

Enterprise IT Strategic Plan

Information Technology Services (ITS) Department

Jefferson County, Alabama

2019





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County Manager's Message

I am pleased to present to you the Jefferson County ITS Strategic Plan for the years 2019 through to 2022. The ITS Department has been hard at work preparing a plan for the future of technology at the County.

The ITS Strategic Plan will be a fundamental report for tracking ITS performance and accountability across the County. It is based on broad County outreach and thorough analysis, and it reflects the values and priorities of the Jefferson County. The plan outlines ITS' plan to support the County in:

- Enabling the economic development of the County
- Improving decision making at all levels of the County
- Delivering effective services to citizens and constituents
- Improving communications, both internally and externally in the County

Our vision for the ITS Department is an ambitious one: "The Department of Information Technology Services will be recognized as a high-performance team providing technology excellence that is in alignment with the Jefferson County Commission mission and goals." To that end, the Plan contains objectives and related strategic priorities that provide a roadmap for how we can achieve this vision over the course of the next three years and beyond.

The Plan is meant to inspire all of us to consider how we can use technology to support our communities and achieve prosperity across the entire County. For the Commissioners and County staff, the ITS Strategic Plan will be an important tool for setting technology priorities, making decisions, and managing operations for years to come.

I am often impressed by the tremendous passion of the ITS Department. That passion was evident throughout the ITS strategic planning process, and it will certainly serve us well as, together, we seek new and innovative solutions to better serve our citizens and constituents. I look forward to working with everyone on this plan and welcome feedback as we continue to grow and prosper.

Sincerely,



Tony Petelos
Chief Executive Officer



CIO's Message

I am honored and excited to present to you the Jefferson County Information Technology Services (ITS) Strategic Plan for years 2019 through 2022. This living document, amended every 12 months, provides strategic direction in a time where technology plays a critical role in determining organizational success. The 2019-2022 Strategic Plan empowers a strong partnership between IT and the County Departments to advance the technological maturity of the County with effective and cost-efficient solutions.

In support of the County priorities, the ITS Department first introduced a Strategic Direction Report in 2018. A strong emphasis was put on creating an effective and unified ITS team that delivers reliable and valuable services. Working as a team, we had some great success with our initiatives and created a solid foundation for Jefferson County ITS to advance forward. Some key achievements include:

- Modernization of our IT infrastructure that drastically improves performance and reduces the likelihood of outages
- Adoption of Office 365 to foster a digital workforce and enable rapid collaboration across different teams and departments
- Implementation of the Open Data Portal to allow access to County data and improve our transparency into decision making

In closing, I would like to acknowledge the hard work of all the members who participated and provided their insights into the future of technology at the County. These inputs helped us identify key opportunities to advance the County's use of technology. I especially want to thank the Commissioners, the various department leaders and their teams for their continued support throughout our endeavors. Together, we are building a future that allows the County to better serve our riders with effective and innovative solutions.

Please don't hesitate to contact me if you have any questions or would like to discuss this plan further. karras@jccal.org

Sincerely,



Srikanth (Sri) Karra
Chief Information Officer



Introduction

The Information Technology Services Strategic Plan provides a complete and comprehensive County-wide IT Strategy to transform Jefferson County with innovation and technology to deliver effective services to internal stakeholders and the County's citizens and constituents. The ITS Strategic Plan for Jefferson County has been developed with support from the County commissioners and departments to align the ITS department to the County's objectives and ensure that their information technology needs are supported. As a part of the ITS Strategic Plan, a three-year roadmap has been developed to help the County implement the plan and ensure that the value outlined in the strategy can be realized.

As a part of the effort to build the ITS Strategic Plan, an assessment of the ITS Department was performed in connection to provide a baseline from which to measure the success of the strategy. The ITS Strategic Plan is a "living" document that the County will update on a regular, consistent basis. As mentioned above, the intent of the Plan is to ensure that the strategic initiatives are aligned with and supportive of general goals and objectives of the County.

The following visual highlights the inter-relationship between the County objectives and the ITS Strategic Plan:





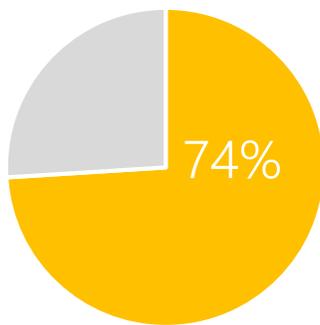
Technology Assessment

Based on interviews conducted with County Commissioners, department leaders and their teams along with surveys sent out to County employees, a current state maturity of the ITS department and its services was developed. The current maturity is used to identify gaps and opportunities for the ITS department.

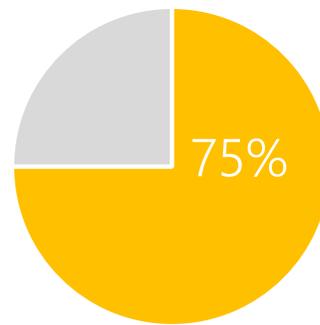
The assessment identified that there has been significant progress in improving ITS services across the County, as well as significant opportunities to enhance the County’s technological position even further.

Overall, the findings indicate broad support for ITS, with high ratings for satisfaction and value provided by ITS.

Satisfaction with ITS

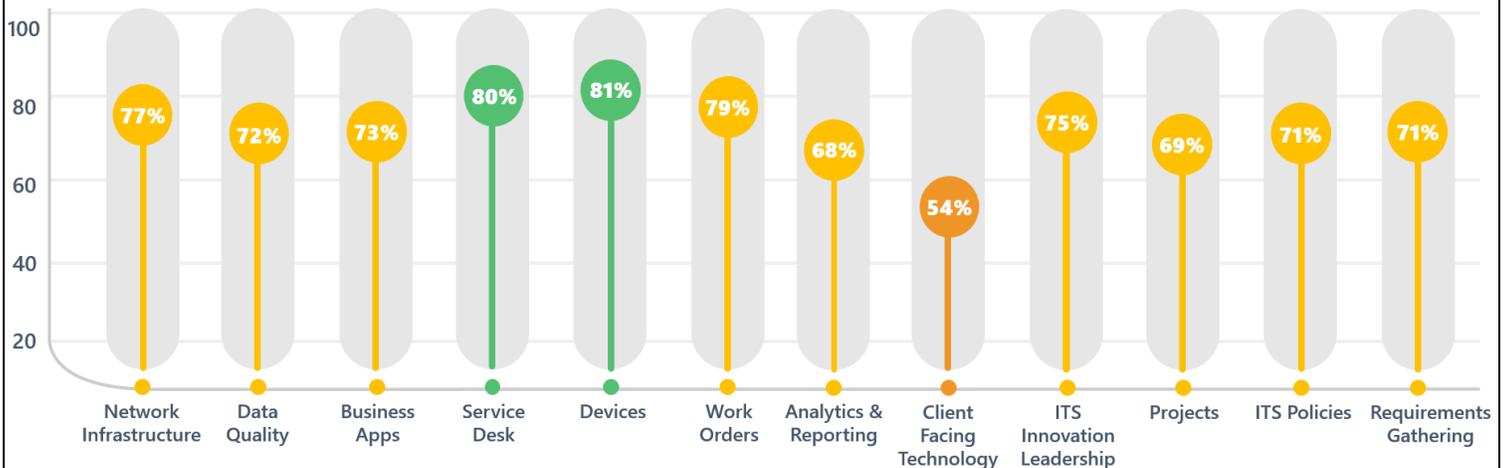


Value provided by ITS



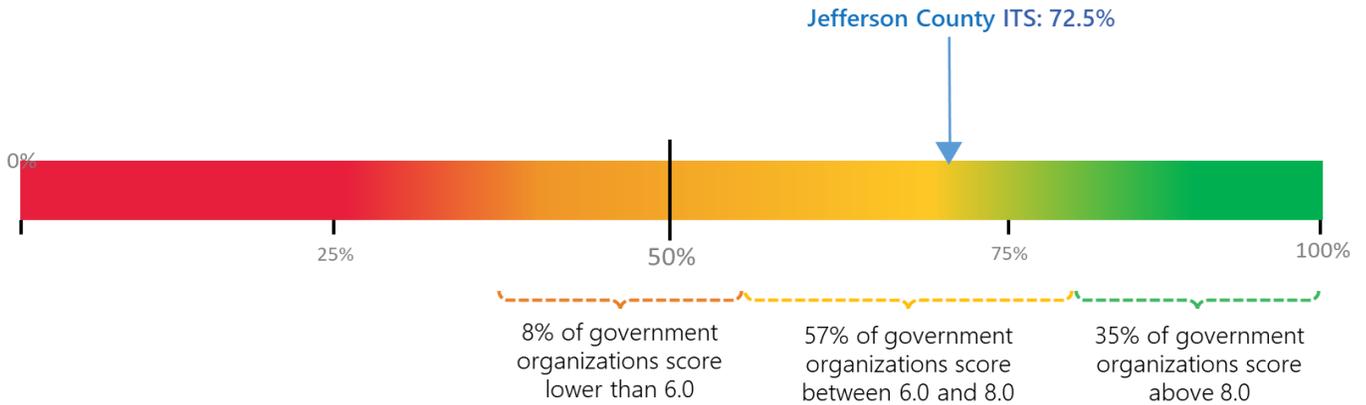
Based on Info-Tech’s Business Vision Survey, end users are most satisfied with the ITS Service Desk and the Devices provided to the County, followed closely by the Work Order Fulfillment and Network Infrastructure.

Satisfaction with ITS Services

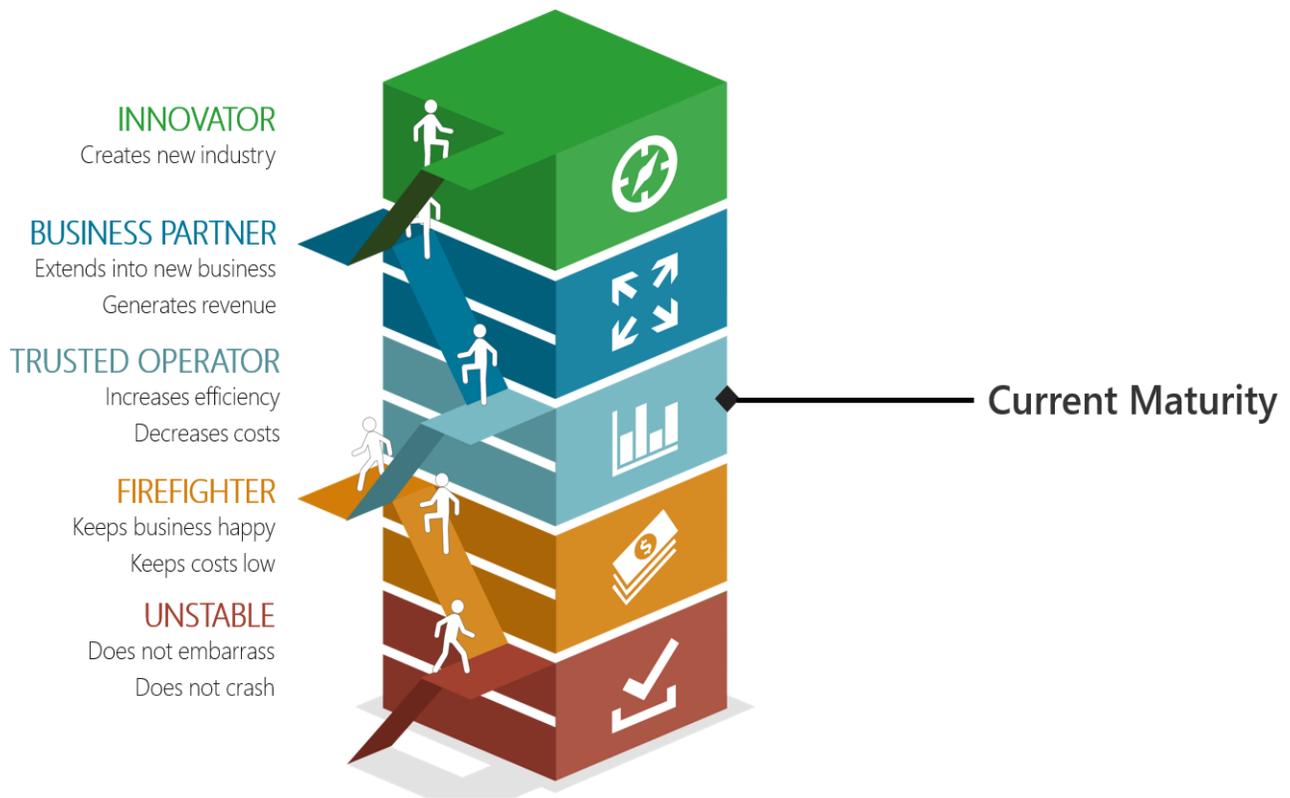




These results put the ITS Department close to the average satisfaction scores among their peers in other counties:



Based on our assessment, we have determined that the ITS Department at Jefferson County is a Trusted Operator, with reliable infrastructure, service management, functional business applications and effective fulfilment of business requests:





Opportunities Summary

Jefferson County IT is well-positioned to transition from being trusted operators that keep the County's systems up and running to business partners that work closely with County Departments and Commissioners to deliver on strategic initiatives and improve services for citizens. Opportunities for growth and improvement include:

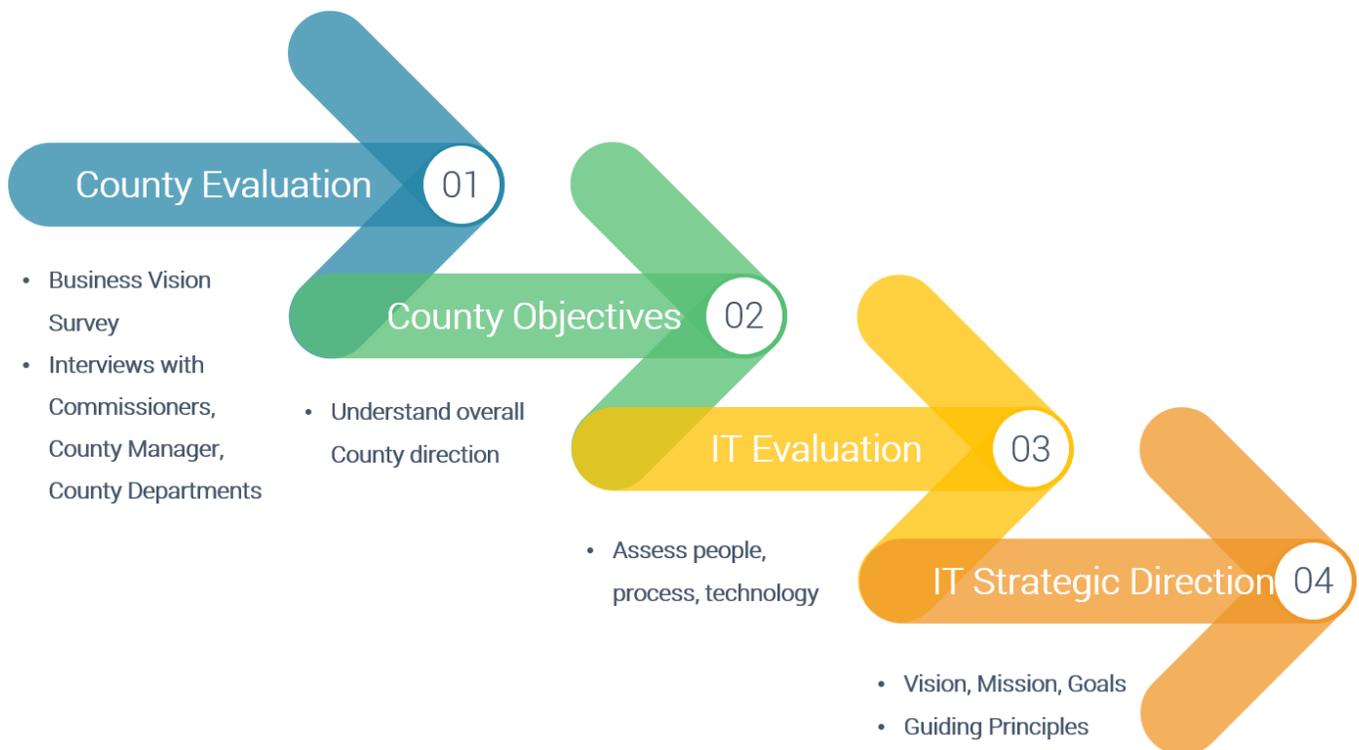
- Streamline and automate processes; move away from manual, paper-based processes for improved collaboration, communication and efficiency across the County.
- Improve the data sharing, access, security, and accuracy for strategic County-wide data-based decision-making.
- Improve service accessibility by offering web/digital self-service options to constituents as well as internal County employees.
- Improve remote work capabilities for employees across the County.
- Consolidated licensing agreements and improved vendor management for improved service, business value, and cost control.
- Enhance security operations to drive security prevention, detection, analysis, and response processes to address the increasing the increasing sophistication of cyber-threats.



Strategic Planning Process

The Information Technology Services Strategic Plan is the culmination of assessments of the current state of ITS, analysis of the environment in which they operate, the County's overarching goals, and industry best practices. The process began ITS gathering input from a broad set of stakeholders across the County organization. Input was obtained from the County Commissioners, County Manager, Department Heads, Chief Information Officer and many other department representatives. As a part of this exercise, PESTLE factors and business drivers were identified and used as input into the plan creation. Lastly, trends in other counties and municipalities were gathered as additional inputs into the planning process.

Methodology



1. County Evaluation

- Business Vision Survey: administered to all County departments and Commissioners to gather initial feedback on ITS value and satisfaction.
- Interviews with Commissioners: understand goals of Commissioners, experience with IT (pain points, how well IT supports execution towards those goals, etc).
- Interviews with County Manager: understand overall County trajectory, how IT fits into vision for County, experience with IT (pain points, how well IT supports execution towards those goals, etc).
- Interviews with Departments: understand department goals, experience with IT (pain points, how well IT supports execution towards those goals, etc).



2. County Strategy / Direction / Objectives

- a. Understand the overall County trajectory, how ITS fits into and helps bring the County vision to life, how IT can better align with County objectives.

3. IT Evaluation

- a. People, Process, Technology: assess alignment of these three aspects within IT to identify areas of strength and weakness

4. IT Strategic Direction

- a. Vision, Mission, and Goals: were established based on the assessment of IT, its environment and where ITS wants to be.
- b. Guiding Principles: five guiding principles were determined to direct the actions taken and decisions made by ITS to ensure delivery against ITS and County objectives.

These inputs were then used to create the County-wide ITS Strategy using the following six objectives outlined in the strategic direction report:



The ITS Strategic Plan is predicated on the County’s imperative to provide IT services within the most effective and efficient model. Like all organizations, Jefferson County is concerned with providing a high level of service to the constituents within the communities they serve. During our interviews, the County Commissioners, Department Leaders and Team Members demonstrated a high-level of commitment and concern regarding the services being provided to the citizens and the community. They indicated that IT is an extremely important element needed to enable the County to achieve its overall mission.



The County has a budget process that provides an excellent mechanism from which to create alignment between the ITS Strategic Plan and the overall goals and objectives of the County. Based on the budget process and budget development timeline, we recommend that the IT Strategic Plan, including the Information Technology Tactical Plan be updated in February/March of each year and finalized in May.



County Objectives

The County Commissioners, the County Manager and the Department Leaders have informally outlined high level priorities at provide a direction for all County services. The County has outlined the following informal objectives:



Enable the economic development of the County



Improve decision-making at all levels of the County



Deliver effective services to citizens and constituents



Improve both internal and external communications throughout the County



ITS Strategic Plan

The vision and mission statements for Jefferson County's Department of Information Technology Services below have been taken directly from the strategic report provided to Info-Tech. They provide a strong direction for activities going forward and there is no need to change them at this time.

ITS Vision

The Department of Information Technology Services will be recognized as a high-performance team providing technology excellence that is in alignment with the Jefferson County Commission mission and goals.

ITS Mission

To support the County in providing value-added services that meet the strategic initiatives and goals by using secure, reliable and proven technologies in the most cost-effective and efficient manner. In support of this mission, we will provide:





Strategic ITS Goals

Based on our understanding of the situation and the six objectives outlined in the strategic direction report provided to Info-Tech, we have identified a set of four strategic goals that the Information Technology Services Department at the County should consider working towards in the next three years:



ITS as an advisor

A strategically aligned organization is the result of the integration of multiple goals between multiple departments within an organization. ITS will work to understand the objectives of the departments and Commissioners to identify and improve the processes needed to support the needs of the various commissioners and departments within the County.

Data-driven decision-making.

ITS will work with County departments and Commissioners to define how data is captured and stored to ensure accessibility and accuracy. ITS will further work to improve the County's ability to leverage data in decision-making and insights generation by putting in the right architecture, infrastructure and tools.

Skilled and mobile workforce.

ITS will work with the County to develop and implement strategies to attract, recruit and retain a highly skilled technology workforce that is focused on achieving the County objectives. As a part of this effort, ITS will ensure that the workforce is utilized at an optimal capacity and have clear paths for



development to ensure successful job performance. In addition, ITS will ensure that everyone is provided the right set of tools and technologies to promote flexible working conditions across the County.

Technology-enabled services.

ITS will work with the County to provide excellence in service delivery through technology enabled services that allow the County to engage and understand the needs of citizens and constituents. ITS will adopt a Service First culture that will put people at the forefront of everything we do – our expectation is an extraordinary experience, for everyone, at every ITS touchpoint.

ITS will review the various business processes to identify opportunities to digitize and/or automate and streamline County processes and integrate collaborative business practices within and across departments. Through the use of various tools and technologies, ITS will provide an enterprise-wide collaboration platform for employees to cooperate within and between County departments.



Strategic Guiding Principles

A set of guiding principles were developed and based on sound business practices with respect to the information technology industry domain. Each of these principles is intended to guide IT decisions that are made throughout the County and will play an important role in IT Governance.

01



Enterprise Value Focus

We aim to provide maximum long-term benefits to the enterprise as a whole, while optimizing total costs of ownership and risks.

02



Customer Centricity

We deliver best experiences to our customers with our services and products.

03



Innovation

We seek innovative ways to use technology for business advantage.

04



Fit for Purpose

We maintain capability levels and create solutions that are fit for purpose without over-engineering them.

05



Managed Security

We manage security enterprise-wide in compliance with our security governance policy.

IT Principle #1: Enterprise value focus

We aim to provide maximum long-term benefits to the enterprise as a whole, while optimizing total costs of ownership and risks.

Rationale:

- Solutions must aim to maximize the cumulative business benefits over their entire lifecycle.
- Enterprise priorities are above priorities of a business unit or a project.
- Total cost of ownership is more important than the cost to buy/build alone.
- Risk governance and management are integral elements of the company's operating model.

Implications:

- Link all investment proposals to business/IT strategy and goals.
- Track and demonstrate business value realization on all major investments.



- Prefer common solutions and shared services that benefit the enterprise over one-off solutions for one business unit.
- Analyze and take into account organizational readiness for adopting new solutions.
- Manage development and operational risks on every project and acquisition.
- Include the total cost of ownership analysis for the proposed solution or solution options for every investment (project or acquisition) proposal.
- Prefer vendor-independent solutions to avoid vendor lock-in and enable competitive sourcing.

IT Principle #2: Customer centricity

We deliver best experiences to our customers with our services and products.

Rationale:

- We support the customer intimacy theme from our business strategy by providing best experiences to our customers.

Implications:

- Measure and improve customer satisfaction with our services and products.
- Define service levels for services provided to our customers; measure and improve our performance.
- Engineer products with best-in-class usability.
- Manage usability requirements (accessibility, localization, user interface aesthetics, and consistency) and test solutions against them.
- Listen to customers by involving them in product design.
- Manage customer relationships.

IT Principle #3: Innovation

We seek innovative ways to use technology for business advantage.

Rationale:

- We innovate to build industry-leading products for our customers.

Implications:

- Stay current on the business priorities and strategic aspirations to be able to innovate for the business.
- Identify technology trends and new ways to utilize technology for business advantage and share ideas with the Innovation Committee.

IT Principle #4: Fit for purpose

We maintain capability levels and create solutions that are fit for purpose without over-engineering them.

**Rationale:**

- To be effective in satisfying business needs, solutions must be fit for purpose, i.e. fully conform to both functional and non-functional requirements.
- Over-engineered solutions result in wasted budget, time, and resources and often increase operational complexity.
- Required capability levels must be maintained to enable achievement of business, IT, and capability goals.
- Higher-than-needed capability levels cost more, while not resulting in additional value.

Implications:

- Identify functional and non-functional requirements of the business and buy/build solutions that conform to them.
- Identify the following non-functional requirements for every solution that needs to be procured or built:
 - Business continuity requirements, e.g. availability, reliability, and recoverability.
 - Performance requirements, e.g. response time, and throughput.
 - Usability requirements, e.g. accessibility, localization, user interface aesthetics, and consistency.
 - Avoid over-engineering, i.e. building or buying solutions that exceed functional and non-functional requirements of the business.
- Maintain required capability levels for all IT capabilities. Develop and execute a capability improvement plan for IT capabilities that have a lower-than-required capability level. Avoid maintaining higher-than-needed IT capability levels.

IT Principle #5: Managed security

We manage security enterprise-wide in compliance with our security governance policy.

Rationale:

- Security threats represent a high risk for enterprise information.
- Security threats represent a high privacy risk.
- Security-related risks require special treatment due to the associated complexity of required control procedures and rapidly changing threats.

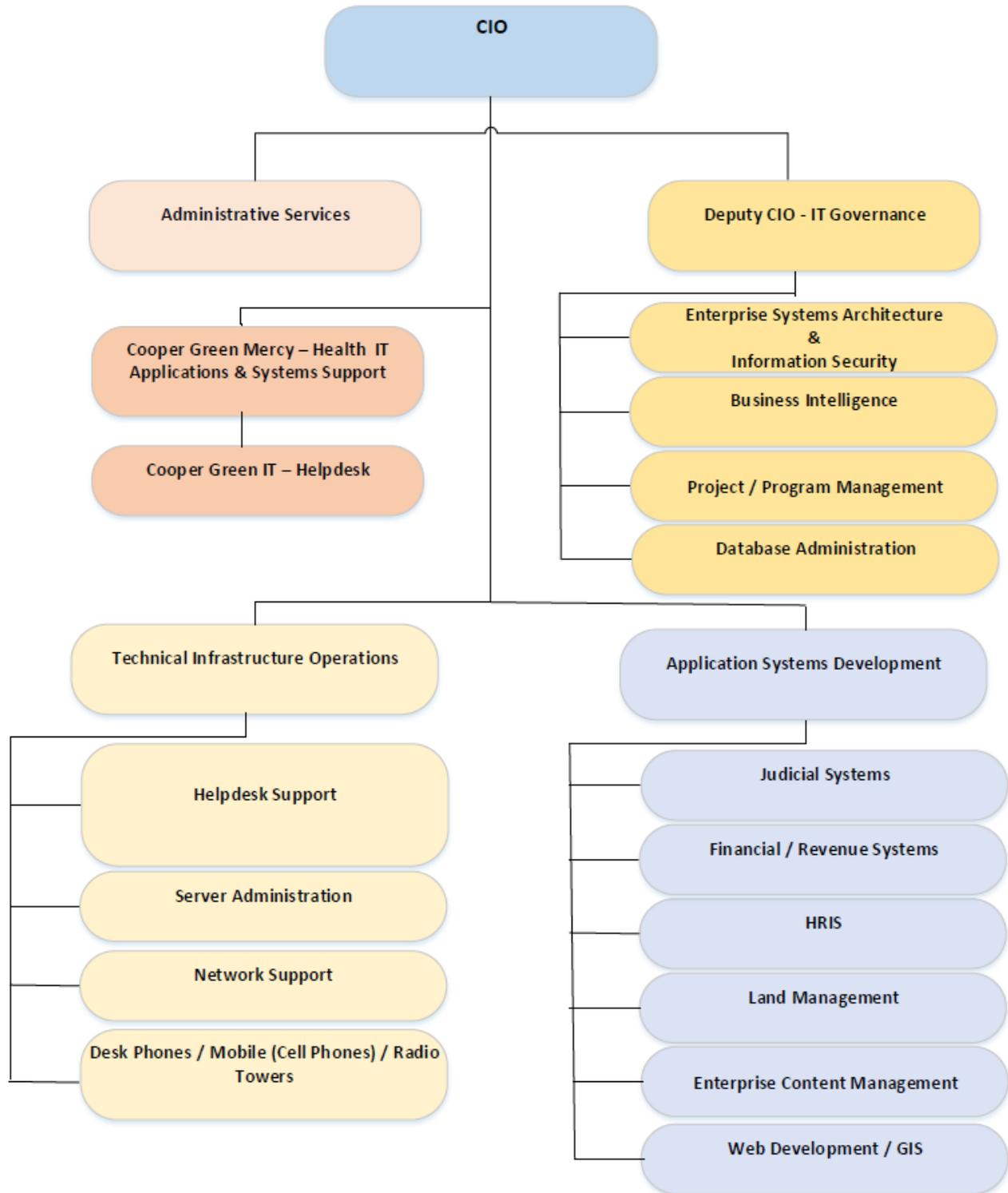
Implications:

- Every solution (procured externally or built internally) must comply with the security policy.
- Every solution must pass a security governance checkpoint before it can be used anywhere within the enterprise.
- The existing IT environment must be continuously monitored for security vulnerabilities and breaches.
- Security vulnerabilities and breaches must be treated to minimize the associated business risk.
- Security vulnerabilities and breaches must be treated to minimize the associated privacy risk.



ITS Organization

In order to implement the ITS vision and strategic objectives, the department will need to pivot and adapt to serve the needs of the County. As a part of this exercise, ITS will reorganize itself in the following manner:





Strategic Projects Summary

A set of strategic initiatives has been developed to be carried out by ITS over the next three years and beyond. They are based on the goals outlined for both the County and for ITS, and take into account the in-flight initiatives described in the CIO's April 2018 Strategic Direction Report and included in the below roadmap.

The following charts illustrate how each initiative being proposed delivers on the various overarching strategic objectives and ITS goals:

ITS Strategic Objectives

| Strategic Initiatives |  IT As An Advisor |  Data-Driven Decision-Making |  Technology-Enabled Services |  Skilled & Mobile Workforce |
|-------------------------------|---|--|--|---|
| Digital Services | ✓ | ✓ | ✓ | |
| Value-Added IT Services | ✓ | | ✓ | |
| Data Strategy | | ✓ | | |
| Enterprise Content Management | | ✓ | ✓ | |
| Digital Office | ✓ | ✓ | | ✓ |
| Stakeholder Relations | ✓ | | | ✓ |
| IT Organization Development | | | | ✓ |



Strategic Plan Objectives

| Strategic Initiatives |  Being a Trusted and Strategic Partner |  Citizen Engagement |  High Performance Culture |  Transparency and Open Data |  E-Government (Mobile) / Access Anywhere |  Secure IT Infrastructure (Public Government Cloud) |
|-------------------------------|--|---|---|---|--|---|
| Digital Services | | ✓ | ✓ | | ✓ | |
| Value-Added IT Services | ✓ | | ✓ | | | |
| Data Strategy | | | ✓ | ✓ | | |
| Enterprise Content Management | | | ✓ | ✓ | ✓ | |
| Digital Office | | | ✓ | | ✓ | ✓ |
| Stakeholder Relations | ✓ | ✓ | | | | |
| IT Organization Development | ✓ | | ✓ | | | |



1. Digital Services

The digital transformation of service delivery will enable Jefferson County to align the organization around empathizing with citizens to continually deliver their most desired outcomes and a more consistent, reliable, and informed experience, as well as digitally enhance capabilities to gain insight quicker, address customer needs sooner, and invent new ways to create value.

The digital transformation process involves the following activities:

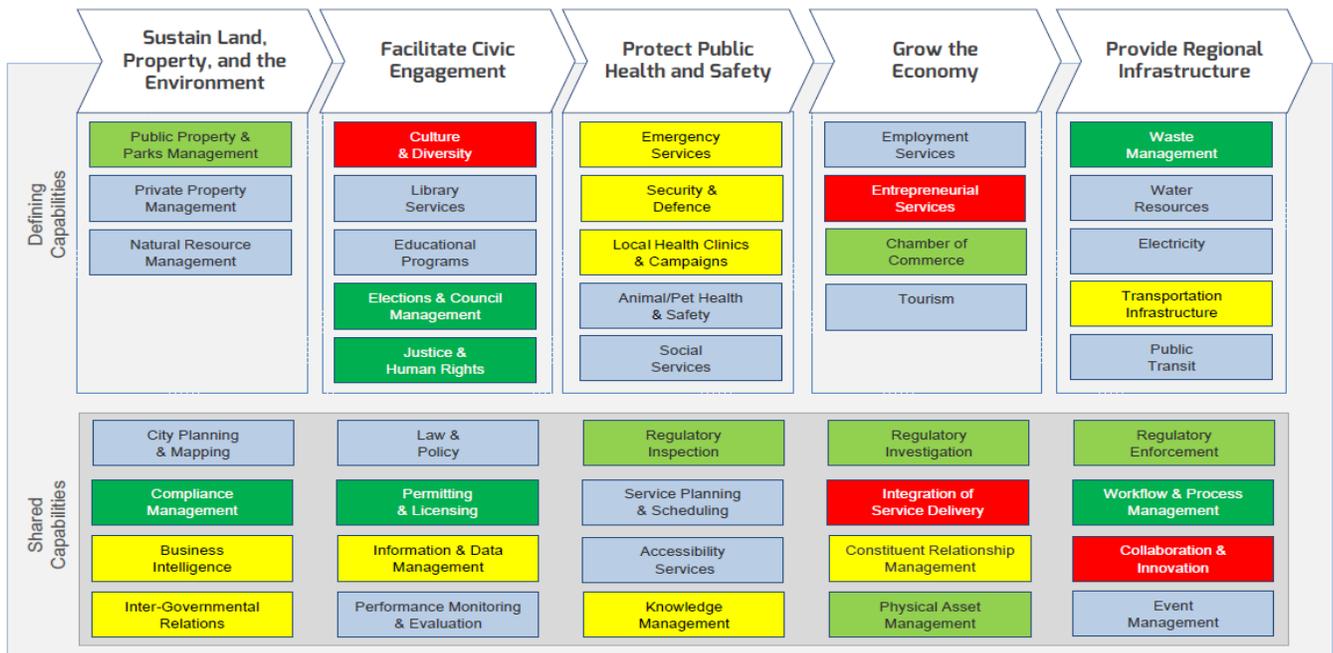
a. Business Capability Model

In order for IT to become a technology advisor and deliver effective services, it is important to have a unified and validated view of business capabilities that aligns with initiatives, investments, and strategy in order to function efficiently and effectively and deliver value to its citizens.

Business capability modeling is the process of modeling what a business does to reach its objectives (its capabilities) that should be undertaken to understand key organizational processes, value streams, and business capabilities and how IT can support them. It promotes a strong relationship between the business model itself and the IT infrastructure that supports the business requirements.

By mapping the business capabilities, the County will have a visual representation of the organization's key capabilities that will expose critically important capabilities in achieving organizational goals as well as capability gaps. The County's IT department will be able to assess current projects to determine if

ILLUSTRATIVE EXAMPLE: BUSINESS PROCESS SUPPORT OF KEY CAPABILITIES



Legend:

- LEVEL 1:** No documented process exists.
- LEVEL 2:** Processes have been documented.
- LEVEL 3:** LEVEL 2 + processes have been formally communicated and there is minimal overlap between processes.
- LEVEL 4:** LEVEL 3 + processes are enforced and regularly monitored for deviations. Users typically adhere to the process.



the right capabilities are being investing in, as well as conduct business capability assessments to identify opportunities (such as application rationalization) and prioritize projects.

b. Applications Review

With limited resources, IT departments must allocate people and budget towards the most valuable activities, and it is often unclear what those activities are or where improvements are needed. ITS has already completed a substantial amount of work towards reviewing existing applications with the mainframe lease expiring in May of 2019. Continuing the review and validation of the County's applications will result in higher quality applications, improved ability to manage legacy applications, and greater alignment with business needs.

An application review will allow the County to assess applications for alignment with business requirements to optimize application performance. Once the business capabilities have been mapped out (see section 1a: Business capability Model above), map out the applications used against the capabilities map to determine the technological health and support provided to those capabilities by the applications. This will elucidate any gaps in application support for critical business capabilities and allow IT to prioritize the applications that are required to better support the organization's goals.

c. Business Process Automation

Business process automation is needed to simplify and automate complex and non-digitized operations and strategically align processes with County goals. It involves assessing an end-to-end process and applying a methodology to determine improvement opportunities

Begin by selecting key processes that are critical to Jefferson County that are in need of improvement through automation. Re-engineer the selected processes, and produce new process maps. Identify transformation initiatives to implement the identified improvement opportunities, automation activities and change to existing systems and organization. Propose a change management approach to plan the transition from the existing to the improved processes. Build a high-level process transformation plan to obtain the buy-in of the process owners.

d. Enterprise Service Management (ESM)

In order to transition to a more citizen-centric mentality within the County, an Enterprise Service Management plan should be developed. ESM is about pushing exceptional services to customers by pulling from organizational capabilities, as well as delivering exceptional experiences to your employees so they can deliver exceptional services to your customers.

Many business groups in the organization are siloed and have disjointed services that lead to a less than ideal customer experience. Service management is too often process-driven and is implemented without a holistic view of customer value. ESM will help to increase business and customer satisfaction by delivering services more efficiently by aligning services throughout the business, reducing friction between silos, realizing potential savings and productivity gains via optimized service delivery, and identifying opportunities for standardization, optimization, and automation.



e. County Website Redesign

The County website acts as a bridge between constituents and County employees. By redesigning the website, the County will be able to more effectively manage and control access to content efficiently, as well as manage the services provided to constituents, and resulting in an improved experience to all users.

2. Value-Added IT Services

Developing a sourcing strategy will allow the County to re-organize how IT delivers solutions and services in a manner that emphasizes business enablement, ensuring that IT staff are working on activities and projects that add value and outsourcing those activities that do not. A sourcing strategy will provide IT and their stakeholders with a holistic perspective on how IT delivers value to the business through an optimal mix of insourcing, co-sourcing, and outsourcing models.

Effective sourcing strategies will result in:

- Higher business satisfaction with services and solutions provided by the IT organization.
- Better relationships with vendors and external partners.
- Decrease in the total cost attributed to the delivery of IT services.
- Ability to focus scarce resources on activities deemed to be critical to business success while offloading commodity activities to vendors who specialize in their delivery.

To set your outsourcing initiative up for success, perform a criticality assessment to identify candidates for outsourcing followed by a capability assessment to identify what pre-work is required. Build a project charter to communicate to stakeholders the value of outsourcing systems management; have a strategic approach for engaging stakeholders to help secure buy-in and prepare for key objections by having a strong stakeholder management strategy. Understand how to engage with your vendor to ensure productive collaboration rather than conflict. Outsourcing is not a typical vendor/client relationship; it is a partnership and must be treated like a collaboration rather than a simple exchange of money and services.

3. Data Strategy

County master data is pervasive throughout the organization and is often created and captured in highly disparate sources that often are not easily shared across departments and applications. As such, there is a need to implement Master Data Management (MDM) processes and technology to better manage enterprise master data to improve access, data accuracy and collaboration. The first step is to develop an MDM strategy and initiative roadmap, taking data governance, architecture, and other critical data capabilities into consideration. Next, identify the MDM implementation style that best suits the needs of your organization, and maintain MDM by identifying key metrics to measure your successes.

By developing a MDM strategy and roadmap within the next couple of years, the County can develop a strategy for big data. IT needs to have a strategy for managing big data, even if the strategy is that



what is currently being done is still sufficient. This strategy will provide the County with an approach to making big data useable to enable the County to deliver on organizational goals.

4. Enterprise Content Management (ECM)

End-to-end ECM solutions with process automation, integration capabilities, and cheaper scalability provide the technological foundation for enterprise-wide content management programs. Enterprise content management platforms are a key component in the digital transformations taking hold in organizations everywhere; quality information provides a foundation for innovation and, when deployed and managed properly, ECM provides a foundation on which to build out advanced information capabilities.

Begin by setting an ECM program vision aligned to the County's organizational goals. Develop use-cases and benchmark performance of key functions to make an informed decision about requirements and priorities. Create a plan to implement the ECM program gradually, and in a way that avoids common pitfalls, overcomes resistance to change, and minimizes the need for costly re-work, by following a bottom-up, process-based approach for ECM. Measure ECM project success across process efficiency, resource efficiency, and risk mitigation metrics.

An ECM program will provide the County with a system for content management, archiving and collaboration accessible through an employee portal.

5. Digital Office

Updating infrastructure platforms and the security program will help Jefferson County to modernize critical organizational processes, improve cybersecurity, and set the stage for developing a more mobile workforce that is secure from external threats and efficient in its communication, data sharing, and project completion.

The process of creating a "digital office" includes the following activities:

a. Cloud Services

ITS will continue to move off of the mainframe and into a cloud environment with the intention of eliminating / reducing the need for server farms. In addition to a smaller footprint, cloud capabilities will provide the backbone for inter- and intra-County collaboration, improve service scalability to fit organizational needs and improve efficiency by streamlining various processes.

b. Disaster Recovery Plan (DRP)

Having a formal Disaster Recovery Plan in place will further ITS' efforts to ensure business continuity in the event of a disaster. It will allow the County to prioritize technology enhancements based on DR requirements and risk-impact analysis, identify process and technology gaps, and have a roadmap in place to close the gaps between current DR capabilities and recovery objectives.



c. Infrastructure Roadmap

As the ITS Department works towards supporting the County's direction, developing an infrastructure roadmap will help County ITS to implement new infrastructure platforms that will help ITS support the County's future business needs and allocate resources optimally for the timely delivery of milestone events on the roadmap. ITS has already made significant progress (60% reduction) in reducing the infrastructure footprint through virtualization.

As a part of this initiative, ITS will begin by conducting an organizational analysis, as well as an analysis of technology by performing an inventory assessment of what currently exists, and assessing new technology for potential fit. From there, build the roadmap.

Effective roadmaps will allow the County to do these four things:

1. Manage the lifecycle of aging equipment in order to meet capacity demands.
2. Curate a portfolio of enabling technology to meet future capability demands.
3. Initiate a schedule of infrastructure projects required to achieve business goals.
4. Adapt to feedback from the executive on changing business priorities.

d. IT Security Roadmap

In 2016, it was found that [44% of local governments surveyed nationwide](#) experienced some kind of cyber-attack daily. Few reported that they saw this as a downward trend, with many indicating that this attack level had remained the same or increased. Local governments are not prepared to handle these security incidents and do not have the appropriate support. There is often no capacity for dedicated resources focused on addressing or preparing for security events.

It is critical for Jefferson County to develop an actionable security roadmap that aligns with organizational needs and IT capacity. Critical security components that control access to sensitive County information, such as Identity & Access Management, will need to be identified and deployed. In addition to security technology, the County will need to incorporate security into the various business processes to ensure that the County is protected. Begin by assessing security requirements for the various business processes; understand the threat types and the impacts they can have on the County, the current security practice capabilities and performance, and security obligations, scope, boundaries, and responsibilities. From there, a security target state based on organizational context can be established, gaps in security can be assessed, and a roadmap to help the County achieve the security target state can be developed.

e. Enterprise Mobility Roadmap

Most organizations realize the value of enterprise mobility, but want an approach that takes advantage of new technologies, while minimizing security threats, costs, and service desk headaches. Implementing a hybrid Enterprise Mobility Management (EMM) strategy can allow you to focus on security for users accessing sensitive information, offer choice to those who will benefit the most from it, and save money with users that only require basic apps.



Begin by assessing the current role of mobility within the organization, finding weaknesses and pain points. Identify goals and create the mobile strategy, and make any necessary changes to the current provisioning model mix that will meet County goals. Identify and document risks and dependencies, and develop and plot initiatives onto a detailed roadmap. Update infrastructure components of the mobile strategy, finalize and publish the mobile strategy.

During this process, make any necessary changes to mobile workforce policies to enable safe and convenient remote accessibility for County employees.

f. IT Service Management (ITIL)

As the organization's workforce is technology-dependent, it is imperative that ITS fills the role of a trusted and responsive service provider. To achieve this role, ITS will require a culture shift that emphasizes understanding customer needs and providing excellent customer experience.

While communication to raise the awareness of a business-centric culture is important, truly transforming into a service organization requires changes to the processes themselves. IT processes, particularly service management processes, can have segmented responsibilities across different teams, which prevent a holistic view of outcomes and create silos amongst IT. To translate the service culture into tangible benefits, services need to be designed, delivered and supported in a way that fulfills the requirements of the business, complements the organizational structure and integrates the IT teams. A well implemented IT Service Management practice outlines the target state while considering the process dependencies.

Once executed successfully, the organization can expect to achieve:

- Higher business satisfaction through more effective, reliable and responsive delivery of IT services.
- Better resource utilization, including staff, tools, and budget, to implement and manage services.
- Lower proportion of effort spent on firefighting and operational tasks, leaving more time for strategic and innovative initiatives.

6. Stakeholder Relations

Business leaders and other stakeholders believe that IT should be a partner with the business, but many IT organizations are not viewed as partners and trusted advisors; IT is not often viewed as a value creator. Implementing a Business Relationship Management program will help to demonstrate the value of the IT organization to the business and build credibility and trust in the short run, and will evolve with the IT organization as it transforms into a strategic partner, making IT an indispensable part of the business value chain in the long run.

Additionally, it's important to know who your stakeholders are and how to communicate with them to gain and maintain buy-in. Unknown and unaddressed stakeholders can unexpectedly derail IT initiatives. Developing a stakeholder management plan by identifying and analyzing stakeholders will enable County IT to tailor communications and engage with and monitor stakeholders on an ongoing basis.



7. IT Organizational Development

In order to ensure that Jefferson County's constrained IT department has the knowledge, skills and competencies required to deliver on IT and County goals, and is being provided opportunity to grow and advance in their careers, a knowledge management strategic roadmap and organizational development initiatives should be created.

a. Knowledge Management

Many tenured IT employees are set to retire in the next few years, which means that a significant portion of Jefferson County IT knowledge will be gone. Effective knowledge transfer mitigates risks from employees leaving the organization and is a key asset driving innovation and customer service.

Building a strategic roadmap will work to retain and share knowledge in your IT organization. The process will allow Jefferson County IT to identify and prioritize knowledge transfer candidates based on their likelihood of departure and the impact of losing that knowledge, as well as develop knowledge transfer tactics based on the type of knowledge that needs to be captured – explicit or tacit – and create knowledge transfer plans for all identified knowledge sources.

b. Staff Development

As processes are digitized and IT activities are outsourced, Jefferson County's IT department will need and organizational redesign to ensure IT is aligned with the strategic direction of the organization. Begin by taking inventory of the IT personnel onboard and what skills and competencies they have. Next, visualize IT's structure with an appropriate operating model, and define future-state work units, roles, and responsibilities that will enable the IT organization to complete the work that needs to be done.

This will also allow the IT department to understand what is required for staff to be successful in their roles and bridge any gaps in knowledge or skill through training. County IT will have a set of defined roles and required skills and competencies, as well as paths for career growth within the IT organization mapped out, improving County IT's ability to attract and onboard new hires more effectively.

Organizational design implementations can be highly disruptive for IT staff and business partners. Without a structured approach, IT leaders may experience high turnover, decreased productivity, and resistance to the change. Therefore, it is imperative that the CIO build a change communication strategy and organizational transition plan to lead staff more comfortably through the transformation.



Roadmap

Current Initiatives

| | 2018 | | | 2019 | | | | 2020 | | | | 2021 | | | |
|---|------|----|----|------|----|----|----|------|----|----|----|------|----|----|----|
| | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |
| Major Systems | | | | | | | | | | | | | | | |
| • City Works – Labor and Equipment System Implementation | █ | █ | █ | █ | █ | █ | | | | | | | | | |
| • Accela Permitting System Implementation | █ | █ | █ | █ | █ | █ | █ | █ | █ | | | | | | |
| • Mainframe Migration | █ | █ | █ | █ | █ | █ | █ | █ | | | | | | | |
| • NextGen EMR Implementation | | | | █ | █ | █ | | | | | | | | | |
| • Jeffco Website Redesign | | | | █ | █ | | | | | | | | | | |
| • Implement Business Intelligence – Microsoft Power BI | | | █ | █ | █ | █ | | | | | | | | | |
| • Implement Sewer Billing System – path to mainframe migration | | | █ | █ | █ | █ | █ | | | | | | | | |
| • Accela Legislative System Upgrade to Granicus Platform | | | | | | | | █ | █ | █ | | | | | |
| • AssuranceSRT – Revenue System (Replaces Tax Mantra) | █ | █ | | | | | | | | | | | | | |
| • SAP Maintenance Support – Rimni Street | | █ | | | | | | | | | | | | | |
| Assessments / Plans | | | | | | | | | | | | | | | |
| • Microsoft SAM Engagement | █ | | | | | | | | | | | | | | |
| • Microsoft Active Directory Assessment | █ | | | | | | | | | | | | | | |
| • Microsoft EA Agreement | █ | | | | | | | | | | | | | | |
| • Network Assessment - SecureWorks | | | █ | █ | █ | █ | | | | | | | | | |
| • IT Strategic Planning | | | | █ | █ | | | | | | | | | | |
| Security / Disaster Recovery / Infrastructure | | | | | | | | | | | | | | | |
| • Microsoft Tenant Migration – Gov't Cloud | | | █ | █ | █ | | | | | | | | | | |
| • Active Directory 2016 (upgrade) | | | | | █ | █ | █ | | | | | | | | |
| • Datacenter Systems Upgrade – Blade Chasis / SAN Storage / NAS Storage / Enterprise Backup – with Dell/EMC VXRack (Hyperconvergence) | | █ | █ | █ | █ | | | | | | | | | | |
| • Disaster Recovery Hot Site (Setup) | | █ | █ | █ | █ | █ | █ | █ | █ | | | | | | |
| • Network Infrastructure (Switches/Routers/Wi-Fi/Ap's/Voice – Upgrades) | | █ | █ | █ | █ | | | | | | | | | | |
| • Enterprise IT Security Program | | | █ | █ | █ | █ | | | | | | | | | |



| Communications | | | | | | | | | | | | |
|---|-------------|-------------|-------------|-------------|-------------|-------------|----------------------------|----------------------------|-------------|--|----------------------------|----------------------------|
| • Internet Bandwidth (upgrade) – 1GB complete; next 5GB | Completed | Completed | | | | | | Scheduled, but Not Started | | | | |
| • Wi-Fi County Locations (Implementation) | | | In Progress | In Progress | In Progress | | | | | | | |
| • Motorola P25 Project – Radio | In Progress | | | | | | | |
| Governance | | | | | | | | | | | | |
| • Governance / Project Management – Microsoft Project Server Sensei (Implementation) | | | | | In Progress | In Progress | In Progress | | | | | |
| • Enterprise GIS Program | | | | | In Progress | In Progress | In Progress | In Progress | In Progress | | | |
| Operations / Support / Training | | | | | | | | | | | | |
| • Applications / Infrastructure IT Staff Training – Skill Soft implemented in Aug. 2018 | In Progress | | | | | |
| • Customer Satisfaction Survey | | | Completed | Completed | | | Scheduled, but Not Started | Scheduled, but Not Started | | | Scheduled, but Not Started | Scheduled, but Not Started |

| |
|----------------------------|
| Completed |
| In Progress |
| Scheduled, but Not Started |
| On Hold |



Strategic Initiatives

| | 2018 | | | 2019 | | | | 2020 | | | | 2021 | | | | 2022 | | | |
|---|------|----|----|------|----|----|----|------|----|----|----|------|----|----|----|------|----|----|----|
| | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |
| Digital Services | | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| Value-Added IT Services | | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| Data Strategy – Power BI Phase 3 | | | | | | | | | | | ■ | ■ | ■ | ■ | ■ | | | | |
| Enterprise Content Management | | | | | | | ■ | ■ | ■ | ■ | | | | | | | | | |
| Digital Office | | | | | | | | | | | | | | | | | | | |
| • Cloud Services | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| • Disaster Recovery Plan | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| • Cloud Computing Strategy – Phase 2 | | | | | | | | | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| • Security Roadmap and Identity & Access Management | | | | | | | ■ | ■ | ■ | ■ | | | | | | | | | |
| • Enterprise Mobility Roadmap | | | | | | | | | | | ■ | ■ | ■ | ■ | | | | | |
| • IT Services Management, Services Catalog & Portal | | | | | | | ■ | ■ | ■ | ■ | | | | | | | | | |
| • County Employee Portal | | | | | | | ■ | ■ | | | | | | | | | | | |
| • Enterprise Tools Roadmap | | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | |
| Stakeholder Relations | | | | | | | | | | | | | | | | ■ | ■ | ■ | ■ |
| IT Organizational Development | | | | | | | | | | | | | | | | | | | |
| • Knowledge Management | | | | | | | | | | | ■ | ■ | ■ | ■ | | | | | |
| • Staff Development | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |

Strategic Plan Implementation Approach

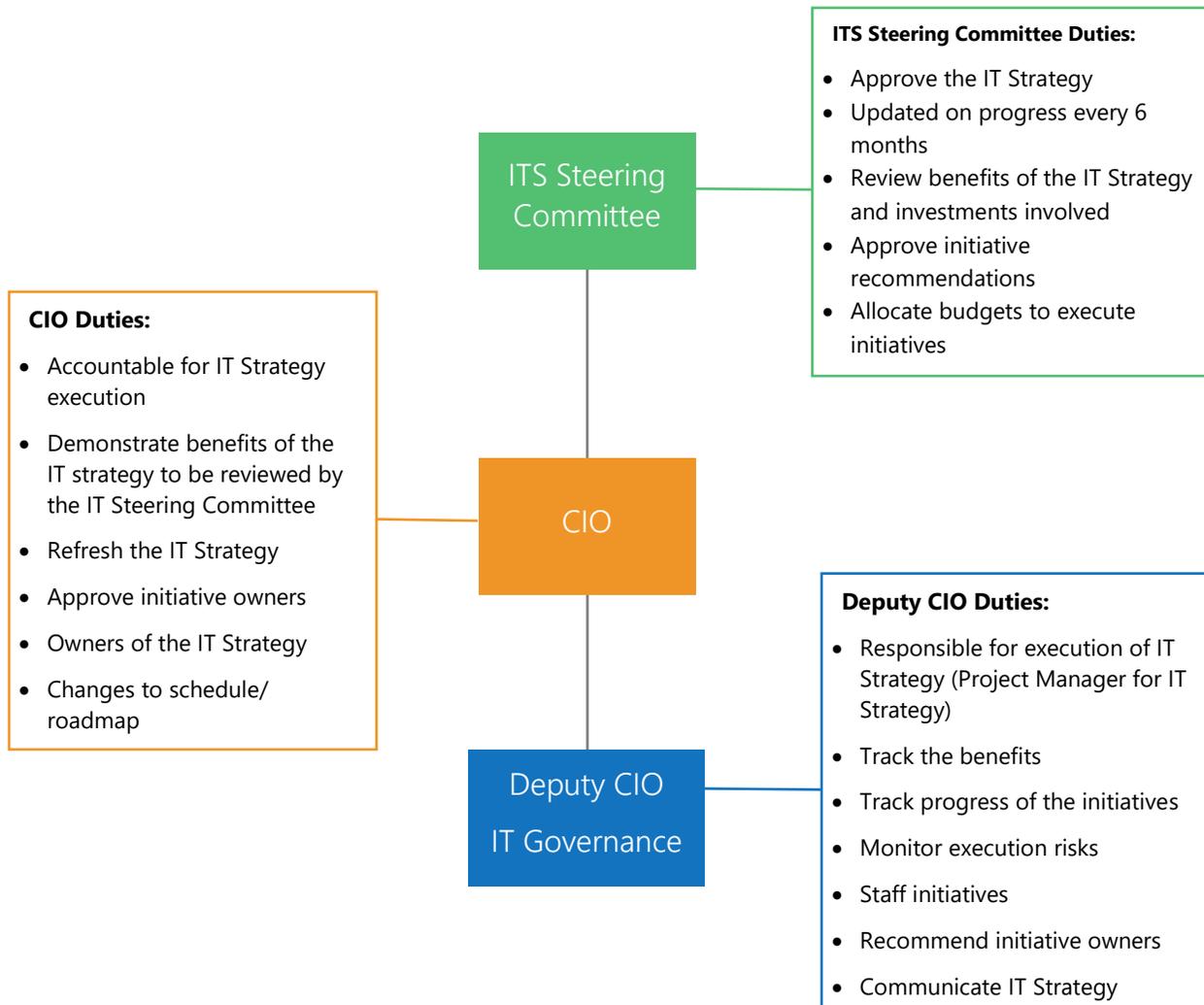
Governance for IT Strategy Implementation

To ensure that the ITS Strategic Plan outlined in this document is implemented, it is critical to build a governance structure, which consists of the process, structure, people, and rules by which the organization makes decisions and executes on the IT strategy.

The ITS Steering Committee shall provide oversight of information technology investments by monitoring, evaluating, and approving actions related to IT risk, investment, and prioritization of projects and services. This oversight positions IT to deliver business value by aligning IT initiatives and operations to the current and future strategic objectives of Jefferson County.

Additionally, this oversight ensures that departments are effectively supported and have the technology they need to enable their goals.

The ITS Strategy Governance Structure below outlines the duties – accountabilities, responsibilities and communication – for the ITS Steering Committee, CIO, and Deputy CIO for approvals, reviews, execution, and tracking of the ITS Strategic Plan.





IT Governance Advisory Board

An IT Governance Advisory Board will be assembled that will oversee and ensure that ITS and the rest of the County are aligned in their goals and that ITS is delivering against their objectives.

Goals:

1. To foster collaboration through shared accountability for IT investment, project, risk, and service decisions and performance.
2. To hold the organization accountable for IT success through shared accountability and established processes.
3. To align funding and prioritization of IT projects with Jefferson County objectives.
4. To maximize business value through effective project management and allocation of resources.
5. To encourage continuous improvement of IT service performance and strategic use of IT by the County.

Responsibilities (in addition to the responsibilities outlined in the above graphic):

1. Benefits Realization
 - Monitor information lifecycle metrics.
 - Monitor PPM metrics.
 - Monitor and report on program outcomes.
 - Monitor project management metrics.
 - Monitor stakeholder satisfaction with services.
 - Monitor service metrics.
2. Risk
 - Review the prioritized list of risks.
 - Monitor risk management metrics.
 - Monitor changes in external regulations.
 - Maintain risk profiles.
 - Approve the risk management emergency action process.
 - Maintain a mitigation plan to minimize risk impact and likelihood.
 - Evaluate risk management.
 - Direct risk management.
 - Monitor and direct project risk.
 - Define and monitor information risk.
3. Resources
 - Establish the target investment mix.
 - Evaluate and select programs to fund.
 - Set standards and policies for resource management.
 - Monitor and maintain a standard approach to project management.
 - Approve launch of projects.
 - Approve off-cycle projects.
 - Review major obstacles to project completion.



- Approve and monitor requirements gathering process effectiveness.
- Review feasibility studies and formulate alternative solutions for high-risk and high-investment projects.
- Monitor and direct changes in service levels.
- Approve policy and standards on the service portfolio.
- Monitor performance and capacity.
- Approve plans for new or changed service requirements.
- Define information lifecycle process ownership.
- Approve classification categories of information.
- Approve information lifecycle process.
- Set policies on retirement of information.

Note: the above goals and responsibilities provide a launch pad for IT governance and will continue to formulate and evolve over time.



Communicating the IT Strategy

After receiving approval for the IT Strategic Plan, it is crucial to lay out a formalized communication plan to ensure that all individuals involved in executing the IT strategy understand the big picture of IT vision, goals, initiatives and their alignment to the business strategy.

The communication plan should consider both IT and business personnel involved in initiative execution to communicate the big picture and the details of the IT Strategy depending on the stakeholder level.

| Stakeholders | Action | Frequency | Owner |
|-------------------------|--|---|------------|
| ITS Steering Committee | <ul style="list-style-type: none"> Executive presentation of the IT Strategy | Once | CIO |
| | <ul style="list-style-type: none"> Report on the ongoing status of initiatives | Every 6 months (Every other steering committee meeting) | |
| County Commissioners | <ul style="list-style-type: none"> Executive presentation | Once | CIO |
| | <ul style="list-style-type: none"> Report on Progress | Quarterly | |
| County Department Heads | <ul style="list-style-type: none"> Presentation of the ITS Strategy | Once | CIO |
| | <ul style="list-style-type: none"> Plan for execution (share details on the roadmap, owners for each initiative, timelines, time commitments, what IT needs to be successful) | | |
| | <ul style="list-style-type: none"> Update on IT | Monthly | |
| ITS Leadership | <ul style="list-style-type: none"> Presentation of the IT Strategy, with information tailored to their specific department and role | Once | CIO |
| | <ul style="list-style-type: none"> Plan for execution | Weekly | |
| | <ul style="list-style-type: none"> Regular updates on progress | | |
| Department Teams | <ul style="list-style-type: none"> Present parts of the IT Strategy (Tactical information such as how key applications will be affected and response times for tickets, etc.) | Monthly | Deputy CIO |



| | | | |
|----------------|--|----------------|------------|
| | <ul style="list-style-type: none"> • Progress reports | | |
| ITS Department | <ul style="list-style-type: none"> • Town hall style IT Strategy presentation with opportunity for questions and discussion | Quarterly | CIO |
| | <ul style="list-style-type: none"> • Email updates on the progress | Monthly | Deputy CIO |
| County Manager | <ul style="list-style-type: none"> • Executive presentation of the IT Strategy | Once | CIO |
| | <ul style="list-style-type: none"> • Report on ongoing status of initiatives | Every 6 months | |



Appendices



Appendix A: Industry Trends

Trends in Local Government IT

Local government represents the closest point of contact between a government and its constituents. It is unlike any other industry as there are uniquely designed structures and services based on geographic needs. Local governments are in a unique predicament since they must strategically consider their policy direction and balance mandates coming from other levels of government.

Given these demands, there is an increasing demand for meaningful IT strategies by municipalities. These IT strategies share many common themes and goals, including:

Community communication and engagement: All municipalities give high attention to improving how they can communicate with citizens and strengthen the engagement of those citizens. Some see themselves as having a clear goal to improve transportation options for their citizens. A few express the importance of ensuring flourishing arts, culture, and recreation opportunities. Some are trying to provide uniform access to its citizens.

Organizational Effectiveness: Municipalities continue to search for opportunities to improve administrative processes (such as the automation of paper-based systems) and to improve decision making (which translates usually to having access to more information).

Improve the IT relationship with the diverse departments in the organization: IT departments seek to become trusted technology advisors in organizations that cover a very diverse set of services. Many have a large distance to travel to become what can be described as “business partners.” Some engage external partners to supplement limited internal expertise and mitigate the creation of shadow IT.

Demonstrate fiscal prudence by optimizing the costs to deliver IT: As municipalities are typically revenue constrained, their IT departments continue to find ways of reducing current service costs (better prioritization, less internal labor, improved contracts, and increased use of the cloud) to provide capacity for delivering enhanced services.

Promote business process innovation through technology and innovation: There are significant opportunities to improve administrative efficiency through enhanced but well-tested automation opportunities (for example, document management and learning systems). We see little evidence of significant attention to new approaches such as Smart Cities. Few municipalities highlight significant changes along the lines of Smart Cities in municipal goals, suggesting either a preference for gradual change or a lack of awareness of or interest in alternative municipal service models.



Appendix B: Analysis of Jefferson County IT

| PESTLE Analysis | |
|-----------------|---|
| Political | <ul style="list-style-type: none"> • Consent decree hampers hiring; increased control over hiring will be gained, but County will remain in oversight, and JCCAL's IT department will continue to be constrained in this regard. • Have support of Commissioners, County Manager; any change of Commissioners, political philosophy or strategic direction from the County Manager's office could result in changes in the allocation of funding across the County departments. |
| Economic | <ul style="list-style-type: none"> • JCCAL's budget increasing over last few years; potential increase for IT budget as result. • Changes in commissioners, political philosophy or strategic direction could result in changes in the allocation of funding across the County departments. |
| Social | <ul style="list-style-type: none"> • Birmingham young adult population declining (college students leave upon graduation). • County's workforce is aging; many set to retire; loss of skilled labour and small talent pool to draw replacements from further constrain hiring. • Demand for increased accessibility and ease of access to needed County services on the part of citizens should be anticipated over time as citizens become more tech-savvy. |
| Technological | <ul style="list-style-type: none"> • Increasing threat of cyber-attacks. • Social media is becoming more popular method of communicating with citizens. • Push to provide more self-service, online, and portal options for citizens to access County services; citizen expectations for the use of technology in their interactions with the County and its services should be anticipated. |
| Legal | <ul style="list-style-type: none"> • State of Alabama brought new law into effect in 2018 regarding the governance of privacy and data for personal information (Alabama Data Breach Notification Act SB 318) that would be extremely costly for the County if not adhered to. • Being a highly paper-based organization presents legal risk; should disasters such as a fire occur, there is a lot of information that would be destroyed. |
| Environmental | <ul style="list-style-type: none"> • Jefferson County is in the heart of Tornado Alley; tropical storms and hurricanes pose a threat to the County's infrastructure and servers. |



SWOT Analysis of Jefferson County ITS Department



Strengths

JCCAL’s IT department consists of knowledgeable, trusted, tenured staff deeply committed to the job of keeping the County’s system running, eager to apply their skills and learn new ones in order to do their jobs.

IT’s Help Desk team is well-respected within the organization; they are seen as doing a great job of responding to and solving the majority of day-to-day inquiries and problems that arise in the various County departments in a timely manner.

Under the new IT leadership, positive changes have been made that have helped improve communication, transparency and morale, such as centralized and standardized project reporting, changes to the on-call pay policy, and the creation of a festivities committee for team-building. As well, a clear IT mission, vision and set of values have been developed that help to provide direction and IT team alignment.

Given the visible positive changes being made by the new ITS leadership and the excellent job on the part of ITS’ Help Desk servicing the different departments and commissioners, ITS have the support of the Commissioners and the County Manager – all of whom are important IT stakeholders.

JCCAL’s IT department has just gone through the process of rolling out Office365 across the County which is a major step towards automating, streamlining and standardizing business communications and processes and increasing collaborative ability within and across departments.

They have the tools in place to take a more proactive approach to tackling security issues.

Weaknesses

JCCAL’s IT department was significantly reduced in the past and, as a result of the 1982 consent decree that resulted from discriminatory hiring practices, IT capacity is quite constrained. They don’t currently have enough staff to support the projects and initiatives that need to be carried out by ITS, and the existing staff are overworked.

There is no designated security team in place; the team is currently very reactive when it comes to external threats, which leaves them more vulnerable. Many ITS staff are set to retire in the next few



years that will create critical knowledge and skills gaps in the department that will need to be filled. Given that the County is still in oversight and has not yet regained control over hiring, firing and promotions, this loss will further constrain the department's ability to deliver on projects and service County departments effectively, let alone take a more proactive approach to County security.

ITS lacks documented standards, procedures, processes, and clear, relevant policies for the collection, storage and sharing of data and no checks and balances in place for sensitive documents and information. As well, there is a lack of insight into the overall performance of IT; there are no defined metrics and therefore no benchmark(s) to track progress over time.

Some County departments feel misunderstood by ITS and that they are unaware of the functions and goals of certain departments, resulting in the development of shadow IT throughout the County. This was especially true of departments located physically outside of the Jefferson County courthouse where they feel underserved and somewhat neglected.

Change is not always communicated effectively to other County departments; many are left not knowing whether their issues have been resolved, why updates/changes are taking place, and the impact those changes will have.

Opportunities

There is an opportunity to implement IT governance, and transition from being seen as trusted operators to being seen as business partners within the County. Many departments and commissioners within the County are in favour of IT taking on more of an advisory role and guiding the County in decisions regarding vendor selection and licensing agreements, and recommending new technologies, productivity/collaboration tools, and job-related resources (ex: law apps) as many are unaware of what's available to them.

A couple departments are currently working on their strategic plans for the next few years and there is an opportunity for IT to work collaboratively with them to find ways of enabling the successful completion of their goals through tech. In addition, this would allow IT to manage the vendors strategically and in the best interests of the County instead of enabling vendors to take advantage and push agreements that are more beneficial for them.

There is currently an opportunity for IT to take stock of and consolidate existing vendors and software applications to centralize control and potentially reduce costs.

The recent Office 365 migration and migration from the mainframe to the cloud will set a solid foundation for modernization and improved efficiency within the County. It opens the door to improved collaboration between and within County departments, the ability to automate and digitize many of the County's paper-based processes, improved data access and sharing capabilities, and a centralized data warehouse. Microsoft's Power BI will increase BI capabilities as well as bring systems together, including financial, GIS, and permitting systems, allowing data-based decision-making.

Threats

The biggest challenge facing the JCCAL is amount of tenured, skilled staff across the County set to retire in the next few years. There are no succession or knowledge management plans in place;



departments are largely reactive to staffing changes and there is a risk that institutional knowledge will be lost. Limited control over the hiring process resulting from the 1982 consent decree combined with the County's poor perception hampers the County's ability to attract talent. Birmingham's population is declining with many college and university graduates and young working citizens leaving the state, further compounding the challenge of finding suitable replacements.

Some employees within the County have the mentality of not sharing information with others since they see it as a form of job security. This is counter-productive to making County processes efficient, and will complicate IT's efforts to increase collaboration within and between County departments. As well, some are resistant to an enterprise frame of thinking, and many departments prefer to get their own vendor, later expecting IT to service it. Many of these licensing agreements work in favour of the vendor and result in the County paying more than they should and IT to spend more time on maintenance due to unreliable maintenance contracts.

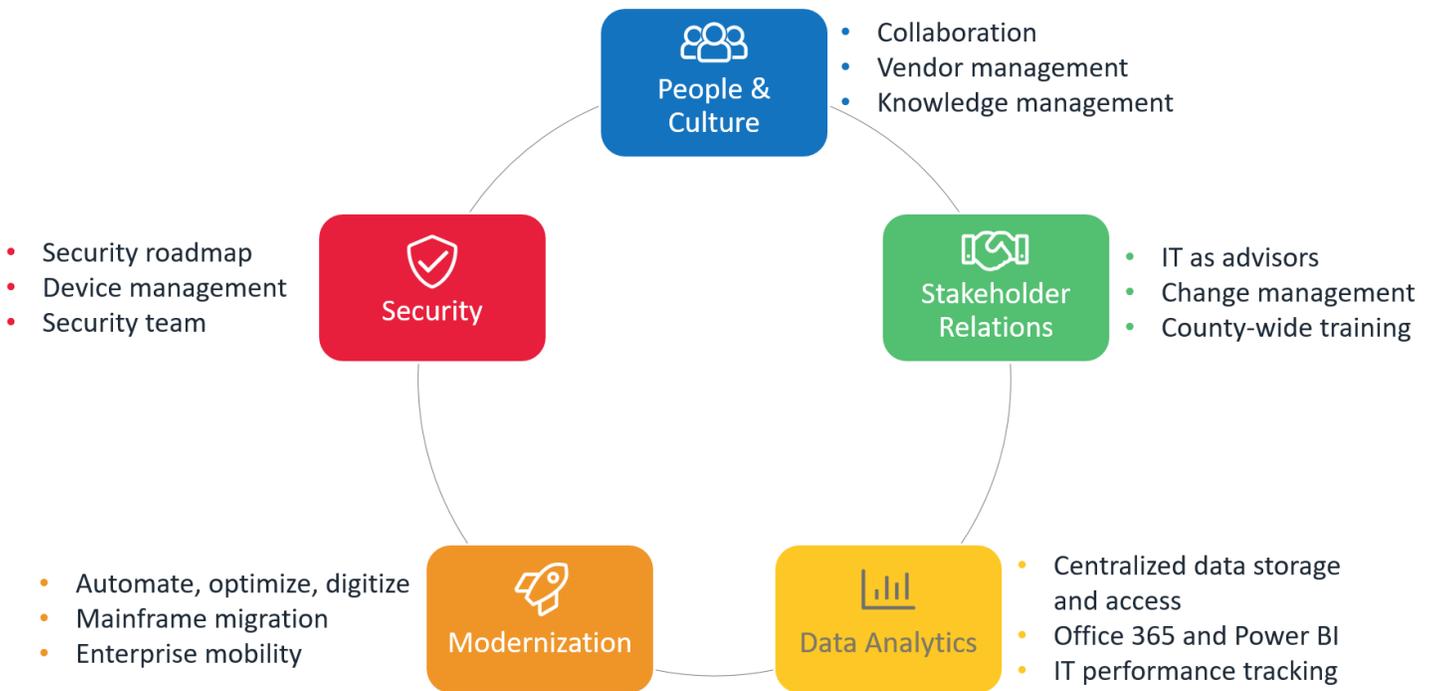
The morale is low among front-line/customer-facing staff; a culture of neglect and making front-line staff feel undervalued exists, which can lead to disengagement and active resistance to the adoption of new customer-facing technology and a service-oriented mindset within the County.

In general, the workforce is not the most tech-savvy; this presents a barrier to the adoption of new technology as many are set in their ways and satisfied with the status quo, or are averse to technology just for the sake of it. Many require a high degree of training and support on basic functions (including email), which ties up IT personnel when they are already constrained.

Security presents a growing concern for the County. There is currently no security plan in place to head off attacks from an increasing number of external threats, and devices are not protected when they are taken off prem.



Findings / Themes



People & Culture

Jefferson County functions in siloes; there is not a lot of collaboration between departments, including between IT and the various County departments, and there is some resistance to an enterprise frame of thinking. As a result, it is common practice for County employees to exclude IT from decisions, and only reach out to them when problems arise. Departments are in the habit of typically securing their own vendor and keeping IT out of the decision process and license agreement negotiations, but expect IT to service the applications when something goes wrong and the vendor isn't providing adequate support. Conversely, it is not uncommon for departments that are located in buildings that are physically separate from the IT department to feel neglected, and as if they have to fight for service from IT.

One of the biggest concerns JCCAL has are the risks associated with an aging workforce. Firstly, embracing change can be met with resistance due to a "this is how we always do it" attitude, especially when processes are primarily paper-based and employees are not particularly tech-savvy to begin with. Secondly, while it is beneficial to have staff with extensive institutional knowledge, this knowledge is often not captured on paper or digitally, and could result in a critical gap as these staff retire and leave. This will be further exacerbated in some cases due to a mentality of not sharing information as a form of job security held by a handful of employees. Finally, the lack of control over hiring will make it difficult to build an IT department that has the skills, expertise and capacity to tackle the projects and challenges facing the County.



Stakeholder Relations

The County IT department must take on more of an advisory role within the organization and be thought of as strategic partners as opposed to simply tech support. Many departments are looking for guidance, especially given that County employees are not the most tech-savvy and many don't know what technology exists to help improve their processes and daily functioning.

When introducing new technologies and carrying out initiatives, effective change management will be critical to IT's success and their ability to gain and maintain stakeholder buy-in. To accomplish this, JCCAL's IT department must make changes to how they are communicating with other departments and commissioners' offices. Many departments have stated that there is some confusion around IT's role in certain scenarios, as well as a general sense that IT does not understand what the functions and goals of various departments are. Change is not always communicated in the most effective way; many employees are often left feeling unsure about why certain changes are being made and the impact those changes will have on them. In the case of departments with access to IT personnel located externally to the IT department, it is often unclear which IT resource the department should be assisting. More regular and relevant communication needs to take place, as well as collaboration with external IT resources.

As JCCAL's IT department introduces new technologies and applications, it will be imperative that they provide training that is appropriate for the diverse range of technical capability among County employees. Training must be made readily available and be tailored to the audience it is made for.

Data Analytics

Given the siloed nature of the County, it is no surprise that data is not easily accessed or shared in the County and is an issue for many departments. There is currently no centralized data warehouse or repository, no data strategy in place, and no known operational metrics for IT. IT's new BI division and the migration to Office 365 and use of Power Bi will help to determine baseline IT performance, as well as bring together various data such as GIS data, financial data, and permitting data. The sharing of data will help departments to improve efficiency of processes and provide new capabilities.

Modernization

As the largest County in the state, Jefferson County wants to eventually be at the technological forefront among and set the standard for tech for Alabama counties. In order to do so, the first step for the County is to move away from inefficient paper-based processes; there is a need to automate and digitize most of these processes to improve efficiency, collaboration and data flow. Migrating to Office 365 will allow the County to improve collaboration between and within County departments and open up opportunities to collaborate with the state and other counties and municipalities down the road.

Over the past while, JCCAL's IT department has been moving off of the mainframe and into a cloud environment which will allow for improved data storage and search, and reduce costs once the mainframe can be completely decommissioned. There is a desire to increase mobility and be able to



work remotely, improve the web services made available to the public, make use of devices in customer-facing departments to improve efficiency and citizen experience.

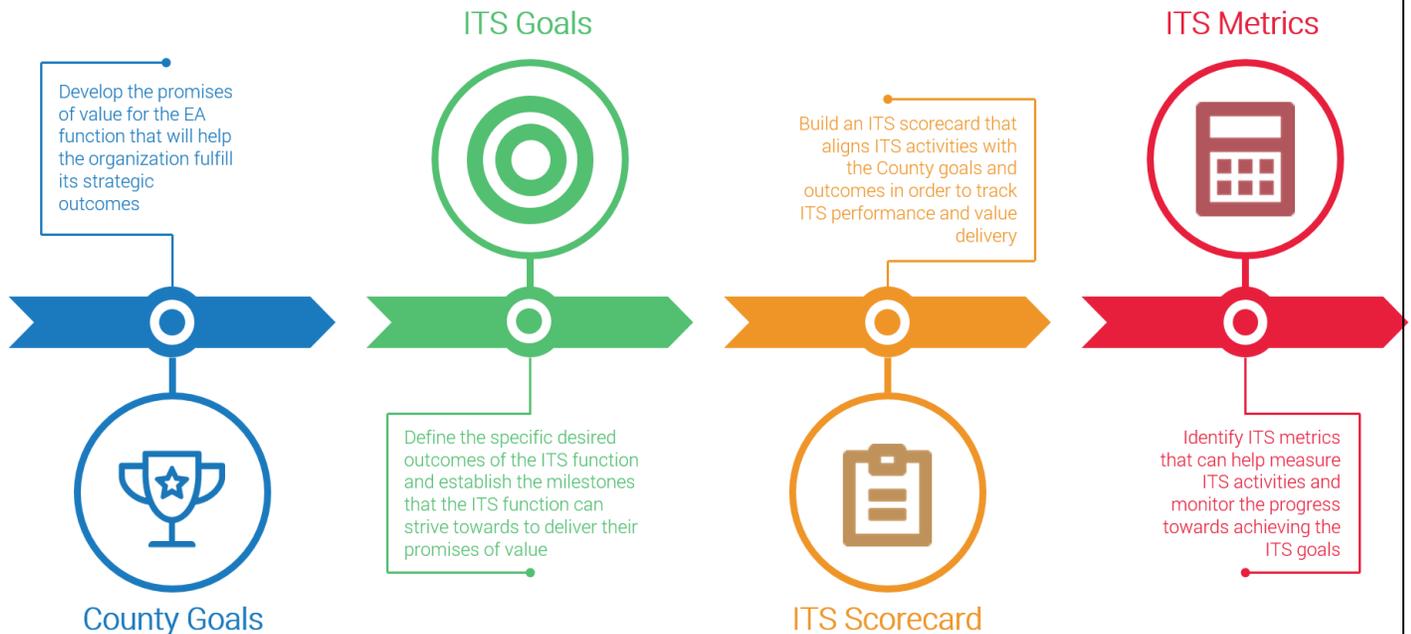
Security

Security is a growing concern for Jefferson County; there have already been some incidents that could have had huge impacts that IT has managed to contain. Because the IT department is capacity-constrained, they take a very reactive approach to protection, which leaves them vulnerable. There is no security roadmap in place, no device management plan to protect devices off-prem, no way to protect people on their network (or vice versa), and no designated security team. They have the tools to be more proactive, but don't have the people or the time. Security is time-consuming and costly, but the biggest challenge for the County is that they don't have the capacity.



Appendix C: ITS Performance (Metrics & KPIs)

In order for ITS to understand how well they are delivering against ITS and County goals, a metrics framework will need to put in place to track performance. These metrics will enable ITS to monitor progress towards initiatives and provide regular health checks on various ITS operations. The metrics outlined in this section were chosen based on County and ITS goals, value and relevance to stakeholders, and the availability of data for analysis and reporting. The following diagram illustrates the process for developing a metrics framework that works for ITS:



ITS Performance – Balanced Scorecard

Jefferson County's ITS department should consider four different perspectives to ensure a balanced and accurate view when tracking their overall performance. The diagram below provides a brief overview of each perspective:





Financial Metrics & KPIs:

| KPI Category | KPI | Description | Metric | Frequency |
|----------------------------|--|--|---|-----------|
| Business Value | Satisfaction with the business value delivered by IT | Secure optimal value from IT-enabled initiatives, services and assets by delivering cost-efficient solutions and services and by providing a reliable and accurate picture of costs and benefits. | Percent (%) of IT-enabled investments where claimed benefits are met or exceeded | Quarterly |
| | | | Percent (%) of investment business cases with clearly defined and approved expected IT-related costs and benefits | Yearly |
| Budget and Cost Management | Satisfaction with the allocation of IT resources | Manage the IT-related financial activities and prioritize spending through the use of formal budgeting practices. Provide transparency and accountability of the cost and business value of IT solutions and services. | % of operational budget growth over last fiscal year | Yearly |
| | | | Percent (%) of resources allocated to high priority initiatives | Quarterly |
| | Satisfaction with the effectiveness of IT capabilities | Ensure that adequate and sufficient IT-related capabilities e.g., people, process and technology, are available to support business objectives effectively at optimal cost. | % of capital budget growth over last fiscal year | Yearly |
| | | | Percent (%) of projects impacted by a lack of IT resources | Yearly |
| Application Maintenance | IT budget spend for maintenance | Manage the constant improvement and changes to the organization's applications after the original implementation & delivery. | Percent (%) of IT budget spent on maintenance | Yearly |



Customer Metrics & KPIs:

| KPI Category | KPI | Description | Metric | Frequency |
|-----------------------|--|--|--|-----------|
| Innovation | Satisfaction with IT's ability to enable business innovation | Stay up to date with IT trends, identify innovation opportunities, and plan how to use technology innovation to create a competitive advantage, enable business innovation, or achieve improved operational effectiveness and efficiency. | Estimate the business value realized through IT enabled business innovation (\$) | Yearly |
| IT Governance | Satisfaction with IT's strategic decision-making abilities | Provide a consistent approach so that IT-related decisions are made in line with the business strategies and objectives. Ensure that IT-related processes are overseen effectively and transparently, and that legal and regulatory compliance requirements are met. | % of projects and initiatives that map to IT strategy | Yearly |
| Stakeholder Relations | Stakeholder satisfaction with IT | Manage the relationship between the business and IT to ensure that the stakeholders are satisfied with the services they need from IT and have visibility into IT processes. | Percent (%) of business units assigned a relationship manager | Quarterly |



Staff Metrics & KPIs:

| KPI Category | KPI | Description | Metric | Frequency |
|--------------------------------|---|--|--|-----------|
| Leadership, Culture and Values | Retention rate of IT staff | Ensure that the IT department reflects the values of your organization. Improve the leadership skills of your team to generate top performance. | Frequency of staff turnover (%) | Yearly |
| Learning and Development | L&D as a percentage of IT budget | Ensure that the IT department is providing opportunities for growth and career advancement to encourage employee satisfaction and retention. | L&D cost as a percentage (%) of IT budget | Yearly |
| | Level of L&D investment per FTE | | L&D investment per FTE in dollars (\$) | Yearly |
| Staff Management | Employee Engagement | Manage structuring, placement, decision rights and skills of human resources. This includes communicating the defined roles and responsibilities, learning and growth plans, and performance expectations. | The percentage of employees who are engaged within an organization | Quarterly |
| Productivity | The percentage of overtime hours out of total hours worked. | Manage resourcing, staffing and efficient delivery on initiatives to reduce the overall amount of overtime worked. | Percentage (%) of overtime worked | Quarterly |



Operations Metrics & KPIs:

| KPI Category | KPI | Description | Metric | Frequency |
|---------------------------------|---|---|--|-----------|
| Vendor Management | Satisfaction with the performance of vendors | Manage IT-related services provided by all suppliers, including the selection of suppliers, management of relationships, management of contracts, and reviewing and monitoring of supplier performance. | Percentage (%) of vendors failing to meet requirements | Quarterly |
| | Satisfaction with the selection of vendors | | Percentage (%) of vendors that have broken SLAs | Quarterly |
| Application Development Quality | Satisfaction that solutions are released successfully and are stable. | Implement standard procedures in the application development process, including testing strategies, testing preparation and testing execution, to ensure that the quality of the applications meet business requirements. | Percentage (%) of releases that cause downtime | Quarterly |
| Data Quality | Satisfaction with the accuracy of the data | Put policies, processes and capabilities in place to ensure that appropriate targets for data quality are set and achieved to match the needs of the business. | Percentage (%) of datasets meeting data quality thresholds | Quarterly |
| Security Management | Satisfaction with the management of security services | Protect enterprise information as required by the business. Establish and maintain information security roles and access privileges, and perform security monitoring to minimize the business impact of operational information security vulnerabilities and incidents. | # of firewall breaches detected | Monthly |
| | | | # of unauthorized devices discovered on the network | Monthly |
| | | | # of vulnerabilities discovered | Monthly |



| KPI Category | KPI | Description | Metric | Frequency |
|--------------------------------------|---|---|---|-----------|
| Security Strategy | Satisfaction with the IT security plan | Define, operate and monitor a system for information security management. Keep the impact and occurrence of information security incidents within the business' risk appetite levels. | # of security incidents | Monthly |
| | | | % of incidents due to issues not addressed in the security plan | Monthly |
| | | | % of projects with security oversight | Monthly |
| Asset Management | Satisfaction with the reliability of IT assets | IT assets through their life cycle to make sure that they deliver value at optimal cost, remain operational, are accounted for and physically protected. Ensure that the assets are reliable and available as needed. | # of obsolete assets | Quarterly |
| | Satisfaction with the availability of software licenses | | % of assets that are not allocated | Quarterly |
| | | | % of unallocated software licenses | Quarterly |
| Availability and Capacity Management | Satisfaction with infrastructure performance | Balance current and future needs for availability, performance and capacity of IT systems and infrastructure through the forecast of future performance and capacity requirements. | # of hours of unplanned downtime | Monthly |
| | | | # of times performance SLAs were broken | Monthly |
| | | | # of unplanned upgrades | Monthly |
| Change Management | Satisfaction with business facing change management | Manage IT system changes, both standard & emergency, in a controlled manner. Enable fast and | % of emergency business facing changes | Monthly |



| KPI Category | KPI | Description | Metric | Frequency |
|---------------------------------|--|--|--|-----------|
| | Satisfaction with infrastructure change management | reliable delivery of change with minimal business impact. | % of emergency infrastructure changes | Monthly |
| Incident and Problem Management | Satisfaction that issues are resolved in a way that prevents them from recurring | Identify & classify problems and root causes, providing timely resolution to prevent recurring incidents. Reduce the number of operational problems. | # of infrastructure incidents | Monthly |
| | | | % of incidents with fixed root cause | Monthly |
| | | | % of incidents with identified root cause | Monthly |
| | Satisfaction with the timely resolution of incidents | | Average time to resolve incidents (in minutes) | Monthly |
| Operations Management | Satisfaction with the consistency of IT service | Manage the activities and operational procedures required to deliver IT services, including standard operating procedures and monitoring activities. | % of incidents caused by facilities issues | Monthly |
| | | | % of incidents caused by operational issues | Monthly |
| | | | % of incidents detected by automated systems | Monthly |
| Release Management | Satisfaction that solutions are released successfully and are stable. | Successfully implement new IT solutions and services in line with agreed-on expectations and outcomes. Ensure that the | % of releases that cause downtime | Monthly |



| KPI Category | KPI | Description | Metric | Frequency |
|--------------|--|--|--|-----------|
| | Satisfaction with the acceptance testing performed on solutions. | implementation of new solutions and services has the necessary support, from planning to execution to post-implementation support and training. | % of releases that meet deadlines | Monthly |
| Service Desk | Satisfaction with service desk effectiveness | Provide timely & effective response to user requests and resolution of issues. Restore normal service; record & fulfil user requests; and record, investigate, diagnose, escalate and resolve incidents. | # of incidents resolved | Monthly |
| | | | # of requests fulfilled | Monthly |
| | | | Average time to first contact (in minutes) | Monthly |
| | Satisfaction with service desk timeliness | | Average time to resolve incidents (in minutes) | Monthly |