



Oklahoma IT Strategic Plan

2017-2021



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Message from the Chief Information Officer (CIO)

Dear IT Colleagues and Partners,

The Office of Management and Enterprise Services strives to be one, unified state IT resource for the State of Oklahoma. Providing quality services through collaboration, innovation and operational excellence helps OMES to contribute to a more effective government for our citizens.

As Oklahoma state government has evolved, it has produced opportunities to further improve and optimize the technology landscape of our state government.

Moving rapidly toward a digital smart world with technology advancement in online citizen services and needs, OMES will need to be able to adapt quickly to produce positive results. To do this, productivity, knowledge sharing, research and social interaction need to be improved.

To continue in our role as trusted advisers for our state government, we need a strategic plan — a plan that can address not only the challenges unification has exposed, but also future opportunities to come.

After much discussion and analysis, I have worked with OMES leaders to develop a new vision of IT for Oklahoma — one that will address these challenges, build on our strengths and provide a foundation for aligning OMES technology strategies with agency missions to help stay ahead of the increasing demand for IT services.

To achieve the goals outlined in this document, we will begin developing a team with the technical depth and confidence needed to deliver quality, cost-effective and secure technology solutions. With ongoing partnership and support with our state agencies and affiliates, we will leverage the best of available talent, technology and processes.

Our approach will not be conventional. It will align technology strategies with the distinctive missions and needs of our agencies. I look forward to continuing in our role as a trusted adviser and sharing these exciting times with you.

Sincerely,

Bo Reese
State Chief Information Officer
Office of Management and Enterprise Services

OMES MISSION: Supporting our partners through unified business services.

OMES VISION: OMES is a trusted, credible partner that empowers employees to provide valued business expertise allowing customers to focus on their missions across state government.

STRATEGIC GOALS

INTERNAL AND EXTERNAL COMMUNICATION

The goal of communication is to educate and empower stakeholders to build relationships, and inform customers and employees to ensure clear expectations.



CUSTOMER SERVICE

The goal of customer service is to empower, educate and train OMES employees in order to effectively satisfy customer needs.

CONTINUOUS IMPROVEMENT IN EXPERTISE AND INNOVATION

The goal of continuous improvement in expertise and innovation is to establish a culture of continuous learning and process improvement in such a way that streamlined processes, professional credibility and innovation are achieved by 2019.



UNIFIED AND PRODUCTIVE CULTURE

The goal of achieving a unified and productive culture is to educate, develop and communicate through all stages of employment and hierarchy in such a way that employees and customers recognize and acknowledge the value of the OMES team.

FISCAL RESPONSIBILITY

The goal of fiscal responsibility is to increase the understanding of the fiscal impact of divisions within OMES and to increase fiscal responsibility throughout the state through clear, concise and enforceable policy and guidance.



Keys to Success

Vision: Strive to achieve short- and long-term goals by planning ahead to anticipate needs to build a better future.

Integrity: Embody strong principles with the best interests of our partners in mind, always. Honor our commitments.

Reliability: Instill confidence our partners can count on for results.

Trust: Earn trust through our abilities, character and actions.

Innovation: Solve complex business needs with creative solutions.

Simplify: Seek to reduce complication.

Transform: Change how our users and customers meet their needs and how they leverage technology services.

Evolve: Constantly learn and challenge ourselves. Don't settle.

Organizational Evolution and Structure

The organizational evolution was created to align technology employees into common job families and working titles.

In 2012, OMES started adding new staff from different agencies, creating a group of roughly 1,000 individuals with over 400 working titles, with no way to organize the information.

OMES Information Services reviewed each of its existing positions and assigned them to one of 13 statutorily defined job families, 10 service teams and one of approximately 100 working titles. The staff alignment improves our ability to provide career ladders for our employees as well as gain insight into comparison of pay rates and qualifications of our OMES family.

To communicate these changes and gain feedback during this evolution, roundtable discussions were held with agency directors, town hall meetings were held with all OMES IS employees, online webinars were held for remote staff, specialized newsletters were created and resource documents were posted online. Communication was and is a key factor to create a cultural shift in how we do IT for our partner agencies, ensuring a successful first step in our evolution process.

Once the communications were out, we moved into the implementation phase. Over 800 personalized letters were emailed to all OMES IS employees identifying their new job role, working title and assigned service team. Regularly scheduled team meetings were established for even remote employees to attend via online webinar.

This shift in staff alignment was just the beginning of the organizational evolution. The next steps included redefining job levels for each of the 100 working titles. OMES worked diligently to define job levels.

The alignment of staff into roles and levels provides clearer, more consistent career ladders for training and common job duties and goals.

The positive impact of unifying job roles advances our recruitment efforts, improves our ability to address compensation and increases professional development and knowledge transfer among our staff. As career maturity shifts and many valuable employees retire in the next 5-10 years, establishing marketable compensation is the best preparation we can perform for the upcoming obstacles state employment faces. [*See Government CIOs Must Create a Digital Workplace to Attract and Retain the Next-Generation Workforce, Rick Holgate, 25 August 2016, ID: G00311278.*](#)

Current State of IT in Oklahoma

Today there is a vast array of choices concerning where and how IT services are sourced. This is not entirely new as various forms of outsourcing have been employed for years. But, today's multi-sourced, hybrid IT world is much more dynamic and offers a greater variety of options. Oklahoma agencies can now avail themselves to hosted services and Software as a Service, or SaaS, solutions in a fraction of the time it would take with conventional solution development life cycles.

While most of the dialog associated with hosted services at OMES has been working its way from the infrastructure up, it is time to define what we want to be. To make more informed business decisions, it is important to understand what it truly costs to deliver services.

Currently, OMES employs a service provider model wherein hardware and software are purchased, installed and managed by in-house staff to provide IT services to state agencies. With the unification objective, we are able to leverage volume efficiencies to drive pricing below what individual agencies can negotiate for themselves. While this does lead to cost savings, they are short-term due to the rising cost of maintenance and licensing. In addition, OMES IS faces attrition of about 16-18 percent annually, constantly leading to over-burdened employees and investment of time to fill vacant positions (when approved). From a financial perspective, OMES did not raise service rates in the first six years despite increases in operational costs. In other words, we provided subsidized IT services to state agencies, which led to budget balancing issues.

The other side of the coin is the service broker role. Service brokers are generally defined as trusted advisors or intermediaries who facilitate commercial transactions. Brokers provide professional services that allow buyers to free themselves from tactical, time-consuming tasks to focus on strategic goals and objectives. State agencies are demanding quick results from our IT experts with tangible benefits, not multi-year plans loaded with promised potential. Maintaining the status quo of traditional IT sourcing and management is no longer an option. The growing demand for change is giving rise to the concept of an IT service broker — an entity that can deliver accessible, integrated, secure and market-differentiating IT solutions to solve business problems in a short period of time. OMES must become a closely-aligned service broker, but this requires a paradigm shift in strategy.

The unification mandate is complete. Agencies have been unified from a perspective of IT equipment, staff and the provision of standard catalog services. We now have opportunity to pivot to a business value model wherein OMES is a trusted partner with agencies. It is essential that agencies embrace digital innovation and collaborate to transform the citizen experience within government. Innovation can be the cornerstone of delivering quality services to Oklahomans at a time when funding is deficient.

The IT broker function should be separate from the rest of the IT department to provide the most effective architectures, oversight and governance across all environments. Gartner's article, "Leadership in the Digital Age: A Gartner Trend Insight Report," explains the role of an internal IT service broker and a conceptual view of its relationship to the rest of the organization and technology providers. Within OMES, account executives and IT strategists perform the IT broker role. (See "[Leadership in the Digital Age: A Gartner Trend Insight Report.](#)" Analysts: Bard Papegaaij, Jeffrey Cole and Alvaro Mello, Published: May 26, 2017, ID: G00331260)

Data Insights

Oklahoma is ranked 48th in a digital states survey conducted by the Center for Digital Government. Results from a two-question survey conducted by Gartner, Inc. were organized into three primary performance categories. The following are overviews of each category, reflecting further results

based on their answers:

- **Top performers** — These respondents self-reported a score of 6 or 7 (out of 7) on the question, “How effective is your company at factoring digital considerations into strategy and planning?” These performers answered “scaling” or “harvesting” (the two top categories) to the question, “Which of these best describes the stage of your organization’s digital efforts?” Top performers are organizations successful in upfront digital planning and in delivering outcomes on their digital initiatives.
- **Typical performers** — This cohort performed too well to be included in trailing performers, yet not well enough to be included in top performers.
- **Trailing performers** — These respondents self-reported a score of 1 or 2 (out of 7) on the question, “How effective is your company at factoring digital considerations into strategy and planning?” These performers answered “not applicable” or “desire” (the two bottom categories) to the question, “Which of these best describes the stage of your organization’s digital efforts?”

(See [“Organizations Digitizations Efforts -2017 CIO Agenda: A Government Perspective.”](#) Analyst: Rick Howard, Published: Feb. 9, 2017, ID: author here, Feb. 2017, ID: G00318319.)

Currently, Oklahoma falls under the Late Majority Desire category, but should aim to be Early Adopters in digital planning efforts.

Emerging Trend

It is news to no one that change is accelerating in the IT industry. The adoption of mobile access, hyper-converged infrastructure and cloud computing has forever altered IT delivery models. Social media platforms have redefined communications and collaboration expectations. Short-term, pay-by-use service agreements are the new norm of business and contract models. In yesterday’s world where IT product and service choices were limited and slow to evolve, it was possible for fully staffed IT departments to be all things to all people. Today and tomorrow, austere IT departments must selectively decide where their time and efforts are best directed to keep pace with the change overwhelming every area of the IT industry.

Today’s new expectations require Oklahoma government agencies to be ready to deliver and receive digital information and services anytime, anywhere and on any device. It must do so safely, securely and with fewer resources. Oklahoma needs a digital strategy that embraces the opportunity to innovate more with less and enables entrepreneurs to better leverage government data to improve the quality of services to Oklahomans.

Gartner provides an excellent summary of this trend and the effects it will have on information technology and our lives:

“Digital-age disruptions: The digital age — now often called the Fourth Industrial Revolution — really changes everything. It changes how we lead IT, how we do business, how we work, how we live. Waves of disruption are hitting us from all directions, fundamentally changing the rules of the game. As a result, we cannot expect our old ways of managing and leading IT to successfully get us through the changes we are facing. We could stay focused on technology only, but there are good reasons why we shouldn’t. The technology landscape has so fundamentally disrupted itself that much of what we thought we knew about how to plan, develop, run and exploit it is no longer valid and needs to be rethought.” ([Leadership in the Digital Age: A Gartner Trend Insight Report, Bard Papegaaij, Jeffrey Cole, Alvaro Mello, 26 May 2017, ID: G00331260.](#))

Strategic Vision

Building a Digital Oklahoma

Digital transformation refers to all of the changes associated with the application of digital technology on all aspects and operations of an enterprise. Digital transformation involves harnessing the combined powers of the four great digital disruptors of our time — social media, analytics, mobile technology and the cloud — in order to transform the business from its current state. The digital government strategy contained herein is aimed at building a modern, technologically-enabled government that delivers better services for Oklahomans. This strategy leverages technologies such as cloud computing, shared services (e.g., commodity IT), modular approaches for IT development and acquisition, and improved IT service delivery. It specifically draws upon the overall approach to increase return on IT investments, reduce waste and duplication, and improve the effectiveness of IT solutions.

While the qualitative benefits are intriguing, it's the quantitative benefits that should garner our attention. Agencies can leverage cost savings by helping OMES architect systems for interoperability and openness from conception, building common standards and more rapidly share the lessons learned by early adopters and adopting a coordinated approach to ensure privacy and security in a digital age.

Planning Assumptions

To create a strategic five-year technology plan for the State of Oklahoma, several environmental factors should be observed and monitored each year. The environmental factors include:

Citizen Demand: As the private sector increases demand for technology supported services, Oklahoma citizens will expect the same level of service.

Political: There will be several administrative and leadership changes at the federal, state and local level over the next five years that may affect IT planning and could lead to a change in priority of state goals and initiatives.

Financial: Oklahoma state government is currently operating under financial constraints and will continue on this path with future financial challenges ahead. Financial challenges force the state to develop innovative approaches for technology improvements and cost savings.

Policy Areas: Legislative policies will continue to change and could lead to changes in priority of technology strategic planning for the state.

Market Solutions: The technology landscape will continue to evolve and produce new and improved collaborative solutions and shared services for Oklahoma.

Workforce: As all industries will be facing workforce gaps as staff leave and new staff arrive, state government is no different as a large number of state employees will retire over the next decade. As technology needs increase annually for state government and technology advances more quickly, the state's ability to adapt to those changes could decline.

Shared Services Expansion: Shared services for improved service delivery, data platforms for increased transparency and integrated contact centers will need to be considered to create a more effective state government. Expanding shared services will be challenging if there is not senior-level governance and allocated funding.

Security: As cyberattacks are on the rise, security services will be a constant essential for state government. Keeping private information safe and secure will become more challenging as the need to provide citizens with more online services increases.

Uncertainty: Change is the new norm. Technologies and functions no longer last decades. Our strategies must assume that change occurs more dramatically and at a faster pace. We should seek to minimize disruptions to users as much as possible.

Recommendations from Gartner

The following six items represent key recommendations from Gartner for the establishment of a digital state:

- Adopt proven practices and lessons from digital top performers in leading industries, and use this research to benchmark against them.
- Pay down technical debt by accelerating modernization initiatives. Decommission legacy systems, and replace the business functions they support with cloud-based alternatives.
- Elevate strategic workforce planning to a program area within your organization. Bridge the skills gap by extending your networks of experts.
- Align your technology investments and road maps with the core digital technologies that underpin digital ecosystems, focusing on analytics, cloud services, citizen experience and security. Work with ecosystem partners and startups to increase interoperability.
- Engage the executive leadership of agencies in strategic planning discussions to clarify the link between the organization's strategic direction and business objectives over the next two years. Leverage Gartner's global perspective on government business objectives to provide thought leadership and stimulate a strategic conversation about the digital transformation agenda.
- Recast "cloud first" policies and strategies built on a promise of cost savings alone. Develop application and hosting strategies that assess the benefits of moving workloads from on-premise data centers to public cloud and SaaS solutions based on criteria, such as the impact on business agility, support for scalability, and privacy and security obligations.
- Revise your digital strategy and IT investment plan to ensure business alignment and appropriate focus and investment across enablement, optimization and transformation capabilities. Use scenario planning, business capability modeling and business ecosystem modeling to focus the strategy on the predicted business future and to contextualize the storytelling required to build understanding and support of business partners and executives.

Summary

From a perspective of populations that will be impacted with the digitization of Oklahoma, there are two main categories or channels. First is the citizen channel that aims to provide tools and technology for citizens to interact with executive branch agencies and consume services. Second is the state employee channel that is focused on using technology to effectively deliver services to citizens in a cost-effective manner.

Building on these two channels as the basis for the strategy going forward, this document defines a capability-based strategy as it is not a collection of agency projects but rather a strategy based on building and provisioning capabilities that will enable and accelerate a digital services foundation.

Technological capabilities and social forces have now converged to move government organizations beyond simple online efficiencies and take full advantage of digital data to optimize, transform or create entirely new services, while renovating back-end systems. As the digitalization of society progresses and matures, national, regional and local government CIOs must take the lead in opening government to citizens and industry, while breaking down the traditional barriers that stifle innovation ([*see “Hype Cycle for Digital Government Technology, 2016”*](#)).

Strategic Plan Development

To develop the Oklahoma IT Strategic Plan, OMES applied the following process and principles, culminating in a strategy summit held in 2018.

Oklahoma Strategic Planning Process and Principles

“The art of progress is to preserve order amid change and to preserve change amid order.”

– Alfred North Whitehead

This section provides a high-level overview of the IT strategic planning methodology and principles used to develop this strategic plan.

IT strategic planning is the process of translating the enterprise’s vision and mission into how resources, including IT’s capabilities, are deployed to generate maximum value for stakeholders such as agencies and affiliates.

The Oklahoma IT Strategic Plan focuses on how IT can help state government meet its goals, addressing three main areas — demand, control and supply. “Demand” clarifies business context: how the business will win, what it needs to win and what the IT contribution is. “Control” outlines how to make decisions to satisfy business demand, how to encourage behaviors to support the IT strategy and how to monitor execution against strategic goals. “Supply” details which IT services to provide, how to migrate enterprise architecture to support the required capabilities, how to develop IT human capital to meet business goals and what approach to IT sourcing should be adopted.

The most important risks this strategy incurs will also be outlined in the strategies section, along with measures to mitigate them.

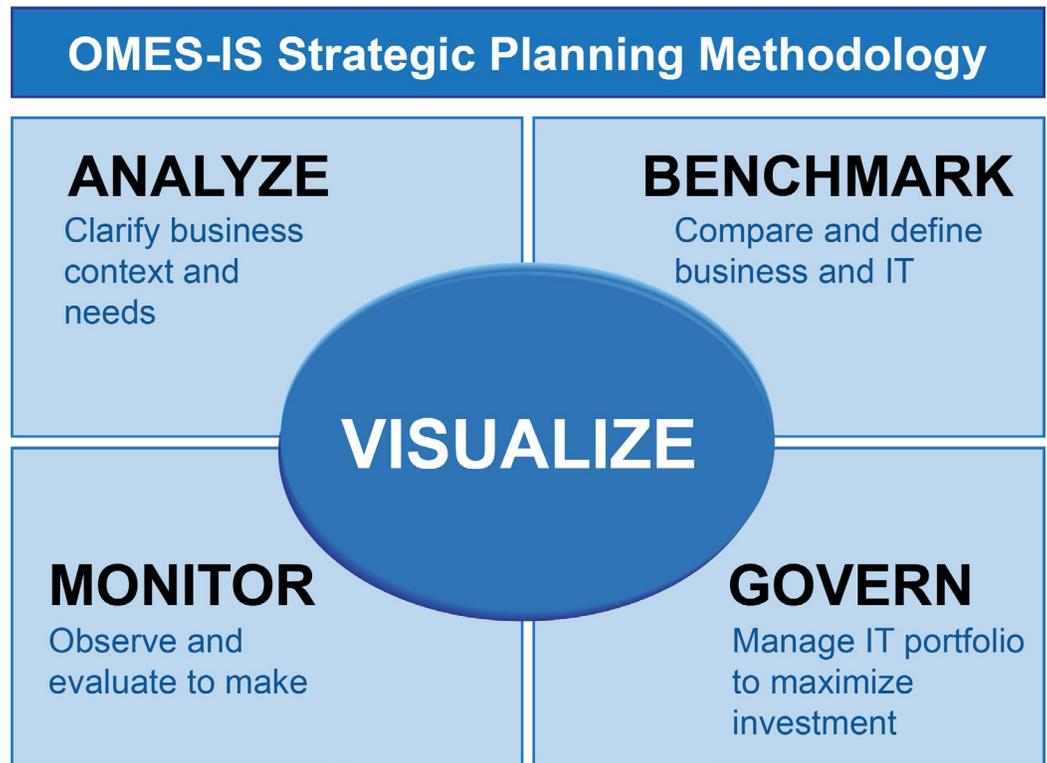
Critical Success Factors (to determine our readiness)

- **Purpose:** Highlight the strategy’s purpose and its audience — its main target, and the other key stakeholders and their roles.
- **Scope:** Identify what time periods, functional areas, business units and enterprises the strategy will cover.
- **Process:** Determine how much time will be needed to create the strategy, and how the process fits with enterprise-wide strategic planning.
- **Outside-In:** Think about the underlying business model, other businesses with a similar model and what we can learn for the strategy.
- **Communication:** Use strategy moments — communicating frequently in meetings — to make strategy an ongoing conversation. Develop a one-page strategy to articulate the role of IT in business success.

IT Strategic Planning Methodology

- **Analyze:** Clarify the business context — how the business does and will win. Determine how the IT organization can clarify the purpose and scope of the IT strategy in light of the business’s vision, mission and value proposition. Consider planning for uncertainty.
- **Benchmark:** Compare business and IT performance against a standard, and determine areas of risk and opportunity.

- **Visualize:** Review industry trends and the business context to visualize the future state of IT within the State of Oklahoma.
- **Govern:** Develop processes and policies, including principles, financial management and metrics, for making the strategy come to life.
- **Monitor:** Observe and evaluate the financial management mechanisms and the business success metrics to make adjustments that will improve business outcomes.



IT Strategic Guiding Principles

Principles used to guide and enhance the strategic plan:

- Start with the end in mind: Understand the business context (why), the business model (what), and how the business strategy addresses the agency staff and citizens of Oklahoma to achieve the desired outcome.
- Engage key business decision makers, stakeholders and strategy planners to identify goals at both enterprise and business unit levels.
- Understand the current set of IT capabilities and how they contribute to realizing business goals.
- Work with IT and business personnel to identify additional IT capabilities needed to deliver strategic business outcomes.
- Adopt a systematic approach to examining new technologies and utilizing core IT assets that address both the fundamental business goals and persistent business needs.
- There are no "IT" Projects: All projects are state projects to improve our delivery services and support for our citizens.
- Seek to minimize disruption to the business operations and users as technology and IT assets change. Business change planning should occur throughout our projects.
- Strive to be transparent in our decisions and actions with our team, and partners, and expect the same of them.

Oklahoma IT Strategy Summit

The strategic planning process (Analyze, Benchmark, Visualize, Govern and Monitor) relies heavily on business context and needs so that OMES can develop and/or modify the IT Strategic plan to serve business mission and goals. A one-day annual summit will be held to bring together business and IT leaders of state and local governments as an excellent opportunity to engage in discussions, share best practices and collaborate with OMES on IT investment and priorities.

While this is the first ever five-year strategic plan for Oklahoma, it is proposed that an IT strategy summit will tweak and modify the five-year plan on an annual basis to constantly align business and technology to produce IT solutions that are geared at enabling business outcomes.



DIGITAL OKLAHOMA STRATEGIC ROAD MAP

	FY 18	FY 19	FY 20	FY 21	GOALS & GUIDING PRINCIPLES
CITIZEN CHANNEL	Develop one-stop portal	Design and develop Google bar-type search for State of Oklahoma Executive Branch			<p>We will use technology to engage and better serve our citizens.</p> <ol style="list-style-type: none"> 1. Government services should not be further away than a smart phone. 2. Citizens will not have to “know” government to get what they need. 3. Citizens will have a voice. 4. Citizen data will be safe.
	Migrate state websites to new CMS solution		Provision new open date & data integration portal		
	Build 15 microservices and public APIs	Mobile-enable 25 services	Mobile-enable 25 services	Mobile-enable 25 services	
	Provision an enterprise class mobility platform	Equip AEs and IT strategists to target solving business problems with mobile solutions		Offer mobile application development as a service	
EMPLOYEE CHANNEL	Enhance infrastructure for work from home	Enable BYOD for state employees			<p>We will find better ways to empower our employees.</p> <ol style="list-style-type: none"> 1. Anytime, anywhere access. 2. Customer service “my way.” 3. Things will work as designed. 4. The “right technology” for the “right problem” at the “right time.”
	Office 365 rollout – all features	Design and develop desktop as a service capacity	Migrate 33% of desktop to a hosted environment		
	Provision BI framework	Identify server workload for hosting	Migrate PS-FIN to cloud		
	Migrate PS-HCM to cloud	Deploy identified server workload to a hosted environment			
	Complete HVS project	Migrate active directory to cloud	Deploy SDN		
	Complete MPLS project	Deploy Windows 10	Bandwidth expansion		
		Migrate unstructured data to cloud			
INNOVATION CHANNEL	Deploy portal for collaboration on innovation	Build partnership model	Solve business problems using innovative and disruptive technologies such as IoT, Blockchain, Drones, NextGen storage, etc.		<p>Encouraging Oklahoma solutions for your everyday problems.</p> <ol style="list-style-type: none"> 1. Fostering innovation in government. 2. Creating startup companies. 3. Empowering citizens.

A text version of this chart is available in Appendix A on page 24.

Strategies

There are three key strategies OMES will pursue towards its Digital Oklahoma vision. Each of the strategies is described below, along with defined principles and initiatives, framing our efforts and prioritizing where we assign resources to achieve each strategy's vision statement. The efforts described within each channel focus on enterprise-level or statewide IT initiatives towards the strategy. In addition to these initiatives, there are hundreds of IT projects OMES will deliver to agencies as noted in the Agency Initiatives section.

Strategy 1: Citizen Channel

This channel lists the capabilities that will be developed to provision technologies that will then enable additional solution development to engage and enhance the citizen experience.

Vision

We will use technology to engage and better serve our citizens.

Guiding Principles

1. Government services should not be further away than a smart phone.
2. Citizens will not have to “know” government to get what they need.
3. Citizens will have a voice.
4. Citizen data will be safe.

Strategic Initiatives

1. **Develop One-Stop Portal** – This capability will build a single landing website for all government services within Oklahoma. This portal will work in conjunction with No. 5 below to provide a seamless experience for Oklahomans and negate the need to remember different URLs for different services. This portal will also act as a redirection engine to direct visitors to the right services based on their search criteria.
2. **Migrate State Websites to New CMS Portal** – The State of Oklahoma currently supports six to seven different technologies to administer and present agency websites to citizens, which increases maintenance and fosters an inconsistent look and feel. This capability will condense the technologies into no more than two tools, including for complex websites with advanced requirements and simple websites needing a cheaper solution.
3. **Build 15 Microservices and Application Program Interfaces** – The usage of Microservices and APIs is an architectural style that structures an application as a collection of small, reusable and loosely coupled services which implement business capabilities. This architecture enables the continuous delivery/deployment of large, complex applications. It also enables an organization to evolve its technology stack without a major rewrite. This capability will identify the best fit for this style and also the subsequent development to facilitate agility for future solutions.
4. **Provision an Enterprise Class Mobility Platform** – The State of Oklahoma currently does not have a production-ready mobile application development platform. This capability will provision an MADP so OMES can build world-class mobile apps for citizen-facing services.

5. **Design and Develop a Web Search Engine for State of Oklahoma Executive Branch –** This capability will build a search bar similar to that found in popular search sites, such as Google, Yahoo or Bing. Citizens will be able to type simple English into the search bar for interpretation by an intelligent engine that will present relevant links matching the search criteria, taking the guesswork and innate knowledge required to navigate the state web presence out of the equation.
6. **Provision New Open Data and Data Integration Portal –** Open data is data that anyone can access, use or share. The Open Data movement is similar to other open movements such as Open Source or Open Government. This capability will provision a new and improved open data portal and be populated with open data. In addition, a data integration capability will be added so that data can be downloaded or exchanged with APIs and/or web services.
7. **Mobile Enable 25 Services (x3) –** This capability further expands on the MADP described in No. 4 to mobile-enable 25 citizen-facing services per year; e.g, application and renewal of hunting and fishing licenses, vehicle tag renewal, etc. It is anticipated that there are more than 75 suited for mobile-enablement. This will also require the development of a “container” app that can be downloaded from the app stores. It will register a citizen and present each mobile-enabled service as a “tile” or app within the app. This approach will prevent cluttering and enhance management on mobile devices.
8. **Equip Account Executives and IT Strategists to Solve Business Problems with Mobility Solutions –** Subsequent to the provisioning of mobile technologies, OMES must train account executives and IT strategists to become subject matter experts on how these technologies might help agencies in solving business problems. Additionally, these account executives and IT strategists should also recognize which business problems lend themselves to crowdsourcing options such as innovate.ok.gov.
9. **Offer Mobile Applications Development as a Service –** This capability will position the MADP capability mentioned in No. 4 toward agency-specific mobile-enablement needs. There are several opportunities in health, human services and transportation for mobile-enablement that can enhance efficiency and timeliness of data collection and dissemination.
10. **Deploy Citizen Sentiment and Customer Service Tools –** Data holds the key to designing and provisioning better services in the public sector. For improving services, agencies must capture data from all sources – internal and external, structured and unstructured – to identify the sentiments of their citizens. Social media is omnipresent, and agencies are certainly starting to sit up and take notice. However, monitoring and analyzing social media has not been widely adopted in Oklahoma, with the result that a lot of potential insight is being missed. The ability to analyze these conversations can help agencies uncover crucial insights, including how well services are delivered and received, where staff are performing well and where they are not, and where there may be problems that need to be addressed quickly. This capability provisions tools to assess and analyze citizen sentiment and customer service levels for service delivery.

Strategy 2: Employee Channel

This channel lists the capabilities that will be developed to provision critical capabilities that will empower State of Oklahoma employees to use technology to deliver services to Oklahomans.

Vision

We will find better ways to empower our employees.

Guiding Principles

1. Anytime, anywhere access.
2. Customer service “my way.”
3. Things will work as designed.
4. The right technology for the right problem at the right time.

Strategic Initiatives

1. **Enhance Infrastructure for Teleworking** – This capability will provision the infrastructure necessary to enable teleworking for all state employees. Several state agencies are beginning to encourage teleworking to reduce onsite costs. While most of the infrastructure is in place today, this capability will extend the capacity to accommodate a larger population.
2. **Office Productivity Suites Rollout** – The rollout of Office 365 is in progress with approximately 55 percent completion across all unified agencies. This capability is for the completion of Office 365 by the end of FY 2018. Additionally, it is important for the State of Oklahoma to provide an alternative option to Office 365, such as Google Suite. This capability also provisions a statewide offering for alternative office productivity suites.
3. **Provision a Business Intelligence Framework** – Data analytics and business intelligence solutions are becoming more widespread within the state as agencies attempt to use these tools to gain more insight into their data. This capability will begin the build of the business intelligence framework using current projects that can be extended to future needs.
4. **Migrate PeopleSoft to the Cloud** – The current PeopleSoft HCM on-premise software will be migrated to the cloud as an SaaS model to maximize the cost-to-value ratio and enable all that PeopleSoft has to offer. A project called EmpowerHR has been initiated for this migration.
5. **Complete Hosted Voice Services Project** – This capability will complete the Voice over Internet Protocol migration of state phone systems leading to an operationalization of phone costs as well as bring the power and flexibility of VoIP to the state.
6. **Complete Multiprotocol Label Switching Project** – With increases in data and devices that consume data, networks must be upgraded to handle the volume and demand. The current migration project from Frame Relay to MPLS needs to be completed to allow for state networks to be more secure, with faster speed and faster restoration of networks.
7. **Enable Bring Your Own Device for State Employees** – This capability further expands on No. 1 to allow state employees to bring personal equipment (mobile phones, computers, etc.) and receive the same experience as they would with a state-owned device. This capability is necessary to reduce costs for agencies that wish to allow BYOD and reduce expenditure on expensive capital assets.

8. **Design and Develop Desktop as a Service Capability** – Desktop as a Service is a cloud-based service in which the backend of a virtual desktop infrastructure is hosted by a cloud provider. This capability will build a multitenancy architecture, and the service will be purchased on a subscription basis. In this delivery model, the service provider manages the backend responsibilities of data storage, backup, security and upgrades. The addition of this capability has significant potential in reducing costs for procuring, managing and retiring desktops as compared to the traditional purchased/leased model.
9. **Identify Server Workload for Hosting** – This activity will identify those servers, along with their applications and data, suitable for a hosted environment. It is likely that some servers must remain on premise due to statutory or regulatory constraints. At its conclusion, this activity will present a list of hostable servers and those that must remain on premise.
10. **Deploy Identified Server Workload to a Hosted Environment** – The capability will deploy the list of servers identified in No. 9 above to the cloud and thus reduce the on-premise footprint and increase scalability and flexibility of storage and computing by leveraging the cloud.
11. **Migrate Active Directory to the Cloud** – The migration of Active Directory domain service to the cloud will enable running directory-aware workloads in the cloud as well as connect other cloud-based services for authentication and authorization.
12. **Deploy Windows 10** – This capability will deploy the most recent version of Windows 10 across compatible machines. Windows 10 will be required to enhance capabilities such as BYOD and Desktop as a Service along with various other features.
13. **Migrate Unstructured Data to the Cloud** – Unstructured data is data which does not reside in a database, such as files, pictures, images, etc. It is expected that 80 percent of state data is unstructured and on-premise storage is more expensive than cloud storage.
14. **Migrate 33 percent of Desktops to a Hosted Environment** – After No. 8 builds the Desktop as a Service platform, this capability will migrate one-third of the desktops to the cloud.
15. **Deploy Software Defined Networking** – This capability is aimed at making the network agile and flexible by allowing networking engineers to respond quickly to changing business requirements. SDN allows for management and control of the network through software portals and consoles without having to touch individual switches.
16. **Bandwidth Expansion** – To accommodate both the citizen channel and employee channel capabilities, the bandwidth of the state network, associated infrastructure and devices will be upgraded to handle the increased workload.

Strategy 3: Innovation Channel

This channel lists the capabilities that will be developed to provision innovative technology solutions to empower State of Oklahoma employees and engage citizens to deliver and consume government services.

Vision

Encouraging Oklahoma solutions for your everyday problems.

Guiding Principles

1. Fostering innovation in government.
2. Creating startup companies.
3. Empowering citizens.

Strategic Initiatives

1. **Deploy Portal for Collaboration on Innovation** – As the first step to incubate innovation, OMES and partners created the Innovate Oklahoma portal (<http://innovate.ok.gov>) as a central hub for all requests, submissions and solutions. Announced in September 2017, the program is used for finding innovative ways to leverage technology and support the tech startup sector in our state. Anyone can issue a challenge to be solved by Oklahoma’s technologists and entrepreneurs.
2. **Build Partnerships** – Through partnerships, these great ideas can be turned into winning new startup companies that have the ability to reshape how state government works while growing new businesses that provide high-tech jobs. Key partners in this endeavor will be OCAST and i2E and may extend to other entrepreneurial entities.
3. **Solve Business Problems using Innovation and Disruptive Technology** – Along with challenges and solutions from the Innovate Oklahoma portal, the following disruptive technologies will alter government service delivery and citizen engagement:
 - a. **Internet of Things** – IoT will bring about an ecosystem of interrelated computing devices, mechanical and digital machines, objects, animals and/or people in a way that has not existed until recently. This ecosystem and the data it collects and transmits can be used to solve a myriad of problems. The specific applications of this type of capability will need to be explored further with agencies. Some examples of IoT in government could be road sensors to manage traffic, smart meters and sensors to conserve energy costs, and many other ubiquitous applications of which the sum is greater than the individual parts.
 - b. **Blockchains** – The ability of Blockchains to continuously grow, be linked securely and be inherently resistant to data modification will act as a significant disruptor to several business transactions. While the applications of blockchaining are mostly regarding cryptocurrency today, the potential for better delivery of government services is significant. For example, Blockchain technology can be used as a time stamp of sorts. When used as a time stamp for everyday transactions, such as vital records or exchange of property, it reduces the burden of providing proof of identity or of a previous transaction, and citizens will no longer have to provide documents in

person, thus reducing errors and time.

- c. **Unmanned Aerial Vehicles** – UAVs have soared well beyond the realm of hobbyists. With commercial applications that can be extended to state government, UAV technology can be used in agriculture, public safety, cell tower inspection and more. Conceivably, data collected by UAVs could use the same infrastructure as IoT.

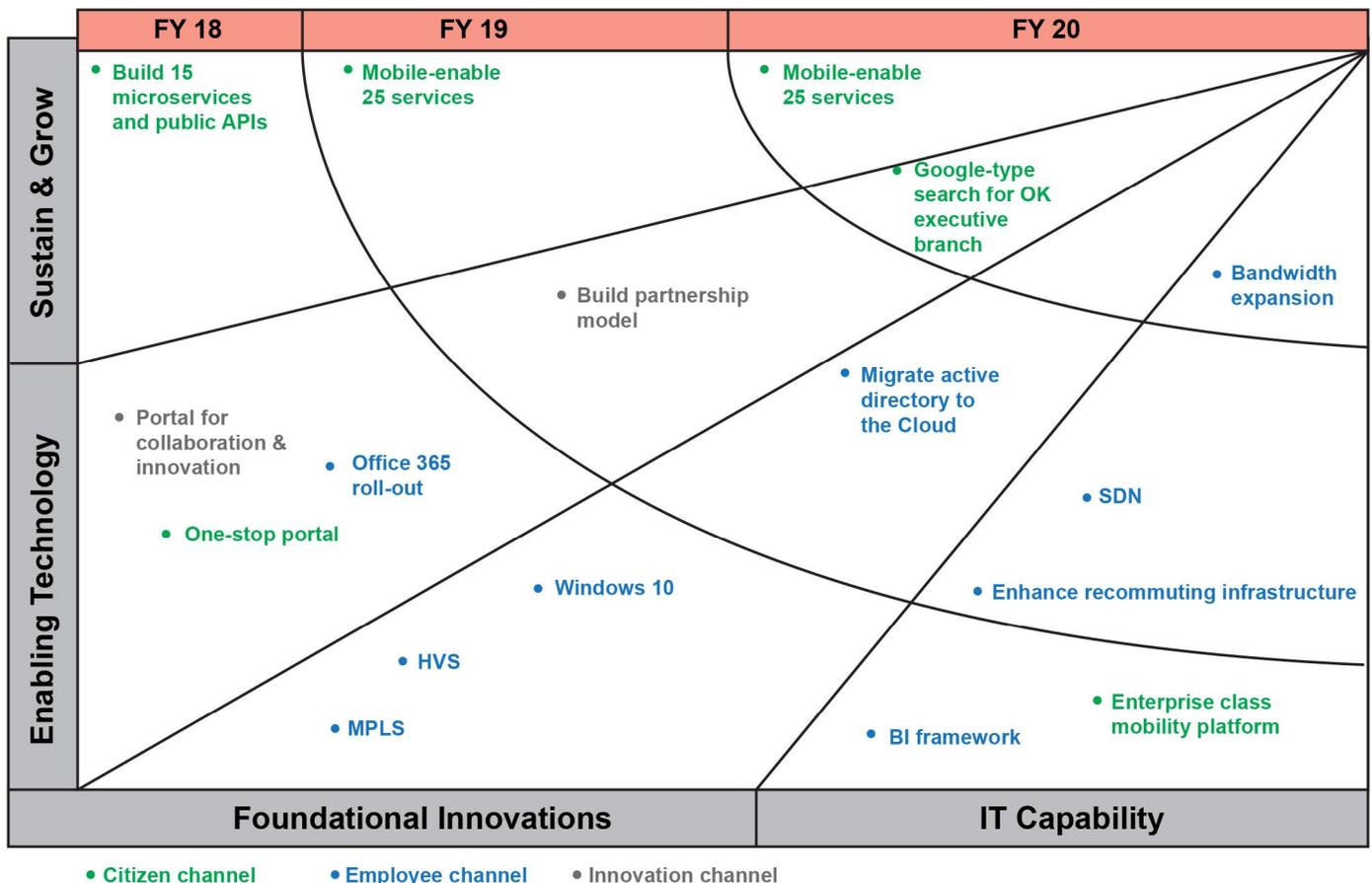
Portfolio Approach

To “construct” the above technology portfolio, the sequencing and integration of the various IT assets is crucial to its success. Like constructing a house, there is much required work that goes unseen (in the walls, under the floor) that visitors of the final product rarely see. The same is true when developing a technology portfolio as diverse and complex as ours.

The Construction Road Map below provides how the various efforts within the three key strategies will be pursued, as well as the portfolio areas in which they reside. Each of these four areas, IT Capability, Foundational Initiatives, Enabling Technologies and Sustain & Grow, support the overall vision and strategy of OMES, but the sequencing of efforts ensures the core capabilities and foundations are built to enable the front-end functionality and technologies.



Construction Road Map



A text version of this chart is available in Appendix A on page 26.

Agency Initiatives

Beyond the key strategies to enable the State of Oklahoma to achieve its objectives towards a Digital Oklahoma, there are hundreds of projects focused on supporting and innovating our state agencies. Currently, there are more than 428 active IT projects and that number will increase as new needs are established.

Agency projects range from compliance or regulatory updates to large, transformational efforts that will transform how we operate and deliver services to our citizens. The current list of projects contains:

- **275 projects currently requested.**
- **53 agencies or state entities affected.**
- **15 agencies with more than 5 projects.**

Large, Complex Projects

Within the agency project portfolio there are many current projects that will substantially effect how we work. Many of these projects are required to replace outdated legacy systems that are expensive to maintain and no longer meet technology demand. Other projects will increase reliability and transform our operations all the while driving Oklahoma state government towards a 21st-century delivery platform. These projects include the following:

1. **EGID HealthChoice Disability Third Party Administrator** – The Employees Group Insurance Division needs a new TPA for their HealthChoice Disability Plan for State of Oklahoma and county employees.
2. **Implementation of a Business Management Solution for OMES** – OMES is seeking to implement a business management solution to improve efficiency in the billing life cycle. Preferably, this solution will be an off-the-shelf system to support the billing process, including billing and invoice operations, chargeback operations, service management/request operations, statement of work/work order process and rate services calculator.
3. **DHS OK Benefits Phase 1** – Phase 1 of the Department of Human Services OK Benefits initiative to modernize their technology platform.
4. **OSDH OSIS Phase II** – The Oklahoma State Immunization Information System, an electronic database of immunization records for children and adults in Oklahoma operated by the Department of Health, is utilized by health care providers to provide OSDH up-to-date information regarding immunizations that are complete, current or past due and those needed in the future. The individual electronic records are also utilized by parents, schools and child care facilities. OSIS currently meets about 80 percent of the standards for Centers for Disease Control and Prevention and will be 100 percent compliant upon completion of this project. In addition, a pandemic module will assist in accepting electronic messaging, ensure up-to-date and accurate data is entered into the database, improve efficiencies and provide savings in staff time and overall performance for OSDH.
5. **Fax over Internet Protocol Pilot for Statewide Fax Solution** – In order to ensure business continuity and provide a low-cost fax solution at an enterprise level, the State of Oklahoma will research, select and deploy an FoIP solution.
6. **Windows Server 2003 Network Infrastructure Project** – Decommission the 2003 infrastructure servers for Department of Health, Department of Agriculture, and Capital Assets Management.

7. **CyberWARN Upgrade** – Upgrading CyberWARN to 10.0.
8. **EGID HealthChoice Third Party Administrator Migration** – EGID is integrating a new TPA with implementation effective Jan. 1, 2018, to increase reliability and precision of claims processing and certain administrative aspects of the HealthChoice health, dental and life benefit plans for State of Oklahoma current and former employees and their families.
9. **OMES Asset Management Program Design** – This project is to formally develop the OMES Asset Management Program processes that track all hardware and software assets from receipt of the asset, to request by the customer, to delivery to the customer, to termination/surplus of the asset, and to include proper billing of customers using OMES assets. Processes are currently in place but have not been formalized to reflect the changing processes as a result of IT consolidation. At the completion of this project, OMES Asset Management will have all processes formally documented to include the new requirements that have emerged as a result of IT consolidation, comply with ISO 9001 quality management system standards where appropriate, and be able to provide necessary documentation to evidence compliance with state standards.
10. **DHS eKids.Net Upgrade** – Convert eKids legacy application in ASP to latest version of .Net 4.5 or higher.
11. **DHS Medicaid Waiver Management Information System Replacement – Build and Implementation** – Replace existing WMIS with the new WMIS application that will track providers, members, service & care plans, and provide a repository of data for the DHS Aging Services Division.
12. **DHS Aging & Disabled Waiver Information Portal** – Information and prescreening eligibility for Medicaid waivers for aging and disabled.
13. **EmpowerHR** – Implement Oracle HCM Cloud application services.
14. **Statewide Identity Management Selection Planning** – Identify what tool will be used for the statewide identity management implementation.
15. **OTRD Megasys Online Campground Reservation System** – Update the Oklahoma Tourism and Recreation Department online campsite reservation system to a more modern system to increase tourism in Oklahoma.
16. **OCAST OKGrants Management Software Replacement** – The Oklahoma Center for the Advancement of Science & Technology needs a new grants management system. The current software requires excessive manual processing in order to maintain and manage grant solicitations and awards. The new software would automate these processes and allow grant seekers, external reviewers, and staff to search, manage and obtain grants in an automated fashion.
17. **OSDE Online Professional Development System** – The Department of Education is looking to purchase, install and populate an online professional development platform.
18. **Business Continuity Plan Development** – OMES will assist several agencies in developing business continuity plans that will create a strategy through the recognition of potential threats and risks facing each agency, with an eye to ensure that personnel and assets are protected and able to function in the event of a disaster.
19. **OWRB Water Use Information System Redesign** – OMES will work with the Oklahoma Water Resources Board Water Permitting and Accounting employees to achieve the following needs:
 - Build a new web application available to water permit holders to access data validation

checks and limited historical water use reporting for each permit, and make water use fee payments.

- Redesign the annual water use survey and administrative fee invoice mailing in order to allow water permitting employees to prepare and execute the mailing.
- Build new financial invoice accounting database sections to track invoicing, payments, and refunds required by the state water use reporting program.
- Incorporate tools and processes for providing Oklahoma water use data to the USGS.
- Map new data fields to geographic information system data stores.
- Redesign the water use section of the water permitting database to incorporate new data, data validation checks, and water use fee payment tracking and processing.
- Redesign the water use section of the water permit application and include new data validation checks.

20. **ODVA PointClickCare Software Upgrade** – The Department of Veterans Affairs will implement new modules within the PointClickCare cloud-based software system, including integrated labs, tray cards/dietary, skin and wound, agency-wide web-based training which will replace another software package that will no longer be supported by the vendor.
21. **OSDH Lead System Replacement** – Replace the current Neometrics software used by the Oklahoma Childhood Lead Poisoning Prevention Program with Healthy Homes and Lead Poisoning Surveillance System. The new system, provided by the CDC, will capture lead hazard data, automate outdated systems and require less manual oversight from the OCLPPP staff.
22. **OCC E-Discovery Implementation** – Implementation of the Office 365 E-Discovery tools for the Oklahoma Corporation Commission to facilitate open records requests, providing a quicker, more accurate turnaround time for all open records requests at a lower cost by limiting manual intervention.
23. **CLEET BIM Software Replacement** – This Oklahoma Council on Law Enforcement Education and Training project will be to perform software replacement for their business information system to meet current needs and provide predictable paths for future requirements.
24. **OSDH Medical Claims Billing Automation** – Software development to create a billing reconciliation process for Medicaid, Medicare and private insurance so county health departments can be reimbursed for services rendered.
25. **DHS SNAP Applications Web Service** – DHS Adult and Family Services will develop a web service to receive Supplemental Nutrition Assistance Program applications electronically from external business partners. As DHS reduces its physical footprint in some areas and community partners increase their ability to participate in an electronic exchange of information, Adult and Family Services feel they can better serve Oklahomans receiving SNAP benefits.
26. **Care Management System Procurement** – The Oklahoma Health Care Authority utilizes the current system, which has reached end of life, to manage members of established population groups or other members as needed.

Appendix A: Road Maps – Text Version

Digital Oklahoma Strategic Road Map (from Page 14)

Citizen Channel

- **FY-18**
 - Develop one-stop Portal
 - Migrater state websites to new CMS solution
 - Build 15 microservices and public APIs
 - Provision an enterprise class mobility platform
 - FY-19 Design and develop Google bar-type search for State of Oklahoma executive branch
- **FY-19**
 - Design and develop Google bar-type search for State of Oklahoma executive branch
 - Mobile-enable 25 services
 - Equip AEs and IT strategists to target solving business problems with mobile solutions
 - Offer mobile application development as a service
- **FY-20**
 - Provision new open date and data integration portal
 - Mobile enable 25 services
 - Deploy citizen sentiment and customer services tools (chatbots, etc.)
- **FY-21**
 - Mobile enable 25 services
- **Goals and Guiding Principles**
 - We will use technology to engage and better serve our citizens
 1. Government services should not be further away than a smart phone.
 2. Citizens will not have to “know” government to get what they need.
 3. Citizens will have a voice
 4. Citizen datat will be safe

Employee Channel

- **FY-18**
 - Enhance infrastructure for work from home (complete in FY-19)
 - Office 365 rollout – all features (complete in FY-19)
 - Provision Business Intelligence framework
 - Identify server workload for hosting
 - Migrate PeopleSoft-HCM to cloud (complete in FY-19)

- Complete Hosted Voice Services project
- Migrate active directory to cloud (complete in FY-19)
- Complete Multiprotocol Label Switching project
- **FY-19**
 - Enable Bring Your Own Device for state employees (complete in FY-20)
 - Design and develop desktop as a service capacity (complete in FY-20)
 - Deploy identified server workload to a hosted environment (complete in FY-21)
 - Deploy Windows 10 (complete in FY-20)
 - Migrate unstructured data to cloud (complete in FY-20)
- **FY-20**
 - Migrate PeopleSoft – Finance to cloud (complete in FY-21)
 - Deploy Software-Designed Network
 - Bandwidth expansion (complete in FY-21)
- **Goals and Principles**
 - We will find better ways to empower our employees
 1. Anytime, anywhere access.
 2. Customer services “my way.”
 3. Things will work as designed.
 4. The “right technology” for the “right problem” at the “right time.”

Innovation Channel

- **FY-18**
 - Deploy portal for collaboration on innovation
 - Build partnership model (complete in FY-19)
- **FY-19**
 - Solve business problems using innovation and disruption technologies such as IoT, Blockchain, Drones, NextGen storage, etc.
- **Goals and Principles**
 - Encouraging Oklahoma solutions for your everyday problems.
 1. Fostering innovation in government.
 2. Creating startup companies.
 3. Empowering citizens.

Construction Road Map (from Page 20)

Sustain & Grow

- **FY-18**
 - Build 15 microservices and public APIs - Application Programming Interface (citizen channel)
- **FY-19**
 - Mobile-enable 25 services (citizen channel)
- **Fy-20**
 - Mobile-enable 25 services (citizen channel)

Enabling Technology

- **FY-18**
 - Portal for collaboration & innovation (innovation channel)
 - One-stop portal (citizen channel)
 - Office 365 roll-out (employee channel)
- **FY-19**
 - Build partnership model (innovation channel)
- **FY-20**
 - Google-type search for OK executive branch (citizen channel)

Foundational Innovations

- **FY-18**
 - MPLS - Multiprotocol Label Switching (employee channel)
 - HVS - Hosted Voice Services (employee channel)
 - Windows 10 (employee channel)
- **FY-19**
 - Migrate active directory to the Cloud (employee channel)

IT Capability

- **FY-18**
 - BI - Business Intelligence framework (employee channel)
 - Enterprise class mobility platform
- **FY-19**
 - Enhance recommitting infrastructure (employee channel)
 - Software-designed network - SDN (employee channel)
- **FY-20**
 - Bandwidth expansion (employee channel)