

# Department of Innovation and Technology

April 2016

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# Department of Innovation and Technology

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# State of the State's Technology

# State of the State's Technology

42 years' of technical debt

Vulnerable Security Position

Out of balance
Cost Structure

Illinois is ranked "C" as a Digital State

1974 - 2016





A = 8

B = 30

C = 12

These challenges have caused lost opportunities for our customers to benefit from the power of their government...

Ease of doing business in and with the State

Seamless engagement Customer <> Government Improve workforce productivity

Unleash value of data

Secure personal information

### Illinois "FIRST"

# Strategy Execution

Make 45 years' journey in 4 years **Step 1: Improving the business** of IT **Step 2: Improving the business** of State using IT **Step 3: Leapfrogging to reclaim leadership** 

**External Collaboration** nterna

**Expected Future State** Digital States' Ranking: C → A **Enterprise Innovation & Technology Organization** Illinois "FIRST" **ERP** Mobile Agile **Analytics** Cloud Business Modern, Secure, **Customer-centric Solutions** 

### **DoIT Vision Statement**





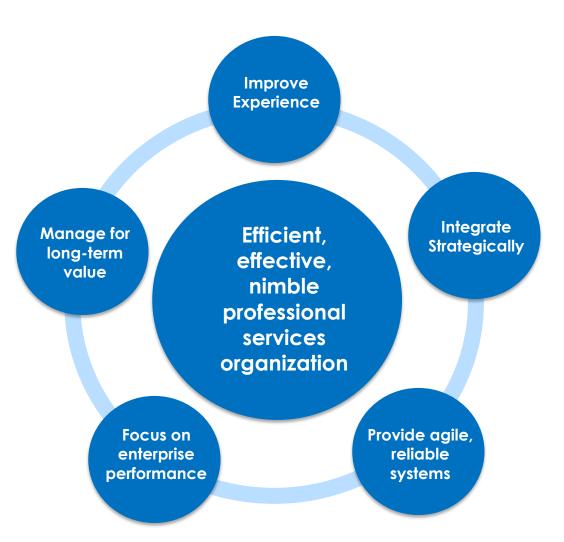
# Illinois "FIRST" Strategy

Illinois <i>FIRST</i>		Theme	Result
1.	One Team	Illinois "FIRST" mindset	One state, one budget, one high performing IT team
2.	Service Delivery	Cost effective, trusted and timely services delivered to customers	Improved service delivery, higher customer satisfaction
3.	Agency Innovation	Collaborative shared innovation across the entire state	Agencies drive innovation
4.	Smarter Illinois	Smarter Illinois Focus	Security, Mobility, Analytics, Cloud, ERP with roughly right, agile, Internet of Things execution
5.	Enterprise Platform	Common enterprise platform for computing (back-office/factory)	Cost efficiency and reduced risk
6.	ЕРМО	Enterprise Program Management Office	Consolidated return on investment (ROI) focused budget, agency driven priorities and improved accountability

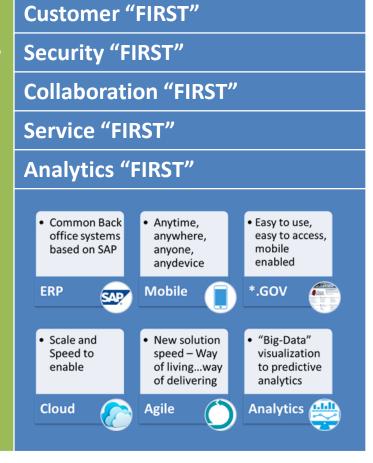
# Illinois "FIRST" Based on 5 Strategic Actions

### Vision:

build an efficient,
effective, nimble
professional technology
organization to
empower a more
efficient, accessible and
competitive Illinois.



The Illinois "FIRST" strategy is based on operating as a preferred one stop, one entity and one voice across the state for Information Technology. Focused on "SMART Citizen" enablement we must collectively improve services and experiences of all citizens, businesses, visitors and "everything" in, around and across the state.



### Illinois "FIRST"

# **Executable Technology Strategy**







Turn technology's focus outsidein

#### **Collaboration**



Collaborate and Govern to become a world class technology org

### **Service**



Transform and streamline statewide IT operations

### **Analytics**



Build vertical business systems with horizontal data interoperability

### **Security**



Strengthen
Cyber
Security to
mitigate risk

### Illinois "FIRST"

# IT Strategy

Turn technology's focus outside-in

Customer"FIRST"



- ERP implementation (ERPFIRST)
- 2. eProcurement solution
- Complete applications rationalization and publish future state
- 4. MobileFIRST app pilots with EPA, DCFS, VA, Mobile Payments and \*Illinois.gov
- Collaboration tool upgrades including Office 365 Pilot, SharePoint expansion, video and web conferencing

Strengthen Cyber Security to mitigate risk

Security"FIRST"



- Securing personal identifying information in state systems
- Campaign to involve the Governor's Cabinet in cybersecurity oversight
- 3. Cybersecurity awareness training for all state employees
- Implement advanced threat detection technology
- 5. Statewide adoption of the NIST Cybersecurity Framework

Transform and streamline statewide IT operations Service"FIRST"



- CloudFIRST strategy / implementation
- Centrex to VoIP migration including ICN build-out and expansion
- 3. Establish enterprise architecture and publish future state
- Expand data center virtualization and establish disaster recovery (DR) offering for state
- 5. Implement LEAN
  Service Delivery
  Management
  Improvements

Collaborate and Govern to become a world class technology shop (C+ to A) Collaboration "FIRST"

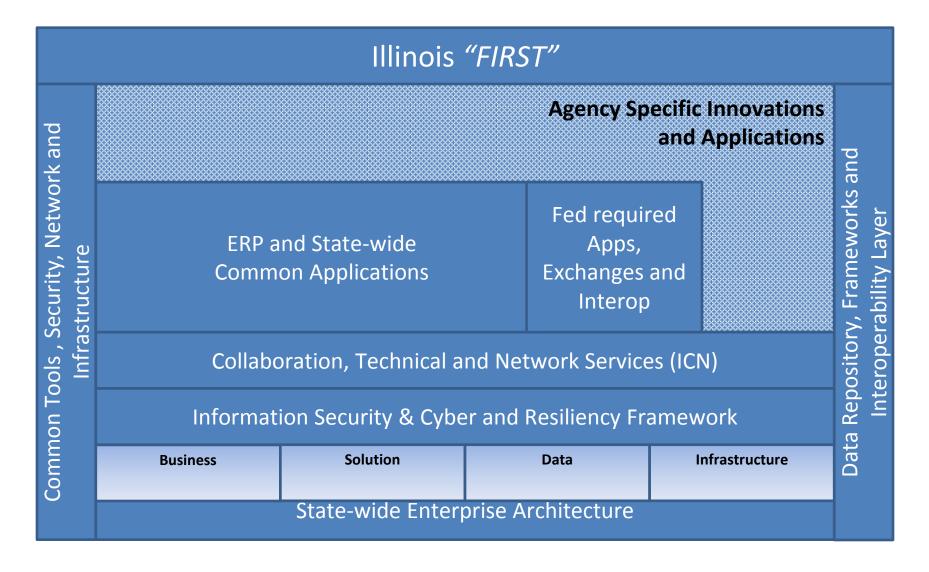


- IT Transformation
   project including talent
   management strategy
- 2. CIO Council working groups cross state collaboration
- 3. Establish highfunctioning office of the CIO to lead IT across state
- Implement enterprise program management and governance process
- Vendor management multi-step RFP award for IT solutions providers

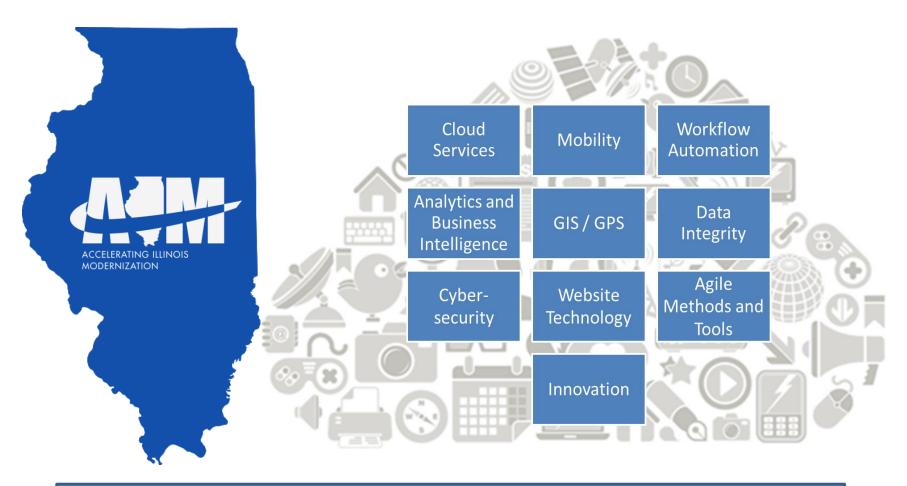
Build vertical business systems with horizontal data interoperability Analytics"FIRST"



- Health and Human services transformation though data interoperability and analytics
- 2. Unify business tax service systems
- 3. Build statewide license management system
- 4. Build statewide case management system
- Create statewide public safety and education data sharing framework



# IT Strategy



To deliver best in class innovations and technologies to enable and empower citizens and business collaboration across the state

- Cybersecurity



# Strategy on a Page – Cybersecurity

#### CYBERSECURITY WORKING GROUP STRATEGY ON A PAGE FOR 2015 – 2016

Vision Statement - A secure and resilient cybersecurity environment which facilitates and protects the business of the state of Illinois, reduces risk and protects privacy, while promoting innovation, economic growth and transparency.

#### State of Cybersecurity in 2015

#### Top Characteristics of the Initial State

- Lack of measurable outcomes as applicable to cyber security which display value to stakeholders.
- Inconsistent executive support regarding the prioritization of cyber security. Lack of specific authority and processes to direct resources to address critical security controls at state agencies. Competing priorities between security and business resources. Lack of wide understanding of the criticality of enterprise information security.
- Lack of a comprehensive security awareness program.
- Cybersecurity efforts and teams are decentralized and lack common standards and direction.
- Lack of uniformity on how security standards are applied. Lack of implementation of critical security controls and lack of consistent inventory practices for cyber-assets across state agencies.
- Inconsistent practices and expertise across entities in identifying that an attack or incident is taking place or has taken place.
- Cyber-risk information is not consistently shared across the state as an enterprise.
- Lack of a statewide cyber response plan as part of the Illinois Emergency Response Plan
- Absence of consistent risk management practices across state agencies. Security risks are either not known or not addressed.
- Lack of standardized cybersecurity policies across the state
- · Lack of sufficient cybersecurity expertise.

#### **Key Initiatives**

Cybersecurity awareness training for all state employees

Campaign to involve the Governor's Cabinet in cybersecurity oversight

Cybersecurity Strategic Plan which identifies funding and staffing needs.

Cybersecurity Governance and Authority structure for the state of Illinois

Strategy for the adoption of a common cybersecurity framework

Proactive threat detection training and technology sharing and innovation

 $\label{lem:cybersecurity} \textbf{Cybersecurity information sharing initiative (builds on STIC, MS-ISAC, FBI)}$ 

Cyber Disruption Strategy integrated into the State Emergency Operations Plan

Risk Management framework guidelines, policies and training for all state agencies

Model cybersecurity policies deployment across all state agencies

Illinois Cybersecurity Workforce Development Plan

#### Top Underlying Beliefs and Assumptions

Efforts to improve cybersecurity must properly reflect the borderless, interconnected, and global nature of today's cyber environment.

Efforts to improve cybersecurity must be based on risk management

Efforts to improve cybersecurity must focus on awareness.

Cybersecurity efforts must be able to adapt rapidly to emerging threats, technologies, and business models.

Efforts to improve cybersecurity must leverage public-private partnerships and build upon existing initiatives and resource commitments.

Efforts to improve cybersecurity must more directly focus on bad actors and their threats.

Sufficient funding and resources will be provided to further the overall strategy.

All agencies will participate toward the success of the cybersecurity strategy.

#### State of Cybersecurity in 2016

#### Top Characteristics of the End State

- Illinois' cybersecurity strategies and programs are continually aligned with the business strategies of Illinois agencies, boards and commissions as well as the enterprise as whole.
- Cybersecurity programs and initiatives are developed based on a sound and consistent Risk Management Process across all state agencies.
- A culture of cyber-risk awareness at all levels of state government has been created and is continually enhanced.
- Illinois utilizes a common framework for cybersecurity across all state agencies.
- Illinois has developed and maintains a proactive approach to threat and attack detection and rapidly and effectively responds to mitigate the threats and reduce the impact to the state.
- Cybersecurity planning is prevalent during all phases of the solution development
- Emerging information security threats and vulnerabilities are appropriately shared across Illinois agencies, boards and commissions in a reliable and timely manner.
- Illinois' response to a significant cyber disruption is fully defined, exercised and effective. Cyber response is governed by the Cybersecurity Response Annex in the Illinois Emergency Operations Plan.
- Effective and consistent cybersecurity policies are in place across all state agencies.
- Illinois' cybersecurity workforce is well-trained and continually developed.

Statement of Risk - The lack of a comprehensive and consistent approach to cybersecurity strategy across the state poses an immediate threat to the State of Illinois and places the confidentiality, integrity and availability of critical information in jeopardy and poses risks to privacy assurances our citizens expect and deserve.

- Cloud Services



# Strategy on a Page – Cloud Services

#### WORK GROUP STRATEGY ON A PAGE FOR 2016 - 2019

Work Group Strategy and Value Proposition: To develop and implement a cloud computing strategy for the State of Illinois, which will improve performance, security and applicability of technology solutions while also being more cost effective.

#### State of IT in 2016

#### Top Characteristics of the Initial State

- Low to moderate asset utilization
- Fragmented demand for resources
- Duplicative systems
- Differently governed and managed data centers
- Top 5-7 Metrics Describing the Initial State
- 3% of workload in the cloud
- Time to launch solutions hampered by process inefficiencies

#### Top Initiatives\*

- 1. Cloud implementation plan for the State is threefold:
  - · public,
  - · private, and
  - · hybrid offerings
- 2. Moving workload to the cloud
- 3. Migrating internal data center to hybrid computing hub

#### Top Underlying Beliefs and Assumptions

- The State will be able to better exploit and share commodity products and services
- Innovative solutions will be developed and deployed quickly
- Proper governance and security will enable the move to lower cost, standard, interchangeable services
- Culture of government will change to adopt and adapt to solutions the market provides

#### State of IT in 2019

#### Top Characteristics of the End State

- · Fully implemented cloud strategy
- 70% of workload in the cloud
- Illinois Innovation Hub is hosting destination of choice

#### Top 5-7 Metrics Describing the End State

- · Cost of computing reduced 25%
- · 50% of statewide apps sunset
- State generates \$25M providing cloud services to municipalities

Statement of Risk: With cloud computing there are standard risks that must be mitigated through due diligence (e.g., data classification, segregation and recoverability), vendor management, information security, and business continuity planning.

- Mobile



# Strategy on a Page – Mobility

#### MOBILITY WORKING GROUP STRATEGY

Work Group Strategy and Value Proposition: Increase accessibility to digital tools and web properties using a state-wide mobility strategy.

#### State of Mobility in 2015

#### Top Characteristics of the Initial State

- Lack of a State-wide Mobility Strategy
- Some agencies building mobile responsive applications
- Lack of skills and resources to deploy mobile platforms

#### Top Metrics Describing the Initial State

- · Smartphone Sales grow by 20%
- State of IL transitions to iPhone
- Digital Govt = Mobile

#### Top Initiatives\*

- Define a Mobility strategy in 60 Days for Digital products.
- Co-opt and form a group of like minded leaders who are willing to pool resources to create a Virtual CoE
- Define set of rules and tools to enable mobility.
- 4. Collaborate with private entities

#### Top Underlying Beliefs and Assumptions

- 1. Security is a critical consideration when building apps.
- Mobile should be a choice to increase stakeholder productivity and process efficiency.
- Strategy ensures decision making between native vs. Hybrid vs. Responsive is easy.

#### State of Mobility in 2017

#### Top Characteristics of the End State

- · A state-wide mobility strategy
- Virtual CoE for Mobility solutions
- · Defined high-level toolbox
- Secure native/hybrid mobile application deployment platform

#### Top Metrics Describing the End State

- Increased accessibility to tools
- Increased efficiency for agency staff to perform field work
- # of Downloads and # of users

Statement of Risk: Ability to create and execute a mobility strategy requires the availability of resources with appropriate skills and experience.

- Analytics



# Strategy on a Page – Data Analytics

# DATA ANALYTICS, BUSINESS INTELLIGENCE AND DATA INTEGRITY WORK GROUP STRATEGY

Charter: Establishing a single, enterprise analytics solution that can be leveraged across agencies and aggregated for state-wide metrics, reporting, dash boarding and predictive analytics.

#### State of Bl in 2015

#### Top Characteristics

- Duplicated, disconnected efforts across departments
- Mind set of data ownership at the department level
- · Legal challenges sharing data
- Inability to easily aggregate data across departments
- Smaller departments are at a disadvantage due to cost of solution

#### **Top Current State Metrics**

- · Hundreds of data sharing agreements
- Several analytics solutions in place using different technologies
- · Days or weeks to move data
- Data duplicated and stored multiple times

#### Top Initiatives\*

- 1. Procure necessary tools
- 2. Hire key staff
- 3. 360 degree view of an individual/child pilot
- Secure federal funding

#### Top Underlying Beliefs and Assumptions

- An enterprise solution will provide the necessary aggregation of data for predictive analytics
- Departments will be able to leverage this solution and be more productive with less cost
- Data will be able to be shared between departments quicker due to everything being in one place
- 4. Legal concerns will be able to be alleviated

#### State of Bl in 2017

#### Top Characteristics

- Single, unified solution with collaboration across departments
- Ability to share data under master sharing agreement
- Data aggregation is happening quickly for multiple departments
- Smaller departments have the same analytics capabilities as larger departments

#### Top End State Metrics

- Number of data sharing agreements reduced considerably
- · Reduced cost of multiple solutions
- Cross-department data is quickly available
- Cost of duplicative storage of data greatly reduced

**Statement of Risk:** The current mind set of data ownership being at the department level and overall security concerns of the data and system not being managed by department staff will create challenges with adoption of a single, enterprise solution.

1

- Business Intelligence



# Strategy on a Page – BI

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- Workflow Automation



# Strategy on a Page – Workflow Automation

#### WORK GROUP STRATEGY ON A PAGE FOR 2017 – 2017

Work Group Strategy and Value Proposition: Recommend strategies to make technology platforms available that will enable State agencies to more easily automate enterprise workflows.

#### Current State 2016

#### Top Characteristics of the Initial State

- Most State Agencies continue to rely on paperbased workflows to gather information, signatures, reviews and approvals.
- Most workflows are manually intensive, lack standardization, data integrity, repeatability and lack efficiency.
- Many data intake processes used by citizens and business for government services are not easy to navigate and use.

#### Top Metrics Describing the Initial State

- · Number of transactions per u nit of time
- · Number of staff required to complete transactions
- Customer response time
- Customer satisfaction
- · Cost of manual processes

#### Top Initiatives\*

- Validate the use of existing Adobe Experience Manager (AEM) SharePoint and Nintex technology platforms for workflow automation initiatives.
- Complete installation of AEM infrastructure and implement AEM "Proof of Concept"
- 3. Fully automate and place in production three Illinois EPA workflows
  - Implement use of adaptive forms for mobile application
  - · Implement use of digital signature capabilities
  - · Implement use of form portal
- 4. Establish service model for AEM services

#### Top Underlying Beliefs and Assumptions

Automating workflows:

- Lowers overall costs
- Improves data accuracy
- Eliminates duplicative data entry
- Increases worker efficiency and overall productivity

#### Future State 2016 -17

#### Top Characteristics of the End State:

- Availability of two to three cost-effective technology platforms for fast and efficient delivery of workflow automation initiatives.
- Establishment of tools and mechanisms to assist agency business units to build effective business cases that include ROI calculations and metrics for workflow automation initiatives.

#### Top Metrics Describing the End State

- Reduced cost of employee salaries associated with previous manual based workflows
- Reduced annual cost of paper
- Reduced content creation, packaging, publishing
- Customer satisfaction with reduced response and cycle times.
- Customer and internal employee satisfaction with new automated processes

Statement of Risk: Process re-engineering of existing workflows must be done prior to workflow automation to gain the greatest efficiencies. Cost effective technologies and effective implementation and support mechanisms must be in place to speed the delivery of automation throughout the enterprise,.

Details in the business case per initiative

- Website Technology



# Strategy on a Page – Website(s)

#### WEBSITE WORK GROUP STRATEGY ON A PAGE FOR 2015 – 2016

Work Group Strategy and Value Proposition: To enhance the website experience of SOI constituents and other website users by improving efficiency and effectiveness through a familiar, consistent, and branded interface.

#### State of IT in 2015

### Top Characteristics of the Initial State

- Lost productivity as each agency independently designs and develops websites
- No uniformity in the look, usability, accessibility, mobility, and security of SOI websites
- SOI Portal is outdated and difficult to navigate

### Top 5-7 Metrics Describing the Initial State

- Users spend an avg. of 2 minutes on the service page before finding what they want.
- 60% of users leave the services page without clicking on a service.

#### **Top Initiatives**

- Create guidelines, modern templates and recommendations.
- 2. Update the SOI web catalog of services to improve usability.
- 3. Re-Design the SOI main Portal to be more Search centric.
- 4. Create standard web site template for agencies, boards, commissions, and authorities to use.

#### Top Underlying Beliefs and Assumptions

- 1. Agencies are willing to adopt new guidelines and templates.
- 2. Sufficient resources will be assigned to accomplish goals.
- 3. Use of mobile devices to access SOI websites will continue to increase.

#### State of IT in 2016

#### Top Characteristics of the End State

- Increased productivity of SOI web teams leveraging new templates.
- SOI websites will have a familiar, consistent, modern and friendly interface.
- SOI Portal will be a search centric site providing access to information about the agencies and services that are there to support our constituents.

### Top 5-7 Metrics Describing the End State

- Users should spend less then 1 minute to find service they need.
- 75% of users are able to find the services they are looking for.
- Obtain 20% SOI website compliance with guidelines, templates, and recommendations within first year of introduction.

Statement of Risk: Availability of technical resources with sufficient skills.

- GIS



# Strategy on a Page – GIS

#### GIS WORKING GROUP STRATEGY ON A PAGE FOR 2015 – 2016

Work Group Strategy and Value Proposition: to work collaboratively with agencies to identify and support statewide initiatives aimed at enhancing the use of geospatial data & technologies. Prime objectives of all work group initiatives will be to increase agency and public "location awareness" relative to State of Illinois services and activities.

#### State of IT in 20XX

#### Top Characteristics of the Initial State

- Lack of Interagency collaboration or knowledge sharing
- Lack of resources in Agencies to support GIS
- Lack of common or shared spatial data

### Top 5-7 Metrics Describing the Initial State

- · Level of spatial data duplication
- Agency "Address" records lacking spatial coordinates
- Static maps produced (in lieu of interactive web map)

#### Top Initiatives\*

- Create an Illinois State Agency Spatial Data Catalog/Repository
- Establish an Illinois GIS Collaboration & Knowledge Sharing Portal
- Establish a GIS Cloud Strategy and provide a Procurement Mechanism that can be utilized by all Agencies
- 4. Build an Enterprise Geocoding Service

#### Top Underlying Beliefs and Assumptions

- State Agencies' need for Geospatial Analysis and Visualization will continue to grow at a rapid pace
- The general public has an expectation that Interactive Maps and Geospatial Applications will be made available by Agencies
- Illinois must adopt a "Location Aware" approach to all aspects of State Government services

#### State of IT in 20XX

#### Top Characteristics of the End State

- High level of Interagency collaboration and knowledge sharing
- Agencies using common, enterprise spatial data
- All agency business data with location element spatially enabled

#### Top 5-7 Metrics Describing the End State

- Shared Enterprise spatial datasets
- Agencies participating in GIS Collaboration
- Enterprise geocoding transactions

Statement of Risk: Resistance to Change at Organizational or Individual Level; inability to add spatial attributes alongside business data in legacy data stores.

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<sup>\*</sup> Details in the business case per initiative

- Data Integrity



# Strategy on a Page – Data Integrity

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7

# Q&A





# Thank you for your time