Agenda

DATA CENTER
MODERNIZATION

CYBER SECURITY
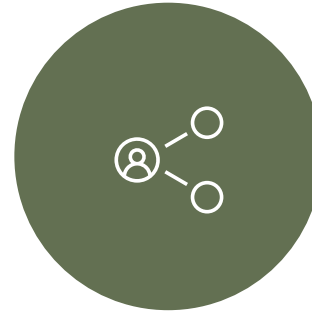
AR DATA

FUTURE
INITIATIVES (PILOT)

Arkansas Department of Transformation & Shared Services
Division of Information Systems
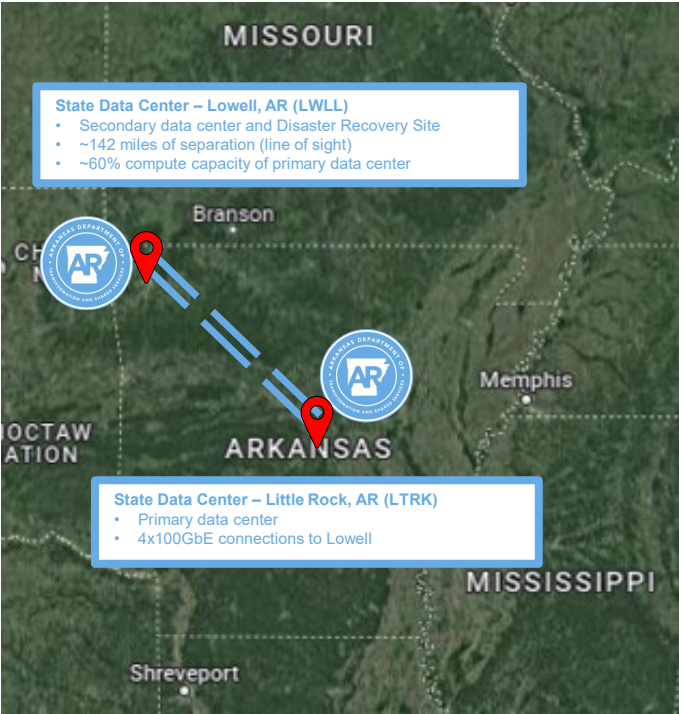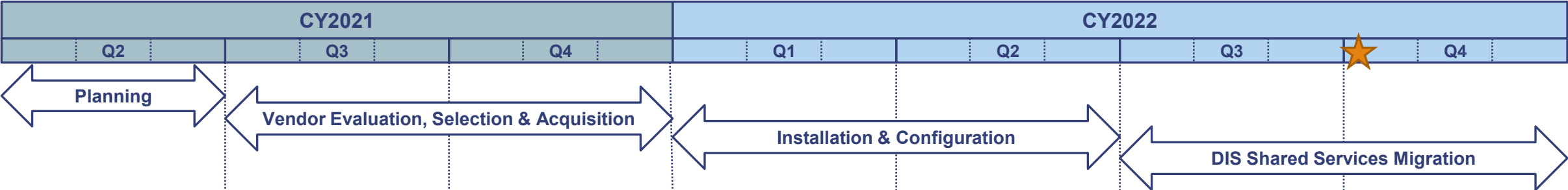
DATA CENTER MODERNIZATION

DCM Focus Areas

Focus Area	Accomplishments
Standardization	• Standardized automated workflows for system provisioning • Implementation of patch and configuration management software • Regular compliance checking and alerting
Improved Security	• Integrated from the beginning • Policy-based controls and standards • Reduced complexity • Improved penetration testing, vulnerability scanning and monitoring • Governance, Risk and Compliance
Improved User Experience	• Automated self-services capabilities (with automated and manual approvals) • Multi-tenant access to tools • Customized dashboards and reports specific to customers • Greater flexibility to add/remove/modify servers, storage and resources
Modernized & Extensible	• Best in class technology partners • Greenfield IaaS • Leveraging virtualization and cloud technologies • New HW/SW deployed and sized to accommodate existing and future workloads (4,000+ systems) • Software defined networking
Resiliency	• Optimum disaster recovery posture • Highly available - geographically separate data centers and network connectivity • More granular recovery levels • Greater DR testing capabilities

Data Center Modernization – Current

CY2021			CY2022			
Q2	Q3	Q4	Q1	Q2	Q3 ⭐	Q4

Planning

Vendor Evaluation, Selection & Acquisition

Installation & Configuration

DIS Shared Services Migration

State Data Center – Lowell, AR (LWLL)
- Secondary data center and Disaster Recovery Site
- ~142 miles of separation (line of sight)
- ~60% compute capacity of primary data center

State Data Center – Little Rock, AR (LTRK)
- Primary data center
- 4x100GbE connections to Lowell

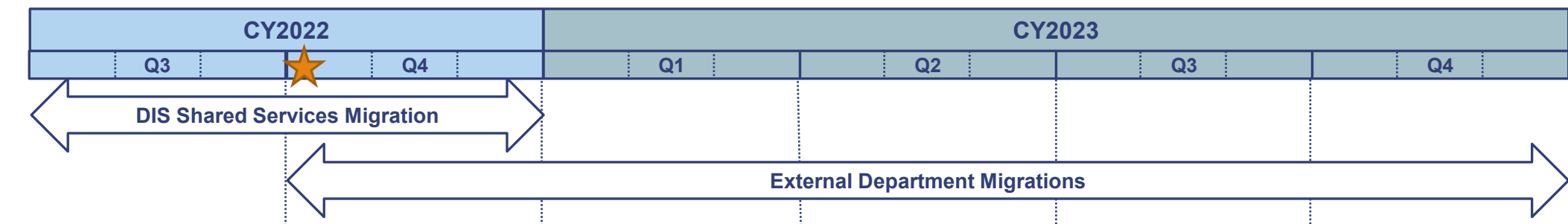| Component	Little Rock	Lowell
Host Servers	74	44
Primary Storage (Replicated)	3.7 PB	3.7 PB
Backup Appliances (Replicated)	~5 PB	~5 PB

Customers	
Arkansas Public Employee Retirement System	Department of Human Services
Arkansas Department of the Military	Department of Inspector General
Arkansas Public Service Commission	Department of Labor and Licensing
Department of Agriculture	Department of Parks Heritage and Tourism
Department of Commerce	Department of Public Saftey
Department of Corrections	Department of Transformation and Shared Services
Department of Education	Department of Veterans Affairs
Department of Finance and Administration	Governor's Office
Department of Health	Public Defender Commission

Statistic	Value
Original Virtual Machines	938
Migrated (to date)	286
Decommissioned	82
Decommission cost savings (monthly)	$20,500
% Complete	40%
Forecasted additional decommissions	125
Forecasted additional cost savings (estimated monthly)	$31,250
Forecasted total cost savings (estimated monthly)	$51,750
Estimated completion date	12/31/2022

*** Will decommission 32 legacy host servers plus end-of-life storage and backup system at end of migration.

Data Center Modernization – Next Steps

	CY2022		CY2023			
	Q3	⭐ Q4	Q1	Q2	Q3	Q4

← DIS Shared Services Migration →

← External Department Migrations →

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Statistic (based on previously gathered information)	Value
Estimated Systems to Migrate	~2,000
Estimated Systems to Decommission	~350
Estimated Completion Date	12/31/2023

Customers	
Arkansas Public Employee Retirement System	Department of Human Services
Arkansas Department of Energy and Environment	Department of Inspector General
Arkansas Public Service Commission	Department of Labor and Licensing
Department of Agriculture	Department of Parks Heritage and Tourism
Department of Commerce	Department of Public Saftey
Department of Corrections	Department of Transformation and Shared Services
Department of Education	Department of Veterans Affairs
Department of Finance and Administration	Arkansas Educational Television
Department of Health	

Potential Cost Savings / Avoidance Opportunities
- Avoid hardware refresh – reduced CapEx spend for HW
- Avoid SW renewals – reduced CapEx/OpEx for SW
- Better pricing on HW/SW (economies of scale)
- Efficiency improvements via automation – more work done with same people
- Better operational / DR posture – improved employee and citizen satisfaction

Focus Areas
- Complete Shared Services migration
- Decommission Shared Services environment
- Migration planning (inventory confirmation, network dependencies, capacity requirements, etc.)
- Schedule migrations
- Automation and operational improvements (additional dashboards, reports, workflows, etc.)

Benefits

- Improved customer experience

- Reduced IT lead times, able to deploy or modify infrastructure components faster

- Streamlined processes, resulting in consistent, compliant, and secure deployments

- Increased operational efficiency

- More efficient utilization of resources – "right size" systems, more accurate costing and reducing siloed/unused capacity

- Policy-based controls – reduced complexity, fewer errors, easier to maintain

- Better positioned for disaster recovery scenarios

- Greater visibility and insight into infrastructure – dashboards, reporting and alerting enabling more proactive decisions

- Opportunity to focus infrastructure resources on other tasks (e.g., new service features, addressing technical debt, etc.)

- Cost savings for licensing and hardware through economies of scale – centralized vendor agreements, better pricing due to consolidated quantities, etc.

CYBER SECURITY

Security Vision

Arkansas Department of Information Systems (DIS) seeks to lead and optimize cybersecurity for Arkansas public sector and establish DIS as a center of excellence in cyber security that encompasses education, workforce training and development and promote partnerships within State Government and academic communities to achieve cyber security goals and initiatives.

Promote the adoption of Information Security Standards, Processes, Methods, Best Practices and Tools.

Strategic Goals for Security

A vision statement for information security creates the purpose and requirements for the department. This vision statement highlights
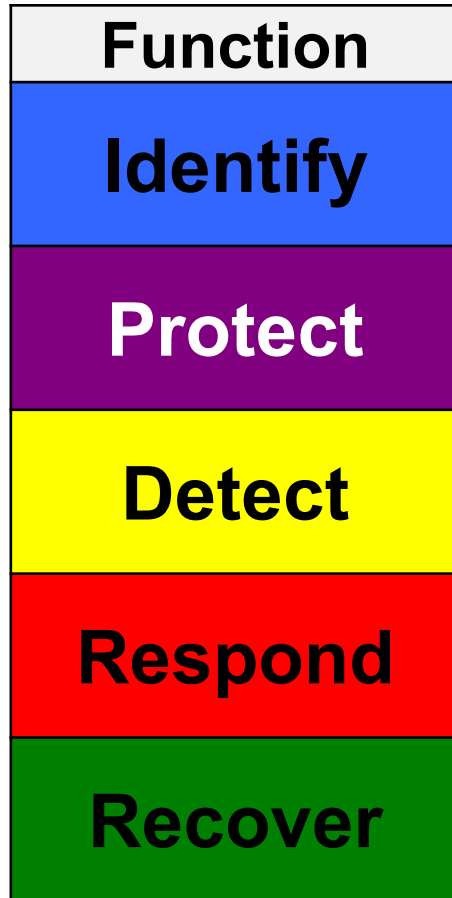
1. Create A Cyber Aware and quality workforce
2. Optimize cybersecurity services
3. Improve Cybersecurity performance
4. Provide and enhance the best IT services to the public sector
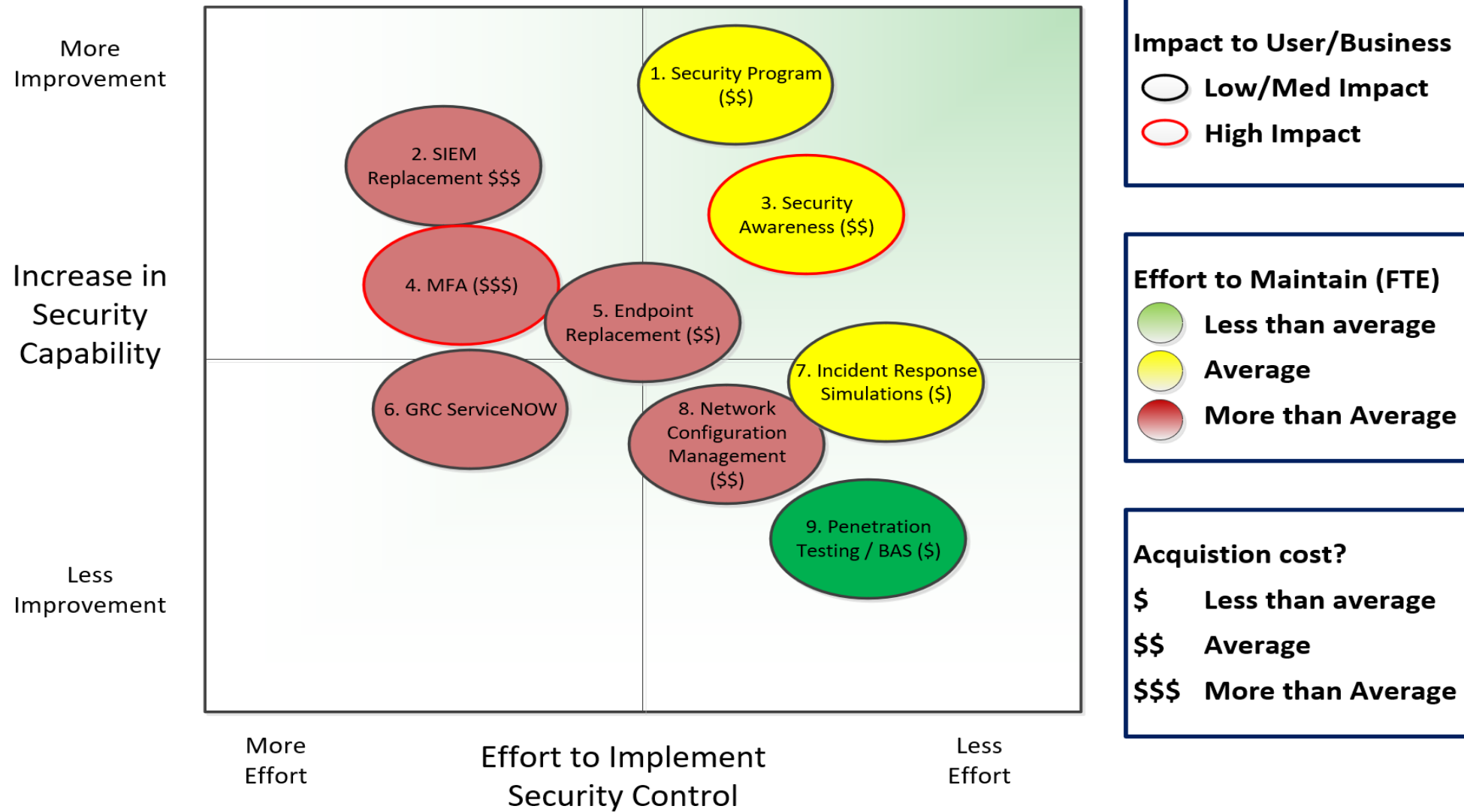5. Champion IT Governance

Core Framework

Establishes a Common Language

Function
Identify
Protect
Detect
Respond
Recover

- Describes desired outcomes

- Understandable by everyone

- Applies to any type of risk management

- Defines the entire breadth of cybersecurity

- Spans both prevention and reaction

Arkansas DIS Security Projects

More Improvement

Increase in Security Capability

Less Improvement

1. Security Program ($$)

2. SIEM Replacement $$$

3. Security Awareness ($$)

4. MFA ($$$)

5. Endpoint Replacement ($$)

6. GRC ServiceNOW

7. Incident Response Simulations ($)

8. Network Configuration Management ($$)

9. Penetration Testing / BAS ($)

More Effort

Effort to Implement Security Control

Less Effort

Impact to User/Business
- Low/Med Impact
- High Impact

Effort to Maintain (FTE)
- Less than average
- Average
- More than Average

Acquistion cost?
- $ Less than average
- $$ Average
- $$$ More than Average

Arkansas Department of Transformation & Shared Services
Division of Information Systems

Key Accomplishments

During 2022, the information security team has conducted and completed several new initiatives which include:

- Build an integrated security architecture for "DCM" (Data Center Modernization)
- Deploy IPS Firewalls to upgrade the capabilities of network detection and threat monitoring.
- Implement weekly external scans for Arkansas executive branch.
- Begin continuous 24X7 monitoring capabilities of logs and endpoint activities utilizing 3rd party MDR. (Managed Detection and Response)
- New CISO to determine future planning and objectives for the information security team.
- Design an enterprise-wide vulnerability and penetration testing program

- Security Awareness: A program to help educate the users within the state to validate the understanding of security attacks and phishing messages. Basic training is provided annually.

- Design and build an incident response strike team

AR DATA
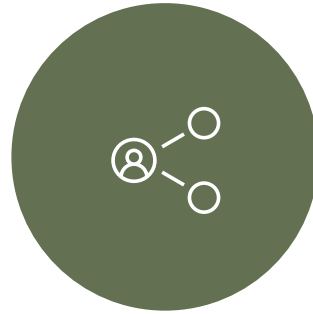
ARData

ARData is a **shared services organization** within the Department of Transformation and Shared Services (TSS) Division of Information Systems (DIS) that supports the secure and compliant **sharing, integration, and use of data** and information across departments, states, and sectors.

Vision: To be an efficient and effective resource for the data-driven and evidence-based **alignment of programs and resources** to the evolving economy of Arkansas and needs of our citizens.

The core team has been providing data services to Arkansas public sector entities since 1997 and has matured towards a **whole-of-government center of excellence** model in response to state needs, national best practices, data related legislation (Act 1282 of 2015, Act 912 of 2017, Act 936 of 2019), and executive branch vision.
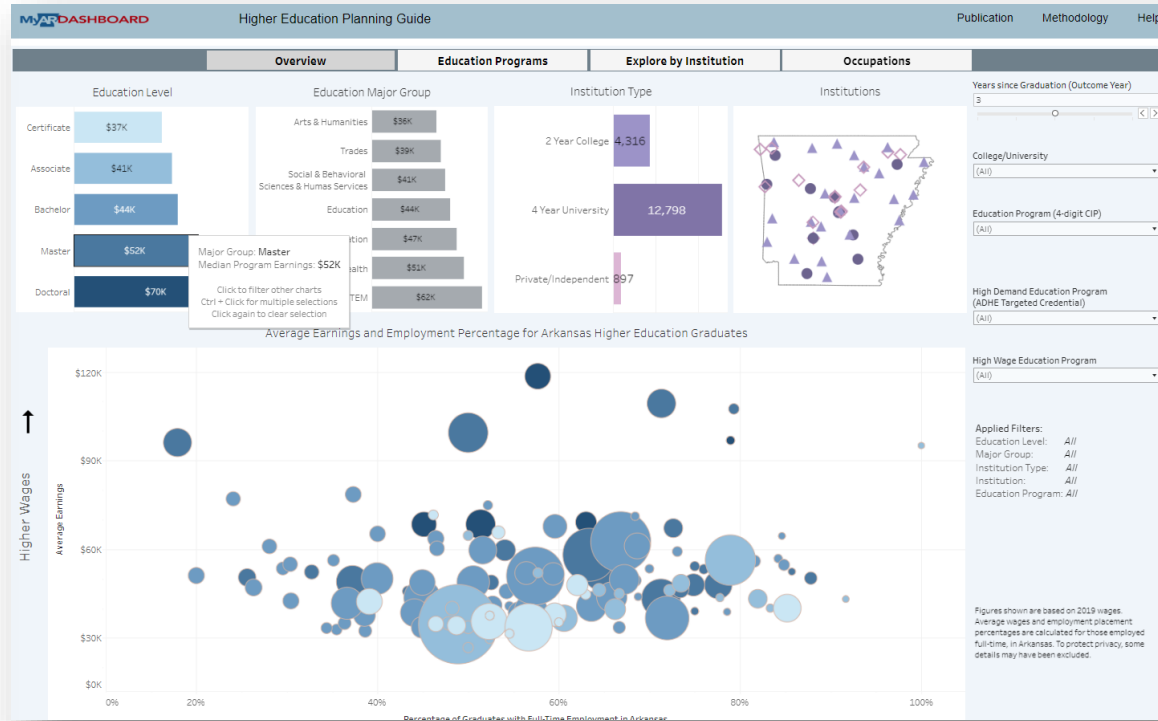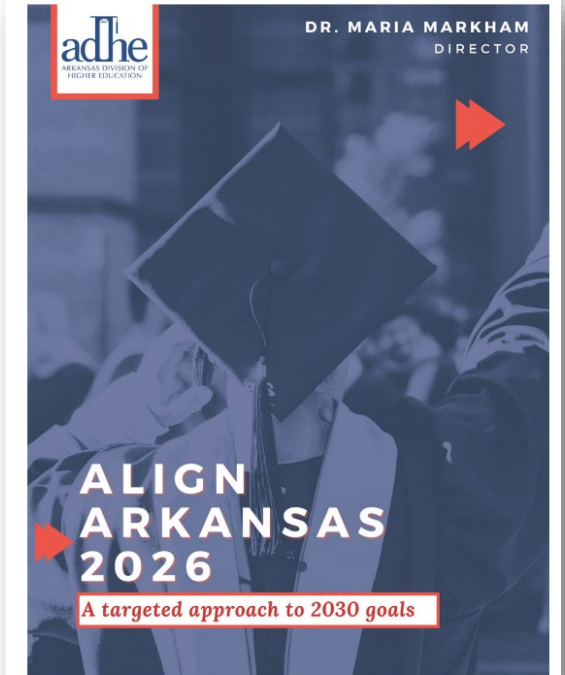
Data Driven Outcomes
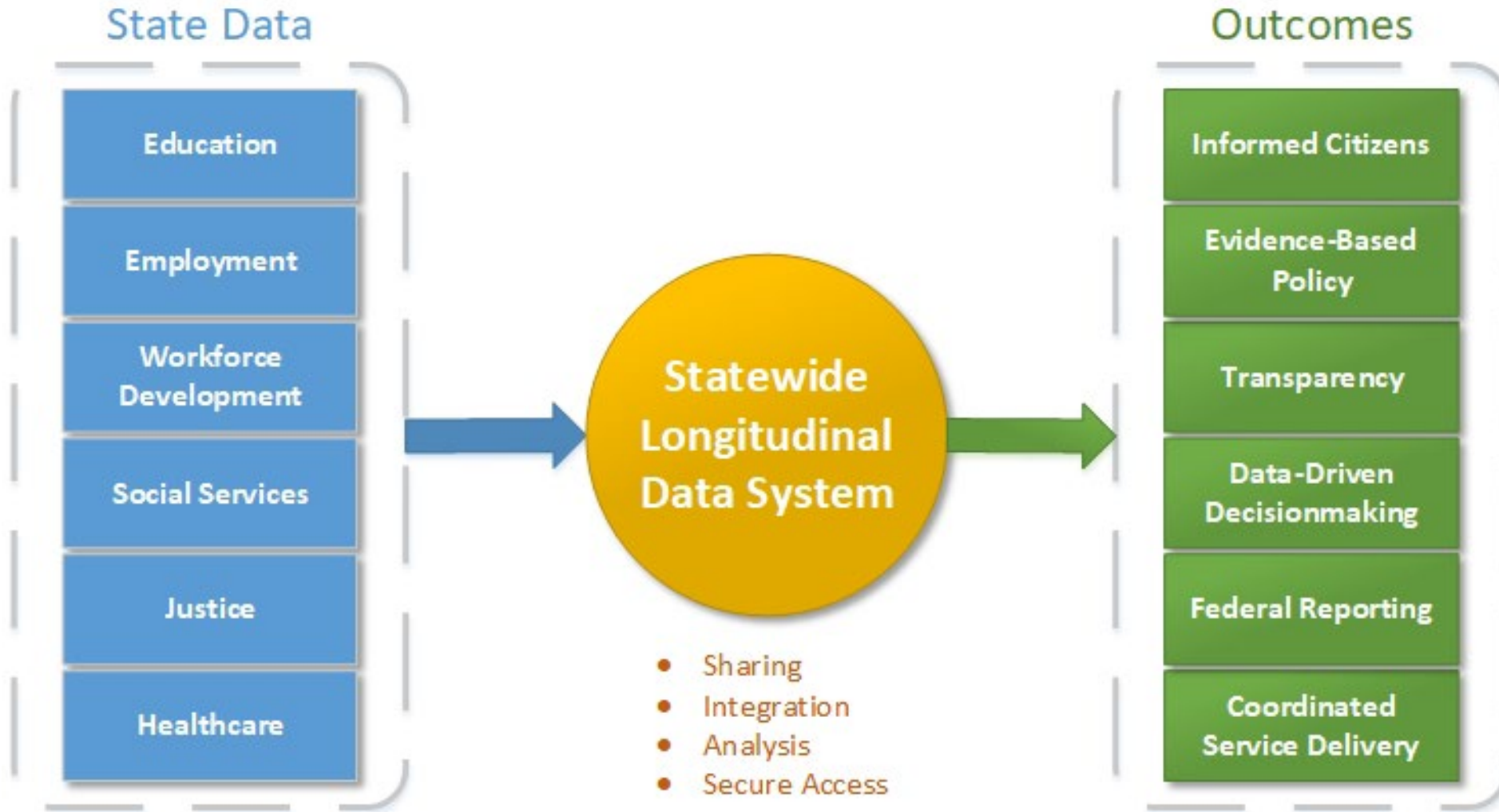
Products

Education and Career
Planning Support

Open Data and
Transparency

Education to Workforce
Supply Demand
Analysis

Future Initiatives

Questions?

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DIVISION OF
INFORMATION SYSTEMS