficiently and effectively and is accountable to the public

FIGURE 1 - KING COUNTY STRATEGIC VISION, MISSION, GUIDING PRINCIPLES AND GOALS

- Continued rising expectations of the public and our employees for the technology supporting government services.
    - More services, available more often, and easier to transact, from wherever the customer is located.
    - Expectations of new service delivery mechanisms (e.g. online, real-time).
    - Increased consumer and employee mobility and flexibility in order to meet these heightened expectations.
- Reduced public willingness to fund government services, resulting in
    - The need for continuous process improvement which includes automation, employee empowerment, standardization, re-use and benefit realization from investments in enterprise technology platforms.
- The need to address the challenges in standardizing processes and systems across the many diverse lines of business operated by the County.
- Significant internal constraints in the ability to provide services
    - Aging workforce / knowledge departure, technology adoption challenges, change fatigue, generational separation of employees requiring different change management approaches, insufficient training focus.
- Difficulty in changing existing business processes.
- Existing information technology obsolescence.

Information Technology Contribution to Business Goals

Overall, the collection of technology objectives and strategies contained in this plan are intended to improve the ability of departments and agencies to accomplish the strategic goals established for the County. The strategic goal for efficient and accountable regional and local government is the primary means through which information technology is able to impact the other six strategic goals. In effect, by making every area of government more efficient and accountable for the services they provide to residents, we are all better positioned to achieve King County's strategic goals. See Figure 2 below for a better understanding of this alignment.

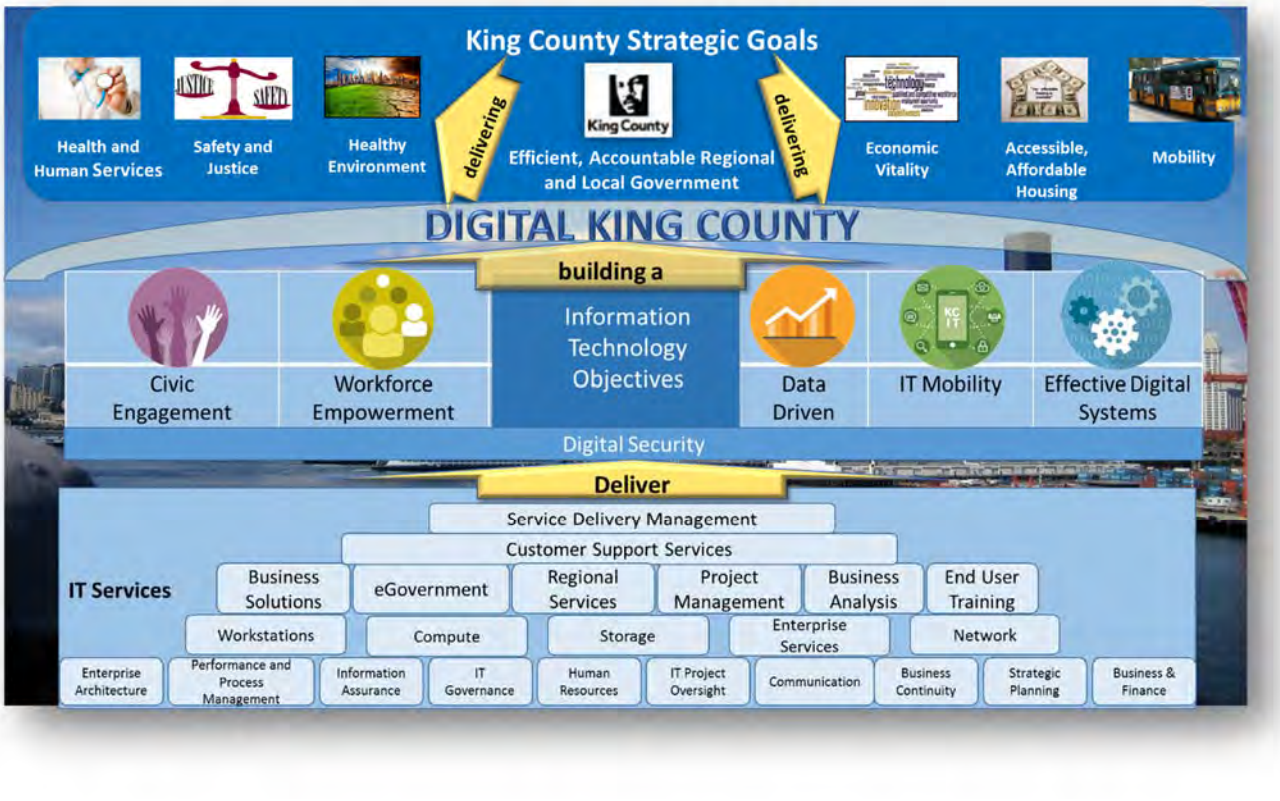


FIGURE 2-HOW INFORMATION TECHNOLOGY LEADS TO STRATEGIC GOALS

Another way of saying this is we don't do technology just for technology's sake. If it does not help to advance business needs in the short or long term, then it should not be done. In fact, many now shy away from the term 'technology project'. Because a business case has always been required for these types of projects, they could more appropriately be called 'business projects involving information technology'.

In addition to improvement efforts or projects to help us move towards our business goals, more than 800 application systems are available and supporting existing business processes every day in each agency and department throughout King County. These application systems are an integral part of delivering government services to King County residents and are continuously maintained and improved to support business results where possible.

Information Technology Considerations

We have made significant progress in major components of our previous three year strategic information technology plan. We established a solid information technology infrastructure foundation for the future so we can turn our strategic efforts toward delivering extended customer value in the systems they use to accomplish business processes.

Vision and Mission for King County Information Technology

King County has a vision of communities that provide equitable access to opportunities and where the determinants of equity are available to all. Information technology has a role in realizing this vision by ensuring that all residents and employees can participate fully in the values and advantages available in the digital economy and digital society of the future. In support of this and other King County strategic goals and objectives, KCIT has created the following vision and mission statements:

Vision Statement

Building stronger communities through innovative information technology

Mission Statement

Deliver smart information technology solutions that support our customers

Progress Against the Previous IT Strategic Plan

Significant progress was made on the Strategic Technology Plan 2013-15 as shown in Figure 3. Highlighted areas of progress that can now be leveraged as we turn toward civic value include:

- The hybrid cloud and non-cloud storage environment – provides "anywhere access" and significant cost savings opportunities by using either internal or external virtual hosting platforms with differing cost/features depending on systems' needs. This platform enables our 'cloud first' approach that includes a preference for SaaS (Software as a Service) applications when they deliver a lower total cost of ownership. The hybrid environment currently consists of:
    - KCIT hosted private platform – Also called SVE for Server Virtual Environment,
    - Amazon Web Services (AWS) public platform,
    - Microsoft Office 365 platform for office productivity
    - Constituent Relationship Management (CRM) platforms
    - Multiple SaaS (Software as a Service) providers for specific business applications
- Data center consolidation – increased stability and fault tolerance
- Network upgrades – increased throughput, reliability, availability and wireless connectivity
- Vendor hosted software applications are more quickly adapted and used than home grown alternatives
- End-point standardization and expansion to include employee owned devices
- Architecture principles and standards guide system design toward effectively reusing the tools and systems that work well
- Platforms provide common components for quick and consistent extension where valuable to customers, including:

- Unified Communications – consistent and integrated ways to collaborate both internally and externally including instant messaging, email, voice, voicemail, video conferencing, desktop sharing, presence and other features
- Document management which includes several components:
  - Document storage related collaboration tools (using enterprise SharePoint, OneDrive, and our Enterprise Document Management System (EDMS) which enables scanning and storing of paper documents)
  - Document creation tools (through enterprise Office 365 including Word, Excel, PowerPoint and OneNote)
  - Records management tools (Enterprise Records Management System (ERMS) for storing records according to their retention schedules)
- Constituent Relationship Management (CRM) which provides easily built workflows and forms to support interactions with constituents and move us toward a single view of the customer
- Common identity and access management strategy

FIGURE 3– OUTCOMES PROGRESS FROM PRIOR STRATEGIC INFORMATION TECHNOLOGY PLAN

The Application Modernization objective from our previous strategic plan is the area that made the least progress. Having made these significant improvements in our IT infrastructure, we can now turn efforts toward adapting our existing applications that work well across all departments and agencies to reduce duplication and ensure they are not out of date. See Appendix G for the full update on strategic progress against the prior plan.

IT Industry Drivers

Significant change continuous throughout the information technology industry. Existing and emerging trends and opportunities have been included in determining IT strategic objectives and opportunities for moving forward. See Appendix I for more background information.

Strategic Technology Objectives

When looking at how to best accomplish our customers' strategic goals and support future business needs, past business and information technology progress and anticipated information technology industry trends and innovations, the following five themes readily present themselves:

- Digital Civic Engagement
- Workforce empowerment
- IT Mobility
- Data Driven
- Effective Digital Systems

Each of these objectives is further described in the following sections by describing the past and current environment, depicting the desired future state, and describing the strategies that will help us get there. The benefits of the future state are also described. Scenarios are described to better understand the desired future state in Appendix A. Measureable outcomes we are expecting to attain and will help us to know if we are successful in accomplishing strategic objectives are identified in Appendix B.

Information assurance and the ability to protect information as needed while also making information available to the broadest appropriate audience is a key/major component of effective digital systems as well as all other objectives. Because it should be a part of everything that we do, it is not called out separately, but included in all efforts.

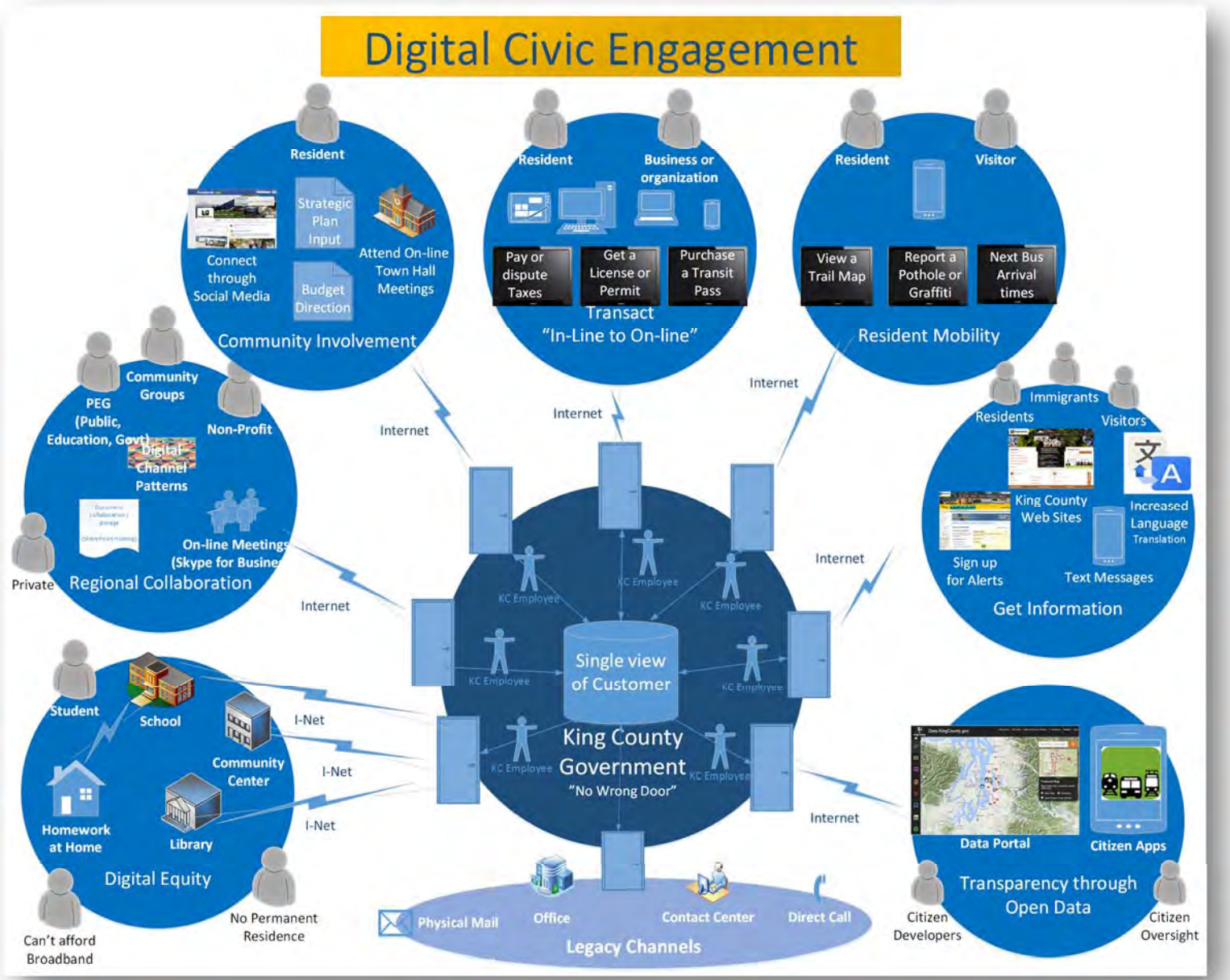
Digital Civic Engagement

	Objective	
1	**Digital Civic Engagement** 	Digital Civic Engagement – Leverage IT platforms and tools as a channel to increase the opportunities, convenience and audience engaging with government "Increased access to and participation in government leads to improved government services and value from those services"

Business/Customer Value and Benefits

Accomplishing this objective is expected to provide the following benefits:

- Increased citizen participation in government
- Deeper, more impactful government presence in our communities
- Faster and more convenient delivery of services to the public
- Improved customer understanding and satisfaction with King County
- Greater transparency of government operations
- Increased equity of participation
- Increased collaboration with regional partners
- Reduced unit costs for government services


Digital Civic Engagement
Resident
Strategic Plan Input
Attend On-line Town Hall Meetings
Connect through Social Media
Budget Direction
Community Involvement
Resident
Business or organization
Pay or dispute Taxes
Get a License or Permit
Purchase a Transit Pass
Transact
"In-Line to On-line"
Resident
Visitor
View a Trail Map
Report a Pothole or Graffiti
Next Bus Arrival times
Resident Mobility
Internet
Internet
Internet
Community Groups
PEG (Public, Education, Govt)
Non-Profit
Digital Channel Patterns
On-line Meetings (Skype for Busine
Private
Regional Collaboration
Internet
Immigrants
Residents
Visitors
King County Web Sites
Increased Language Translation
Sign up for Alerts
Text Messages
Get Information
Internet
KC Employee
KC Employee
KC Employee
KC Employee
Single view of Customer
KC Employee
KC Employee
King County Government
"No Wrong Door"
KC Employee
Student
School
Community Center
Homework at Home
Library
Digital Equity
I-Net
I-Net
I-Net
Can't afford Broadband
No Permanent Residence
Internet
Data Portal
Citizen Apps
Transparency through Open Data
Citizen Developers
Citizen Oversight
Physical Mail
Office
Contact Center
Direct Call
Legacy Channels

Past and Current Progress

E-government was an objective in the last strategic information technology plan in which we made significant progress in accomplishing its desired outcomes of improving government's connection with residents in King County. It did so through:

- Significant increases in web usability and usage
- Rapid growth in social media as a communication and dialoguing tool
- GovDelivery as a way to identify special interest groups (through self-selection) that could then be notified and provide feedback around topics of interest

Despite progress in these areas, relatively slow progress was made towards increasing the number of King County services accessible online. There are still many services which cannot be accessed online and require travel even though it may be inconvenient or more costly. The desire to report issues and transact business from wherever a citizen is located (through a mobile application, a website tailored to a cell phone, or a call to a common number, regardless of what is being requested) continues to increase. Customers also find themselves having to navigate our organization if they choose the 'wrong front door', and knowing who/how to contact us can be confusing for those who don't do it frequently. In addition, demand for additional ways to access King County is growing to include online forums and town hall style meetings where many residents can provide feedback simultaneously or asynchronously.

A policy issue continuing to affect this area has to do with the conflict between the need for transparency and openness in government and the information which supports it compared to the privacy concerns of individuals and securing sensitive information so it isn't seen by those without authorization. As we proceed toward a digital King County where more information exists solely in a digital format, we must find ways to support both of these principles related to openness and privacy by establishing clear policy guidance to be followed when conflict occurs.

Where we are going

One of the keys to finding the right 'front door' lies not in limiting King County to one front door, but in having all of the doors accessing and using common information and tools so the customer gets a consistent experience regardless of which door they pick. A mobile application, a web portal, a phone call, or an email can and should all access/update the same customer information and follow a consistent process in tracking their request. This will lead to a consistent long-term handling of all requests and provisioning of services as compared to the siloed responses that are the norm today.

To improve customer experiences with King County and expand the opportunities for interaction, the following strategies should be pursued:

- **Digital Government**
  - **No wrong door** – All requests – regardless of where they are received – should follow a consistent process for collecting, tracking and responding to the request. This will require King County to have one view of the customer, and not multiple, dis-connected views that retain data and transaction history separately.
  - **In-line to online** – Utilize IT as a significant and consistent delivery channel by increasing the number of services provided with an online service option for those who would prefer/benefit from the convenience and timeliness of online service provisioning.
  - **Enhanced Digital Experience** – As customers are engaging with government, we will strive to improve their overall experience by using all digital assets available. For instance, when a resident contacts us to acquire services, we can ask if they want to receive a text when their service request has been completed, join a mailing list on a related topic, and/or follow up on a previous interaction stored in our Constituent Relationship Management (CRM) system. We can also offer new opportunities if they match the users profile or analytical preferences and can connect them to related social media channels of interest and/or present related regional partner services in a more seamless way.
  - **Digital Steering** – Leverage the online relationships that have been built to increase the awareness and ability to engage in decisions and processes by providing timely and targeted connections between interested residents and government issues and decision processes. Provide an **online forum** for this engagement that is consistent across issues, easy to use, and accessible.
- **Digital equity** and inclusion – increase access to the internet and the ability to use and benefit from it for all of our residents so they can do homework from home, purchase goods only available online, and receive the many other benefits of participating in our digital society and economy.
- Work toward reducing the **language barrier** that exists for many of our residents by increasing the amount of content translated online or providing industry available tools for increased real-time translation of non-critical content.
- Support the desire for increased **regional partnerships** through easy to use tools and toolkits to increase the effectiveness of remote meetings and information sharing across organizations and coalitions, empowering employees to more easily facilitate and orchestrate collaborative efforts.
- Expand the participation, utilization, growth, and citizen value from **open data** and how it is used. This will involve increased data more openly available, improved classification and identification of sensitive data and better engagement with the IT community in promoting and facilitating the use of this data. Plan for eventual utilization of open data by King County employees driving departments to make their data open by default. Ongoing crowdsourcing and other partnering agreements should be explored and fostered. Improve the clarity and understanding of policies and guiding principles when conflict occurs between transparent government needs and security/privacy rights.
- Build toward a **single view of the customers** who interact with us. This means understanding ownership of various components of customer information and consistent business process for how we update and manage information. This becomes increasingly important to providing an enhanced digital experience as more services and expectations move online.

Workforce Empowerment

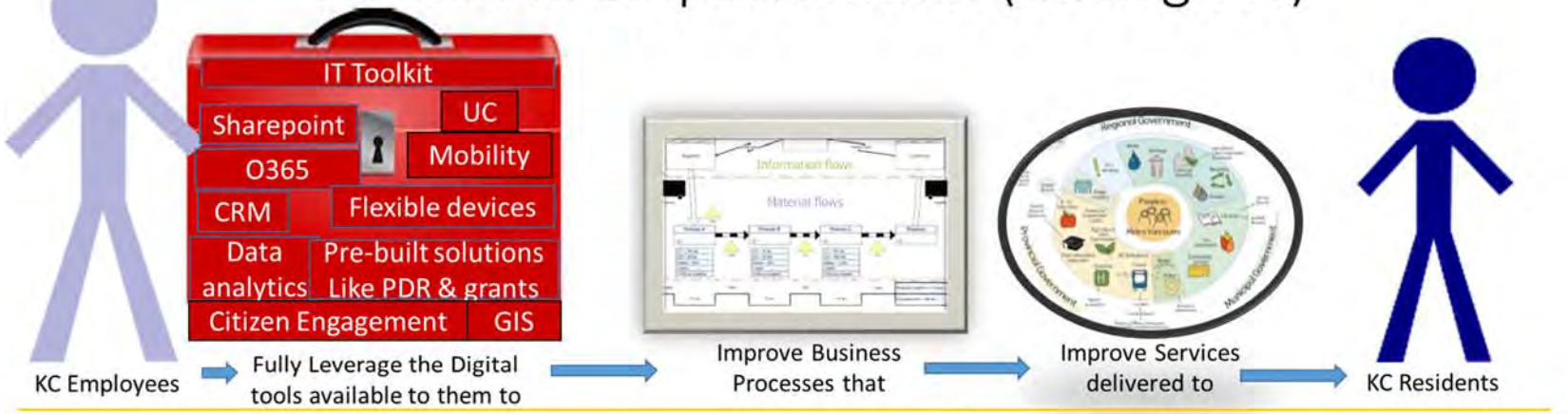
	Objective	
1	**Workforce Empowerment** 	Employees effectively using IT platforms and tools to drive business process improvements "Improved communication, collaboration, and continual process improvement impact everything we do"

Business/Customer Value and Benefits

Accomplishing this objective is expected to provide the following benefits:

- Significant and continuous business process improvements
- Better employee engagement and collaboration
- More positive work environment and increased ability to respond to and conquer change fatigue
- Improved customer value

Workforce Empowerment (through IT)



KC IT Employee

- Trains KC employees on tools and how to use them
- Provides expertise when needed
- Advises on Business process re-design
- Develops/implements more complex Systems

KC Manager

- Encourages staff to use IT toolkit to improve business processes –provides guidance, feedback, and ultimately approval of identified improvements

Tool Strengths:

- O365 – Individual Document Creation, editing
- SharePoint - Document storage and group editing/review/iteration
- CRM – Customer related tasks (data sharing), with repeatable / Complex workflows
- UC – Connecting/ communicating with co-workers or external partners regardless of location
- E-mail – more formal communications with multiple staff
- Mobility – perform work in new locations if/when it makes sense
- Citizen Engagement – solution patterns involving UC, SharePoint, CRM, mobility that make is easier to connect with citizens/partners
- Data analytics – access to data and analysis tools to help make better decisions
- GIS – location based analysis and insight to improve decisions/ communication

Past and Current Progress

Significant enterprise communication, collaboration, mobility and other tools have been implemented over the past several years and are available for employees to perform their daily activities. However, adoption and utilization of these tools is still fairly low compared to the value they can bring and their potential to significantly improve many business processes throughout King County government.

Enterprise IT tools and their intended area of benefit include:

- Unified Communications (UC)
  - Replaces past voice communication tools and enables multiple communication channels to be integrated during a single interaction including voice, text, data and video.
  - Includes features for employee look-up and availability (presence), instant messaging, email, desktop sharing, online meetings, voicemail, voice calls, video calls, recording of meetings.
  - Future
    - Cloud storage of email will enable anywhere access to all past and present messages and personal folders.
- IT Mobility
  - Mobile device management enables appropriate access to resources using county owned and/or personally owned devices from any location with internet access.
  - Wireless capabilities are available in many King County office buildings enabling employees with laptops, tables, or smart phones to access resources from their office, meeting rooms or other covered locations. Future wireless expansion will enable employees to use a wireless connection as their primary way to connect – enabling seamless mobility while they work.
- Document creation tools
  - Office products including Word, Excel, PowerPoint, and OneNote are available to all employees to create documents that meet their communications needs and are accessible from multiple devices (even personal ones if needed)
  - An Enterprise Document Management System enables scanning and storing of paper documents.
- Cloud document sharing and storage tools
  - SharePoint is available to all employees to collaborate on the documents they use to conduct business. This includes organizing document libraries to effectively support teams and ongoing processes, determining access permissions to any document and working simultaneously on the same document if desired.
  - An employee intranet is available to share information within and across departments and agencies to help keep staff informed about needed workplace information
  - OneDrive is now available and will soon become our standard location for storing personal documents with the ability for individuals to keep documents private or share them with others if desired – the document owner decides
  - An Electronic Records Management System is implemented and available for all employees to store the records they create

- Cloud access to all of these options means they are available wherever an employee is; at a desk, in a meeting, at home teleworking or at a regional partner's site – as long as there is internet access.

- Customer Engagement Tools
  - A Constituent Relationship Management (CRM) platform has been created and is rapidly being adopted by multiple departments and agencies. This platform allows for multiple solution patterns including:
    - Customer request management – Aligning requests with a single view of the customer and tracking those requests to ensure King County is responding timely and appropriately
    - Public Disclosure Requests – Consistent, timely, and well documented responses to these requests affect all areas of King County
- Digital Civic Engagement Tools
  - **Social media**
    - An IT director of social media is available to advise all departments/agencies on how to devise and executive effective programs
    - Access to social media from all county owned devices
  - **Text messaging** for those requesting this type of communication
  - **GovDelivery** – Group messaging tool to maintain lists of people interested in various topics to simplify and speed communications. Includes ability for easy opt in or out. Easily placed web-links to advertise simple sign-up options.
  - **Video meeting** capabilities extend beyond King County employees to external users.
  - **Web Hosting** of content on the internet
    - While this is not new, the usability, scalability, and customization to end-user device is. It includes web content and links to other services mentioned above should be part of any Digital Civic Engagement strategy.
  - Future
    - Online forum toolkits
    - Online boards and commissions toolkits
    - Online document/strategy/issue Review forums and feedback tools
    - Increased language translation tools
    - Data analytic toolkits include geo-analysis
- Regional Collaboration
  - Video meeting capabilities extend beyond King County employees to external users.
  - Document collaboration sites can extend beyond King County employees to external users.
  - Future
    - Online template and toolkit to establish regional collaboration infrastructure and practices and utilize Unified Communications (UC) and document collaboration and other tools.
- Data Analytics and Business Intelligence

- Tier Board methodology is broadly in place with an IT standard solution soon to follow.
- Local solutions are evolving to meet the rapidly growing need to analyze key data. This will help to better understand the various types of analytical need going forward as we establish enterprise tools to meet broader needs.
- Future:
  - Enterprise data management practices will enable local data to be understood, combined with other data, and analyzed across King County – without intervention or massaging by IT support staff. Combining with external data will also be more easily performed by business staff as our data becomes better understood. Enterprise business intelligence for our financial and employee data is already in the works. Extension to all data in a structured and organized way will help to accomplish this further as we streamline and modernize applications going forward. Data usability improvements will be part of the process.

- Geographical Analysis and Communication
  - Existing Geographic Information Systems (GIS) services provide a broad range of options to enable King County staff to better understand current issues and status from a geographical perspective.
  - Infographics and graphic design are services available but not fully used throughout the County – these services better communicate the need and impact around various issues, often incorporating geographical analysis into the communication.

Where we are going

Change fatigue has affected many parts of King County government and made it difficult for employees to keep up with the capabilities of the IT tools available to them. In addition, recent employee empowerment initiatives are only beginning to make employees aware of their ability to drive continual improvements to their work environment and related business processes.

The potential benefits to employees and their organizations has created a strong desire to focus on enabling employees to effectively use the many IT tools and services already available to them. To do so will required an increased focus not just on training related to these tools, but on expectations around utilization of these tools to improve business processes and leadership support for knowledge acquisition and process improvements driven by their staff.

In addition to the 'Future' capabilities identified above, this will require:

- Increased utilization of IT training services focused more on use-case scenarios rather than the features and functions of a tool
- Increased business process analysis and changes incorporate these tools as potential partial or full solutions

- Ongoing management analysis of IT tool usage to better understand where opportunities are being missed and how to connect those opportunities with potential solutions

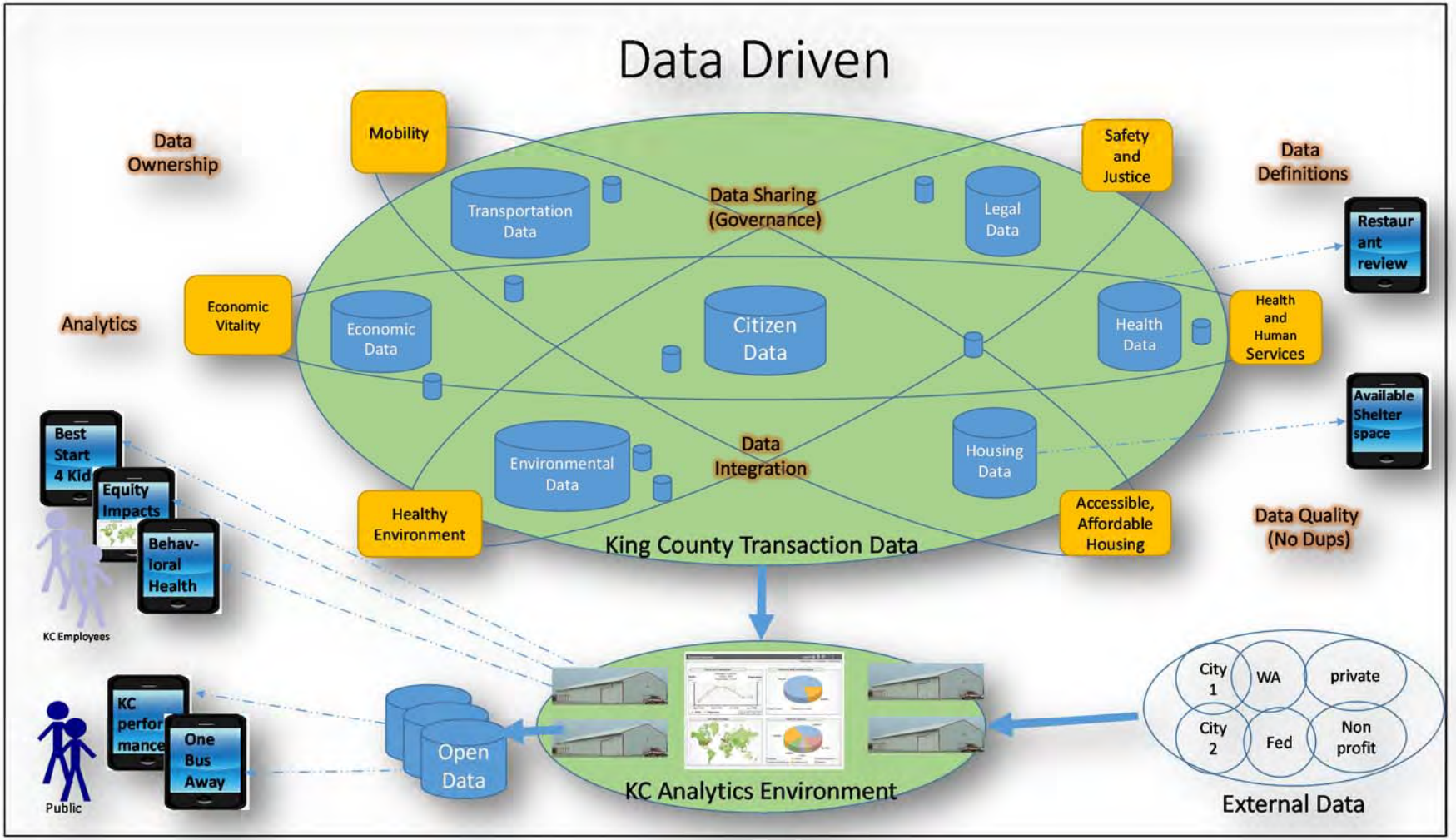
Data Driven

	Objective	
1	**Data Driven** 	Increased utilization of data to understand the current situation, analyze opportunities, measure results and make more informed initial and corrective decisions. "Better decisions mean better outcomes"

Business/Customer Value and Benefits

Accomplishing this objective is expected to provide the following benefits:

- Better decisions in all aspects of government leads to a better run government
- Reduced reliance on 'gut instinct' decisions which can carry un-intentioned biases
- Reduced total cost of ownership for King County's information assets
- Reduced risks related to information management
- Better response to rapidly changing business needs, within and across agencies
- Better enables ability to partner with external collaborators
- Allow people to engage with King County where and when is best for them
- Improved constituent access to data
- Improved workplace efficiency through better performing business applications and reporting
- Improved transparency and usability through increased integration and sharing of data


Data Driven
Data Ownership
Mobility
Transportation Data
Data Sharing (Governance)
Legal Data
Safety and Justice
Data Definitions
Restaurant review
Analytics
Economic Vitality
Economic Data
Citizen Data
Health Data
Health and Human Services
Available Shelter space
Best Start 4 Kid
Equity Impacts
Behav-ioral Health
KC Employees
Environmental Data
Data Integration
Housing Data
Healthy Environment
Accessible, Affordable Housing
Data Quality (No Dups)
King County Transaction Data
KC perfor mance
One Bus Away
Public
Open Data
KC Analytics Environment
City 1
WA
private
City 2
Fed
Non profit
External Data

Past and Current Progress

King County has recently evolved its IT organization in the Executive branch from separate IT organizations within each department to a consolidated, executive-wide IT department called King County Information Technology (KCIT). Because most department applications have not yet been streamlined or modernized, their application architectures vary widely based on where they were originally developed. This is also the case with separately elected applications which are not part of KCIT services. Further complicating the situation, most applications lack data management practices. This means data is stored on many different (non-standard) structures and not managed in a common way.

Data management is the development, execution and supervision of plans, policies, programs and practices that control, protect, deliver and enhance the value of data and information assets – as defined by DAMA (the Data Management Association). Typical components of good data management practices include data governance with clearly defined owners, data architecture, data modeling and design (including logical and physical data models), data quality, meta-data, master and reference data, data integration and interoperability, and other areas.

The lack of data management practices throughout our organization makes it difficult to identify, analyze and make decisions on the data we currently have, except in a very limited and focused way and at a relatively high cost. Some problems existing within our current environment include:

- Data duplicated in many locations without a clear owner of the data or processes for keeping the data in sync
- Data quality issues cannot be relied upon to make decisions
- No single view of our customers and our interactions with them
- Misunderstanding about what the data actually means
- Difficulty finding data
- Difficulty integrating data with related information to tell a better story or uncover insights
- Re-entry of significant amounts of data
- Inability to take advantage of the value contained within the data to make better business decisions

Where we are going

To be the best run government, King County will make decisions based on data. This includes analyzing data to determine the current state, analyzing options and forecasting potential impacts, and reviewing data to determine if the desired results are being accomplished. More and more business processes are identifying scenarios were data analysis is helpful to make current and ongoing decisions.

The need for information and the ability to analyze data is a significant business need that continues to increase in importance. An enterprise data management program is not about tools or technology first, but has, as its goal, improving the alignment of the organization's data capabilities to business goals, metrics, processes and desired future state. It can be continuously implemented, over time, increasing the ability to accomplish business goals. To do so, data management principles, standards, and processes will be implemented as efforts to update and rationalize applications are undertaken, the appropriate data management practices can be put in place as part of those projects.

The following enterprise data principles will guide our actions initially:

1. Data duplication should be minimized
2. Data should have a data steward (care taker) and an owner (decision maker), who are responsible and accountable
3. Data should be available to the broadest appropriate audience
4. Data used by more than one department should be considered enterprise data
5. Data should be protected from loss, damage and unauthorized access and use
6. Approaches and techniques to improve data quality should be proactively incorporated in the design ad capture of data
7. Data should be assigned a classification to guide appropriate use and protection
8. Each piece of data should be uniquely identifiable to distinguish it from other similar data
9. Data should be provided as a service to client systems
10. Data is an asset with value to the County and should be managed as such
11. Data is available for appropriate use

These principles will help make decisions around how an enterprise data management program is shaped, and how projects should implement various data components. The following strategies should also be pursued as appropriate as part of the Data Driven objective:

- Develop an enterprise Data Management Program to provide standard practices and tools for good enterprise data management.
- Create a desired future state and architecture for enterprise data so the projects along the way can help to actualize the future state. A long term road-map should identify needed actions required to arrive at the desired future state.
- Incorporate data management best practices and standards into our application rationalize methodology and make data modernization a critical component of our future state application architecture.
- Build enterprise data services for commonly used data (such as name and address) to provide consistency across our application portfolio.
- Identify and implement standard analytics, visualization, and dash boarding tools to enable direct user access to data and information - with no IT involvement needed when commonly using the tools. This is a long term vision. Prior to a self-service approach being viable, the data must be ready. This means it is high quality and accurate, is well defined so there is no confusion about what the data is, when

it was created, and by whom; is appropriately maintained so conflicts are avoided between reporting and processing systems; and is appropriately classified and secured.

- Increase understanding, visibility, and consistency of data used to support business decisions and insights through availability of business friendly metadata (data dictionary) information describing data sources.
- Build data integration hubs for use across departments and agencies in order to more effectively share common data, reduce redundant data entry, and enforce business rules around the use of data.
- Separate reporting data from transaction data where needed to maintain performance. Design the framework and architecture that best supports future reporting needs. Build out the needed data design to optimize data for reporting and analytics. Manage data quality, definitions, and business rules to present consistent, trusted data to support analytics and BI Reporting needs
- Build out the needed data storage as part of projects and driven by clear customer needs.

Appendix D provides a more comprehensive overview of our overall data management strategy going forward.

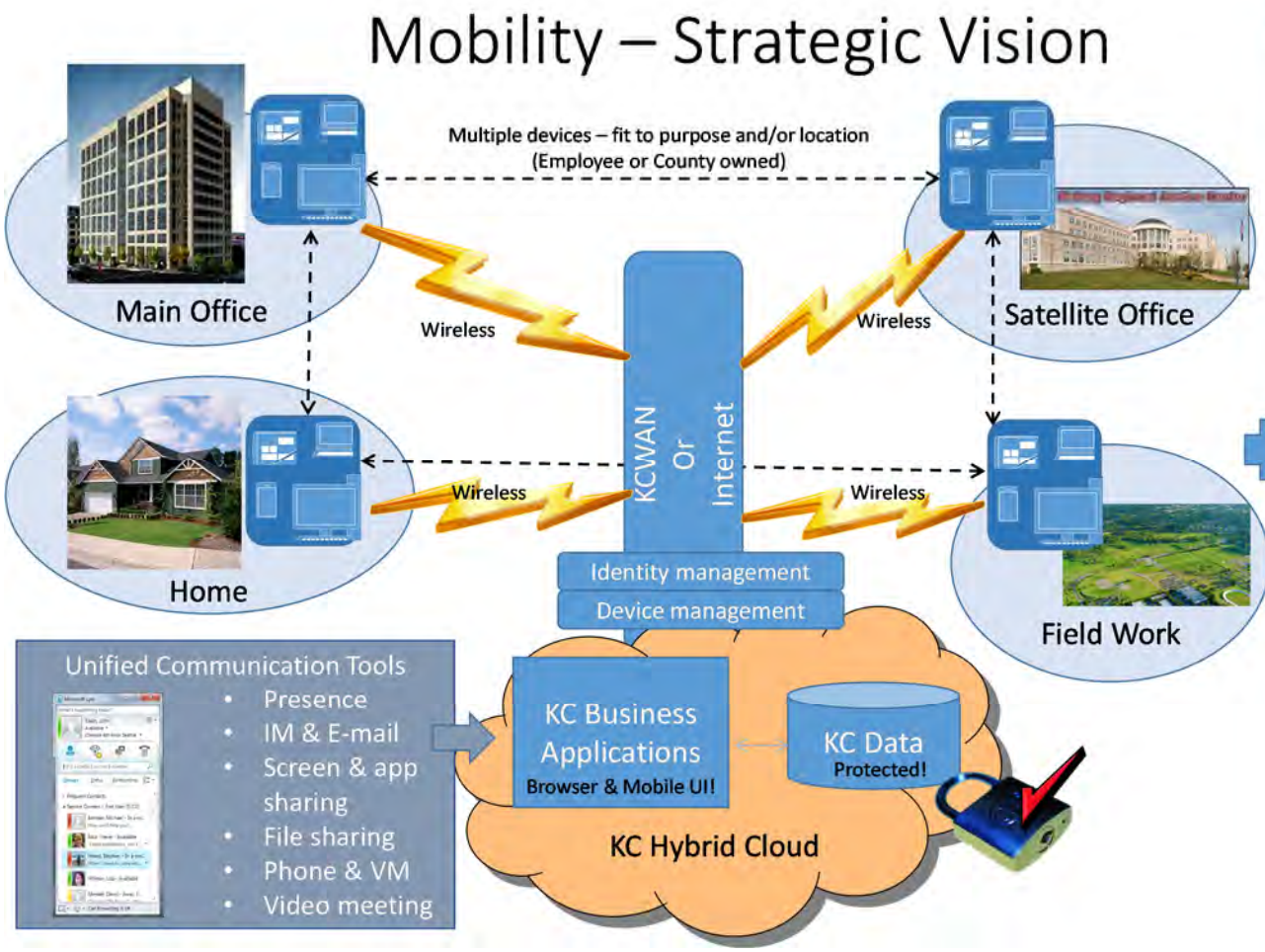
IT Mobility

	Objective	
1	**IT Mobility** 	Free residents and employees to interact and transact business when and where most appropriate and convenient "Reducing the need to travel speeds the delivery, convenience and relevance of our services"

Business/Customer Value and Benefits

Accomplishing this objective is expected to provide the following benefits:

- Redesigned business processes geared towards customer service and overall efficiency
- Increased resident convenience when accessing services
- Reduced costs related to staff moves from reduced/eliminated re-wiring and space consolidation related to open concept
- More collaborative, open, dynamic office space and working environments
- Increased business and IT productivity



- Shared Documents from anywhere – 1 version; multiple, simultaneous contributors
- Robust identity for everyone (not just employees)
- Multiple devices fit to purpose and user agnostic
  - (anyone can log on and use effectively with the right credentials)
- In-line to On-line
- Same apps and data for employees / citizens
- More data in motion to more places – secure it!
- Change business processes and workflows to take advantage of mobility and digital government

Past and Current Progress

As part of the last strategic information technology plan, significant progress was made around infrastructure supporting IT mobility.

- King County's **hybrid cloud** environment has been implemented and is operating at a significa price reduction to customers when used correctly. This includes multiple environments each with differing characteristics and related cost implications depending on the needs of the application system. The three primary components include our virtual private cloud (also cal the SVE for Server Virtual Environment), the virtual public cloud provided by Amazon Web Services (AWS), and vendor hosted applications (also called SaaS for Software as a Service). Systems hosted in the hybrid cloud enable users access to systems anywhere, anytime.
- Significant **network upgrades** including wireless access from many locations enabled access t services via the internet.
    - A standardized remote access tool for employees which will see reduced utilization a content is moved to the cloud and is being replaced by personal or public internet access
- **End-point devices** – Employees are now able to access their email and many applications utilizing either county owned or personally owned devices. This access is controlled through mobile device management software to protect the integrity of county data.
- **Collaboration Tools** – The ability to attend online meetings from any location, communicatio routed directly to your device (this includes instant messages, emails, phone calls, and presen status for the user and all other employees), document sharing, editing and access are all nov standard practices regardless of where you are sitting.

Where we are going

Where an employee sits should no longer have an impact on the ability to perform work. In fact, in m cases, it may improve their effectiveness by freeing them to work more closely with customers regional partners. While there is still remaining mobility expansion for employees, the mobility focu turning outward providing increased IT mobility options to the general public and an improved dig experience. This includes the need to continue to build out the digital access to services wh appropriate.

Strategies which should be followed to meet this objective include:

- Business processes continually improved to take advantage of the mobile capabilities employees and the mobile needs of residents.
- Laptops as new standard device for most employees. This extends mobility options to most st even if infrequently used. It also eliminates the need for end-point wiring in new buildings or wiring in existing building due to cube changes – a significant impact considering the more t 200 current county office locations.
- Expansion of IT mobility focus from King County employees to include King County residents, w will use our apps and services more and more from their own mobile devices. This includes:
    - Introducing more mobile apps and smart phone friendly web applications, with modern applications digestible from any end-point device
    - Improved identification of users and what they should have access to
    - Increased security of data in transit to increasing mobile locations

- Increase ongoing reliability and coverage of Puget Sound Emergency Radio Network (PSERN) in support of expanding, denser population throughout more of King County's large geographic boundaries.
- Increased mobile access by residents to transportation information and options making regional transportation more seamless.
- In-line to online – King County will do its part to reduce the need for customers to travel to use the government services it provides. The intent is not to replace other channels, but to supplement them for those who prefer an online option or who have difficulty in traveling.
- **Identity** – There will be a significant expansion of users we need to identify correctly as we move to expand access to services to customers. This requires improved ability to identify users regardless of where they are connecting from, and to only authorize access to appropriate services.

Effective Digital Systems

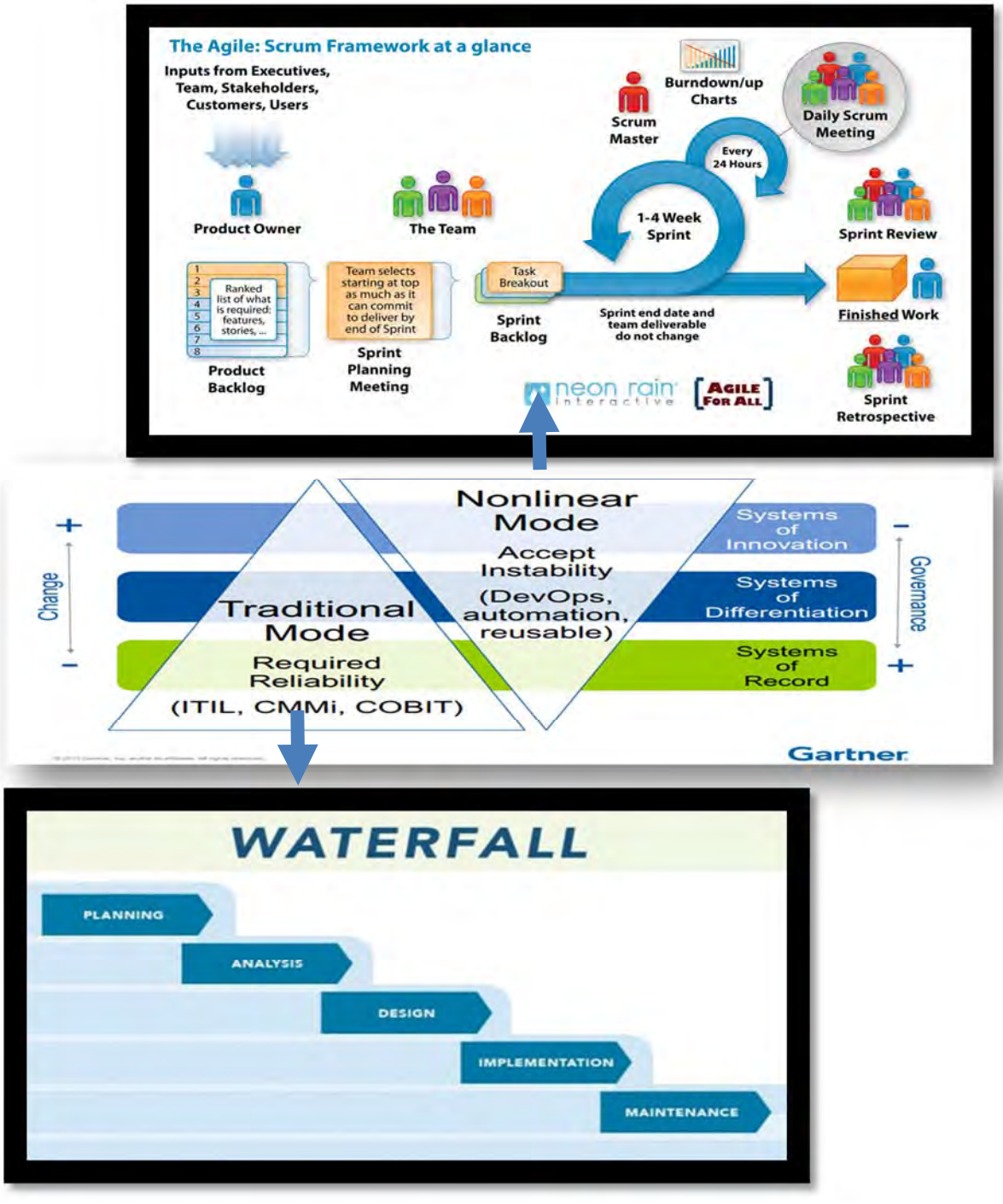
	Objective	
1	**Effective Digital Systems** 	Increase the value to customers by providing high quality digital systems to better meet their needs using standard components and continuous process improvement "Timely, standard processes & components, value-added, equitable, planned & architected"

Business/Customer Value and Benefits

Accomplishing this objective is expected to provide the following benefits:

- Capturing continuous improvement in the form of systems with higher quality, lower risk and better fit to customer needs
- Maintained systems are less likely to fail and have a lower TCO (Total Cost of Ownership) through efficiencies, standardization, re-use and the ability to meter and rapidly scale resources up or down as needed
- More agile and faster speed to implement business process changes
- Increased service quality due to increased standardization and reduced downtime
- Reduced risk due to increased redundancy, geographic diversity, and commoditized, on-demand scaling of needed assets

BI-Modal IT



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Past and Current Progress

Two objectives in the last strategic information technology plan were Technology Modernization and IT Service Maturity. Significant progress was made in modernizing the technology infrastructure, setting a foundation for the future and enabling us to turn our efforts outward towards customer value. Significant areas of modernization include:

- Data center consolidation
- Server virtualization
- Hybrid cloud computing environment
- Network upgrades and capacity expansion – including wireless
- Workstation device standardization
- Standard enterprise technology products including email, office document creation tools, Unified Communications and collaboration tools (voice, IM, online & video meetings, desktop sharing, presence), document management tools (MS Office, SharePoint, records management, scanning), software packaging and distribution tools
- Service center consolidation
- Application portfolio management
- Replaced enterprise backup to tapes with backup to cloud

Progress towards Service Maturity was also significant and included:

- Adoption and implementation of several industry best practice methodologies including Information Technology Infrastructure Library (ITIL) for operational process management, Solution Delivery Life Cycle (SDLC) for the implementation of new system solutions, Praxis-85 for project management, and Enterprise Architecture for overall systems design including standard design reviews.
- Internal organizational alignment within KCIT to put us in a better position to create and standardize processes in the future.
- Increased role specialization to reflect the process utilized by best in class IT organizations and the adopted SDLC including:
    - Business Relationship Managers also calls Service Delivery Managers (SDM's) to focus on customer service and value from IT as valued business partners
    - Business Analysts (BA's) to focus on business requirements definition, ensuring business needs are met regardless of the technical solution utilized. This will be critical moving forward in order to take advantage of the best solutions to meet our customers' needs at the lowest cost. BAs also help customers look at their business processes and re-design them to increase effectiveness while utilizing standard solutions.
    - Architects at an enterprise and solution level to improve the design of our systems and better leverage standards and re-use of existing components.
    - Quality Assurance (QA) analysts to independently test that systems work as designed and meet the identified requirements.
- Shifting our service catalog and cost model to be product based instead of being based on headcount or other factors.
- Service health monitoring through visual management metrics established for each service.

Where we are going

Progress towards modernizing our applications was steady, but there is still a lot that needs to be accomplished. Focus is shifting from modernization to rationalization. In other words, we want more than just modern applications, we want applications aligned well with business need. We also don't want a lot of applications or tools that do the same thing. Ideally, an application that effectively enables a business process or function should be re-used throughout the organization and integrated effectively into workflows specific to each user. Rationalization also anticipates the need to make investments from a portfolio perspective that maximize the value of the overall portfolio. This means 'Pace-layering' our applications so that different types of applications receive investments over different life-cycles and potentially utilizing differing solution delivery methodologies (a bi-modal approach). Systems of record should receive different treatment than systems of innovation or even systems of differentiation.

Strategies that will be important to pursuing this envisioned future include:

- Modernize our emergency radio network so it continues to operate in a reliable, maintainable state well into the future.
- Rationalize our application portfolio to take advantage of our infrastructure foundation, better meet business needs, utilize standard information technologies including data management, identity and access management, platform services, hybrid cloud compute and storage, re-usable components/services, mobility technologies, geo/location services, business continuity, and desired customer service levels. This includes:
    - Develop an application rationalization strategy which clearly states the desired future state application architecture
    - Put principles and standards in place which guide projects towards accomplishing this future state
    - Identify minimum standards required to maintain applications so they remain modern and included as part of the base application service
    - Appendix C providers greater detail on our application rationalization strategy
- Continue to improve our maturity. The efficiency of IT and the quality and supportability of its products depends on mature IT processes and methodologies. Specifically:
    - ITIL – utilize data and specific target metrics to stabilize and improve initial core processes around incident, request, change, and problem management. As these processes stabilize introduce additional ITIL processes and stabilize them.
    - SDLC should be utilized on all rationalization efforts and projects going forward, regardless of size. The methodology is customizable based on needs. This will require continued shifting of resources into architect and QA roles.
    - Tune project management methodology (Praxis) to improve usability and integration with other methodologies
    - Evolve resource management practices to integrate with project plans and SDLC so resource allocation is clearer and resource conflicts can be more easily identified and resolved.
- Establish increased clarity around service levels for each customer facing service and within internal services to better establish expectations with customers and provide a dialogue for ongoing service improvements and related cost impacts.

- Increase our customer focus by improving existing customer satisfaction processes and extending them where appropriate. We need to continue to ask our customers where we are doing well and where we can improve.
- Increase overall strategic focus by participating in customer strategic planning and line of business planning and injecting IT opportunities and analysis into those discussions. IT will provide significant opportunities for strategic value as the communities we support continue towards a more digital society and economy.
- Directly contribute towards climate change efforts by reducing the overall energy footprint required by information technology.
- Continue to evolve strategic planning practices around Line of Business planning for each service to look at long term service changes needed to meet future customer needs.
- Define system continuity standards and mature the ongoing program to verify our ability to meet those standards – Include RTO (Recovery Time Objective) and RPO (Recovery Point Objective) for all systems in alignment with customer requirements
- Work with management and leadership to raise the priority of planning best practices and popularize at all levels.

Appendixes

Details provided in separate document:
https://kc1.sharepoint.com/teams/itc/Strategy/_layouts/15/DocIdRedir.aspx?ID=MVNJMYUWTD6V-615-155

Appendix A – Strategic Objective Future Scenarios

- **Digital Civic Engagement Scenario: Public comment on Strategic Plan**
- **Workforce Empowerment Scenario: Workgroup communication**
- **Data Driven Scenario: Data Management**
- **Data Driven Scenario: Analytics**
- **IT Mobility Scenario: Service Request via mobile app**
- **Effective Digital Systems Scenario: Rationalized Application**

Appendix B – Strategic Objective Outcome Measures

Digital Civic Engagement
- *Outcome 1: Broadband access*
- *Outcome 2: In-line to On-line*

Employee Empowerment
- *Outcome 2: Overall business process efficiency*

Data Driven
- *Outcome 1: % of data under data management / meeting standards*
- *Outcome 2: Data maturity model*
- *Future Outcome 3: BI inquiries/visualizations*

IT Mobility
- *Outcome 1: Mobile application usage Geo aware = bonus points?*
- *Outcome 2: Employees*

Effective Digital Systems
- *Outcome 1: Systems complying with standards*
- *Outcome 2: Service level performance*
- *Outcome 3: Phase gate compliance*

Appendix C – Application Rationalization Strategy

Appendix D – Data Management Strategy

Appendix E – Identity and Access Management Strategy

Appendix F – 2016 Strategic Technology Plan Update

Appendix G – SWOC's for Each Strategic Information Technology Objective

Appendix H – The Case for Building Digital Equity in King County

Appendix I – IT Industry Drivers

Appendix J – Table of Acronyms

Appendix K – Digital Equity Pro-Policy Agenda

Appendix L – The Case for Building Digital Equity in King County

2016 KING COUNTY INFORMATION TECHNOLOGY AWARD WINNERS

Josephine Wong accepts the Technology Champion award for her efforts in moving the operations for the Homeless Management Information System (HMIS) from the City of Seattle to King County while upgrading vendors. It is a great example of both regional partnering and being data driven in order to achieve better outcomes for the public!

Patty Klopp accepts the Technology Achievement award for the AFIS mobile fingerprinting project. New software gives officers the ability to search two prints against local, state and national AFIS databases and receive results in minutes. This is a great example of IT mobility enabling the officer to confirm ID quickly, on-site, increasing the time officers can remain on the street.

Information Technology Strategy – 'Enterprise Planned, Project Implemented'

Strategic Information Technology Plan 2016-2018
Appendixes

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Appendix A – Strategic Objective Future Scenarios

In order to better envision the intent and desired future state vision related to each strategic objective, descriptive use case scenarios are provided below.

Civic Engagement Scenario: Public Comment on Strategic Plan

Ralph saw a poster on the bus that King County is creating a plan to end homelessness and wants to make sure it addresses some of the issues he has seen firsthand. Despite being homeless, Ralph has kept a cell phone in order to be available for job interviews both by email and phone. He uses an app on his phone to read the QR code on the poster in the bus he is riding and is taken to a public town hall forum where he is able to get background information on the plan, read the components he is interested in, and make comments about the things he likes and dislikes. He also adds his desires for having free Wi-Fi and check-outable iPads for job searching at all homeless shelters. He also knows of several homeless high school students who could benefit from using the tablets to access their assignments and do homework using online textbooks and reference materials. These tablets are managed by King County staff utilizing mobile device management software which can be used to easily refresh the tablet for the next user. It also helps to find any lost equipment through geo-tracking and can automatically lock-down to protect sensitive data if needed. While registering his ideas, Ralph also signs up to be notified of updates on the plan and is reminded there is available space in both the King County and City of Seattle shelters he used last week, but not in the City of Renton shelter that he is hoping to move to.

Workforce Empowerment Scenario: Workgroup Communication

Ursala is telecommuting today to be able to focus on completing a report that is due tomorrow. She fires up Skype from her personally owned computer connected to her home Wi-Fi and quickly sees who is in and out today from her primary work group. Ursala needs information from a co-worker, Tom, who is available according to Skype, so she sends him a text and gets a quick response with the information needed. Upon review, Ursala has some questions, so she opens up the text into a call and asks the questions verbally. To answer the questions effectively, Tom brings up a document and shares it as part of the meeting so they are both looking at the same data. A dispute about the meaning of part of the document causes them to get the opinion of another member of the workgroup, Sheila, who is currently on a call so they set an alert for when she completes her call and continue their discussion. Tom starts updating the document as they agree on content in order to improve the clarity of what is communicated. The alert sounds and Ursula adds Sheila to the call. All three discuss the issue and agree on final edits together. These edits are stored before leaving the meeting. A version of the document is maintained automatically (behind the scenes) in case any information needs to be recovered from the last version, but this is unlikely. The record series has also been identified on the document so it will be stored as a link in the records management system until it is destroyed automatically at the appropriate date in the future.

Returning to her original report, Ursala still needs information on code compliance but doesn't know who to ask. She does a search in Skype using the word 'code compliance' and finds several appropriate

code enforcement officers. One is available. After a quick call, Ursala has the information she needs to complete her report.

At 2:00, Ursala joins her regular team meeting, using video so others can see her facial expressions in addition to hearing her voice – making the interaction much more beneficial from an overall communication standpoint. She comments on several areas of a proposal that a co-worker is preparing and she shares a graphic she created for use in the proposal. The group likes it and the graphic is sent to the document owner who adds it before the meeting is over. Ursala spends the rest of the day finalizing her document. When complete, she sends a link to the document via email requesting electronic comments and edits to several co-workers and external collaboration partners (non-County employees). Comments and edits are all entered over the next few days to a single version of the document so Ursula won't have to collect or track responses. Reviewers are also able to comment on the comments and edits of others, improving them as well. These edits are also tracked automatically so it is easy to see who made which comments, and Ursala can follow-up with the appropriate person if there is need.

During the day, Ursala gets alerts for the instant messages and emails she receives and is able to respond immediately. She particularly likes the alerts announcing new documents for her to sign as part of the department's new purchasing process. Her approval is documented and the form is automatically routed to the next approval level if needed based on the size of the purchase or to the purchasing staff once all approvals have been received. She is easily able to go back and see any approvals should she have a need to in the future.

Ursala splits the time she would have spent commuting by cleaning out her emails and then getting an early start on dinner!

Data Driven Scenario: Data Management

The recently modernized case management system is planning to go live in two weeks and a readiness review is being performed. For the data portion of the readiness review, Hoang, the data solutions architect on the project, is verifying the system complies with all standards.

- Data ownership was clarified early in the project and the data owners as well as key data users have met regularly in governance meetings to resolve questions on who can update what data and when. The systems permissions appropriately enforce these rules. Users were involved in clean-up efforts needed prior to conversion to improve the quality and reliability of the data. Owners then validated data quality prior to going live.
    - Check.
- The logical and physical data models were created as part of the design and are accurately reflected by the test data structures in use. Performance for both the transactional and reporting elements of the system have passed the load tests performed on them. Synchronization of data across the transaction and reporting environments (utilizing enterprise ETL scheduled updates) also meets the requirement of near-real-time reports (refreshed every hour), and back-up and recovery tests have also met their RTO and RPO objectives. Data fully reconciles across all systems.
    - Check
- The data dictionary has been updated with all of the meta-data components needed to effectively include this data in the enterprise analytics environment. During acceptance test, key users from the business sponsors organization were very excited to see the integration of this data with other data currently available through their BI analytics tool. All pre-defined

management reports are an improvement over the old reports due to new integration of external data. Data sensitivity has been classified at the field level, enabling easy export to King County's open data platform where only public data will be made available to the public. Roles have been defined for users through active directory to restrict the analytics tool to only show the information a user has been authorized for.
    - Check
- Integration with the customer file (CRM) has verified appropriate activities are available through CRM with appropriate credentials, enabling multiple roles to better see the entire interaction with affected individuals.
    - Check
- User screens are pre-filled with appropriate data, and look-ups occur in real-time where appropriate when data is being entered to both validate and pre-fill additional fields like state and zip code. This minimizes the amount of data that needs to be entered and reduces data entry errors. Potential duplicates are flagged for investigation so the quality of on-going data stays high.
    - Check

Data Driven Scenario: Analytics

Marcella has recently implemented SharePoint workflow to support a paperless new hire on-boarding process. She is especially interested to see if the automated approval processes are improving. She has metrics from last month for "days to approve" and sees that the average time for all approvals went up. As she drills into the several types of approvals, she see that space planning approvals increased from 3 to 8 days on average. In her efforts to discover "why" this increase in space planning "days to approve" is occurring, she attempts to contact the primary Space Planner for her department via Skype and discovers he/she is on extended vacation. Further research leads to the discovery that the SharePoint workflow approval process was not configured correctly since there were no proxies or alternate approvers identified should the primary approver not be available. The workflow configuration is corrected and now alternate approvers are notified if the primary approver has turned on their out-of-office notifications. Marcella also adds an additional "alert" option to the "days to approve" metric in her analytics application. This "alert" automatically notifies Marcella whenever a "space approval" request exceeds the three day threshold. This automated KPI (key performance indicator) alert now allows Marcella to focus on other workflow bottlenecks and not be concerned about the space planning approvals until she gets an "exception" alert. She takes a video of this updated process and saves it to the internal processes team SharePoint site for others to learn/refresh when needed. This is included as a help link from within the workflow so it can be accessed 'in-flight'. She also shares the video directly with the two staff identified as proxies. A month later, Marcella again reviews her numbers and is happy to see she has indeed shortened the time to hire based on these adjustments.

IT Mobility Scenario: Service Request via Mobile App

While commuting to her job in downtown Renton, Sandra is frustrated by a pothole that always seems to cause her coffee to spill out of its cup as she pulls out of her driveway in the morning. Her co-worker says she should report it, so before getting into her car, Sandra downloads the KC Pothole app onto her iPhone and starts it up. She takes a picture of the pothole and sends it to King County. The application knows the geo-location and sends it along with the request. The request is automatically received by King County's 311 application which stores the interaction in the customer file and sends a work order request to the roads maintenance system, which sees the request and automatically schedules repair

for the next time a crew is in the neighborhood. The scheduling system then automatically notifies the 311 system of the scheduled repair date which, in turn, sends a text to Sandra as she requested so she knows when to expect the pothole will be filled. The 311 system also sets an alert for follow-up if it doesn't receive confirmation of completion within a week following the due date.

Effective Digital Systems Scenario: Rationalized Application

Young is monitoring her request log and sees a new request from one of her biggest customers to significantly upgrade the vehicle maintenance application she is responsible for. She reads the justification associated with the request and looks for any similar, outstanding requests. She notices there are several outstanding service requests for minor enhancements which could be grouped into a release with this request. She also sees two identified problems with this application that have been deferred until the next release. Young does a final check to view the rationalization assessment that was performed six months ago and sees it has been targeted for modernization. This most likely means it doesn't fit the business need very well and/or was built on components that no longer meet current systems standards designed for maintainability and currency.

After reviewing all of these records and reviewing some of the components of the system, Young provides an initial recommendation that a project be created to modernize the application and include the outstanding enhancement requests as requirements for the new system. She includes a comment that a mobile, geo-aware interface could enable the business processes to drastically change and improve. She submits this proposal to the project queue for prioritization against other efforts, and assumes based on the current backlog and her knowledge of this project's impact on the business, a project will be scheduled for the next quarter's resource plan. The project will have a project manager, a business analyst, application and data solution architects, integration and SOA engineers, a quality assurance engineer, and a trainer. When the project is executed, it will progress through several phase gates to ensure the quality of the plans, designs, construction/integration and support readiness fit to business requirements. Young will most likely participate in the later stages of the project so she is fully ready to support the new application once it is launched. She looks forward to this project as she knows the customers will benefit greatly and she enjoys the collaboration between the many team players each contributing in their respective areas of expertise.

Appendix B – Strategic Objective Outcome Measures

Civic Engagement

Accomplishing our strategic objective around civic engagement should lead to several expected outcomes. In general, residents should be more involved with their local government, leading to public policy decisions that better reflect their needs and desires. In order to gauge our progress, three high level outcomes have been identified that we will track over the life of this strategic plan.

Outcome 1: Online Public Outreach

King County strives to engage and inform residents in ways that are technologically convenient, including the KingCounty.gov website and countywide social media, email, and text message communications. Successful online public outreach allows residents to access and learn about King County services freely and easily, and to participate in local government through the innovative use of online tools.

Measuring our success in this area is a combination of growth, reach and interactions. Growth refers to the total number of social media fans and email list subscribers; reach includes website visitors and social media impressions; and interactions is the number of "clicks" people make on our content, including Facebook likes, retweets on Twitter, and clicks on newsletter links.

We have not finalized our measurements in this area but are considering the following:

- Growth, reach and interactions
  - Social media
  - Email lists and e-newsletters
  - Text messages
- Website visitors, pages-per-visit, time on site, etc.
- Public feedback submitted via online tools

Outcome 2: Broadband access

In order to utilize digital channels for civic engagement, residents need to have an adequate connection to the internet as well as devices that connect to the web and the knowledge of how to use them. Broadband access at home has been identified as the best way to track this capability.

- Baseline: 84% of homes in King County with broadband access
- Target: 90% of homes in King County with broadband access

*Outcome 3: Electronic Payments - In-line to **Online***

The opportunity for online engagement is limited by the number of services delivered by King County that a resident can engage with directly online. This metric will focus on the percentage of financial transactions conducted online as these tend to be activities that provide significant advantages to residents. Advantages include time saved by not having to commute in order to conduct the transaction; convenience of transacting when and where desired; faster transaction turn-around by not having to wait in lines or commute; and possible money savings on things like commute costs (parking, gas, or bus fare) or mailings.

- Baseline: 32% of payment types have some form of electronic payment
- Target: 75% of payment types have some form of electronic payment
- Future Target: Determine cost to accept cash, check, and electronic payments respectively in order to drive towards low cost option given customer satisfaction remains at least even. Chart savings over time.

Workforce Empowerment

Outcome 1: Implementation of our Workforce Empowerment Roadmap

Ensuring that we are able to deliver on our workforce empowerment vision is essential to realizing our customers request to more fully leverage the many tools that we have in place. The roadmap is focused on better engaging and supporting agency needs in utilizing IT investments and includes key alignment with people, processes, and systems.

- Baseline: TBD in 2016
- Target: Stay within three months of road map's original plan

Outcome 2: Overall business process efficiency

The end goal for the workforce empowerment objective is to have IT customers who are more effective in performing their business processes because they are effectively utilizing the powerful IT collaboration and communication tools available to them. Business process improvements can and should be monitored for efficiency and quality gains through their line of business planning and visual management metrics. To determine its impact, we can begin by measuring the utilization of the different collaboration tools, starting with SharePoint.

- How many agencies have provided training to their staff on platforms that realize greater business process efficiency (starting with SharePoint)
- How many partnership projects does KCIT engage with customers regarding a business process efficiency (starting with SharePoint – total # of engagements, including training department to support on their own)

Data Driven

Outcome 1: Data maturity model

Because of the many components of data management, KCIT will utilize a data maturity model as defined by a simplified, customized adaptation of a Gartner Data Management Maturity Assessment. This model will show us our current maturity and areas of focus, based on high impact priorities, in order to measure and improve our maturity. The enterprise architecture service will help lead and determine annual activities to measure progress in enterprise wide data management maturity.

- Baseline: Maturity level TBD in 2016
- Target: Fully increase maturity by one level over 3 years

Future Outcome 2: BI inquiries/visualizations

The end result of improving our data environment should be having data that is utilized more frequently by business staff in making decisions and/or confirming results. As our maturity grows, we will determine how to report on utilization and measure progress against this key outcome.

IT Mobility

Outcomes for this objective will target both external (resident) and internal (KC employee) mobility.

Outcome 1: Mobile Workforce

A mobile workforce means staff are able to access the information, people and tools they need to do their work from wherever they are working. Whether they are in their main office, an alternate work location (satellite, park, sensor location, etc...), at home or out of town. Key ways of tracking workforce mobility include

- Increasing wireless capacity within county-owned buildings
- Increasing adoption of mobile devices by county employees (tables/laptops rather than traditional workstations)
- Increasing the number of conference rooms that have collaboration space technology capabilities (wireless access; smart boards; etc.)

Outcome 2: Online Services/Mobile application usage

For residents, creating truly mobile applications enables them to interact with King County when and where they want is best reflected by the number of applications available to them in a mobile format. This means either as a webpage that scales appropriately to their mobile device, or as an application they can download to their device. We will also want to monitor usage (not just availability) as we mature to ensure they are meeting a need. In addition, creation of these apps can be done by county or citizen developers using open data. In either case, the impact on the resident should be the same. Because these applications are intended to operate from any location, providing context sensitive geo information should also be encouraged!

- Baseline: 7 mobile applications in 2016 and their associated usage (increased usage of mobile apps aids in civic engagement and has the potential to reduce costly in-person transactions)
- Target: 50 mobile applications in 5 years and increased usage

Effective Digital Systems

Outcome 1: Cloud Adoption

During the 2016 – 2018 timeframe, we will increase the implementation of cloud-based solutions in the delivery of services to customers. We will track our adoption of cloud technology of applications and services across the entire King County portfolio – including Executive and Separately Elected agencies and departments.

- Number and percent of applications and services in the cloud (by platform – CRM, Office 365, AWS, Azure, other SaaS)

Outcome 2: SOA Adoption

Establishing a strong Service-Oriented Architecture (SOA) approach to our computer software design is a key long-term strategic initiative for King County and KCIT. As King County continues to develop business strategies and both identify and align business services these defined business capabilities will be delivered by IT capabilities. Development of SOA services allows an IT capabilities to be delivered and reused in a well-defined and governed approach across the enterprise.

KCIT is just beginning its SOA program. Initial technology metrics include:

- Number of reusable services in SOA service catalog
- Services re-used by more than one system
- Estimated cost savings through service reuse (by not needing to re-create similar functionality)
- Platform consolidation through service reuse

Appendix C – Application Rationalization Strategy

King County

Application Rationalization Strategy

A business-driven framework for transforming the County's application portfolio

Greg Brant, KCIT Enterprise Architecture
Brent Veenstra, KCIT Business Solution Service

Draft v1.7 – in progress

https://kc1.sharepoint.com/teams/IT/EA/_layouts/15/DocIdRedir.aspx?ID=AZNJYF4SY3UY-11-798

Appendix D – Data Management Strategy

King County

Data Management Strategy

A business-driven framework for the management of the County's data assets

Tina Embree, KCIT Enterprise Architecture

Draft v1.0

https://kc1.sharepoint.com/teams/IT/EA/_layouts/15/DocIdRedir.aspx?ID=AZNJYF4SY3UY-11-775

Appendix E – Identity and Access Management Strategy

King County

Identity and Access Management Strategy - draft

The Plan for IAM in King County

King County IAM Workgroup and Enterprise Architecture
January 19, 2016

https://kc1.sharepoint.com/teams/IT/EA/_layouts/15/DocIdRedir.aspx?ID=AZNJYF4SY3UY-11-761

Appendix F - King County Overarching Enterprise Architecture Principles

1. The Business Results Focus Principle - We should focus on achieving business results that provide value to customers over process
2. The Customer Experience Principle – We should minimize the complexity of the customer experience
3. The Minimize Cost and Complexity Principle - Business Solutions should be adaptable with changing needs without significantly impacting cost or complexity for the organization
4. The County-wide Perspective Principle - The County's information and information Technologies should be viewed from a county-wide perspective
5. The Minimal Number of Technologies Principle - IT Services should be designed to minimize the number technologies to support
6. The Leverage our existing IT environment Principle - Potential new systems and technologies should be able to exchange and use information from the existing King County IT systems
7. The Integration Principle - Integration between applications should be flexible, standard
8. The Partnering Principle – The King County environment should foster interoperability with our partners
9. The Data Sharing Principle - Data should be available to the broadest appropriate audience
10. The Risk Management Principle - The organization should manage risks to the County's information assets
11. The Phased Approach Principle – Solutions should be implemented using an approach consisting of a number of small, well-defined phases

More information on how to use principles and their rationale and implications are available at:

https://kc1.sharepoint.com/teams/IT/EA/_layouts/DocIdRedir.aspx?ID=AZNJYF4SY3UY-11-397

King County Information TECHNOLOGY

King County, Washington

Strategic Technology Plan 2013 – 2015

2016 Update

April 2016

Table of Contents

2016 Strategic Technology Plan Update

In 2012/13, the Department of Information Technology, also known as KCIT, developed and published the Strategic Technology Plan 2013 – 2015 which provides strategic direction regarding King County's information technology (IT). The plan identifies the most appropriate technology objectives needed to focus IT on delivering business value to our customers. The Strategic Technology Plan (STP) is publicly available on the King County website at: http://www.kingcounty.gov/business/oirm/governance/strategicservices/strategicreports.aspx.

King County Code 2.16.0757(A) requires the submittal of an annual update to the STP. This report provides an update on progress made since the inception of the plan. The strategic plan has been endorsed by the Strategic Advisory Council (SAC) and adopted by the King County Council.

A new strategic technology plan is being drafted to cover the 2016-2018 timeframe. A full strategic planning process was utilized to align our technology strategy with the County's current and future business needs. This has included input and guidance from our Strategic Advisory Council, which includes elected officials from all branches of King County government as well as external industry expert advisors. In addition, business and information technology leaders throughout county government participated in formulating future direction. Performing an environmental scan that includes King County's strategic and line of business plans as well as information technology industry trends has also helped to set the stage for the technology strategies needed to carry us effectively forward through 2018.

King County's Strategic Technology Plan

KCIT is committed to increasing the value technology brings to our internal business partners and to King County's many and diverse external customers. This means ensuring the accomplishment of our information technology strategies positions and empowers our partners to accomplish their goals as stated in the King County Strategic Plan as well as in tactical and operational line of business and agency plans. It also means we can respond quickly with our partners to changing business needs and new technology opportunities can add value to business operations leading to service improvements for our customers.

We believe this is best accomplished through open, transparent, efficient, effective, and service-focused planning and operational activities. See Appendix A - Strategic Technology Enterprise Plan for a one page summary of strategic efforts contained within the Strategic Technology Plan 2013 – 2015. This summary illustrates how KCIT services align with customers as well as technology domains. It also shares strategic initiatives across several years in all of our service areas. This provides context for how our efforts fit together to help meet our technology and business strategic goals and objectives.

Measuring Progress

Measuring strategic progress is based on looking at movement towards long-term goals that have been identified for strategic technology indicators. There are 30 indicators aligned with the four technology objective areas defined in the Strategic Technology Plan. Five of these indicators are focused on information assurance and securing our information technology environment. This reflects not only the strategic importance King County places on securing protected information and business processes but also the needed integration of security concepts in all that we do.

Overall Results

As is the case with any long-range plan, changes that occur over time will influence the value, priority, and feasibility of different components of the plan. Each of the 30 indicators is at a different stage in progressing towards long-term goals. Some indicators have yet to define how progress will be measured. Others have determined baselines and long-range targets. Still others are now measuring progress towards targets.

In this year's update, minor changes to the strategic outcome measures have occurred as a natural part of evolving the measures to be meaningful and drive desired results over time. For the measures still being defined, progress has not yet enabled fully defining measures to clearly align with goals to effectively drive outcomes.

Chart 1 – Strategic Indicator Progress below summarizes the progress-to-date for all strategic technology indicators. The legend for the table describes the icons that are utilized to provide a visual status update for each indicator. In addition, Appendix B – Strategic Technology Indicators by Objective provides more detail for each indicator including expected benefits the indicator aligns with, a chart to show progress over time, and notes on progress, obstacles impacting progress, and additional information where appropriate.

Progress related to eGovernment, mobility, maturity, and technology modernization of infrastructure have all made significant advancements. Progress related to modernizing applications has been slower, but has also seen substantial positive progress.

Of the 30 indicators

- three exceed long-range targets
- twenty-three are making positive progress at or above expected levels
- two are making progress, but at a rate slower than initially expected
- two are working towards defining appropriate measures

Strategic Technology Indicators Chart

eGovernment	Mobility	Technology Modernization - Applications	Technology Modernization - Infrastructure	IT Service Improvement (Maturity)
Website vulnerabilities reduced over time	Percent of mobile devices under active management	Percent of applications having identified appropriate data sensitivity classification	Security scorecard shows continuous improvement over time	Percent of Information Assurance (IA) roadmap items that are completed
Percent of business services transacted online	Increased wireless usage	Application counts by type	Percent of worksites with wireless access	Percent of services with defined methodology/ best practice
Web customer satisfaction (resident survey)	Number employees with Unified Communications (UC) capabilities	Increased usage of Office 365 (O365) platform (PaaS)	Application counts by hosting platform (mainframe, server, SVE, VPC, public cloud)	Percent of projects involving technology accomplishing expected benefits
Effectiveness of online messaging and responses	Percent county owned devices that conform to Workstation Service standards / built with standard image	Service Oriented Architecture (SOA) utilization	Percent of county owned server devices running current preferred Operating System (OS) standard	Number of current technology roadmaps
Utilization of open data	Percent of applications delivered through a browser or mobile interface	Percent utilizing standard components	Percent data center square footage that is utilized by county verses lease tenants	Number IT services with service roadmaps
Expand internal participation in providing open data	Percent of overall computing that occurs in a cloud (virtual) environment	Percent of applications conforming with application data standards	Percent of systems receiving full, end-to-end monitoring	Track and report the ratio/mix of KCIT positions

Legend - Strategic Technology Initiative Status

Measurement process not yet fully defined	Actuals measured but progress slower than expected	Actuals measured and progress meets or exceeds expectations	Actuals meet or exceed long-range (2023) targets

Security Focused Indicator

Chart 1 - Strategic Indicator Progress

Results by Technology Objective

The following sections of this report describe overall progress related to each technology objective and highlight significant areas of progress and/or areas of increased focus.

eGovernment

The eGovernment objective has identified six indicators, five of which are making expected progress towards their target goals.

These indicators show the experience of our residents continues to improve when interacting with us electronically. It's taking less time to find what they are looking for on our website and they also can access our information on their preferred device more. In addition, more information is being shared through electronic subscriptions – with almost 1 in 7 residents signing up. Social media also continues to provide more targeted information, with a 44 percent growth (down from 51% percent last year) in all social media page views in 2015.

The remaining outcome with below expected progress is around system vulnerabilities. New Payment Card Industry (PCI) requirements have added a significant number of new vulnerabilities. Continued focus is needed to reduce vulnerabilities knowing new threats are being developed more rapidly than in the past. Maintaining a strong vulnerabilities posture is critical. Also critical is our continued progress towards systems that utilize only standard components thereby reducing the exponential effect on vulnerabilities that multiple technologies can cause.

Some of the near-term areas of focus elicited from a recent event include:

- Ensure anti-virus is on ALL endpoints.
- Accelerate consolidation of the endpoint security management console to align with KCIT's service structure. This applies to workstations and servers and will improve standardization.
- Select, architect and implement advanced threat protection. Advanced Threat Protection systems accelerate identification and containment of malware attacks.
- Engage a local consultant to perform forensic incident response analysis.
- Eliminate any unnecessary open network shares and eliminate drive mappings. Network shares provide users and systems access to resources. Drive mappings give these resources an alphabetical designation.
- Address storage of files on local drives through accelerating the adoption of OneDrive for all file storage and the migration of .PST (email storage) files to network archives.
- Identify a process and/or system to ensure 3rd party applications are patched.
- Review and update policies and standards and ensure compliance.
- Block web advertisements. This was attempted when the original URL filter was implemented. Political pressure from agencies such as the County Council and others removed the blocking due to a change in the user experience.
- Decommission legacy remote access platforms (SSL/VPN, Go to My PC – no longer available as of April 1)
- Improve communication processes during an information security incident.

Mobility

All six strategic technology indicators for mobility are meeting or exceeding expected progress towards their goals.

Full Unified Communications (UC) capabilities have been deployed to all appropriate employees. This service includes both enterprise voice services as well as Skype for Business collaboration tools. Mobile Device Management (MDM) has also made great strides by fully rolling out to both managed and personally owned devices. Also important to mobility is increased usage of both private and public clouds to make applications available from anywhere. This includes the refreshing of the employee focused intranet onto a cloud platform, as well as our document collaboration capabilities. When combined effectively with mobile device management, employees can now access their work documents electronically from any location using their work or personal devices. As society continues to increase use of phones and tablets in their personal lives, these updates are important steps to empowering our workforce to be more productive, while also ensuring we are effectively stewarding the information we are responsible for. Significant progress has also occurred in the move to virtual servers, from only 25 percent at the start of 2014 to around 60 percent today.

Technology Modernization

The technology modernization objective has 12 strategic technology indicators identified, six are application focused, and six are infrastructure focused. Of these, all six infrastructure and four application indicators are at or exceeding expected progress. Major accomplishments include the decommissioning of our mainframe platform, the significant increase in utilization of our hybrid cloud services, standard cloud collaboration tools available to all employees, and a robust network that now transports voice messages and has the foundation in place for significant increases in wireless traffic.

There are still two indicators that have not yet been defined as they are awaiting our application rationalization strategy, which is currently under construction. Enterprise data classification and Identity and Access Management (IAM) will both be key components of our rationalization strategy going forward.

IT Service Improvements (Maturity)

The IT service improvements objective has six strategic technology indicators identified, five of which are making expected progress towards their target goals. Operational alignment efforts have completed with all KCIT staff now aligned by service rather than by customer. We expect this to have a positive impact on both customer service and service efficiency over time. Processes within each service are also maturing as we implement various on-going improvement efforts. Progress has been slowed in addressing our Information Assurance (IA) roadmap due to the inability to fund next steps in the roadmap including a broader employee education effort.

Appendix A – King County Strategic Technology Enterprise Plan–Updated April 2014

King County Strategy Technology Plan 1-Page Overview

Version 6.2
April 2014
Created by: John Klein

Customers and End Users

KC Strategic Plan

Public (individuals)

Regional Customers (Local Jurisdictions, other counties, other)

Internal Customers

Detention, Assessment, Human Services, Council, Health, Sheriff, Courts, Elections, Licenses, Parks & Resources, Development, Prosecution, Transportation

Providing World Class Technology Solutions To our Customers

Customer Service

Strategic Technology Plan
IT Service Center
Service Delivery Manager
IT Service Catalog
Service Level Agreement
Customer Satisfaction Surveys
Performance Measures

Primary Device / Supplemental Device

Now → Future

- **Desktop** – Standard, Power or Custom
- **Laptop** – Standard or Rugged
- **Tablet** – Desktop replacement
- **Tablet** – Adjunct
- **Smartphone**

Voice Device

- Wired Phone
- Headset connected to primary device (wired or wireless)

Device ownership & maintenance

- King County Always at your service – KC Only
- KC / Employee
- KC / Employee

Device Connectivity

- Wired
- Wireless

Device Modernization

- Match device to user needs
- Enable mobility
- Empower personal device use while protecting data
- Standard images & processes
- Hot Swappable devices

Network

(KCWAN, I-NET, Internet)

Unified Communications (Data, Voice, Video)

Replaced By → Voice Network

Security

- INTERNET – eGovernment Service Delivery
- Browser & Mobile Interface
- Standard office producitivity and collaboration tool

Application Architecture

- Security & Identify Mgmt
- User Interface
- Business Logic
- Data Layer
- Shared Services (SOA)
- 1. PAAS, 2. SAAS, 3. COTS, 4. Custom

Application Modernization

- Browser & mobile interfaces
- Move to single sign-on through Identity Mgmt. & consolidated Active Directory
- Design to leverage cloud
- Utilize shared services and modern achitecture
- Steer towards PAAS, SAAS, COTS, with custom as a last resort

Infrastructure Modernization

- Steer Solutions to Highest Value Platform (PAAS, SAAS, VPC, SVE, Physical)
- Commoditized, standardized infrastructure components
- On-demand scaling, end-to-end monitoring & Geo-diversity

Community Cloud

SVE at Sabey

King County Maintains – Software, Platforms, Infrastructure

Private Cloud

Multiple, interchangeable, Vendor Locations

King County Provides – Software,
Vendor provides - Platforms, Infrastructure

ADC in Olympia

Future replacement

Public Cloud

Standardize then Commoditize

Software

COTS Apps, Custom apps, Business Intelligence

Sharepoint, Executive Correspondence, Outlook 2014, Office 2013, Parks Volunteers, Custom apps, COTS Apps

Location 1 Lowest Rates/Latency
Location 2 Geo-redundant
Critical App Failover (BC/DR)

PROMIS, HIT, Portfolio mgmt, SAAS Apps

Platforms

Pre-Built Solution Components

.Net Dev Environment
Data Analytics Environment
O365
CRM
SharePoint

Infrastructure

Virtual Servers for running Applications and Storing Data

Physical Servers, Database, Virtual Servers, Standard Virtualized Environment (SVE), Move to SVE

Database, Virtual Servers, Vendor Virtual Environment (Like Azure or Amazon), SVE Replication

Database, Servers

Mainframe, Move to SVE

King County's Hybrid Cloud Strategy

PAAS

Platform as a Service

Vendor Provides – Platform & Infrastructure
HIPAA & CJIS Certified

SVE

Server Virtual Environment

With the SVE, KCIT acts as an 'internal' vendor, providing IAAS and PAAS services to KC customers
HIPAA & CJIS Certified

IAAS

Infrastructure as a Service

Vendor Provides – Infrastructure
HIPAA & CJIS Certified

SAAS

Software as a Service

Vendor Provides – Software & Infrastructure
Might be HIPAA or CJIS Certified

IT Business Foundation Services: Customer Support, Enterprise Architecture, IT Performance Management, Office of the CIO, PMO Coordination

IT Mandated Services: Information Assurance, IT Governance, IT Project Advisory Review and Oversight, IT Strategic Planning

Support Services: KCIT Business & Finance, KCIT Human Resources (*Includes Bond Repay & Central rates)

Additional Information

Goals | Objectives | Strategies | Indicators | Technology Roadmap | IT Services | Service Vision
Goal Progress | Objective Vision | Strategic Technology Progress | Capital Projects | Service Roadmap

KCIT Services

IT Service Center
- Consolidate into one IT service center – 2010
- Offer customer satisfaction surveys – 2011
- Analyze data to improve overall incident response performance - 2013

IT End-User Training
- Started in 2012
- Focus = business productivity tools
- See intranet site:
- http://kcweb.metrokc.gov/oirm/services/kcit/training.aspx

Business Analysis
- Started in 2012
- Service to projects or Agencies

IT Project Management
- PMO & Center of excellence
- PMM 2.1 and tools
- Dept. Review Boards
- Portfolio Management- 2012
- Streamlined oversight

Workstation
- Unified Communication (phone, presence, chat, video – all on single device)
- Standard hardware, image – 2011-12
- Remote management tools (SCCM, MDOP) – 2011-12
- Create gold image – 2012/13
- Office of the Future-'Hoteling'&Telecommuting
- ✓ 6 year Enterprise Agreement - 2011-2016
- Mobile devices phase II

Voice
- Countywide Telephony System Replacement – 2011-2014
- Implement Lync on-premise – 2011
- Automatic call distribution for call center upgraded - 2012

Network
- I-Net Modernization – 2012
- KCWAN 10G core upgrades - 2012
- Utilize/participate in local Consortium's - 2012 – 13
- Updated IP Address Schema - 2012
- Network Intrusion Detection System upgrade and integrated with firewall strategy – 2013
- MPLS implementation – 2013?
- Fully integrated with Utility Computing env.- 2013
- ISP-DMZ
- ISP – Intentet gateway filter
- ✓ Business Empowerment and User Mobility
- ✓ Systemwide Enhanced Network Design (SEND) for Health
- Unified Communications
- All types of communication (Voice, Video, Data) delivered through common network – 2011-2013
- Voicemail delivered to inbox – 2012
- Lync on-premise - 2013

eGovernment
- KC internet re-architecture - 2012
- Property assessment appeals-2012
- Public criminal case info - 2012
- On-line services Directory – 2013
- Enhanced 'Alerts' - 2013
- ✓ Sharepoint/intranet convergence–2012
- ✓ Vital Stats & MEO web portal
- ✓ Business case for online mitigation
- ✓ Health Information Technology (HIT)
- ✓ Electronic Medicine Administration Record (eMAR)

Technology Products
- Includes provision of Office suite, E-mail, Active Directy Lync, sharepoint and other collaboration and efficiency tools

Business Solutions
- TFS - Standard Dev Environment – 2011/12
- Implement SDLC – 2012
- Advanced Sharepoint hosting- 2012
- Portfolio Management -2012
- Post ABT archiving - 2012
- All Applications off Mainframe–2013¾
- ✓ Accounting system update – study and business process
- ✓ Jail management system study project
- ✓ Pretrial risk assessment planning
- ✓ Roster management system
- ✓ Designated Mental Health Professionals and Safety

Server, Storage & Database
- Government Cloud Computing project (provisioning of processing/compute, storage, back-ups, disaster recovery and support utilizing virtualization based on application needs) – 2012 - 2015
- Systems Monitoring & Management – 2011/12
- Add alternate DC resources to virtual pool–2012/13
- ✓ Hosted Environment Phase III
- ✓ Demographic Data Consolidation

Business Continuity
- Geo-diversity for Disaster recovery through cloud Strategy
- Re-evaluate critical application designations
- Provide High-availability options for requesting applications

Data Center
- Executive Servers in DC – 2011
- Remaining Servers in DC – 2012
- Move alternate DC to Eastern Washington – 2012
- Mainframe retired - 2013

Regional
- Regional emergency radio upgrade proposal approved - 2011
- 800 MHZ rebanding – 2013
- Distributed Antenna Network – 2012
- South Loop Microwave repl – 201x
- VHF/UHF narrowbanding -
- Map layers shared as open data – 2010

Mandated & Business Founation
- Implement IT Services catalog – 2011-2012
- Create SLAs, OLAs for all Services – 2011-2012
- Menu and true rates for service ordering – 2012-2013
- Provide HR services for KCIT - 2012
- Increase Countywide IT contracts - 2011
- Implement Enterprise Architecture program – 2011/12
- Service Management & Development in place – 2011/12
- Implement KCIT and related Budget updates - 2012

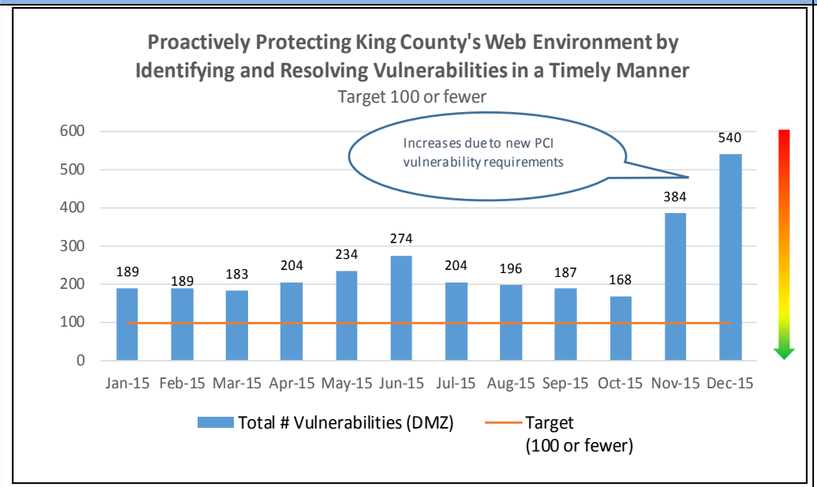
IT Services Legend
- End-User Service
- IT-IT Service
- Mandated & Business Foundation Services
- ✓ 2013 Approved Investments

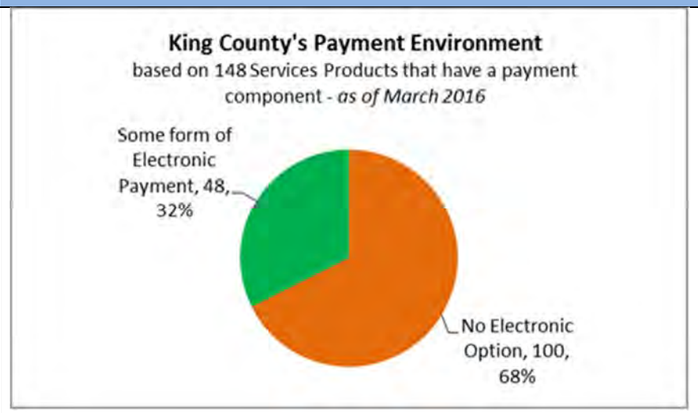
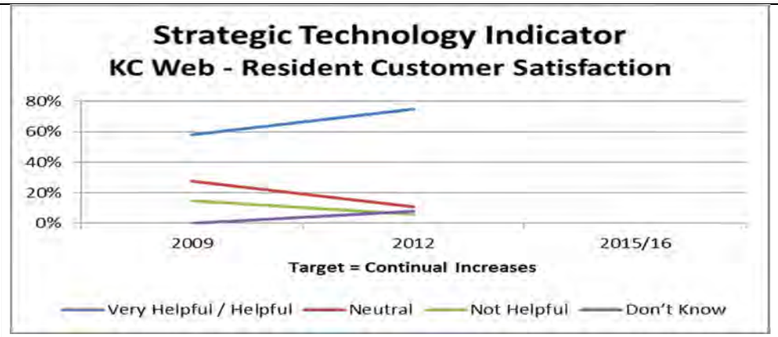
Appendix B – Strategic Technology Indicators by Objective

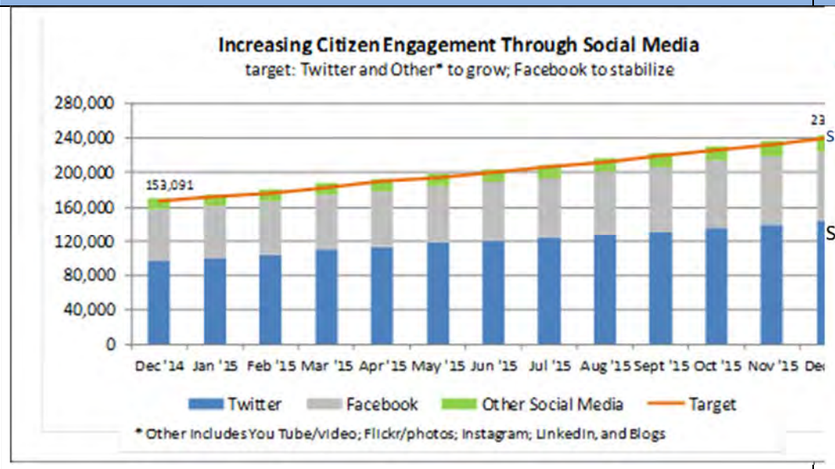
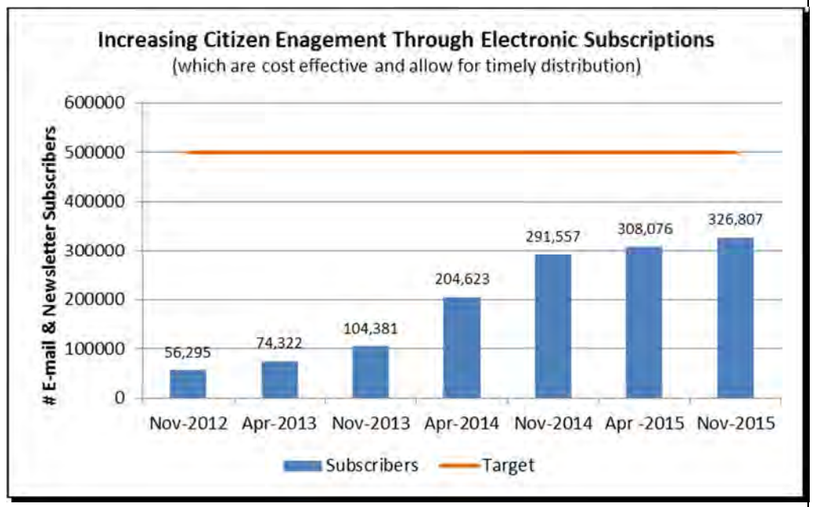
Technology Objective: EGOVERNMENT

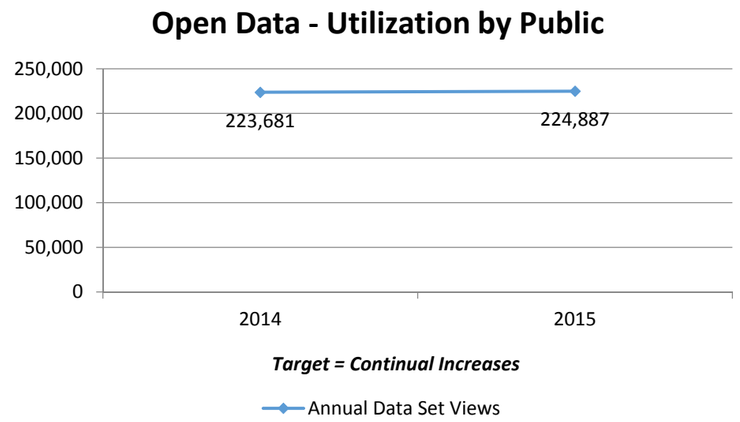
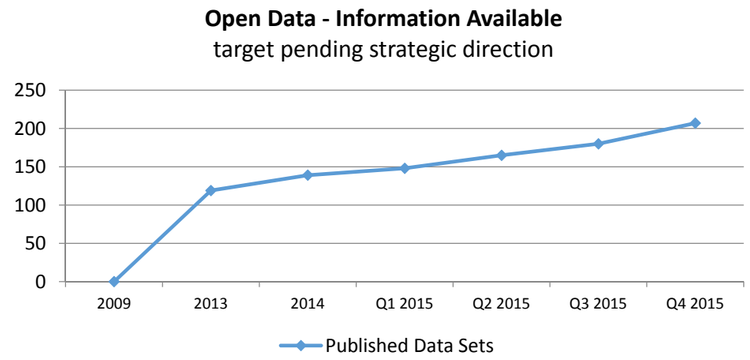
Improve service delivery to and interaction with King County customers by leveraging web and related social media technologies.

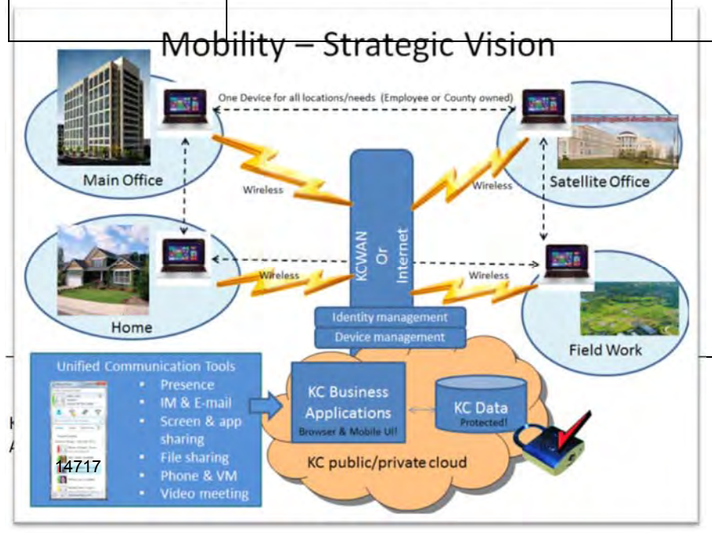
- Improved citizen value and satisfaction when transacting business with King County
- Improved access to King County services
- Increased citizen participation in government
- Greater transparency of government operations

Indicators	Benefit	Chart or progress	Highlights/progress	Hurdles
Website vulnerabilities reduced over time.	**Information Assurance** – Ensure online transactions are safe and secure.		 100 vulnerabilities was initially selected as a good long term goal given the many unknowns that continue to appear as threats. As we learn more about the volume of vulnerabilities over time and increase our understanding of statistical significance, this is proving to be a good stretch target. While KCIT made steady progress in Q3 and Q4 to reduce our web environment vulnerabilities, new PCI vulnerabilities requirements have led to a significant increase in vulnerabilities. On the positive side, our continued progress towards standardizing our environment helps to harden it and reduces the exponential effect multiple technologies can have on vulnerabilities. Our Chief Information Security and Privacy Officer expects to see a significant decrease in vulnerabilities by Q2 2016.	New PCI requirements

Indicators	Benefit	Chart or progress	Highlights/progress	Hurdles
Percent of business services transacted online.	Increases **online delivery** of King County business services to the public.		As stated in last year's metric, we have broadened this indicator to financial transactions throughout the County and their utilization of online payment options. This information is based upon research performed by the e-payments project. Currently, there are 48 services who accept online payments. This is roughly 32 percent of the different types of financial transactions that occur throughout the County.	A consistent payment process that can be used across different types of services. Prioritization by business leaders of e-payments as a valuable option towards reducing costs while also improving convenience and access for residents.
Web customer satisfaction.	**Ease of Use** - Improve the public's ability to easily find and transact the business services they are interested in.		In 2012, King County's website was 19 percent above the national average for resident satisfaction. A new resident survey has not been conducted since then. However, King County has re-architected our web framework since then making it easier to navigate and use on a broader range of consumer devices.	Due to the related expense and effort required, resident surveys are not conducted every year. Inability for various agencies and departments to convert their web content into the current enterprise standard which would lead to a more consistent user experience as well as more accessible and usable information across our website.

Indicators	Benefit	Chart or progress	Highlights/progress	Hurdles
Effectiveness of online messaging and responses.	Increase and improve **public engagement** using social media.	 	Online communications continue to increase. Our usage of the GovDelivery tool for online subscription services continues to grow rapidly, with 1 out of 7 residents subscribing. Some relevant statistics include: Social media stats: · 180+ total social media pages (up from 141 last year) · 257,000 fans and followers (up from 174,349) · 44 percent growth in 2015 across all social media pages (down from 51 percent) · 26 blogs totaling 300,000 page views in 2015 (up from 14) · 56 Facebook pages (up from 46) · 45 Twitter (up from 37) · 26 video feeds (up from 17) · 13 Flickr photo galleries (up from 11) Email/text messages across King County · 330,000 total subscribers reaching 1 in 7 county residents (up from 1 in 9 last year) · 11 percent growth in 2015 (down from 60 percent) · 500+ different topics that people can subscribe to · In 2015, we sent 12.3 million emails and 5.1 million text messages (up from 9.6 and 3.8 respectively)	We are finding increased social media accounts don't directly correlate with increased civic engagement or interaction. We are placing more focus on technologies that appear to be increasing engagement and involvement, such as Twitter. Language is also important and initial translation of some adds to increase awareness has generated significant positive response.
Utilization of open data.	Increase **openness** of information by publishing county data (which is not private/protected) for public consumption.		Growth of page views was relatively flat in 2015. A change in reporting process/tools makes it difficult to compare this data with	Some departments/agencies have protected information that should not be shared

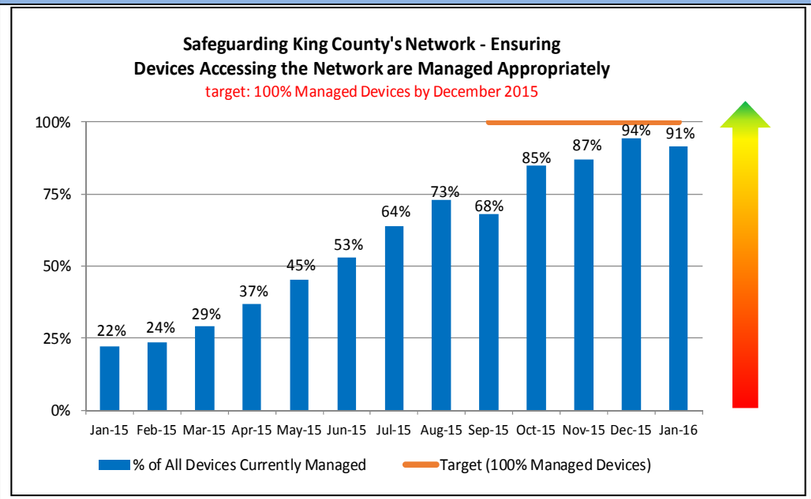
Indicators	Benefit	Chart or progress	Highlights/progress	Hurdles
			prior information. It has also caused us to look at whether page views are a valid way to measure utilization, as usage is trending towards applications (Like One Bus Away) that aren't reflected within page views. Initial data sets were first made available to the public in October of 2010.	openly with the public due to the sensitivity of the information involved.
Expand internal participation in providing open data.	Increase **openness** of information by publishing county data (that is not private/protected) for public consumption.		There are currently over 200 data sets posted for public use on King County's open data website. This number includes charts, applications, calendars and forms. A change in reporting process/tools also makes these numbers difficult to compare to prior data, though we are able to see more historical information than with utilization which isn't retained as long. Initial data sets were first made available to the public in October of 2010.	Some departments/ agencies have protected information that cannot be shared openly with the public due to the sensitivity of the information involved.

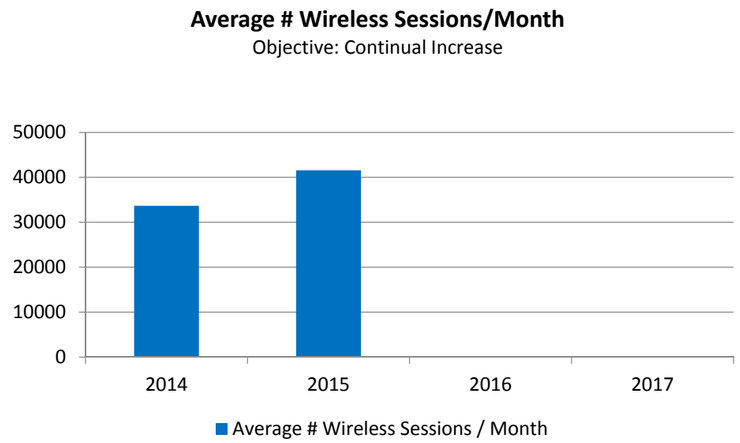
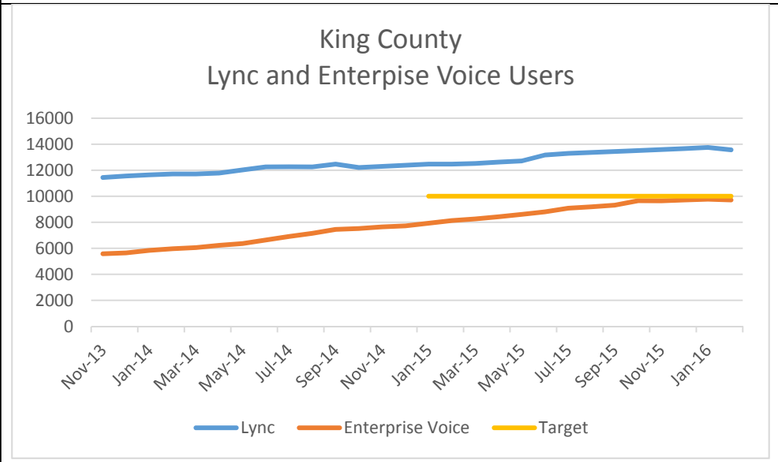


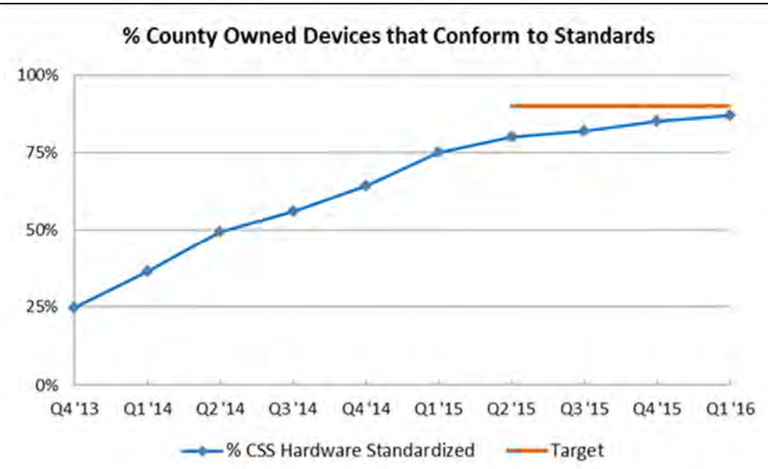
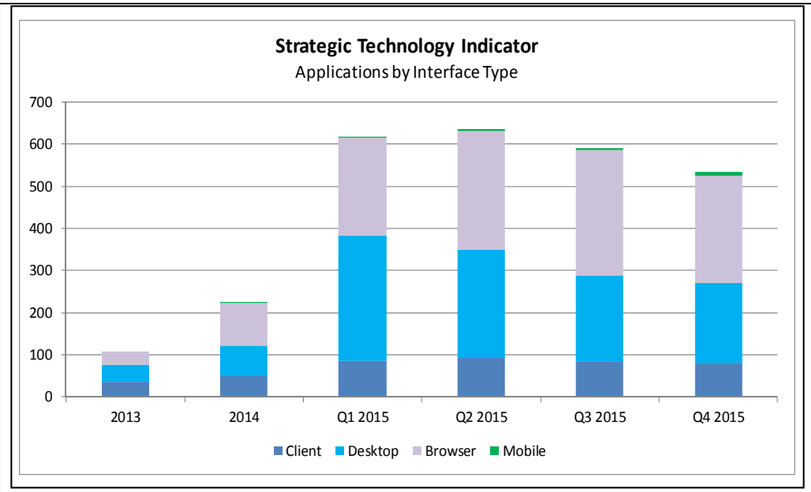
Technology Objective: MOBILITY

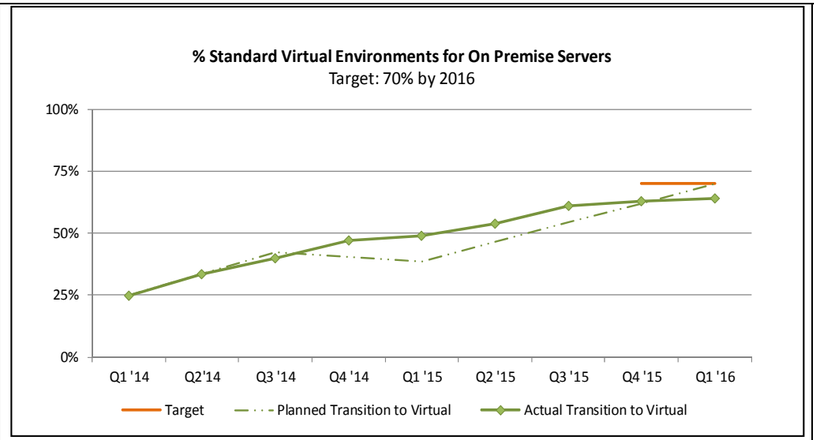
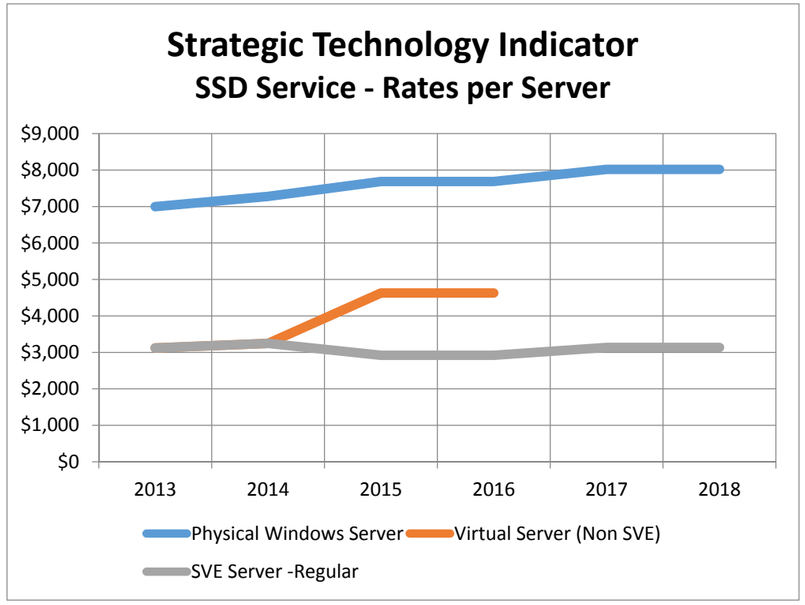
Free employees and citizens to interact and transact business when and where most appropriate and convenient.

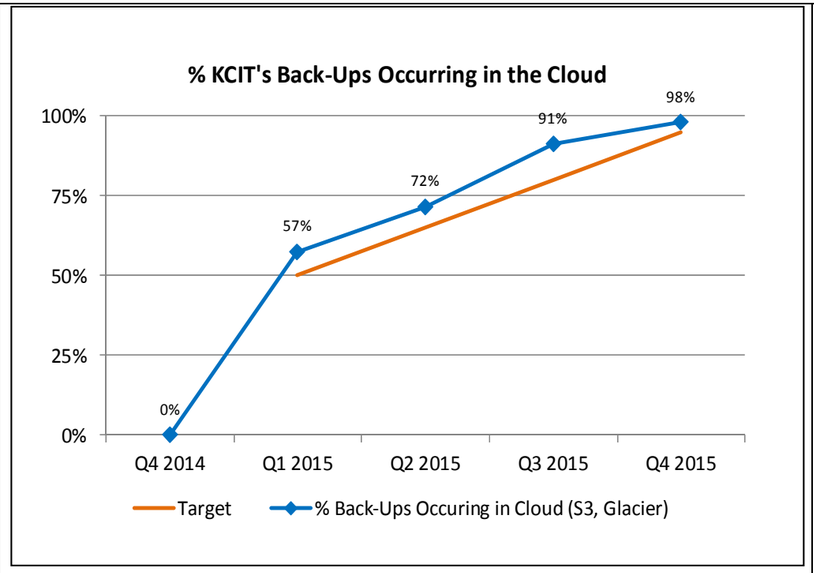
- Increased business and IT productivity
- Re-designed business processes geared towards customer service and overall efficiency
- Reduced costs related to staff moves
- More collaborative, open, dynamic office space and working environments

Indicators	Benefit	Chart or progress	Highlights/progress	Hurdles
Percent of mobile devices under active management.	**Information Assurance** – Ensure protected information is not at risk due to increased use of mobile end-point devices.		 A Mobile Device Management (MDM) system was piloted and implemented in late 2014. Options for implementation were based upon policy decisions involving business leaders focused on enabling their staff to be productive with mobile and personal devices, balanced between protecting sensitive data and complying with public disclosure and other transparency needs. Based on pilot results, the full program was rolled out countywide in early 2015. Measurement was performed on all county owned devices. Significant progress has been made through 2015, with 91 percent of devices managed in January 2016, this includes all county owned devices except for those in agencies who were granted exceptions - Council and PAO. Personally owned devices are no longer granted access unless they fully comply with our mobile device management policy and supporting systems – which means they are now 100 percent compliant!	If King County data resides on a device, then device management is needed to protect the data. If no data makes it to a device (as is the case with some applications like OWA - the Internet accessible version of the Outlook email application, browser based apps, and O365 SharePoint), then device management may not be needed. Many employees are reluctant to have their personal devices subject to King County policy. In those cases, employees can elect not to register their device. This choice will limit the type of access to information they are allowed which includes only use those tools which do-not place data onto their devices, such as OWA as mentioned above.

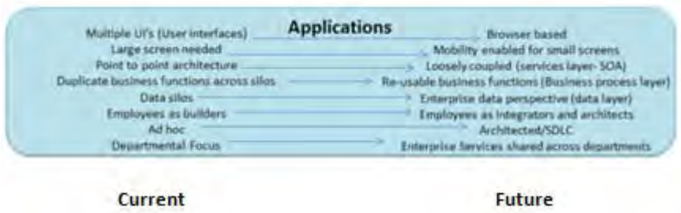
Increasing wireless usage.	**Wireless** – allow untethered movement within and between work-sites, improving productivity and collaboration while reducing office move costs.		The average number of wireless sessions per month continues to increase steadily despite the lack of expansion to additional locations. When this happens, we expect to see volume jump as new sites are introduced with the wireless expansion project. In anticipation of increasing needs around employee mobility, standard equipment for all staff has been updated from a desktop to a laptop. This will provide the same capabilities, while empowering mobility and enabling the future elimination of re-wiring in buildings once all devices can operate over secure wireless connections	The wireless expansion upgrade project was approved for the 2015 budget. After fully designing the solution needed to extend wireless to all buildings, a significant increase in cost was identified. Prior to proceeding, options are being explored and discussed on how to best move forward.
Number of employees with UC capabilities.	**Unified Communications (UC) –** Extend UC capabilities to all King County staff to increase and improve communication channels and tools available to them.		The roll-out of unified communications (UC) is now complete and has extended to all staff where appropriate for both Skype for Business (formerly called Lync) and Enterprise voice. Some clean-up efforts continue to decommission older telephony equipment to save additional costs.	

Percent county owned devices that conform to Workstation Service standards / built with standard image	End-point standardization: **Primary device** – Keep employees more productive by reducing end-point device failure and maintenance.		We continue to progress in increasing the standardization of our end-point devices. Currently 87 percent have been standardized. When we complete our migration towards leased (rather than purchased) devices which are on a 4 year replacement cycle in 2016, we should be at or above the targeted 90 percent.	The speed at which this can occur is limited by the current equipment already deployed. For This reason, attainment of this goal is timed to coincide with the equipment replacement schedule which is targeted to replace all equipment every four years.
Percent IT applications delivered through a browser or mobile interface.	**Browser/Mobile interface** – Applications that run in a browser can be accessed by any device capable of running a browser, and typically are easily accessible via the Internet. Mobility interfaces (for smaller screen size) are also easily available through modern application technologies.		We have made significant progress in updating our application inventory to contain current and actionable information. The overall number of applications has changed as we have improved our processes around maintaining the application portfolio and clarifying the definition of an application. We have started to increase the number of mobile applications - from 1 in 2014 to 8 at the end of 2015 – as we see demand for these types of services beginning to be recognized and valued by our customers. In addition, over half of our applications have a browser or mobile interface making them mobile and available from many locations. An application rationalization strategy is currently being developed as an enterprise architecture initiative to provide guidance for how existing legacy applications will be modernized. A future state application architecture will help developed to best determine when to create mobile and browser based interfaces as applications are rationalized.	An application modernization plan is needed for each system in order to better project future compliance. A modernization plan will take significant effort to create. A 2015/16 proposed project for application modernization was not approved. The Business Solutions Service within KCIT is now addressing application rationalization as part of its on-going practices.

Percent of overall computing that occurs on the cloud (either internal – SVE, or external – VPC).	**Cloud Computing** – Executing applications in the cloud means they can be accessible by any device at any time from any location that can access the Internet.	 	Moving a significant amount of the County's applications from physical servers to virtual servers in our Server Virtual Environment (SVE) has already enabled KCIT to provide a significant price reduction for the compute portion of an application's costs. 2017/18 rates have been determined and show this trend has stabilized but continues to provide significant cost incentive to move from physical to virtual computing. Going forward, we anticipate some of our compute will be moving off of our SVE and onto our virtual private cloud – Amazon Web Services (AWS) over the next several years as we rationalize our applications to take advantage of this opportunity when it makes sense based on the applications needs (such as rapid scaling up or down to meet user volumes). The rates also indicate non-standard virtual servers are no longer offered and existing instances are being migrated off of this platform over time when appropriate. In addition to compute, we have seen significant value from storing data on our virtual private cloud. It is more available and fault tolerant there in addition to costing much less – 2017-18 rates show an 11 percent reduction over 2016 rates!	How quickly we are able to rationalize our application portfolio with determine how quickly we are able to utilize our virtual private cloud for computing resources. There is also resistance from current users to moving off of 'other virtual' platforms and onto the SVE (Server Virtual Environment) or VPC.

% KCIT's Back-Ups Occurring in the Cloud
100%
75%
50%
25%
0%
0%
57%
72%
91%
98%
Q4 2014
Q1 2015
Q2 2015
Q3 2015
Q4 2015
Target
% Back-Ups Occuring in Cloud (S3, Glacier)

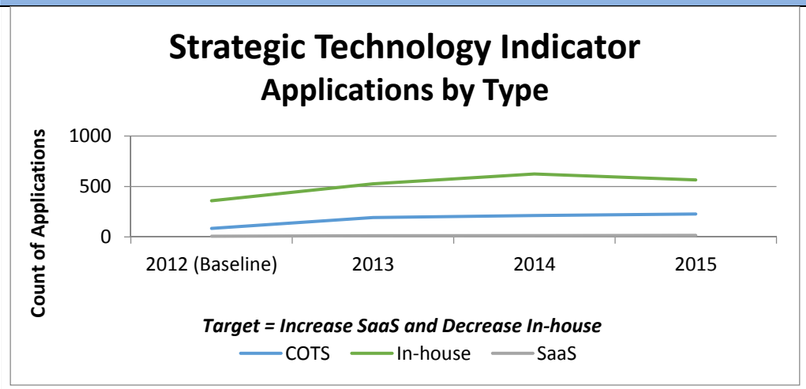
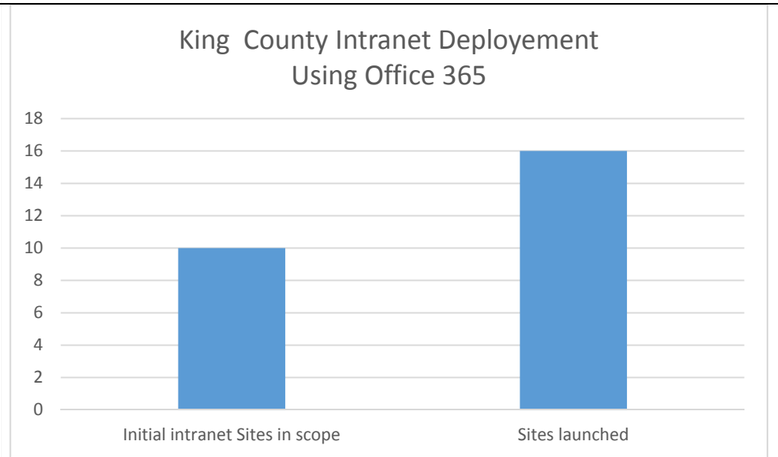


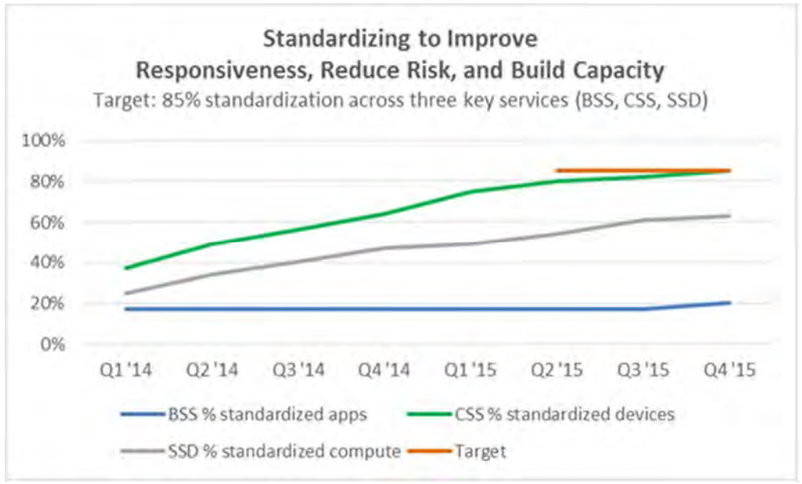
Technology Objective: Technology Modernization – Applications

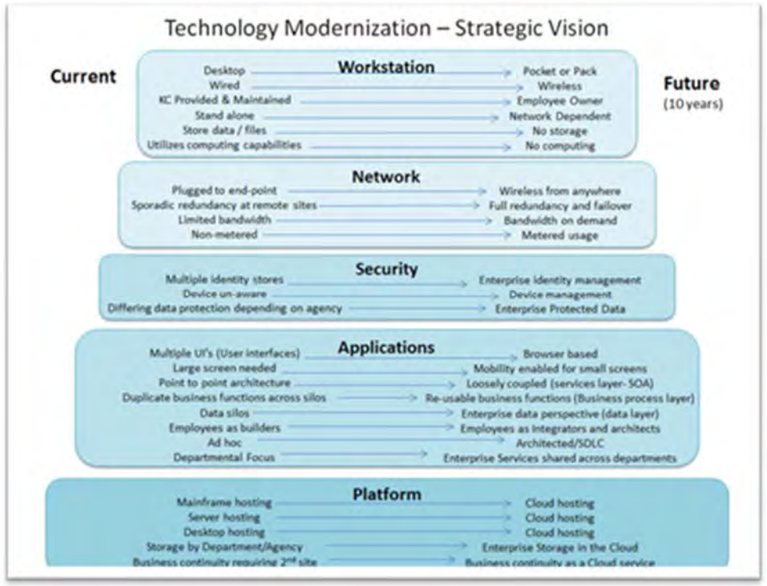
Enable business solutions that are flexible, timely, and dependable by pro-actively evolving modern application technologies and processes.

- Speed to implement business process changes is faster
- Total Cost of Ownership (TCO) for computing is reduced through efficiencies, standardization, re-use and the ability to meter and rapidly scale resources up or down as needed
- Increased service quality due to increased standardization and reduced downtime
- Reduced risk due to increased redundancy, geographic diversity, and commoditized, on-demand scaling of needed assets

Indicators	Benefit	Chart or progress	Highlights/progress	Hurdles
Percent of applications having identified appropriate data sensitivity classifications.	**Information Assurance –** Utilize a security scorecard to identify and track progress in improving our security posture for the most critical and vulnerable components of our systems platforms.	**Data Sensitivity - Applications w/in King County** data available on 150 applications 0 0 0 0	In 2014, updated data classification standards were approved and aligned with Washington state standards and will be used in determining which applications move to which hosting platforms (cloud) – based on their compliance with data sensitivity needs. The standard classifications are: Public, Sensitive, Confidential, and Confidential requiring special handling. In 2015, we began to update our portfolio with this additional sensitivity information. To date, 150 applications have been updated with over half containing information that should not be made available to the general public. We still track applications containing the following data: • Payment Card Industry (PCI) • Personally Identifiable Information (PII) • Criminal Justice Information Systems (CJIS) • Health Insurance Portability and Accountability Act (HIPAA) • Other confidential data	We are looking to make portfolio updates a standard part of our change management process in order to ensure a more accurate and current portfolio

Indicators	Benefit	Chart or progress	Highlights/progress	Hurdles
Application counts by type	**Platform steering** – Encourage system solutions to use the lowest cost/highest functionality platform, reducing TCO while maintaining service standards and needed business functionality.		An updated definition for applications has been created and implemented in order to accurately track applications in our portfolio. Based on updates to our portfolio, we have seen minor increases in COTS and SAAS applications with reductions in in-house applications in alignment with our strategic direction. As our rationalization approach is adopted across our application services, we should see increased movement in this direction.	Need to establish an application rationalization program is needed.
Percent of county departments and agencies converting intranet sites to 0365.	**PAAS - Office 365** – Migrate to an office productivity platform and tools to improve the general office productivity business functions surrounding communications and document creation.		This metric was changed in 2015 to better reflect platform activity for O365 during the strategic plan reporting period. KCIT's O365 focus has been centered on SharePoint and migration to its government cloud platform which KC has helped Microsoft to evolve in support of HIPAA and CJIS requirements. By focusing on this area, we are able to generate more value for our customers by re-establishing the County's intranet - a critical tool for employee engagement and empowerment. The chart to the left shows the County's results towards launching departments and agencies on the new intranet platform. An additional benefit from this migration has been the implementation of single-sign on for King County's SharePoint environment.	Some Agencies and departments opted out of the project deliverables and were provided access to the information needed to self-migrate should they so choose in the future.
SOA service utilization rate.	**SOA** (Service Oriented Architecture) – The main benefit of SOA is to allow simultaneous use and easy mutual data exchange between programs of different vendors without additional programming or making changes to the services. These services are also reusable, resulting in lower		 We currently have not created the SOA design for our desired modern applications. Until a design is created, we will refrain from determining how success will be measured. In general, this indicator should help to understand how quickly our application portfolio is being modernized.	SOA is a key component of application rationalization. A high level strategy for application modernization is needed prior to implementing an enterprise SOA design to be used by future modern

Indicators	Benefit	Chart or progress	Highlights/progress	Hurdles
	development and maintenance costs and providing more value once the service is developed and tested. Having reusable services readily available also results in quicker time to market.			applications.
Percent applications utilizing standard components.	**Application architecture**- A common application architecture increases system supportability and flexibility while reducing time to implement and fix.		 Applications currently utilizing standard languages and data bases were 20 percent at the end of 2015. This is a slight increase over prior quarters and is indicative of new design review processes are starting to have an impact. However, our portfolio tracking for this component is still maturing and there are a significant number of applications that don't yet have this tracked in our portfolio. We expect turning our focus to application rationalization as part of our on-going approach is starting to improve not just the portfolio but the increased usage of standard components within our applications. As expected, end-point devices have been the quickest component of a system to standardize, followed by our computing infrastructure. Because applications depend on both of these, they have been slowest to standardize but will attain our increased focus going forward.	There are currently 56 different versions of application languages our production environment. There are also 26 versions of multiple types of data bases. Of these, eight languages/versions and four data base are considered modern and define the standard that should be migrated to.
Percent of applications conforming to application data standards.	**Data architecture** – Consistent usage and sharing of data improves quality, re-use, and protection while reducing cost and errors.		 How this indicator is measured will depend on the tools/information available once we have identified our data standards. Significant progress in this area occurred in the second half of 2015 with the hiring of an enterprise data architect who has subsequently created a draft data management strategy that addresses our approach to creating data standards.	Now that an Enterprise Data architect has been hired, we need to re-focus significant application staff into solution architect roles to focus on data design, modeling, and standards

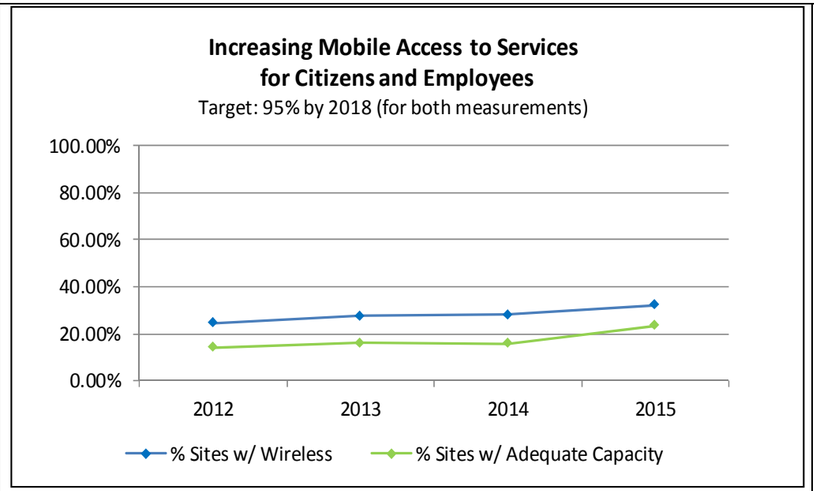
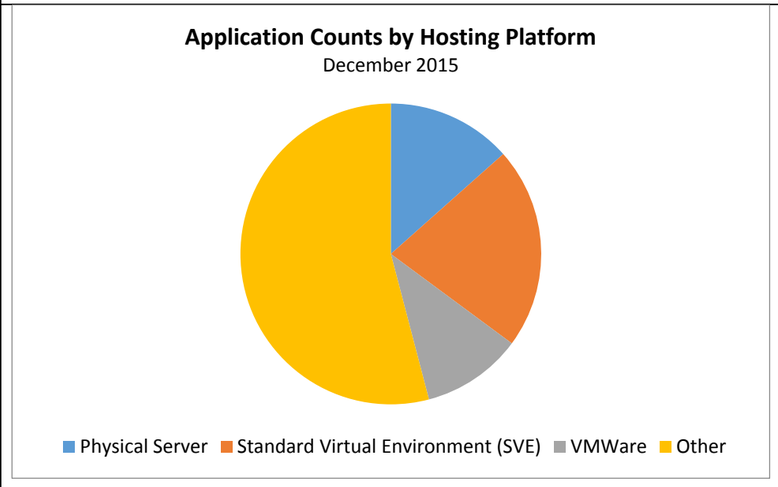


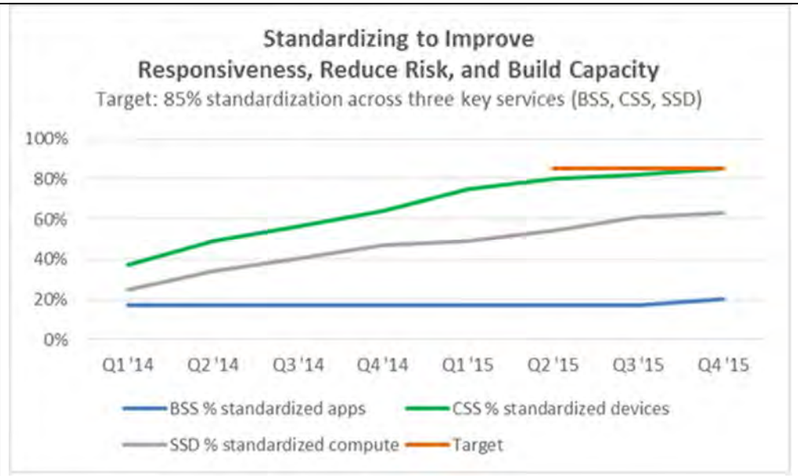
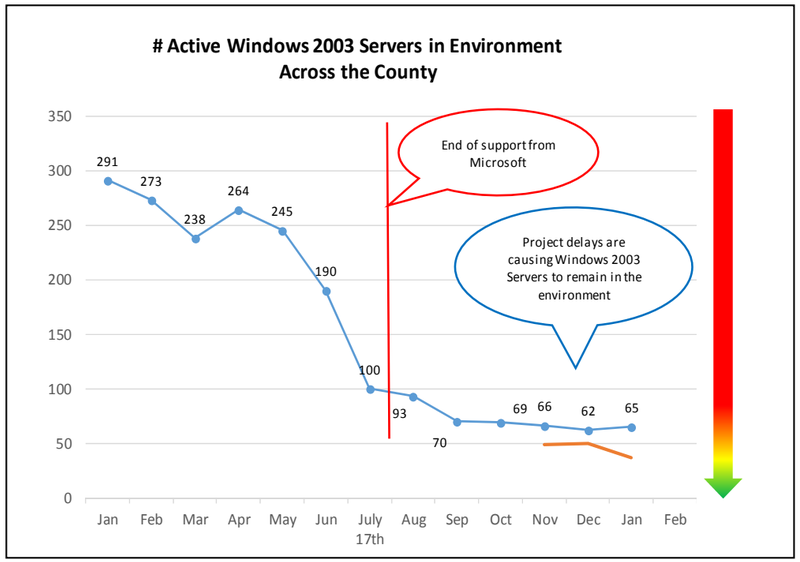
Technology Objective: Technology Modernization – Infrastructure

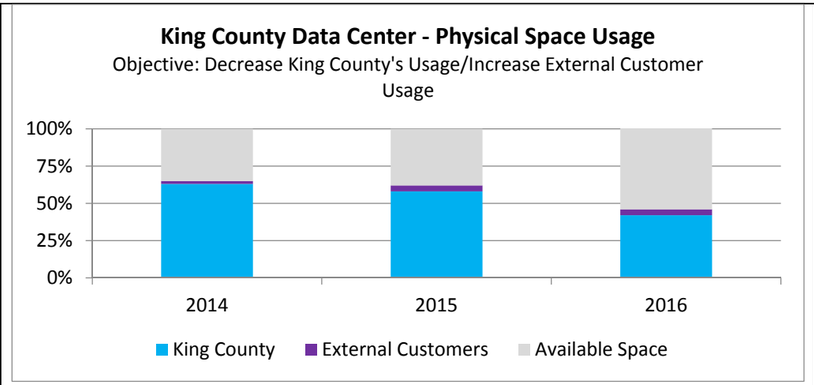
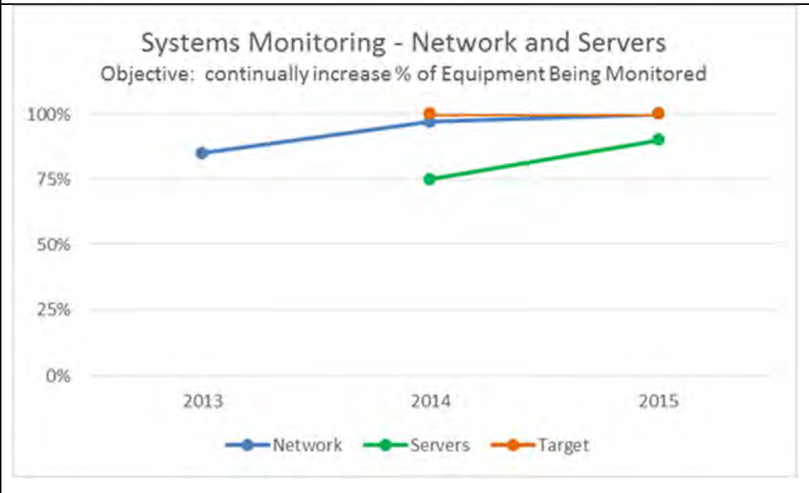
Empower flexible system solutions by providing current technology platforms, components and frameworks on which applications can operate and continuously improve.

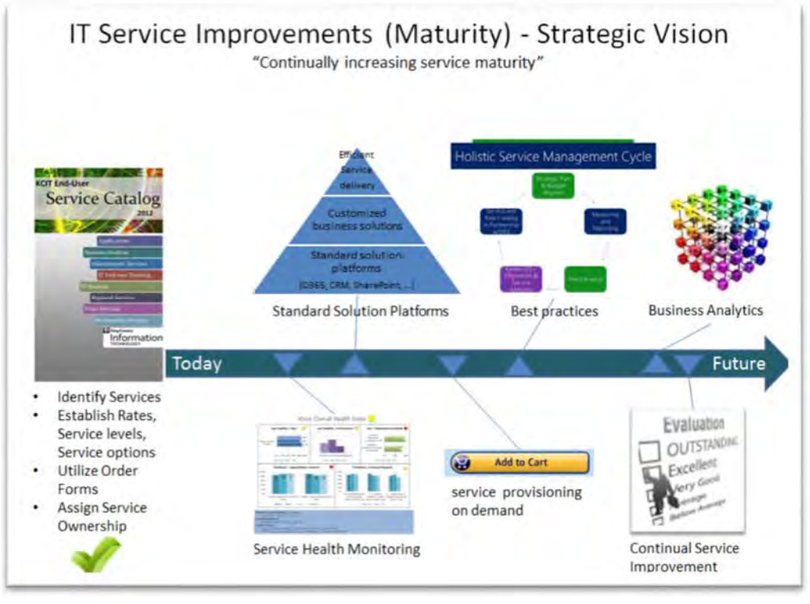
- Speed to implement business process changes is faster
- Total Cost of Ownership (TCO) for computing is reduced through efficiencies, standardization, re-use and the ability to meter and rapidly scale resources up or down as needed
- Increased service quality due to increased standardization and reduced downtime
- Reduced risk due to increased redundancy, geographic diversity, and commoditized, on-demand scaling of needed assets

Indicators	Benefit	Chart or progress	Highlights/progress	Hurdles
Security operational scorecard shows continuous improvement over time.	**Information Assurance –** Utilize a security scorecard to identify and track progress in improving our security posture for the most critical and vulnerable components of our systems platforms.		This metric increased its target in 2015 from a composite score of 8 to 9 based on a full year of meeting the target and wanting to increase our overall drive for improvements. In addition to changing the target, additional scope was added to the scorecard for new challenges in the areas of inventory and mobile device management in an attempt to increase the focus in those areas that need it. By the end of 2015, we are now able to remove MDM from the scorecard as we have essentially attained desired device compliance in this area for both county owned and personally owned devices. This IT approach of utilizing stretch goals will continue to cause us to look for ways to improve and not become complacent.	Continue to update the areas covered by the scorecard to retain focus on new and most significant security risks across our information technology environment.

Percent of worksites with wireless access	**Network** – Provide a robust, redundant, **wireless** network as a key foundational base to all future system solutions. *Ensure proactive upgrades maintain the network's currency as all other services will increasingly depend more heavily on network capabilities in the future.*		Minor progress has continued as identified on the chart and in anticipation of the wireless expansion upgrade project – which should have a significant impact as it is rolled out over the next few years.	The design phase of the wireless expansion project identified significant cost increases over initial funding requests and is working with sponsorship to determine appropriate approach forward given increased costs.
Application counts by hosting platform (Mainframe, server, SVE, VPC, public cloud)	**Cloud platforms** – Utilize a suite of cloud platforms (hybrid community/public/private environments) to drive customer behavior to the most cost effective environment.		With our application portfolio improvements, we are now able to present the breakdown of where applications reside within our hybrid cloud environment. The most significant migration in 2015 was to re-deploy all remain applications hosted on our mainframe to a new platform within the standard virtual environment, enabling us to turn off and decommission the costly mainframe platform. Going forward, we expect application rationalization will migrate applications away from physical servers and VMware towards SVE and AWS.	Operationalizing the need for application rationalization will take understanding and support from our many application customers.

Percent of county owned servers running current preferred OS standard.	**Standard Operating System** – Standardize on Windows as the operating system (OS) for county owned devices, leading to improved systems integration and enabled functionality.	 	We continue to migrate servers off of physical and non-standard virtual servers and towards SaaS, SVE and eventually AWS which are standard. There has been a focused effort to fully eliminate servers that continue to run on the Windows 2003 platform due to security risks related to its obsolescence and lack of vendor support.	The Virtual Private Cloud (VPC) is now available, however, we need to create surrounding processes to make it easier to access in a consistent way that fosters cost effective usage.

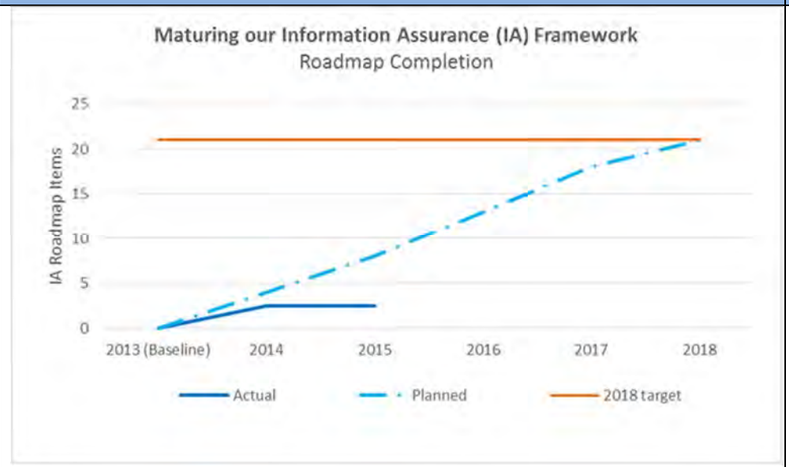
Percent data center cabinet space that is utilized by the County verses regional tenants.	**Data Center** – Minimize data center footprint through virtual/cloud hosting in order to reduce cost and enable increased regional partnerships through co-location.		Through significant process improvement, we have been very successful at dramatically shrinking the square footage needed in the data center to effectively support King County's overall computing needs. Major successful improvement efforts have included: • Decommissioning the mainframe and related printer after migrating all systems to the virtual server environment. • Moving tape back-ups to the cloud, enabling the removal of large tape libraries and equipment • On-going virtualization of physical servers. • Less need for on-site office space as we perform more monitoring and maintenance activities remotely. As our needed footprint has shrunk, we have attempted to re-sell available space to other organizations needing top tier data center space. Unfortunately, this strategy has not been very successful as most potential tenants are moving to commercial cloud hosting options. As a result, we have changed our strategy and are now looking at how to change our long-term lease to reduce the costs related to the un-used space while continuing to shrink our needed data center footprint.	Lease re-structuring.
Percent of systems receiving full, end-to-end monitoring.	**Systems Management** – The ability to monitor and perform preventative maintenance across entire systems (end-to-end) regardless of where they are located/operating improves the ability to maintain, repair, and improve business systems holistically.		Our long-term targets for 2023 include: • 100 percent of network elements being monitored • 100 percent of systems being monitored (not including end-points) • 100 percent of services monitored have operational response plans for major alerts etwork monitoring is now fully implemented and has started into the refinement process to improve the results from monitoring. rvers being monitored has increased to 90 percent and includes 1018 servers. A more robust monitoring tool for servers is also being used on 275 servers including some of our most critical ones. A plan to migrate all servers to this more robust tool is targeted for 2016.	Application monitoring is still difficult given our non-standard environment and aging application technologies.

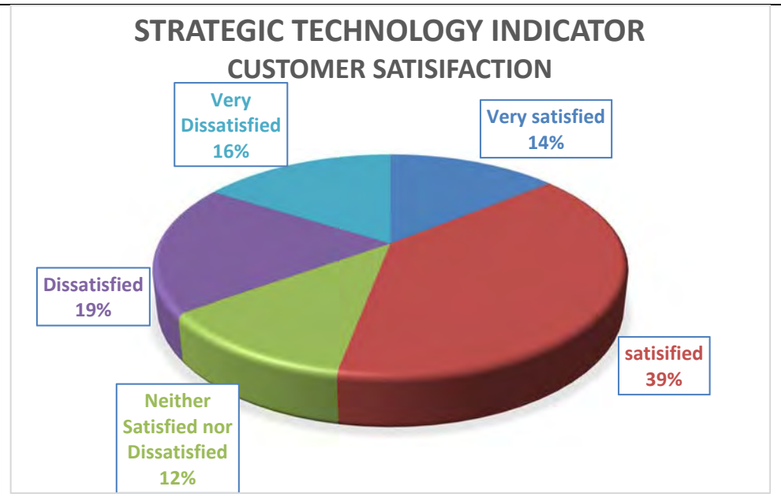
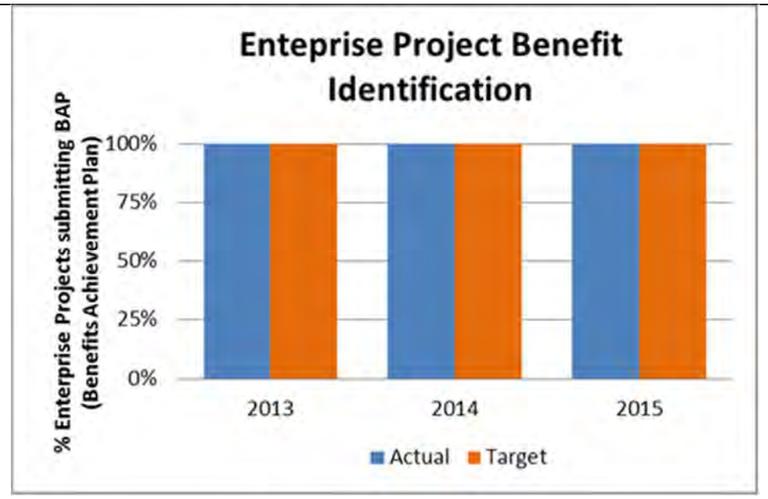


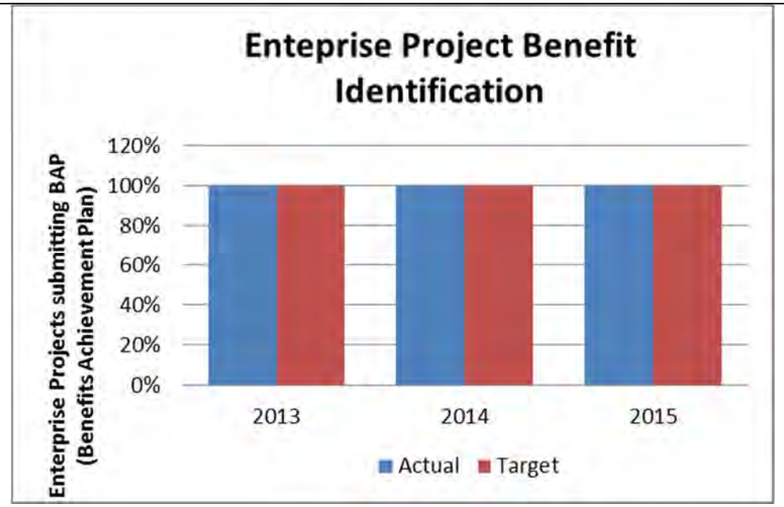
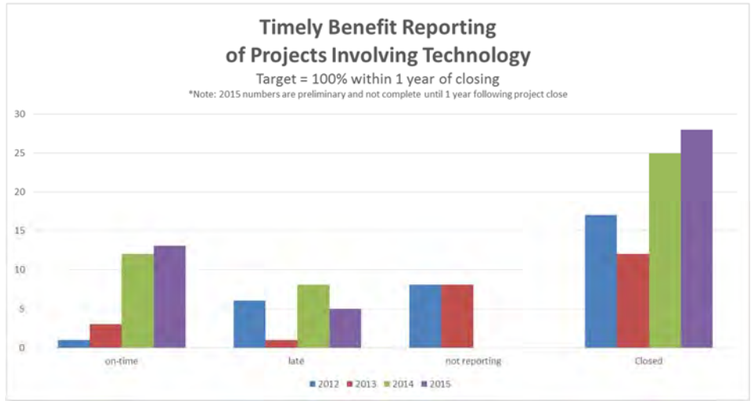
Technology Objective: IT Service Improvements (Maturity)

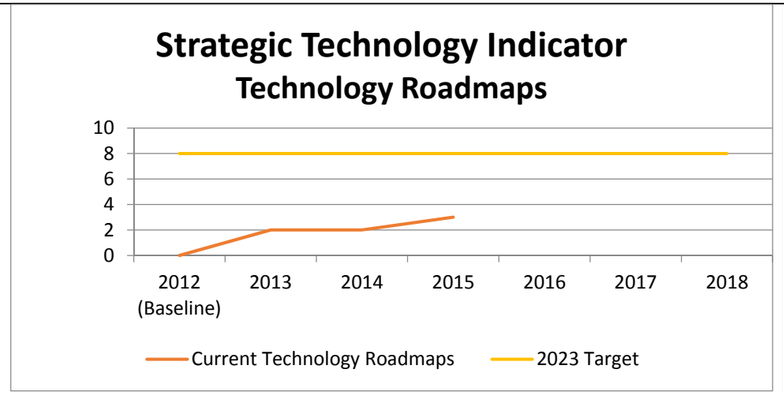
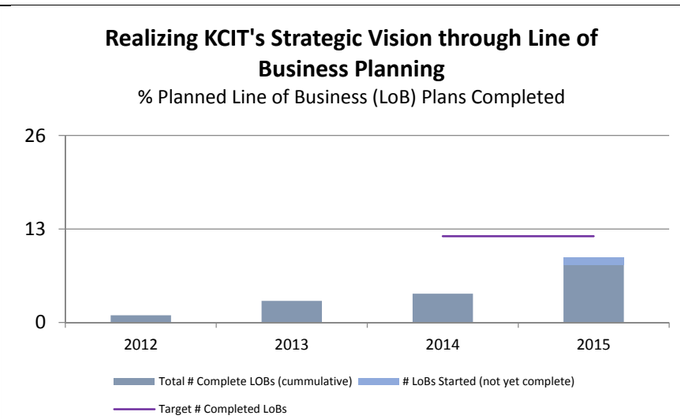
Increase the value to customers from IT services by maturing our service delivery processes and improving our services to better anticipate and match customer needs and expectations.

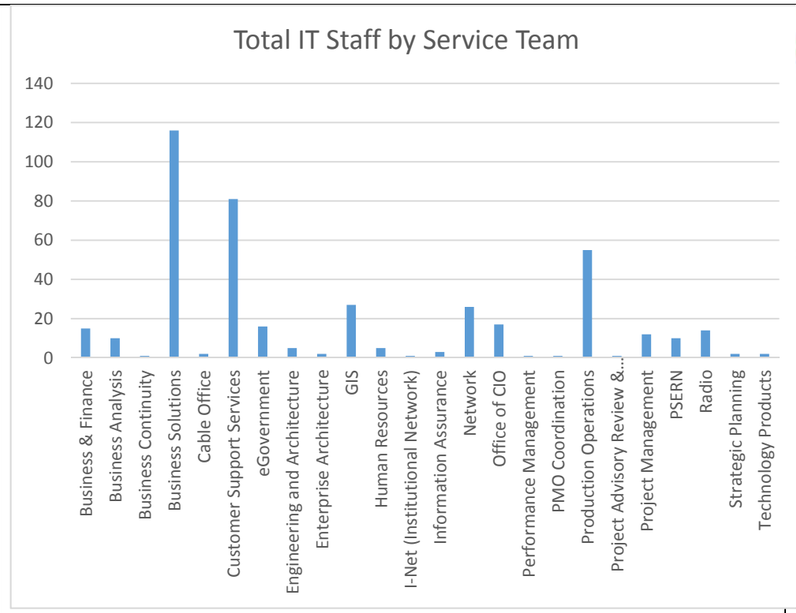
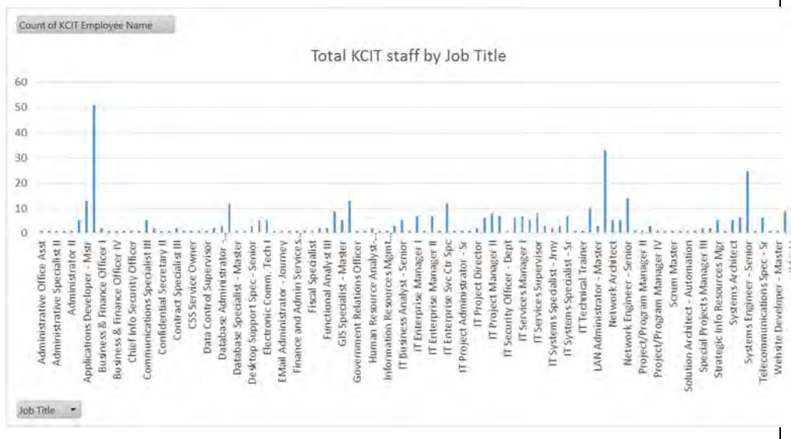
- Increased IT customer choice and greater knowledge/ transparency of IT services through improved provisioning, performance dialogues, satisfaction surveys and other practices improving customer satisfaction and engagement
- Strategic alignment of IT services with future customer needs
- Reduced cost of existing services through low cost options in comparison to industry standard offerings, continual service improvements, increased re-use and sharing of solutions, and improved integration across solutions
- Faster delivery of service fixes, changes, improvements and new service introduction through Continual Improvements (CI)

Indicators	Benefit	Chart or progress	Highlights/progress	Hurdles
Percent of IA roadmap items that are completed.	**Information Assurance (IA) –** Complete an information assurance service roadmap to improve overall understanding, prioritization, and results related to information assurance.		 Significant progress against our information assurance roadmap did not occur in 2015 due to the lack of funding for training and other planned program activities. Existing IA resources have focused on maintaining the current environment.	Progress is slower than expected due to the inability to fund security projects as part of the budget process.

IT customer satisfaction rating.	**Service Catalog** – A catalog ensures open and transparent communication with customers about the services provided as well as the options available to them in order to maximize value received.		This indicator was removed last year. The customer satisfaction score from the last survey conducted with the Business Management Council has been retained at left for your reference.	Significant changes in how KCIT interacts with customers are expected as we re-define our SDM role to be customer focused and strategic, removing much of their current line responsibilities. Because of these changes, we will be re-assessing how we track customer satisfaction.
Percent of services with defined methodology/best practice.	**Industry best practices** – Each service will adopt a methodology or industry best practice by which their service is operated in order to take advantage of the knowledge and learnings of others providing similar services.		Most of our IT services our now following a methodology framework or best practice. Expansion and improvement of our operations methodology (utilizing ITIL) has seen significant progress on 2015 with multiple process owners identified and empowered to improve their processes utilizing in-house ITIL expertise to guide and train staff appropriately.	Partial implementation is the norm as full implementation will either be accomplished after fully aligning our services; or, as is the case with some of the larger methodologies like ITIL, component by component.

Percent of IT investments where KCIT is the business sponsors that accomplish a majority of expected benefits.	**Benefits realization –** Each investment we make in a service should identify expected and accomplished benefits in order to continually improve our planning skills, to improve the decisions made surrounding investments, and to better inform customers of the potential for beneficial impacts to their services.	 	We have identified 3 progressive measurements as we mature the benefits realization process. 1. Percent of Benefit Achievement Plans (BAP's) completed and submitted for active enterprise projects, 2. Enterprise projects reporting results against BAPs within one year of scope complete according to close-out report, 3. Percent of results accomplished compared to expected as reported (this measure is now reported by PSB as is required by code). Our long-term goals for each of these areas are 100 percent, 100 percent, and 110 percent respectively. Currently, all enterprise projects have created and submitted BAPS, fully accomplishing the first metric, and consistent with last year's progress. For the second metric, we are making progress towards submitting benefit achievement reports in a more timely and consistent way. This can be seen by the on-time component of the graph. Late and non-reporting projects are getting less frequent. For 2015, because there is a 1 year lag in how we measure this metric, 2015 numbers are preliminary until the end of 2016. We will not report on the 3rd metric which targets achievement of planned benefits. PSB is now responsible for submitting a report on benefits achievement.	PSB is now reporting on the achievement of projects involving IT.

Number of current technology roadmaps.	**Enterprise Architecture** – Utilizing enterprise architecture helps business leaders and technicians make better decisions by aligning to principles, standards, toolsets, and best practices identified within the County for multiple domain areas.		Several new standards and a new roadmap for Unified Communications (UC) were introduced in 2015 as part of the architecture review process. New roadmaps will continue to be added in 2016 – receiving focus in the application and data area as part of application rationalization efforts and our data focused strategic objective.	
Number of IT services with service roadmaps.	**Line of Business (LOB) Planning** – Pro-actively identifying and planning for future customer needs as well as for environmental changes enables improved service delivery over time and a better TCO approach.		2015 saw significant effort to complete line of business plans for most services. Operations completed all efforts including plans for each service. Regional services also completed their LOB plans as did the eGov service. The combination of PSB analysts and KCIT service delivery managers to facilitate planning worked effectively. All action items identified in the plans are being monitored by leadership to ensure strategic progress according to the plans.	There is limited organizational capacity to complete this work as we are in the process of shifting from an operational to a strategic orientation.

Ratio/mix of KCIT positions.	**Employee Skill Sets –** Grow staff skills to implement, support, and maintain modern technology solutions. Expected future needs will shift towards increased integration (as opposed to custom built solutions) leading to increased need for architecture, analysis, business process, project management vendor management, and especially communication skill sets.	 	This indicator doesn't have any targets other than to initially increase the awareness for how our roles and skill sets are evolving over time. The two charts show how our staff aligns with our services as well as how many staff are in each of the many job titles used within KCIT.	Shifting of our resources may have an impact on our labor agreements over time.

SWOT Analysis

Citizen Engagement

Strengths	Weaknesses
• Business o Lots of "bodies" and programs / resources are available o Unincorporated CSA group does a good job for these areas • Information o Really good sense of our demographics (GIS/Epi/OEM) o Program level knowledge about community • Technology o Not afraid to use tools: ▪ Mind mixer ▪ Virtual town hall ▪ CRM ▪ Social Media	• Business o Lack of coordination, strategy, etc. that ties every department together o Tied to old methods (snail mail, telephone, walk-in) • Information o Need web cookies o Sharing of information between programs (county department protecting data and relationships) o Big data o Begin structuring data o Department existing websites need to streamline • Technology o Avoid using our own processes to onboard o Resistant to using central tools o Under resource roll-out and change management
Opportunities	**Challenges**
• Business o Very civically engaged community o People have a desire to have a broader sense of community (beyond twitter, Facebook) o Expect us to do a better job • Information o Share/display more information o Harvest existing data to better inform what and why we do it • Technology o Better leverage our current social media tools o Partner with external partners, cities, foundations, non-profits, city club o Mobile apps / mobile web	• Business o Public is busy, tired, getting to info or resources o Public demands local government to be as progressive as private industry (suggestions based on browser or info searches) o They don't want to pay for it • Information o Perception of "Big Brother" / government keeping or having info • Technology o Market is not sensitive to our needs (not designed to large county with disparate LOB's)

Workforce Utilization of Systems

Strengths	Weaknesses
• Business o Great people o Knowledgeable people o Strong executive support – staff greatest resource • Information o Moving to single payroll (almost there) o Linking training to central workforce system of record • Technology o Enterprise tools in place (Skype for Business, 0365, SharePoint, remote access) o Online application process / outreach increasing (hiring) o	• Business o Lack of utilization (training, understanding, support for) how to use enterprise tools o Relationship between business and tech roles and responsibilities often blurred o Succession planning o On-boarding / off-boarding o Need an attitude of grow instead of protect (staff) • Information o Do not market our tech o Hiring process (some people won't apply) o Tools/processes/approach to employee development has far to go to see meaningful development paths for employees • Technology o We still push out tools rather than integrate business process o On-boarding / off-boarding
Opportunities	**Challenges**
• Business o Partnering with private sector o Training / information sharing / knowledge transfer on emerging tools o Increase data analytics • Information o Training – building off current successes and expanding o Opportunity to support / act on survey data collected (need to get better at this) o Businesss Analysis service bringing in end user training focus • Technology o Create more training opportunities o Look at current employee survey. o Out in three months – will provide business demands	• Business o Hire and retain ESJ workforce o Aging workforce o Classification o Being competitive when hiring skills sets in scarce supply o County's overall funding structure – needing to constantly do more w/less creates stress on staff o Lack of work/life balance o Initiative fatigue • Information o Not yet fully integrated across systems (side systems; duplicate entries • Technology o Hard to expand/grow skill sets o HR's "need" to be black and with inability to support / promote deserving staff

Mobility

Strengths	Weaknesses
• Business o Bring your own device capable o Appetite o More options for mobility (Uber, bike) o Some funding available (transit) for service efficiency o Policy support – telecommuting, other • Information o Accessibility of info o Social media in use o Systems generate lots of data • Technology o Supported tools (TP, OB) road alerts, my commute, vessel tracker o Cleaner more effecient options	• Business o Mode integration o Agency integration o Staffing for "service providers" (new, retiring) o Struggles with mega projects (e.g. ORCA 2 o Business cant' bring on technical resources in data and KCIT may not be ready o Data not valued as an asset (whose role is this?) • Information o Accessing data and turning it into info. (real time service revision) o Data and sys integration between business entities o Data not valued as an asset (whose role is this?) • Technology o SharePoint tech support for site mgmt. workflow o Customer acceptance and maturity o Proficiency in technology within IT o Develeopment of mobile apps o TMA o Disabled access
Opportunities	**Challenges**
• Business o Potential State / Legislation opportunities o Partnerships (regional transportation, private co. like Uber) o Explain and understand value proposition o Opportunity to be proactive based on choices customers have made in past (data mining) • Information o Provide access to info (have smart phones) are they ready o Data analytics including user data o Crowd sourcing • Technology o Mobile ticketing o General barcoding o Use (understand) existing platforms (SharePoint, UC) o Moving to online (from in-line)	• Business o Taxing environment o Staying current with customers info demands o Response to emergencies (preparedness) • Information o Provide meaningful data in light of "big data" o Make smarter strategic decisions anticipating future • Technology o Small-storms might be OK but regional disasters? o World innovates faster than our ability to adapt o Service definition (e.g. SharePoint) o Communication to customers with a variety of technical expertise o Integrate real world in training

Data / Information

Strengths	Weaknesses
• Business o Strong desire for more / better data forbid o Visual management direction o Growing need to share • Information o Lots of agency level collections o Existing GIS data/metadata program o Some siloed solutions in place o DPH epi program - demographics • Technology o Some strong / modern components in place o CRM	• Business o Limited / difficult data driven decision-making o Data trust issues (difficult cross-agency sharing) o Reliance on many legacy business processes o Funding? • Information o No enterprise view of data (except GIS) o Lack of Metadata o Narrow perspective designing data collection o Questionable data quality o Lack of data governance e & access policies • Technology o No enterprise toolset available o Fractured approaches (all agency level) o Narrow perspective specifying requirements
Opportunities	**Challenges**
• Business o Beginning to understand data analytics possibilities o Desire for better analytics is opening the door to data integration o Cost saving through partnerships o Reduce risk with predictive analytics o Informed decision making o Improve reporting of KPI's / new analysis capability o Collaboration o Cross-agency customer services views (anticipating related needs) • Information o IOT (internet of things) is facilitating more data o Implementation of data governance / stewardship o Integration of cust/const. data • Technology o IOT o Cloud resources o Enterprise solutions (servers, licensing, data) → economy of scale	• Business o Overcoming legacy culture (agency silo solutions) o Enterprise licensing / contracts (not shared) o Needs which should be "enterprise" are not funded through shared services (difficulty funding enterprise solutions) Limits use/sharing • Information o Complex, varied data access rules (i.e. PHI, CJIS, etc.) o Varying business data definitions, priorities o Disparate, agency focused priorities o Lack of data access policy/governance/standards o Gaps in info feedback (from partners), for informing (planning/capacity) • Technology o Standardize disparate / silo o Tools, systems, solutions – integrated solutions o Evolving, agile technologies ill-aligned to government velocity to implement o Legacy technology solutions limit data accessibility

Systems Effectiveness

Strengths	Weaknesses
• Business o Strong vision – One KC o Strong strategic priorities o Trust and collaboration among cabinet members • Information o Nascent information sharing successes o Recognition of importance of information sharing to accomplish missions • Technology o Committed and invested in building strong tech infrastructure o Executive consolidation of IT	• Business o Large # of discreet lines of business o Multiple separately elected o Uneven / complex funding sources o Business defines solutions, not problems • Information o Disparate information systems o Highly complex data o Tendency towards unique solutions • Technology o Large # of legacy application o Difficulty Prioritizing / focusing – causing diluted results o Volume / effort primarily on maintenance and not biggest value
Opportunities	**Challenges**
• Business o P3 – Public Private Partner? Non-profit partnerships o Leverage inter-agency responsibilities o Regional leadership opportunities o Appetite for regional government innovations o Electronic payment – simultaneous solutions • Information o Data sharing o Big data • Technology o New technology platforms (i.e. mobile) o Highly integrated technologies (internal and external)	• Business o Broad and shifting citizen expectations o Conflicting citizen expectations o Funding • Information o Providing easy and equitable access to information / data to the public o The broad range of citizen IT aptitudes • Technology o Keeping up with technology innovations o Security

Enterprise

Strengths	Weaknesses

• Business
  o Strong county vision and priorities
• Information
  o
• Technology
  o
	• Business
	  o Lack of integrated planning across all lines of business
	• Information
	  o
	• Technology
	  o

• Business
  o Talent acquisition and workforce planning, on-boarding
  o In-line to online - Access
  o Sharing data and opportunities to share
  o Consolidate business initiatives
  o Partnerships
  o Re-use
• Information
  o Satisfying the demand for information
  o Visualization
  o Predictive analytics (future)
  o Common architecture and tools
• Technology
  o Standard system qualities
  o Nimble
  o Provide right kind of access at the right time
  o Establish/better utilize enterprise platforms
  o Some modern systems
	• Business
	  o Un-funded mandates and unscheduled priorities
	  o Competition for limited resources – people, space, money
	  o Conflicting priorities of 45 lines of business
	• Information
	  o Public information vs. privacy
	  o Mining – how?
	  o Security
	• Technology
	  o Integrating multiple SaaS with each other
	  o Security

Opportunities	**Challenges**

Appendix I– IT Industry Drivers

Industry trends have also been reviewed and provide perspective on our direction. An example of the major impacts on governments comes from Gartner, Inc. who has identified the top ten technology trends for government that are grouped into the following three categories: engaging, connecting, and resourcing.

Engaging

1. Digital workplace - A technology literate workforce needs accommodation to its preferences; real-time analytics for data driven decisions; and more open, flat, and democratic organization for structures and practices
2. Multichannel Resident Engagement – Multiple channels are used to deliver services with channel selection determined by the needs of various customer groups. Typical channels include legacy (offices, physical mail, contact centers, and direct calls) and digital (eGovernment/web, Mobile apps, Social Media, Alerts/email)
3. Open Any Data – Utilizing open data platforms for both resident and employee use, including non-public information (only for employees based on data sensitivity)
4. Citizen eID – A single identity to span government and private organizations through trusted relationships, federation and other practices

Connecting

1. Edge Analytics – Front-end (rather than back-end) utilization of analytics to inform decisions
2. Scalable interoperability – Systems will work across organizational boundaries and auto-size to accommodate demand
3. Digital Government platforms – Widespread adoption of cloud, mobile, social and information technologies to enable a fully digital experience across interactions
4. Internet of Things – Network of physical objects containing embedded technology to communicate, monitor, sense or interact with multiple environments

Resourcing

1. Web-Scale IT – Attaining efficiencies by emulating cloud/web architectures
2. Hybrid Cloud (and IT) – Hybrid infrastructure sourcing utilizes both internal and external platforms

In addition to the priorities above, the IT industry trends related to state and local government include:

- Increased IT spending projections to meet the need for and better enable digital government opportunities – See Figure 4 Projected Governmental Investment in IT.

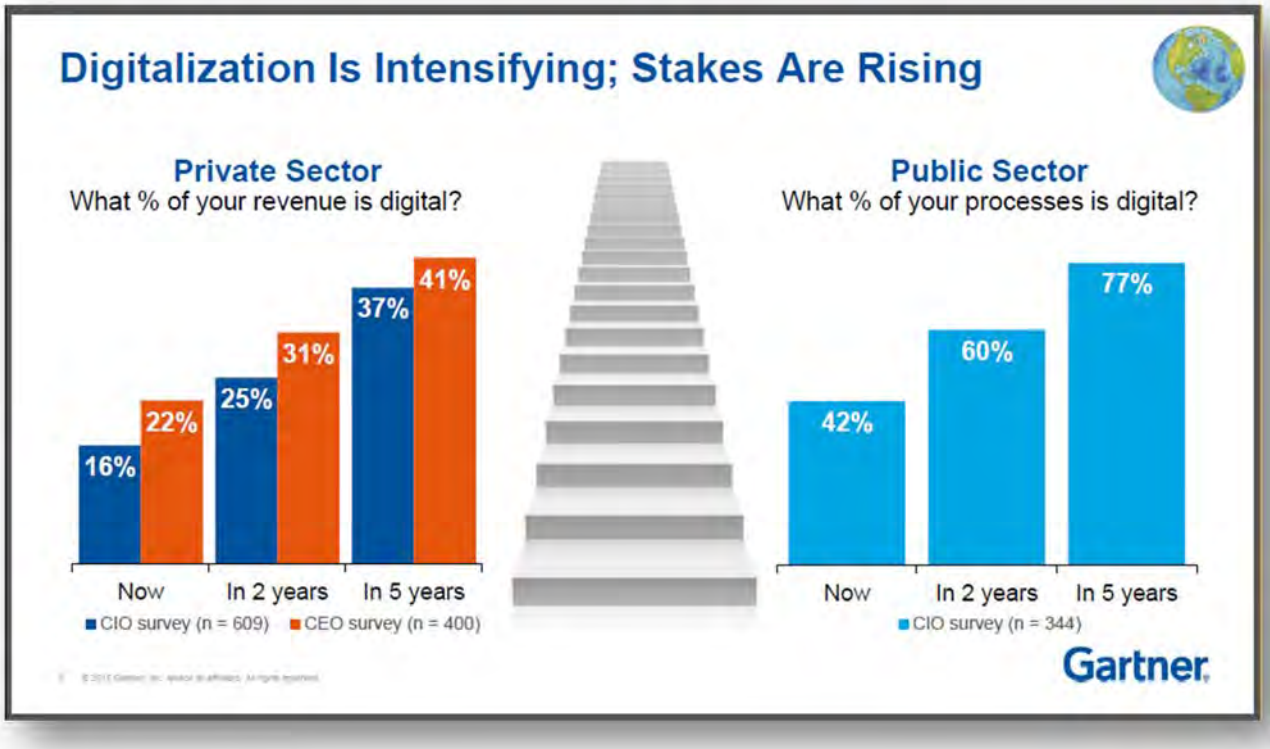


FIGURE 4-PROJECTED GOVERNMENTAL INVESTMENT IN IT

- Paralleling increased digital revenue in the private sector, governments will see explosive growth in digital government (processes) over the next five years leading to approximately 77 percent of all processes being digitized, as depicted in the Figure 5 – Projected Digitalization of Private and Public Sectors.

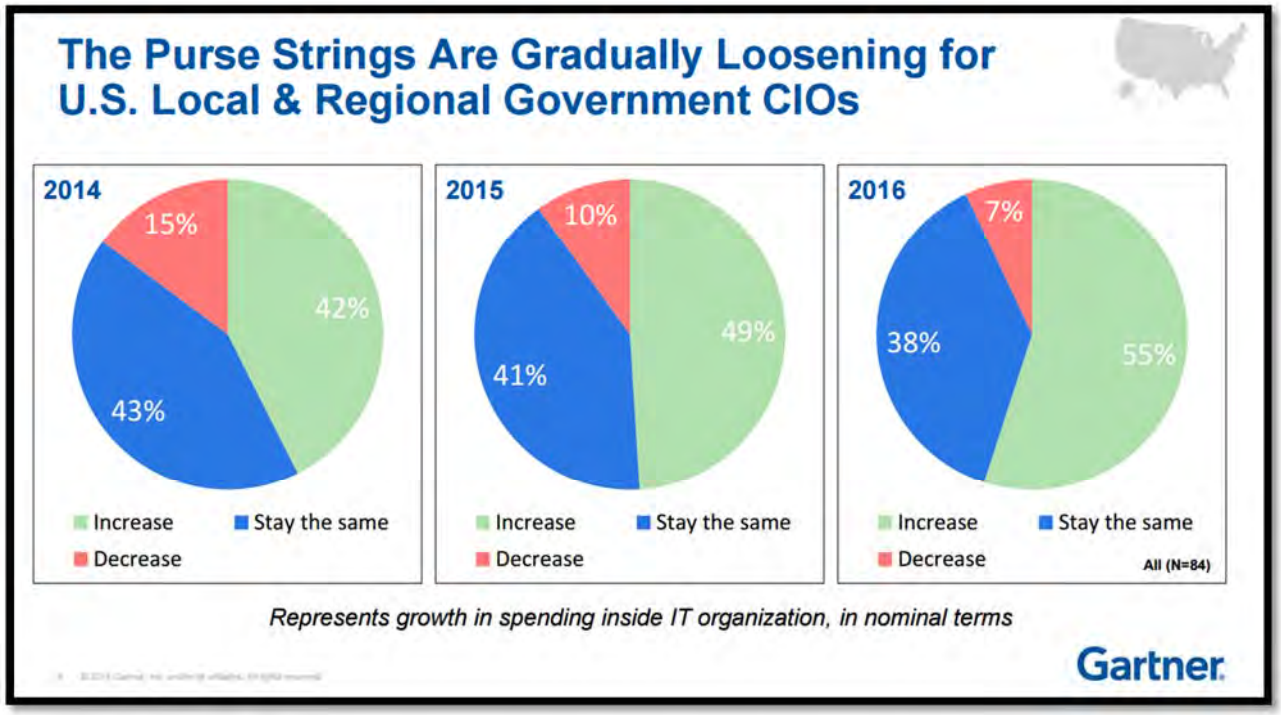


FIGURE 5-PROJECTED DIGITALIZATION OF PRIVATE AND PUBLIC SECTORS

- Increasing utilization of bi-modal workforce capability to enable rapid delivery for systems of innovation and stable, secure maintenance for systems of record.

Appendix J– Table of Acronyms

Acronym	Full Spelling
BMC	Business Management Council
BYOD	Bring Your Own Device
CFO	Chief Financial Officer
CI	Continuous Improvement
CIO	Chief Information Officer
CIP	Capital Improvement Project
CJIS	Criminal Justice Information System
COTS	Commercial-Off-the-Shelf
CRM	Constituent Relationship Management
EA	Enterprise Architecture
EHR	Electronic Health Record
ESJ	Equity and Social Justice
GIS	Geographic Information System
HIPAA	Health Insurance Portability and Accountability Act
HIT	Health Information Technology
HR	Human Resources
IA	Information Assurance
IAAS	Infrastructure-as-a-Service
IM	Instant Messaging
I-Net	Institutional Network
ITIL	Information Technology Infrastructure Library
IT	Information Technology
KCIT	Department of Information Technology, also known as King County Information

	Technology
KCSP	King County Strategic Plan
KCWAN	King County Wide Area Network
LOB	Line of Business
NG 911	Next Generation 911
OS	Operating System
PAAS	Platform-as-a-Service
PH	Public Health
PMO	Project Management Office
SAAS	Software-as-a-Service
SAC	Strategic Advisory Council
SCOC	Strengths, Constraints, Opportunities, and Challenges
SDLC	Solution Delivery Life Cycle
SME	Subject Matter Expert
SOA	Service Oriented Architecture
SVE	Standard Virtual Environment
SSD	Server, Storage and Database
STP	Strategic Technology Plan
TCO	Total Cost of Ownership
TMB	Technology Management Board
UC	Unified Communications
VM	Voice Mail
VPC	Virtual Private Cloud

Appendix K – Digital Equity Pro-Policy Agenda

Our current situation

Washington State has the highest in home broadband adoption rate in the country at 81.9 percent, according to the National Telecommunications and Information Administration. With a booming economy, King County is home to a technology literate society that relies increasingly on broadband internet access. But even within King County, 16 percent of households do not have access to the internet at home – a resource so essential it is being called the "electricity of the 21st century." King County residents who earn less than $50,000 per year are 5.5 times less likely to have internet access at home.

The inability for people in our communities to utilize this resource limits access to government services, such as health care information, health insurance registration and participation in the online marketplace. It also limits opportunities to apply for jobs, the basic ability to do homework from home, social engagement opportunities, and the ability to engage in other aspects of our economy and society. Not having internet access at home means people must travel to libraries, community centers or schools to find information and access services, often placing an additional financial burden on those who are least able to bear it.

This inequity is often driven by poverty and other factors that limit access. For example, there are some communities, such as White Center in our County and parts of Snohomish County, where broadband services are limited due to their lack of perceived profitability by private carriers.

In response to the digital equity issue, a number of cities nationally, including the City of Seattle locally, are adopting action plans aimed at ensuring disadvantaged residents and communities are not left behind but are participating and benefiting in the opportunities provided by advancements in technology and the internet.

How we will make a difference

Access to information and technology is a fundamental social justice goal. Ensuring equal opportunity and access to the internet for all of our residents, regardless of age, income or ability, allows them to participate in our economy and society. King County plays an important role—both as a service provider and as regional convener—in connecting people to the resources they need to succeed in our increasingly digital world.

Some examples that illustrate the strides King County has already made in the areas of digital equity and inclusion are:

- Accessible websites for blind, deaf and hearing-impaired.
- Open data made available to software developers and interested residents, helping our communities transparently share information about county services and trends.
- Digital communications portals like the Assessor's Parcel Viewer that help people learn about King County services and make decisions that are important to them.

- Institutional Network (I-Net) provides affordable broadband internet services for education, municipalities, and nonprofits, benefitting students, teachers, government workers and non-governmental organizations.
- The creation of a social media toolkit that all agencies and departments can use for enhanced and more effective resident interaction through social media.

In the next three years, King County will take action in three key areas to improve digital equity in our communities so that everyone has the opportunity to participate in and benefit from the digital world of the future.

1. Develop and implement a Digital Equity Plan in collaboration with regional partners in King County.

Highlights:

- Develop a digital equity vision, goals, strategy, approach, and initiatives that comprise an action plan for King County and our regional partners.
- Identify local, state, federal funding sources to support digital equity initiatives.
- Integrate the ESJ Strategic Plan, Best Start for Kids, Youth Actin Plan, 311, Smart Cities and other services with the County's Digital Equity Plan.

2. Increase residents' opportunities for digital interaction and engagement.

Highlights:

- Target a reduction from 16 percent to fewer than 10 percent of homes in King County without broadband internet access as part of our public performance scorecard.
- Identify and pilot public/private partnerships that increase the delivery of broadband services to targeted underserved communities in King County, especially low-income qualifying residents and students.
- Increase the number of King County services provided online as opposed to in-line throughout county government to make it easier for those with broadband access to get the services they need.

3. Collaborate and integrate with regional partners to better utilize existing capabilities, develop new capabilities, and extend the impact of those capabilities more broadly.

Highlights:

- Collaborate with Connecting Community Consortium (C3), a regional 23-member municipal, education and nonprofit organization, to activate a fiber network around Lake Washington to provide low-cost access to high speed connectivity and member-managed services.
- Perform convener and collaborator roles with regional private, public, and community partners to identify successfully implemented Digital Equity solutions for re-use replication across King County communities.

- Expand I-Net fiber to more schools, government and nonprofit organizations throughout the County. Additionally, integrate I-Net assets with partner assets to more effectively deliver broadband and wireless connections in rural areas and to underserved populations.
- Evaluate the creation of a digital equity investment bank to stimulate digital equity infrastructure by helping to fund community-driven digital equity initiatives.

Appendix L – The Case for Building Digital Equity in King County