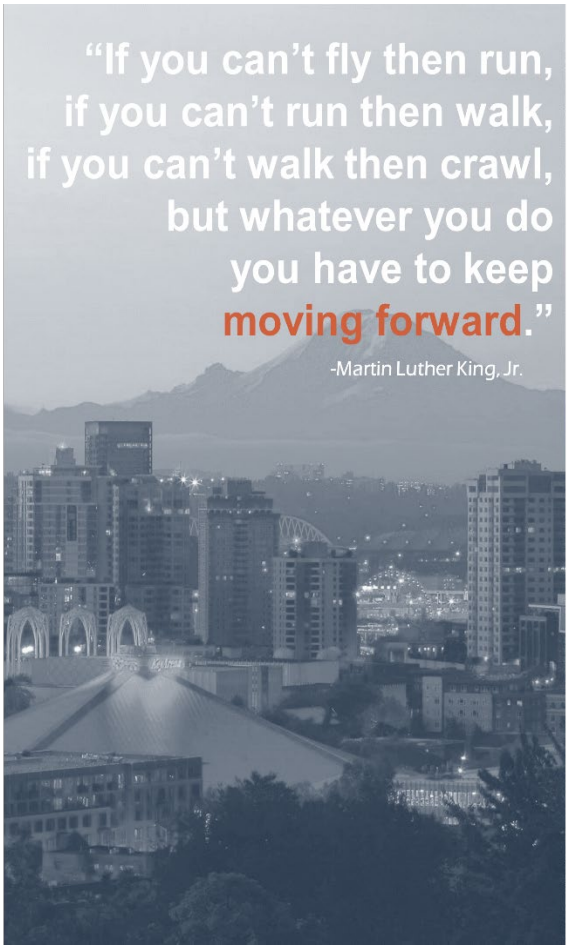
King County
Information Technology

King County, Washington



Business Plan 2019 – 2020

Delivering What's Next for King County

June 2018

Executive Summary

King County Department of Information Technology (KCIT) supports services the County provides to members of the community and leverages technology to digitally transform King County. King County, as the 13th largest County in the United States with 2.1 million residents, residing in a significant technology capital, must communicate and transact government services in an environment driven by the customer experiences and expectations often found in the private sector.

Community engagement, electronic commerce and mobility, combined with a need for real-time data to make informed policy and service delivery decisions, presents fundamental information technology opportunities: the mitigation of risk and the opportunity for improvement. KCIT's response to these opportunities are embodied in this **Information Technology Business Plan**. This plan builds on the technology foundation that has enabled KCIT to respond to the challenges of the past eight years, and it establishes the direction for digitally transforming King County's service delivery.

The direction includes:

- An integrated delivery framework that leverages current and future capital investments.
- A seamless customer experience that offers multiple channels to interact and engage with government and local leaders.
- Using lifecycle management throughout the system development process.
- Reliance upon industry standards for hardware, software and data repositories.
- A cybersecurity framework that protects information from unauthorized access.
- A digital equity lens that considers all customers when technology is deployed.
- Information dissemination policies that promote the exchange of data at the lowest possible cost.

KCIT has established a four-year planning horizon for 2019 – 2022. This horizon will support Executive Dow Constantine's priorities for best-run government, equity and social justice, climate change and regional mobility. Technology plays a critical role in driving these priorities forward.

The technology initiatives embrace the following principles:

- FASTER IT and BETTER RESULTS: Accelerating and ensuring successful implementation of complex technology projects on which our customers are dependent.

- DATA ANALYTICS: Creating a modern predictive analytics service for customers, so the executive departments and Separately-Elected Agencies can better understand the impact of decisions, answer complex questions on resources and improve outcomes.

- COMMUNITY ENGAGEMENT: Creating seamless interactive customer experiences to make it easier to interact or and transact with government.

These principles are an integral part of Strategic Information Technology Plan. To be successful, any organization must continuously change and adapt to the needs and wants of their customers. By understanding our customers, KCIT will create opportunities and deliver outstanding outcomes in the next biennium.

A. Engaging the Community

Engaging the community is **the** emphasis of our business plan. Our efforts center on implementing and maintaining the digital information systems that power the delivery of King County services to people, businesses and local jurisdictions.

As our mission statement shows, KCIT leverages the power of technology to solve real-world problems for our stakeholders. **Investments for the next biennium** include:

- Strengthening the County's defense against increasing and ever evolving cyber threats.
- Data platforms to leverage the wealth of data in the County's custody, providing for data analytics, data-based policy and operational decision-making.
- Software quality assurance tools to deliver quality and reliable products for customers.
- kingcounty.gov platform upgrade to benefit county agencies by bringing major improvements to the County's web presence.
- E-911 next-generation platform upgrades and service improvements that KCIT provides to the county and the region.
- Tools to provide application performance management and monitoring capabilities, allowing staff to head off problems or issues.

These investments will allow KCIT to deliver innovative solution services and seamless customer experiences as KCIT strives to increase the value customers receive from technology.

As part of the biennial budget development, we apply an equity lens to proposed technology investments and projects to ensure resources go to the areas of greatest need. By listening to our customers and acting on their feedback, KCIT is poised to establish and maintain strategic partnerships and promote a customer-centered mindset.

KCIT provides technology products, services and capabilities to these customers:

- Members of the public.
- Community PEG (Public, Educational, Governmental) organizations.
- Executive Branch Department and Separately Elected Agencies.
- King County employees.

A.1 Members of the Public

In an increasingly digital world where transactions occur instantly online, on any device users prefer, customers demand seamless interaction with the government, just like they do from the private sector. Technology provides the digital unpinning for people and organizations to access King County's many critical services.

Members of the community want to engage with government services when, where and how it's most convenient. They expect they can ask questions and find easy answers, provide feedback on topics of interest and know that their feedback is valued and acted upon. This needs to happen without barriers.

To ensure this happens, we must invest in modernizing the kingcounty.gov platform and County's web presence, deploy software tools to enhance performance and monitoring, and commit to delivering digital equity for all customers.

Note: *Multiple personas are under construction for this customer type. See the last two customer types for examples of personas.*

A.2 Community Organizations

Public, Educational, and Governmental (PEG) organizations require many services, including those offered by KCIT's Regional Services team. These services include emergency communications and broadband utility. The broadband service provides infrastructure that can help a PEG organization be more efficient and cost effective. Sharing the resources of a large organization like King County with smaller organizations creates a win/win situation. Customers receive lower cost or higher quality (or both) services than they couldn't otherwise purchase, and King County can spread the cost of these services more broadly, reducing net internal operating costs.

"As a small PEG organization, we can't always afford or even produce the services that we know will make us more productive in delivering what our customers need."

Note: *Multiple personas are under construction for this customer type.*

A.3 Executive Branch Departments or Separately Elected Agencies

Departments and agencies within King County use technology in almost every aspect of service provisioning and delivery to the public. Technology supports critical services to executive branch departments and separately elected agencies. Our County business partners want business-driven results through the use of better data, improvements to services, and better ways to engage the community.

Investments in cybersecurity, data quality, data management and sharing, and community engagement platforms will serve customers well over the next several years. Cybersecurity investments will address compliance with federal regulations for personal data protection (examples include HIPAA-[Health Insurance Portability & Accountability Act], HITECH [Health Information Technology for Clinical Health act] and HHS [Health and Human Services] enforcement, CJIS [Criminal Justice Information Services], PCI [Payment Card Industry], weakness in County controls, and consumerization/BYOD [Bring Your Own Device]). Data investments will specifically address data classification and management while providing a comprehensive governance framework, transparency and strategic focus. Additional network capabilities--with a specific focus on increasing wireless in County-owned or leased facilities--will address bandwidth, network speed and performance, and

improve customer experiences in County's facilities. Continued development of our IT delivery framework will drive collaboration and better business outcomes from technology investments.

Community Superhero

Roles
- **CLIENT WORKER**

"I took this job to help people and make a difference, not spend 8 hours at a desk."

10 years in the field
2 years in the role

GOALS

Make Real Change
I took this job to make a difference.

Spend Next to No Time on a Computer
My passion is people, not a computer and cubicle.

Help My Fellow Human
There are people with real problems, and I can make a difference.

CHARACTERISTICS AND BEHAVIORS

On the Move	Helpful
Dislikes Data Entry	Community Focused
Motivated	People Focused

- Consumes content mostly on mobile devices.
- Stays connected with friend mainly over text, Facebook, and Instagram.
- Volunteers at the community center in her neighborhood.

FRUSTRATIONS

My agency's IT system is more trouble than it's worth.

I constantly have to stare at a screen instead of looking my client in the eye.

My day is mostly data entry.

The news does not report on the real issues.

I don't want to let my client down.

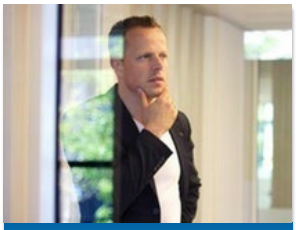
TASKS

- Provide case work to the clients
- Enter client data into the IT system
- Community outreach
- Travel to meet clients

A.4 King County Employees

Most, if not all, of the more than 14,000 King County employees use technology to deliver services to residents, businesses and our community. Most day-to-day activities involve using technology, whether it's creating a document, sending an email, driving a bus, attending an online meeting and receiving or processing payments.

The Analyzer



Roles
- **AGENCY PROGRAM EVALUATOR**

"Let's look at our big picture and determine how our strategy is holding up."

10 years in the role

GOALS

Make Programs Better
Research how and where we are making the biggest difference in the community.

Deliver Information Faster
Respond to questions from the stakeholders.

Reduce Manual Work
Less time doing manual work means more time analyzing the data.

Be Flexible
Be ready to cover a teammate or ask for help.

CHARACTERISTICS AND BEHAVIORS

Decision Maker	Big Picture
Self-organized	Tech Savvy
Problem Solver	Analytical

- Likes to consume content on mobile digital devices like Kindle or iPad
- A natural motivator, he coaches is son's soccer team.

FRUSTRATIONS

The data might not be accurate.

I can't get to the data when I need it.

I can't see the bigger picture until it is too late to do anything about it.

There is a lot of ambiguity in my work.

There is only so much time in the day.

TASKS

- Produce reports
- Report the data
- Approve templates
- Interpret the big picture

"Investing In You" means KCIT provides employees equitable and efficient access to the tools needed to do their job, advance their careers, continuously improve and innovate.

B. Products, Services and Capabilities

KCIT is about innovation and partnerships that offer the latest products, services and capabilities to our partners. These products, services and capabilities allow us to meet or exceed customer expectations. As the pace of technological change advances, KCIT is positioned to serve customers with technology that make their lives easier.

B.1 Meet KCIT

Our region is a technology hub where innovation drives change around the globe. KCIT is your resource for bringing the right solutions to your desktop, your team and your constituents. We're here to help you exceed your customers' expectations. Our **primary and most requested services** include:

I. On-demand technical support and troubleshooting (via the Helpdesk).

- Skilled technologists respond to more than 100,000 requests each year and resolve incidents quickly.

II. Management and maintenance of software, computers, phones and other devices.

- Applications Support and Modernization.
  - Support and enhance applications that agencies are dependent on to deliver services to their customers.
  - Modernizing legacy systems or implementing new applications into a cloud environment is the focus. Modernization includes streamlining business processes, interfaces, systems and functionality to deliver quality and speed.
- Intelligent Operations.
  - Enterprise-wide tools and support, plus platform and infrastructure delivery and maintenance.
  - Radio Support provides ongoing maintenance and operation of King County's critical 800 MHz emergency radio system.
- AV Equipment.
  - Collaborative technology tools, such as SMART Boards, Skype, Logitech SmartDock and Microsoft Surface Hub, to connect your team with people within and outside of your organization.

III. Project Delivery Services.

- Project Management & Execution.
  - A refreshed, best practices-based process for the delivery of capital projects, technology enhancements and upgrades, maintenance and vendor management.
  - The project manager is accountable for the success or failure of a project. Typical responsibilities of a project manager include planning, executing, and closing projects, defining their scope, building comprehensive work plans, and managing budgets.
- Business Analysis.
  - The analyst works with the business stakeholders and subject matter experts to understand their problems and needs. The analyst gathers and documents business needs and requirements. The analyst solves business problems.
  - This service is also available outside of projects for various improvement and change efforts
- Software Quality Testing.
  - Software Quality Assurance (***SQA***) is a process that ensures that developed software meets and complies with defined or standardized quality specifications.

IV. Community Engagement Services

- KingCounty.Gov & Website Development.
  - Better service for your audience through kingCounty.gov with custom, engaging content and tools, and a personalized, seamless user experience.
- Civic Engagement/Social Media Strategy.
  - Social media and digital tools — such as the GovDelivery communications platform and our virtual town hall — and engagement strategies to connect with audiences, collect feedback and provide excellent customer service.
- User Experience & Visual Design.
  - Enhanced interaction between our residents and King County.
  - Better able to understand what our customers need and value, and how they want to interact with us.
  - Distill a complicated project or dataset to create accessible, eye-catching and easy-to-use content for the web, social media and print.
- GIS.
  - Expertise, coordination, infrastructure and services to engage customers and tell your story spatially, because place matters.

V. Technology User Education and Training.

- Comprehensive training and guidance to ensure your teams have the skills to use the technology tools and solutions available to them.

We also offer **Enterprise Services** that benefit your agency or department:

Relationship Management	Service Delivery Managers (SDMs) manage relationship and service delivery for our executive department agencies and/or serve as liaisons for agencies.
Advisory Services	Consultation to assist with technology implementation across King County.
Digital Workplace	Collaboration spaces with the capability to share desktops and documents, annotate pictures and maps, or pull up a whiteboard to start brainstorming.
Security and Privacy	Pro-active security platforms, processes, and monitoring to protect sensitive data and systems.
Network Support	24/7/365 infrastructure support to ensure employees and customers can easily and securely access services on-demand.
Data Management	Seamless transfer of information across devices and platforms.

B.2 Work With Us

Do you have a big idea or a time-sensitive need? Engaging KCIT is easy! We'll help you get the best value for all software, hardware and solutions. KCIT helps you seamlessly navigate technology options and County processes. We will set you up with a right size, multitalented tech team — led by a skilled project manager at the helm — letting you achieve your digital solution.

How do I...?	**...resolve a desktop issue or request new tools?**	**...initiate a major IT project?**	**...launch a visual or user experience design project?**
	For Helpdesk requests, email us	For project work requests, each department has a Service Delivery Manager or agency liaison.	For standalone design projects, contact the Design & Civic Engagement team.

How does it work?	Skilled technologists respond promptly to troubleshoot and help solve your problem.	Your Service Delivery Manager or agency liaison is your technology champion and partner. They can help you get set up with the right team to ensure you get the right fit and your desired digital solution. KCIT can help.	KCIT assists you with custom web development for kingCounty.gov; illustrations, infographics and other visual products; social media strategy; maps and more.

B.3 What Does KCIT Cost?

In general, KCIT provides several types of products, services, and capabilities that are detailed in our service catalog with rates as identified in Appendix C – KCIT standard rates.

Our application delivery and maintenance services are based on standard hourly rates depending on the skillset of the resources involved. The hours needed will also depend on application and/or project characteristics. Rates range from $163 to $122 per hour.

Standard devices are matched to a user's need and come with software and on-going support. One monitor is provided. Additional monitors are billed at cost. Rates for the most common devices are per year and include:

- Standard laptop - $496
- 2 in 1 (Laptop/Tablet) - $665
- Premium laptop - $651
- Rugged laptop - $661

Enterprise services are provided to all departments at a standard rate based on agency or department staffing levels. Some of the services provided include:

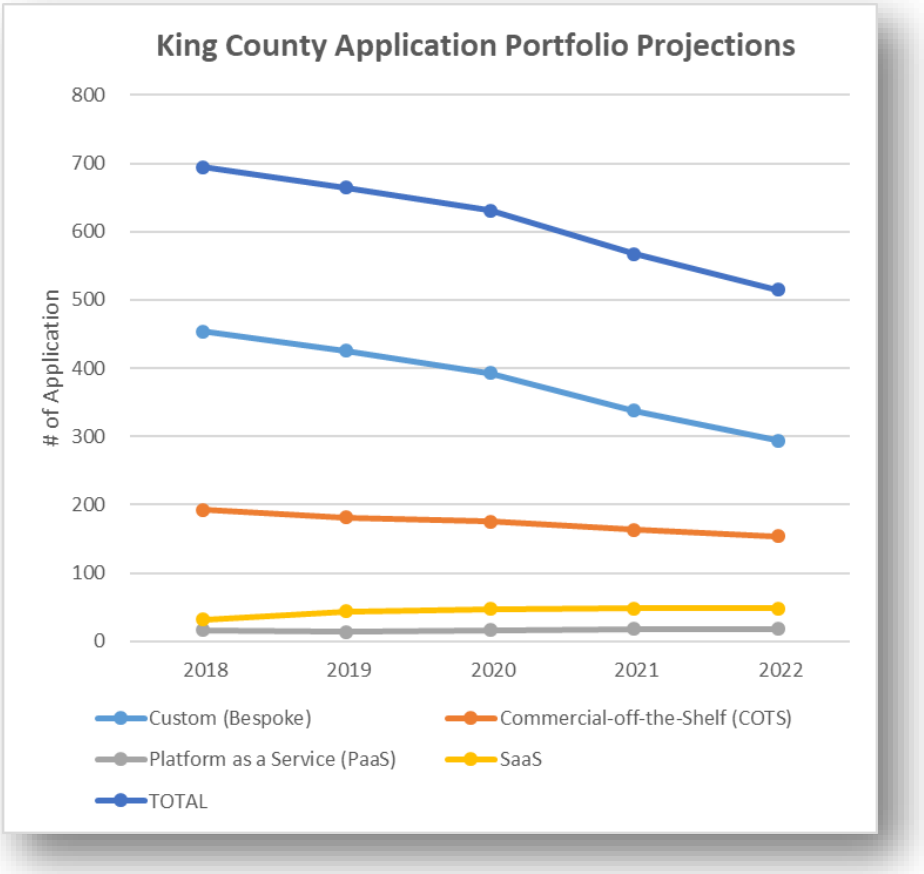
- Enterprise platforms (like SharePoint and Skype)
- Enterprise network
- Cybersecurity
- Digital Engagement/Web Development
- Data Services
- Technology end-user training
- Engineering & Architecture
- Many more

B.4 What Does the Future Hold?

Based on the plan included within this document, we've estimated its impact and that of our initiatives connected to major products, services and capabilities. Below are projections over our four-year planning horizon related to demand and capacity.

County Application Portfolio Projections

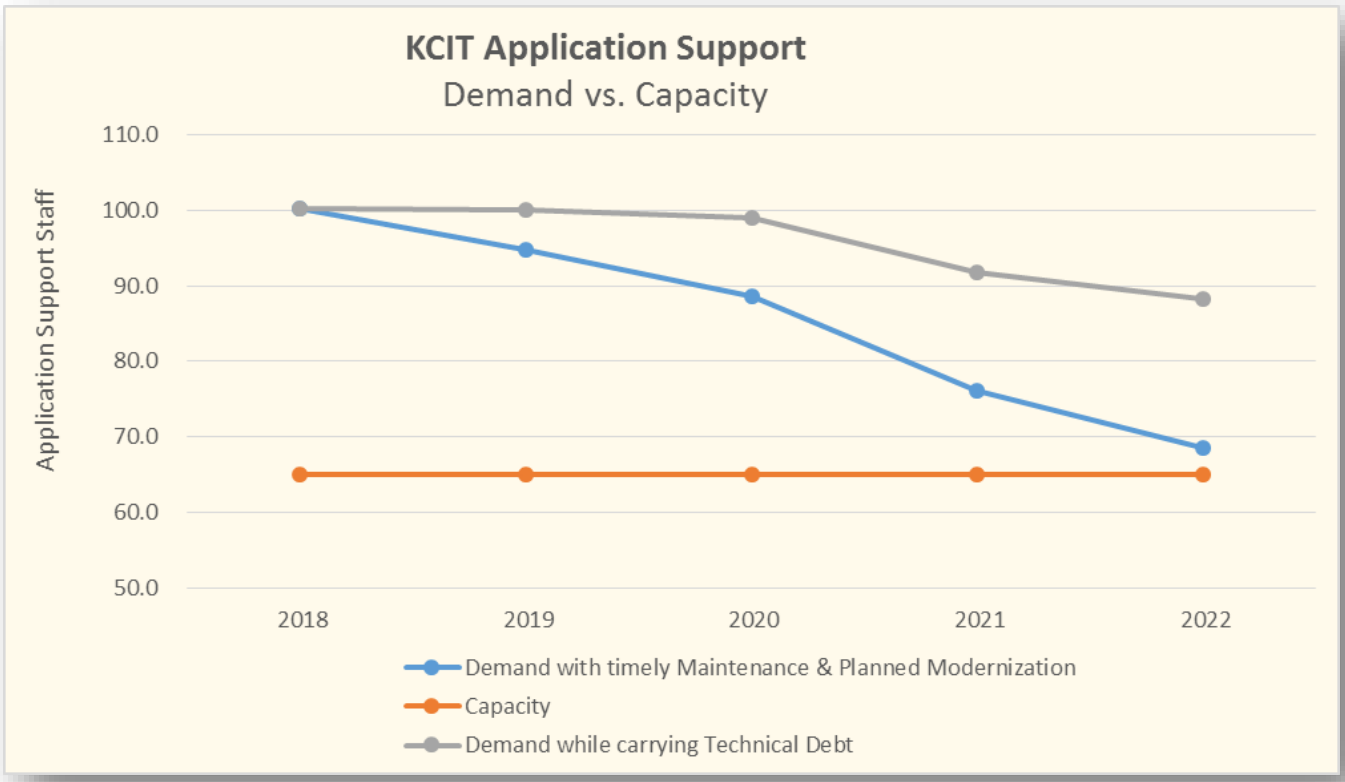
Modernizing the County portfolio means there's migration from custom applications to purchased systems hosted within the County environment or through a third-party vendor. These changes shift KCIT's role from builders to integrators and enable significant increases in speed to market, re-use, and maintenance of a modern application portfolio. Current expectations predict a reduction of 180 applications in the next four years from the current count of 695 down to 515. Additional investments in the 2021/22 biennium could increase this number. In addition, the mix of applications will shift from custom developed and COTS (Commercial Off The Shelf) applications (35% and 20% reductions respectively) to vendor cloud solutions such as SaaS (Software as a Service) and PaaS (Platform as a Service) which show 51% and 15% increases respectively.



The ratio of staff required to support these applications is significantly different based on the type of application. Given the continuous process improvement contained in this plan, we expect to shift KCIT's current support ratios from their present status to Gartner's industry standard benchmark ratios for state and local government over time. These ratios are 5:1 IT applications per IT support staff for custom applications, 10:1 for COTS applications, and 12:1 for SaaS and PaaS applications.

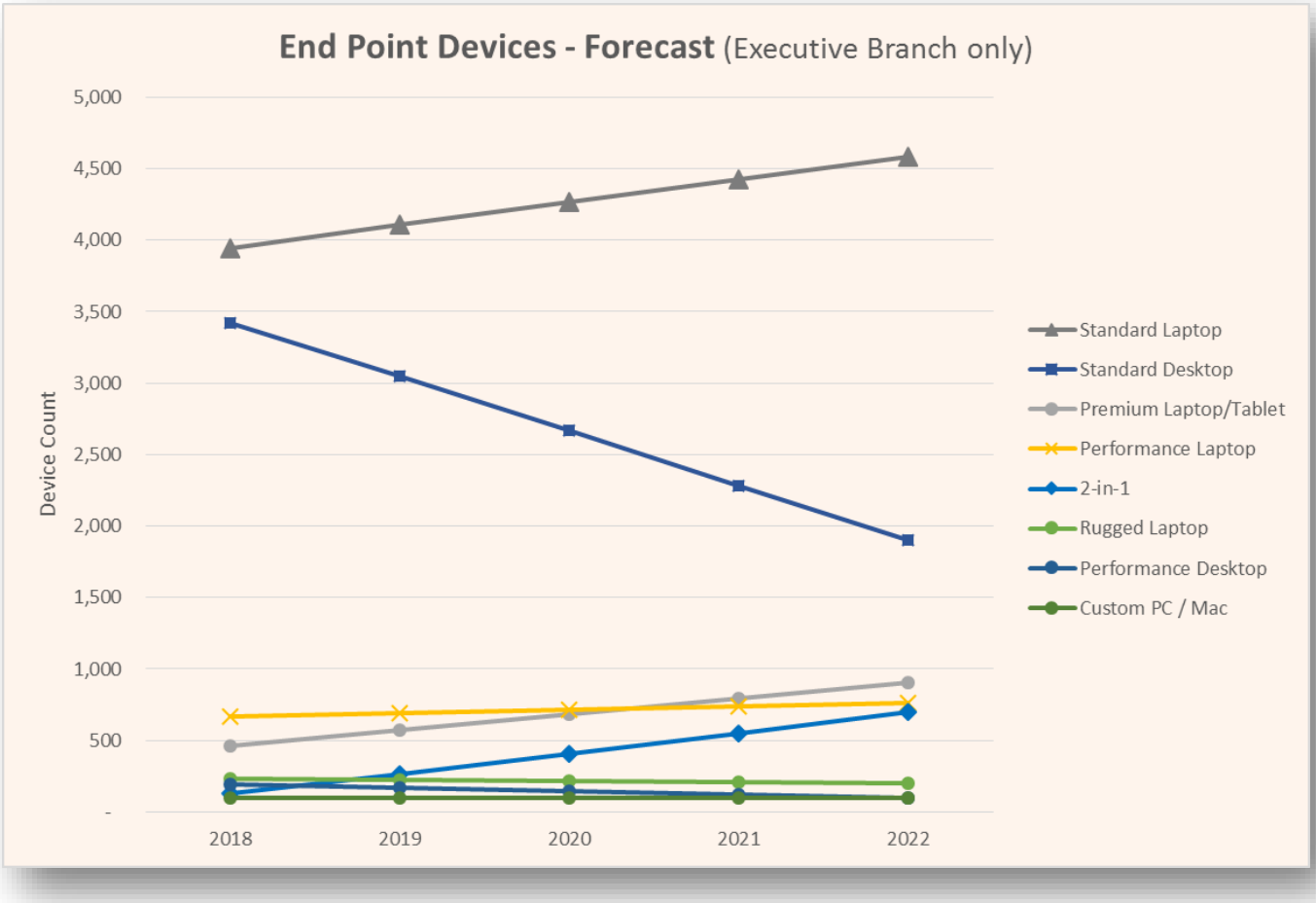
Our current support ratios for custom applications are significantly higher than the 5:1 Gartner benchmark. This causes many of the custom applications to fall well behind on their maintenance creating significant technical debt – or 'catch-up' maintenance that will be required at some point in the future. When systems fall more than 1 or two versions behind on any of their components (operating system, data base, coding language, etc..) then that catch-up work takes much longer than if it would have had it been done in a timely manner. The risk of system failure also increases significantly.

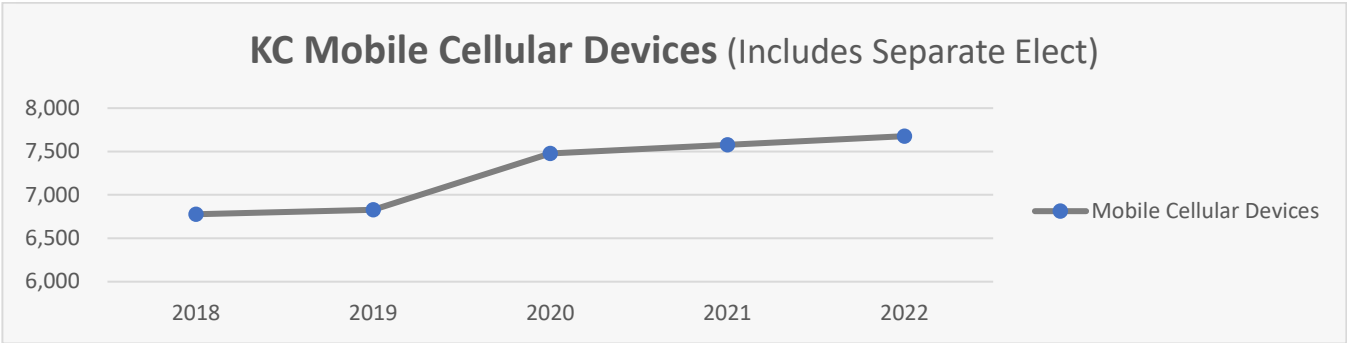
The Chart below illustrates the impact on our application portfolio of both planned modernization efforts and existing technical debt that will continue to be carried forward. Capacity is based on typical application support staffing ratios for the local government sector as identified through benchmarking.



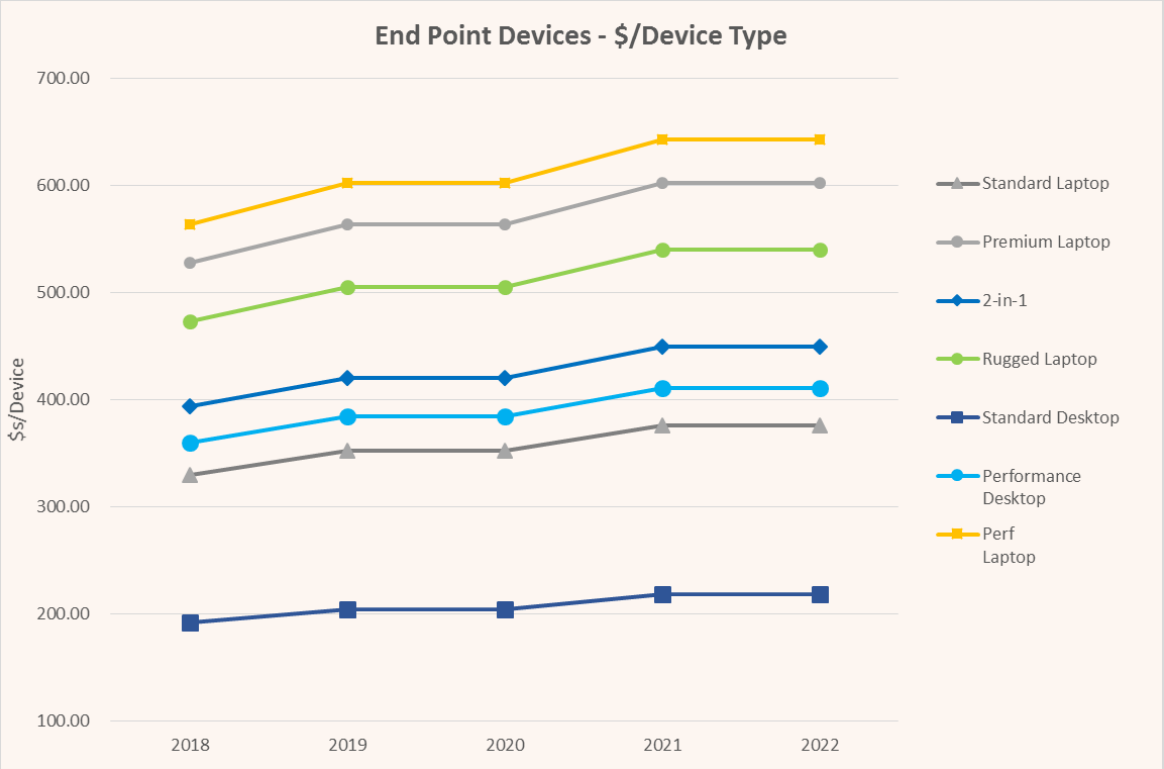
Device Projections

Devices are expected to continue migrating from desktops to laptops to support staff mobility and flexibility. While County staffing levels are anticipated to remain relatively flat, cost trends will rise slowly based on our historical experience with devices. Even though any given device will decline in price over time, to stay current, King County must continue to replace older devices with newer models with different prices and improvements in features/functions. Most employees will continue to have one device to interact with their business application systems. Many will also have a County-provided phone for communications and completing tasks.





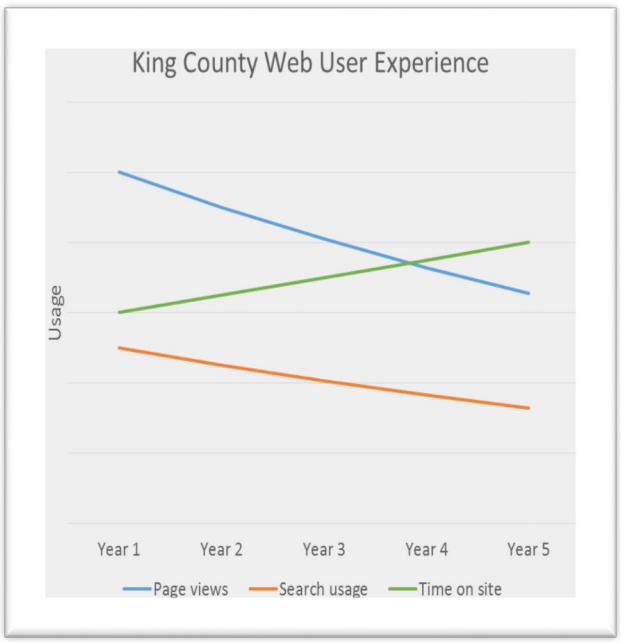
We've also forecast the projected rates for each device type over the same timeframe based on historical data from the past several years and a consistent rate across each 2-year biennium.

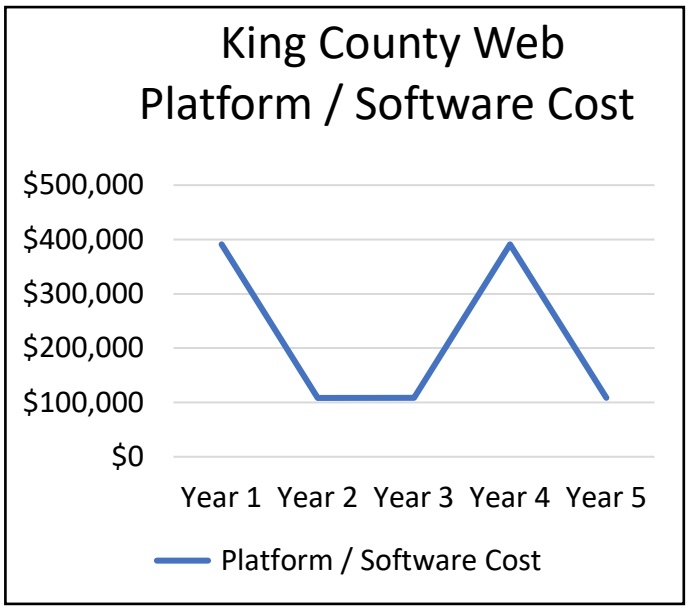


Civic Engagement Projections

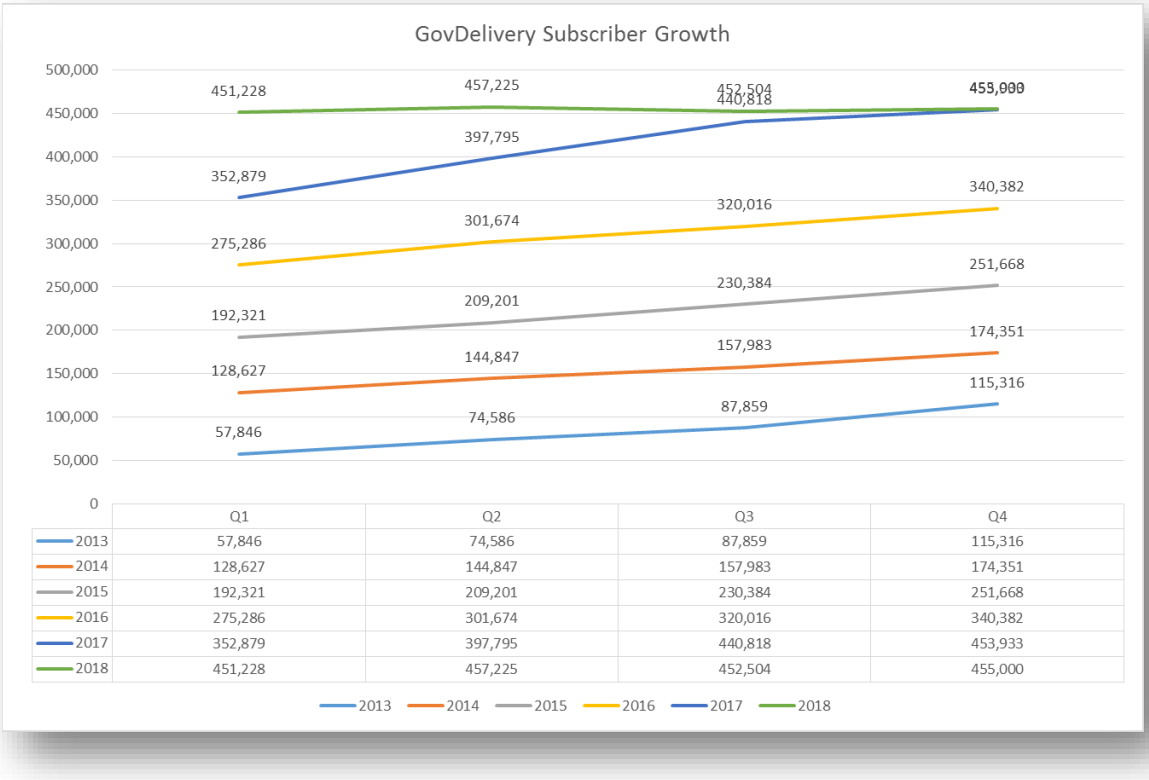
We anticipate continued significant engagement with the public, though how we conduct it will likely shift over time. Some things to consider as we reduce web stale content and realign the experience:

- We should see fewer page views (people are searching less for what they want).
- Use of search to find content should be reduced (since they are able to more easily find what they're looking for).
- Users should spend a bit more time on the site (because they would actually be engaging with the information they need, rather than giving up after failing to find what they were looking for).





Subscriptions will continue to rise as targeted messages expand across our services. For more than a decade, King County has used a vendor product, GovDelivery's communications platform, to share information with constituents and customers about more than 800 topics. The platform includes the ability to send branded email and SMS/text messages, manage subscribers and system administrators, and track metrics.



	Q1	Q2	Q3	Q4
2013	57,846	74,586	87,859	115,316
2014	128,627	144,847	157,983	174,351
2015	192,321	209,201	230,384	251,668
2016	275,286	301,674	320,016	340,382
2017	352,879	397,795	440,818	453,933
2018	451,228	457,225	452,504	455,000

Civic engagement through our online town hall is expected to increase as the number and quality of town hall topics increases with our improved abilities to post topics and monitor their progress. In 2016, King County contracted with vendor Peak Democracy (now known as OpenGov) to launch a virtual town hall, branded as King County Connects. Outreach staff uses the platform to collect feedback on a variety of policy updates and capital projects. Total usage has included:

- 29,691 visitors to the platform.
- 50+ active and completed engagement opportunities.
- 3,621 participants who responded to survey questions.
- 3,751 email subscribers.

Platform costs for both the subscription service and town hall service will remain relatively flat over the planning horizon.

C. Strategic Framework

The strategic framework provides the context within which KCIT current and future services reside. It also sets the stage for identifying new ways to improve the delivery of services and increase value to our customers and partners.

C.1 Our Strategic Technology Plan to Move the Needle

As detailed in the 2016 - 2019 Strategic Information Technology Plan, KCIT, in collaboration with our business partners, supports advancement of the county executive's priorities as well as the strategic direction of the departments and agencies to deliver efficient, effective government services.

We're focused on:

- **Civic Engagement** – Leveraging technology platforms and tools to increase opportunities to engage members of the community in conversations with government and policy makers.
- **Data Driven Decisions** – Increasing data use to understand current situations, analyze opportunities, measure results and make more informed business decisions regarding policy and the delivery of government services.
- **Effective Digital Systems** – Increasing value to business customers by providing digital systems to modernize and transform government services that better meet their needs, using standard components and continuous process improvement.
- **Mobility** – Enabling citizens, public and employees to interact and transact business when and where that's most appropriate and convenient through channels that encourage engagement with government.
- **Workforce Empowerment** – Empowering County employees to effectively use technology platforms and tools to drive and streamline business process improvements.

These goals safeguard enterprise interests when applied across projects and initiatives. The goals also result in homogenous technology investments that are more flexible and easy to maintain. This, in turn, contributes to technical debt reduction – currently KCIT's highest risk area (see the Appendix B – KCIT Risk Profile/Analysis).

C.2 Enabling Key Executive Initiatives & County Strategic Plan

King County's strategic technology priorities serve the County well in support of the executive's key initiatives (Equity & Social Justice, Climate, Best Run Government, and Mobility) and the King County Strategic Plan. These goals were refined over time and are described within the 2016 - 2019 Strategic Information Technology Plan.

With an ongoing need to build the public's trust in government, **technology connects community members** to reduce loss of trust in government or disengagement:

- Share engaging, relevant content across all platforms recognizes that, as our residents' attention spans shrink and traditional forms of media fade away, King County must tell its stories via platforms scheduled for updates, including ESRI, kingcounty.gov and other platforms built around digital storytelling.
- Enable language support on kingcounty.gov to serve the non-English speaking community through a hybrid approach of human translation or "crowd-source" content translation, which builds infrastructure for integration options and automated machine-based translation.

Allowing for innovation and adaptability across our government to help us be more dynamic and culturally responsive, the County's blueprint for action and change guides our **equity policy direction**:

- Requires Equity Impact Review tool use for all technology initiatives to ensure an equity lens is applied rigorously and holistically.
- Implement spatial data tool to review ESJ.
- Serve as pilot for public reporting of ESJ measures as outlined in the ESJ Strategic Plan.
- Connect and convene local and regional organizations to accomplish King County's digital equity plan
- Engage employees on ESJ sub-committees focused on each of the goal areas, allowing staff to contribute to advancing ESJ goals, staff development and self-confidence.

Investments in data platforms to ensure a robust foundation for timely data processing and advanced analytics to continue to move King County forward. Key to this success is the creation of cloud based infrastructure to catalog and integrate key data assets to drive self-serve business intelligence:

- Offer Power BI premium licensing allowing all county employees to access and view Power BI Dashboards and Analytics.
- Establish countywide data governance board of executive and senior leaders with a focus on cataloging and valuing data assets.
- Continue to build out the Integrated Health enterprise data warehouse and operational data stores in support of DCHS and Public Health agencies.
- Continue to build out the Transit Business Intelligence Resource Database (TBIRD) in support of advanced transportation analytics.
- Implement a metadata management toolkit/framework for automatically scanning and classifying data assets and harmonizing business glossaries and definitions.
- Complete a Master Data Management project in creating a single source of truth for employee identity data.

King County has a roadmap in areas which have an impact on the Puget Sound region. The county is a technology leader that is positioning itself to **broaden services offered** to local jurisdictions, nonprofits and educational institutions.

- Launch the Aggregation Services for regional partners to gain access to Microsoft Azure ExpressRoute, AWS Direct Connect, and other services at an affordable rate and offer an easy onboarding process that provides affordable and easy access to all major cloud providers.

C.3 Emerging Technology Trends and Innovation

Technology is disrupting business and enabling changes faster than ever. Rather than waiting for the latest innovative technology to change our work, KCIT is taking control and shaping technology to fit our business partners' wishes and requirements. Supporting the digital platform and offering business innovation, the technology team is developing solutions that offer experimentation with new technology. The approach to exploring technology is to develop proof of concepts (POC) or prototypes through the innovation lab. The innovation lab offers use cases and sandbox to explore the latest technology within the County environment.

The County has invested in its technology infrastructure over the last seven years, building effective digital systems and platforms that promote mobility and civic engagement, all of which enables King County's best-run government efforts to thrive today. Customers are inspiring the top technology priority: use technology to solve King County's pressing challenges. Although the latest in artificial intelligence, mixed and virtual reality, natural language processing, geo-spatial data, and IoT is incubating here, the County's work is about making life better and creating opportunities for members of the community and businesses to thrive including:

- Evaluate use of drones in the Assessor's Office to survey damage following disasters (flooding) where areas are inaccessible.

- Using drone simulator to train county staff in the Assessor's Office and IT.

- Build a chatbot that uses artificial Intelligence (AI), machine learning and natural language processing to respond to most frequently asked questions of kingCounty.gov, continue to increase the accuracy of response, and to do so in 170 languages. An internal prototype has been built thanks to a hack fest event with external launch planned in 2018.

- Build a mobile application that enables pictures of plants to be compared with noxious weeds and provide likely matches that are submitted with geo-location attached. The app also provides information on how to treat the weeds. AI and recognition plays a key role in this app.

- Launch Connect, in partnership with Amazon AWS, to address King County's live answer. Connect uses AI, machine learning and natural language processing to answer callers' questions or direct callers to appropriate offices or text information to the caller.

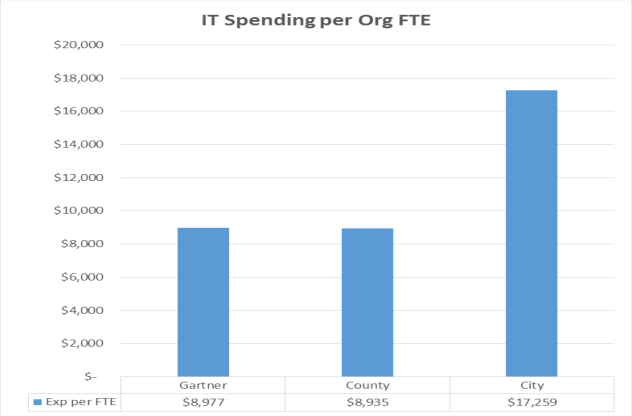
- Launch a proof-of-concept for augmented reality using Microsoft HoloLens and Taqtile's Manifest software to incorporate into the workflow real-time review of IoT sensor data from within the lens, and the ability to increase safety by not allowing the operator to move forward to the next step in the standard operating procedure (SOP) until a meter reading is within acceptable levels. Having this maintenance capability more broadly available to additional staff is also a key safety feature related to emergency overflow situations that occur during significant storm events.

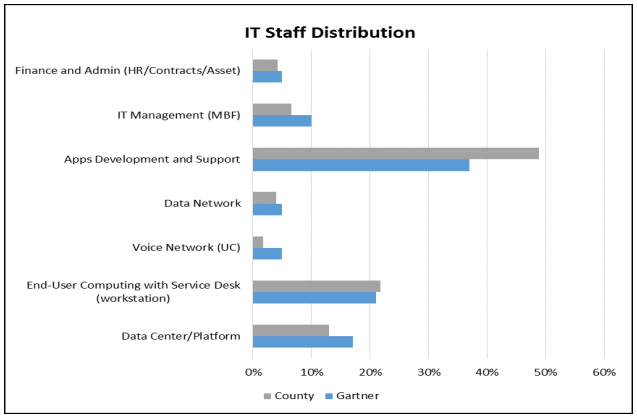
C.4 Benchmarking Performance

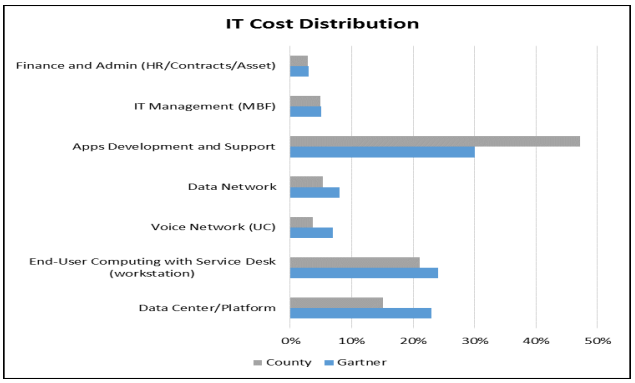
Using the benchmarking process, which is a continuous process of measuring products, services and capabilities against public sector peers, KCIT can evaluate its performance from an external perspective in comparison with peer institutions. Gartner, a research and advisory company, benchmarks various state and local government IT metrics. KCIT has evaluated our performance compared to industry averages and the City of Seattle below.

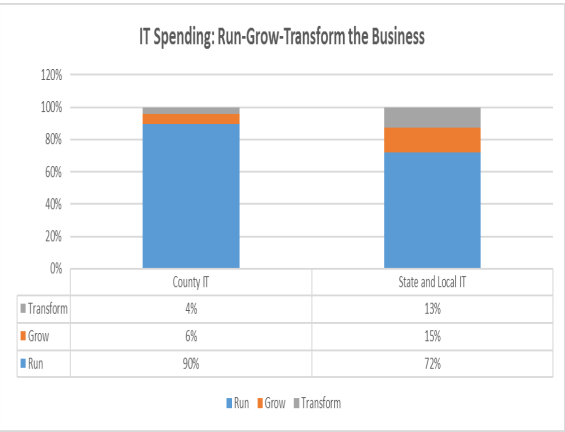
The information primarily shows that King County:

- Spends less on IT than our local/state government peers;
- Has more staff focused on applications than infrastructure, relative to peers. The drivers are:
    - Past strategic IT approach to focus on infrastructure initially and then applications starting with the 2016-2019;
    - Significant accumulation of technical debt related to past implementations of non-standard application and data base technologies; and,
    - On-going organizational alignments towards ITIL based service delivery.
- Allocates most IT resource to Run versus Grow or Transform activities. The drivers are:
    - Significant technical debt caused by past decentralized IT organizations without standards;
    - Continually increasing demand without commensurate funding;
    - Implementation of new systems without associated decommissioning of prior systems (i.e. only partial replacement rather than full replacement).









C.5 Cost Minimization

We realize that cost is a critical driving factor for our customers and we minimize costs wherever possible. Our efforts have led to top 10 performances in the national Digital Counties Survey over the past decade (including a first place ranking in 2017). At the same time, we have charged below-average costs when compared to our peers, especially our peers such as the city of Seattle. *(As shown in the Gartner benchmarking chart above.)*

Many of the short-term initiatives either underway or identified in our implementation plan target efficiency and quality improvements:

Process improvements that improve quality, timeliness, and cost are expected from the following:

- Implementing user-centered design, business analysis, quality assurance, training, change management and architecture.
- Implementing and following an IT engagement framework (ITEF) – reducing effort spent on un-approved work, assigning the most appropriate resources, and improved scheduling.
- Continuing to improve on our ITIL implementation using industry best practices that we continue to improve and expand upon.
- Implementing and follow an upgraded Solution Delivery Framework, consistent and common processes for how we introduce significant changes into the production environment.
- Innovation program – changing our risk profile to invest in higher risk/higher reward projects while also limiting the amount of time and money invested in them.
- Lean continuous improvement efforts such as our focus on equipment disposal.
- Check and balance processes minimizing the proliferation of systems and applications that do the same thing.

The demand for IT services continues to grow both to strategically enable business and to underpin business efficiencies. This makes it difficult for customers to reduce their overall IT costs when they are interested in increasing their overall demand and use of IT services.

The best approach is to work together as business partners to determine the best way to invest in and leverage strategic services and reduce use where advantageous. This requires looking at the cost to provide a service, not just how to minimize the high cost of IT, as this may turn out to be more expensive in the long run. It also requires the fortitude to keep systems current so that their maintenance costs driven by technical debt don't overshadow the ability to develop and align with new business needs.

C.6 Risk Plan

KCIT conducted a high level risk analysis to better understand our current risk profile, target key risks for mitigation efforts, and to assign to ownership to those risks. In general, risks related to outdated systems were seen as the most critical and the most likely to disrupt value to our customers. The following categories were also identified:

Risk type	Priority	Active Mitigation?	Owner?
Legacy / Aging Systems	1	Y	Y
Staffing	2	Y	Y
Security	3	Y	Y
Innovation	4	Y	Y
Budget Pressure	5	**N**	Y
Missing Financial Information	6	**N**	Y
Process Deficiencies	7	Y	Y

For more information, see Appendix B – KCIT Risk Profile/Analysis.

D. Implementation Plan

The following action plans identify the initiatives that are already underway or will be undertaken in the short and/or long term in order to meet projected service delivery requirements for all of our services over the next biennium. This is in addition to our current operational model to both support existing operations and to implement in-flight and approved IT capital projects. Important efforts are described below and in the implementation plan table that follows.

D.1 Continuous Improvements

Security Roadmap/Cybersecurity

Enhance our cybersecurity program to protect the county's technology infrastructure on multiple fronts from cyberattacks that have increased in frequency and sophistication. Recent frequent phishing attacks were an indication that cyber criminals are looking for opportunity to gain access and control of county systems and/or to obtain sensitive information. This effort will allow the county to reduce risk from cyberattacks that occur at multiple fronts. The expenditure request is a combination of purchasing tools, one-time set up, one-time architecture reconfiguration and transition, and ongoing vendor licenses and services to follow the cybersecurity roadmap. The package also included a request for annual self-audit to ensure security compliance.

Data Services Platform & Infrastructure

Establish a platform for countywide data infrastructure that will address the growing needs of data management and integration and to comply with regulations for CJIS, PCI and HIPAA. A standard data infrastructure platform using vendor cloud services, storage, and data analytics tools is needed to address significantly growing demand. Many new active projects that are heavily data-focused and require integrations, such as Transit Business Intelligence Resource Database (TBIRD), Jail Management System, and Fully Integrated Managed Care, are or will be heavily using this platform. Establishing and supporting this common data infrastructure platform is crucial for data integration.

Integration includes infrastructure and processes to catalog and curate data assets and open the data for greater transparency. It enables the building of integration hubs to link and aggregate data for ease of use and discoverability from the data warehouses. King County currently has more than 1,800 databases that are scattered, and there are risks and challenges to meet CJIS, PCI and HIPPA requirements on how they are handled and secured. Having the common platform will ease the discovery and data classifications. In the future, we will expand on the platform to include necessary improved data quality, master data management, and countywide governance components as our platform matures.

Application System Monitoring

Add application performance management and monitoring capabilities which will monitor our applications and alert on potential issues, allowing technical staff to address the issues before they become customer impacting or a major issue.

Radio Services

In preparation for the PSERN rollout, KCIT's radio shop will be assessing and updating its operating model appropriately to fully support and leverage the new network. They have also identified potential risk to current radio infrastructure should roll-out happen later than expected and are mitigating that risk appropriately by addressing at risk equipment and making contingency reserves available should they be needed.

Customer Support Services

As we improve the services and support related to end user devices, there are several efforts needed to continue that improvement in the coming years. Reimbursable expenses related to workstations, such as desktop software and peripherals, need to be managed in the same manner as the workstations themselves so that we are planning for their maintenance rather than hoping we have any funds to pay for them. Enterprise desktop software is migrating to a subscription model based on users, as opposed to devices. This enables users to work more fluidly across their multiple devices to utilize the one most effective for the current task without losing all of their customizations or access to appropriate software and is an industry trend. Finally, we need to account for work phone equipment replacement that is passing their end-of life following our initial phone system migration to voice over IP several years ago.

Enterprise Rates

Initial movement to a services based organization saw KCIT move many of our costs directly into service based containers that didn't accurately reflect their enterprise impacts or the way they were being utilized. As we have learned from this over the past biennium, those costs that are truly enterprise and are more effectively utilized and distributed when included within enterprise rates have been corrected and are being moved back to the appropriate enterprise rates. This is important to ensuring that both customers and service providers are incented to deliver the highest overall value to our end customers. Several of the areas where this is occurring include cybersecurity, network, data services, software quality assurance, application integration, the production operations center, cloud/mobile solutions, infrastructure engineering, platform services, user training, systems analysis, and initial project consulting.

D.2 Modernizing KCIT's Application Portfolio

KingCounty.Gov

The current platform to support KingCounty.gov website is six years old (2012) and out of support. Technology has changed considerably since 2012 and we need to keep up with those changes and maintain standards required by law such as the Americans with Disabilities Act (ADA) and to support the ESJ initiative. In addition to the capital project that will upgrade the platform, we also need to adjust maintenance cost for KingCounty.gov platform to align with the maintenance cost that will require a vendor-managed service after the platform upgrade project implementation.

Puget Sound Emergency Radio Network (PSERN)

During 2019/2020 biennium the Puget Sound Emergency Radio Network (PSERN) project will be nearing completion of equipment implementation and testing. The project plan has all radio site construction, equipment installation and most testing completed by the end of 2020. Additionally, throughout 2020, radio users will receive new replacement radios and transition to the PSERN.

E911 Modernization

The E911 strategic plan calls for modernizing platforms as they are now outdated and may soon increase the risk of service delivery if not modernized. Three capital projects have been submitted that address the key needs.

Network

Adjust network equipment maintenance appropriation to align with the increase imposed by our maintenance vendor due to regular cost increases, an increase in number of devices (equipment) as a result of network site increases and/or equipment/service upgrade. An increase in sites also resulted in an increase in transport cost.

D.3 Equity and Social Justice

Digital Equity Plan

KCIT has drafted a digital equity plan as part of the ESJ strategic plan's pro-policy agenda. The plan is intended to bring regional partners together to collaboratively solve the digital inequities that existing within our communities. A collaborative regional equity performance dashboard is currently under construction, with many more actions targeted at moving the needle on digital equity.

ESJ Strategic Plan Minimum Requirements

KCIT will fully support the minimum departmental expectations laid out in the King County Equity and Social Justice Strategic plan. We currently have sub-committees established for each of the six goal areas in addition to other, targeted sub-committees. These committees are comprised of employees and are designed to enable employees to improve their skills and abilities as they work towards meeting goals.

D.4 KCIT Internal Operational Maturity

Significant effort is currently underway to improve our internal IT processes. The IT Engagement Framework project, or ITEF, is creating a repository for all customer requests so that we have a common practice for evaluating and prioritizing those requests. It also is the starting point for assigning appropriate resources in a timely way so that we are effectively utilizing staff time to accomplish customer needs. Inter-twined with ITEF, are the industry methodology for service delivery, called IT Service Management, or ITSM, the best practices for delivering projects or SDLC for Solution Delivery Framework, and Project Management Methodology (or PMM) which focusses on the discipline of IT project management best practices and is being customized to fit our needs while providing a standardized set of tools that better enables PM's to move within projects.

Another area that has recently been introduced is our Innovation Program that is looking to improve the risks we take when investing in technology by time-bounding investment including the allocation of resources so that higher payback investments are introduced. This effort was discussed briefly above under emerging trends.

D.5 Staff Development

As we benefit from our process improvement efforts related to ITIL, ITEF and other areas, we anticipate migrating resources from areas of increased efficiency and quality to areas of need that are less mature but expected to grow in support of overall IT process improvements and are critical to success. Current resource pain points that continue to grow due to shortages of staff include the project managers, business analysts, system analyst, and quality assurance functions. In addition to increasing staff skills, we will need to support some of our more complex, critical projects through the recruitment of skilled key individuals.

To ensure that staff migrate into the roles required of a modern IT workforce, we are participating in the Career Progression Classification Project as one of the initial departments to look at upgrading our specifications. We also expect to have employee development plans for all employees who are interested in them in order to best support their career aspirations and the future needs of our department. Finally, we plan to create and maintain a succession plan that will help identify needs well in advance that lead to internal employee opportunities for promotion over time. Ideally, this will fit together with development plans to ensure that our staff are continually growing and accomplishing their career goals.

D.6 Short-Term (Next Two Years) Implementation Plan Chart

Action	Start Date	End Date	Accountable	Expected Results *(include expected impact on key metrics at Tier 4 or 3)*	Budget Decision
Continuous Improvements (Item D.1 Above)					
Security Roadmap / Cyber Security	2018	2020	Chief Technology Officer (CTO) & Chief Information Security Officer	• Fewer accounts compromised • Less (if any) loss of sensitive data • Less business downtime	Op-new
Data Services Platform & Infrastructure	2017	2022	CTO & Chief Data Officer	• Increased compliance with industry data standards • Faster system implementations through easier data access/update/sharing • Reduced time to analytics / analysis	Op-existing and new
Application System Monitoring	2019	2019	Mgr. of Ops	• Improved awareness and ability to respond to security issues • Improved troubleshooting of incidents and problems	Op-new
Radio Services	2020	2021	Mgr. Regional Services	• Capability to interact with/ support next generation radio system launched by PSERN project	CIP Project
Customer Support Services	2019	2019	Ops Manager	• Streamlined, more effective operations	Op-existing
Enterprise Rates	2019	2019	Finance Manager	• Improved alignment of costs with service delivery	Op-existing
Modernize KCIT's application Portfolio (Item D.2 Above)					
KingCounty.gov	2019	2020	Mgr. Digital Civic Engagement	See submitted Business Achievement Plan (BAP)	CIP Project
PSERN	In Flight	2020	IT Project Director - PSERN	See previously submitted BAP	CIP Project
E911 Modernization	2019	2020	Mgr. Regional Services	See submitted BAP	CIP Project
Network	2019	2020	Mgr. Operations	See submitted BAP	CIP Project
Equity and Social Justice (Item D.3 Above)					
Digital Equity Plan	2017	2018	Manager of Equity and Diversity	• Improved digital equity throughout King County • Increased internet access/usage by currently underserved communities	Op-existing
ESJ strategic plan minimum requirements	2017	2022	Manager of Equity and Diversity	▪ KCIT provides an equitable environment	Op-existing

				▪ Expanded training and awareness around leading with racial equity	
KCIT Internal Operational Maturity – Use of Standard Methodologies & Industry Best Practices (Item D.4 Above)					
ITEF – IT Engagement Framework	2018	2019	Director of IT Delivery	▪ Improved utilization of resources ▪ Increased reliability of delivery as planned ▪ Faster response to customer requests	Op-existing
ITSM – (IT Service Management) Solution and Process Upgrade	2017	2018	Operations Mgr.	▪ Improved ticket tracking, responsiveness ▪ Improved customer satisfaction	Op-existing
SDLC* and PMM** Implementation * Solution Delivery Life Cycle ** Project Mgmt Methodology	2019	2020	Director of IT Delivery	▪ Increased quality and predictability of solution delivery introduction	Op-existing
Innovation Program Build Out	2018	12/31 /2019	Strategic Technology Planning Mgr.	▪ High value business process improvements ▪ Faster adoption of new technology ▪ Improved risk posture moving from ineffective towards optimized ▪ Improved investment portfolio leading to higher overall customer value ▪ Faster response to business change/industry changes	Op-existing
Staff Development (Item D.5 Above)					
Migration of Staff Skillsets	2017	On-going	KCIT HR SDM	▪ Modern employee skill sets fit to service delivery needs	Op-existing
Career Progression Classification Project	2018	2020?	HRD, KCIT HR SDM	▪ Improved IT hiring and retention	Op-existing
Employee development plans for all (esp. bottom 20%)	2017	2022	KCIT HR SDM	▪ Improved employee engagement ▪ Long term increase in promotions	Op-existing
KCIT Succession plan created/ maintained	2018	2020	HR SDM / CIO	▪ Claims reductions ▪ Employee engagement ▪ Updated technical skills and capabilities	Op-existing

D.7 Long-Term (More Than Two Years) Implementation Plan Chart

Action	Years	Projected Impacts
Issue/Problem/Goal#1		
PSERN Implementation	Through 2022	▪ Increased public safety ▪ Improved regional collaboration
Mobility Solutions	Now through 2022	▪ Increased mobility and consequently productivity for our many customers
Digital Civic Engagement	On-going	▪ Improved communication, collaboration, and dialogue through digital tools
Data Management & Analytics Maturity	Now through 2025	▪ Increased use of data for decisions ▪ Innovative uses of data to improve service delivery

Appendix A – Strategic Technology Indicators by Objective

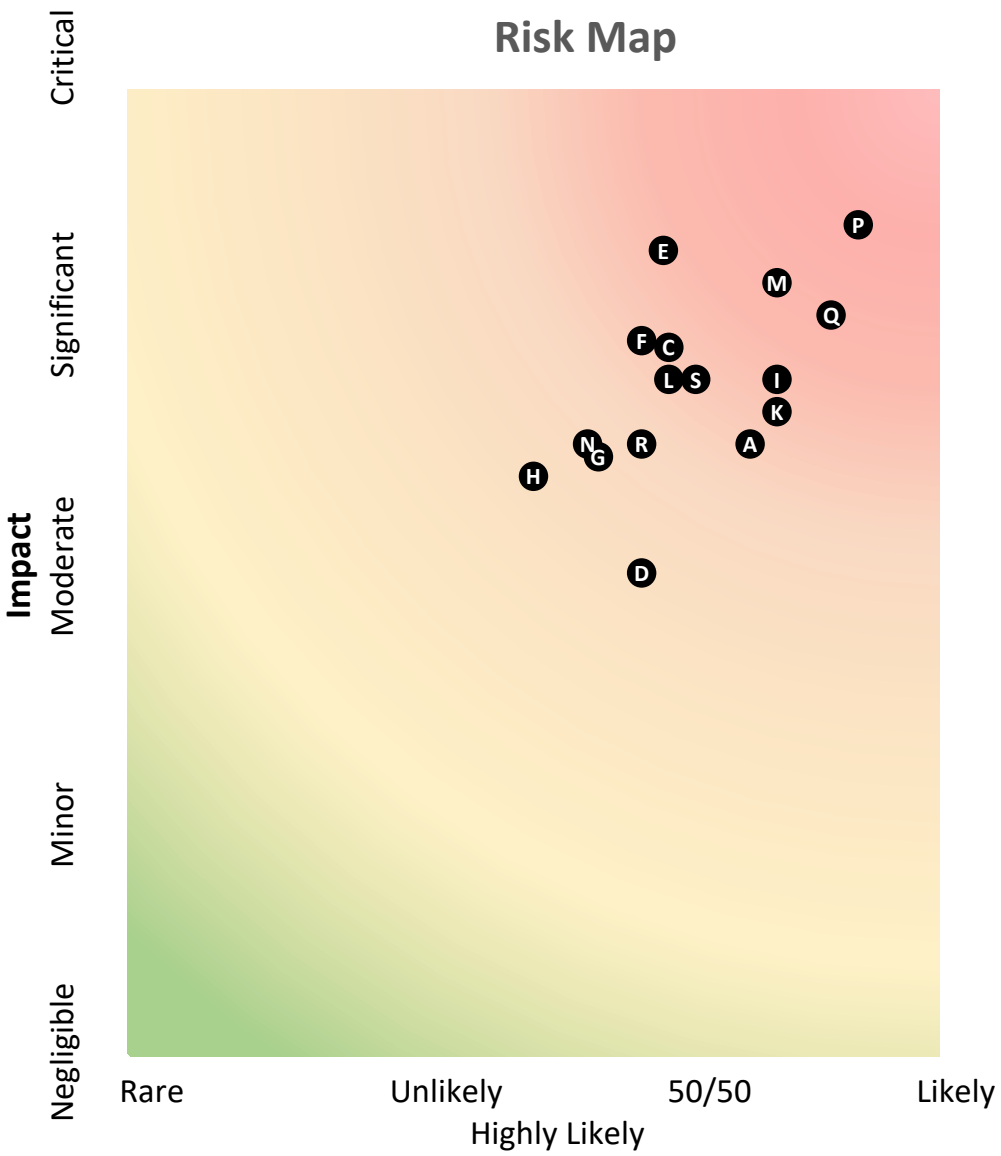
Information Technology Priorities		Resulting Benefits
	**Digital Civic Engagement** – Leverage IT platforms and tools as a channel to increase the opportunities, convenience and audience engaging with government	• Increased participation of members of the community in government • Deeper, more impactful 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 value to members of the community 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 access to data for members of the community • Improved workplace efficiency through better performing business applications and reporting • Improved transparency and usability through increased integration and sharing of data

Information Technology Priorities		Resulting Benefits
	**Mobility** - Empower members of the community to interact and transact business when and where most appropriate and convenient	• Re-designed business processes geared toward customer service and overall efficiency • Increased convenience for members of the community 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

Appendix B – KCIT Risk Profile/Analysis

Tag	Risk	Impact	Likelihood	Exercise Impact Score	Exercise Likelihood Score	Exercise Score	Priority	Owner(s)	Primary Customer impacted	Next Steps
P	Critical systems depend on legacy applications (unknown failure points, succession issues, vulnerabilities, continuity issues)	Critical	Highly likely	4.8	5.0	24.0	1	Aaron	Agency/dept	Focus on Resiliency requirements first
Q	Increasing costs associated with unaddressed/unresolved technical debt	Critical	Highly likely	4.3	4.8	20.9		Tanya/SDM	All	Create System Portfolio Roadmaps for all customers
M	Outdated IT systems delay or impair service	Critical	Highly likely	4.5	4.5	20.3			Agency/dept	
F	Difficulty recovering in an emergency (power outage, snow, flood, windstorm)	Significant	Likely	4.2	3.7	15.4			All	
I	Loss of personnel or inability to fill positions due to competition	Significant	Highly likely	4.0	4.5	18.0	2	HR	All	Career Progression Classification Project
C	Skill sets expire with limited ability to replace them	Significant	Likely	4.2	3.8	16.0			All	employee development plans for all (esp bottom 20%)
L	Loss of personnel and institutional knowledge due to retirement	Significant	Likely	4.0	3.8	15.3			All	Succession plan created / maintained
O	Single points of failure associated with succession planning and personnel backups	Moderate	50/50	3.5	3.0	10.5			All	Targeted employee training on adopted new technology standrds
K	Escalating and/or unresolved conflict between/among employees	Significant	Highly likely	3.8	4.5	17.3			All	
E	Loss of data and liability due to electronic security breach	Critical	Likely	4.7	3.8	17.7	3	CISPO	Citizen	Grow security office. Invest in needed tools (IPDD)
S	Risk averse/risk avoidance leads to missed opportunities and/or a lack of innovation	Significant	Likely	4.0	4.0	16.0	4	John	all	Establish Innovation program and mode2/agile processes
N	Inability to keep up with technologies demanded by public and agencies	Significant	50/50	3.7	3.3	12.2			All	
A	Conflict between increasing cost pressure (to reduce cost and limit headcount) and increasing demand for IT services	Significant	Likely	3.7	4.3	15.9	5	Tanya	Agency/dept	From customer to partner, Innovation partnering
R	Contingency funds for projects are inadequate and add to delays	Significant	Likely	3.7	3.7	13.4	6	Sharon	Agency/dept	Engagement Framework,
B	Resources associated with a project do not match the work to be done	Moderate	Likely	3.5	3.7	12.8			Agency/dept	contingency data and delay data analysis
D	Failure to meet productivity benchmarks of other environments. Higher number of staff are required to deliver the same amount of work.	Moderate	Likely	3.0	3.7	11.0			All	
J	Incomplete financial information leading to inaccurate projections	Significant	50/50	3.6	3.4	12.2	7	Christine, Ga		Utilize engagement framework data, work with PSB to fill holes
								Gauhar		
H	Process requirements lead to customers seeking alternatives or shortcuts	Moderate	50/50	3.2	3.2	10.0	8	Tanya/Ann	Agency/dept	on-going customer satisfaction surveys
G	Failure to perform in compliance with agreements (SLA's)	Moderate	50/50	2.6	3.5	9.1			Agency/dept	Refresh SLA expectations, Upgrade Service desk processes/software


Risk Map
Impact
Critical
Significant
Moderate
Minor
Negligible
Rare
Unlikely
50/50
Likely
Highly Likely
P
E
M
Q
F
C
L
S
I
K
N
G
R
A
H
D

Appendix C – KCIT Service Rates

Service rates are available on the KCIT SharePoint site for internal use.

https://kc1.sharepoint.com/:x:/r/teams/itc/BF/budget/BudgetDocuments/2019_20%20BUDGET%20Documents%20for%20ITSDM%27s/KCIT%2019_20%20%20Unit%20Rates.xlsx?d=wa6a5b60ee10c4dab924a85b8c877b422&csf=1