EmployIndy

Defining Success. Driving Growth.

Technology Assessment
Executive Summary

June 2021

Confidential

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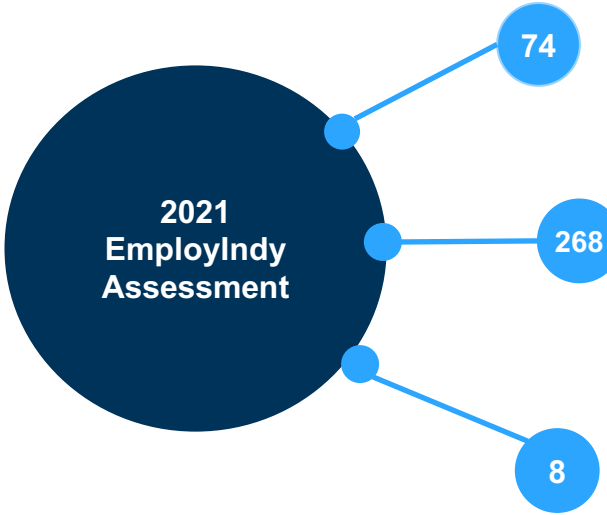
Table of Contents

Engagement Overview

The KSMC team completed a review of the organization's information technology practices and infrastructure in place to support the business's strategic vision.



Information Technology Controls
Utilizing KSMC's technology assessment methodology, the team reviewed 11 technology control areas and 67 different investigation topics.

Systems and Locations Analyzed
KSMC identified, documented, and analyzed 268 different devices, including 24 servers, and 37 network devices.

Interviews and Working Sessions Conducted
Over the course of the assessment, the team conducted 8 different group interviews and working sessions with key stakeholders.

Identified Themes

The KSMC assessment team focused on several areas, and has identified the below main themes:

Decide whether to internalize or outsource

- Potentially cost prohibitive to onboard all needed skillsets
- Potentially under-utilized resources after major milestone completions
- Focus for organization becomes creating the technology to support mission versus achieving their mission.

Need for skills and tools beyond MSP

- Managed Service Provider (MSP) acts as an outsourced IT department
- MSP could require additional vendor contracts and introduces potential for misalignment
- Multisource Service Integration (MSI) can assist in aligning strategic objectives while managing various partnerships or skillsets needed

Desire to develop strong data strategy

- Create capabilities to share data with other interested organizations and partners
- Create opportunities to connect and utilize data from other agencies and organizations
- Implement analytics and visualizations to increase awareness and decision-making capabilities

Will need to implement data security

- Expansion of offerings to other agencies creates the need to review, update, create, and implement security controls on a recurring and frequent basis
- Working with other agencies, especially governmental, requires additional layers of security controls within your technology environment
- The ability to rapidly deploy new offerings, while maintaining or improving security iteratively

Strategic Operations Observations

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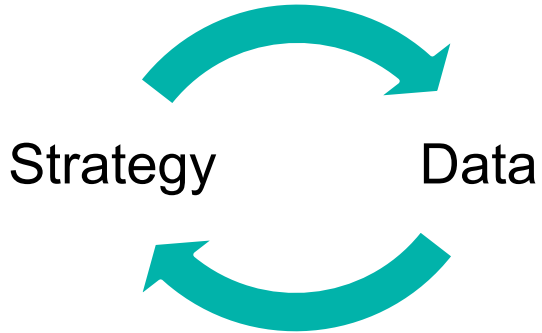
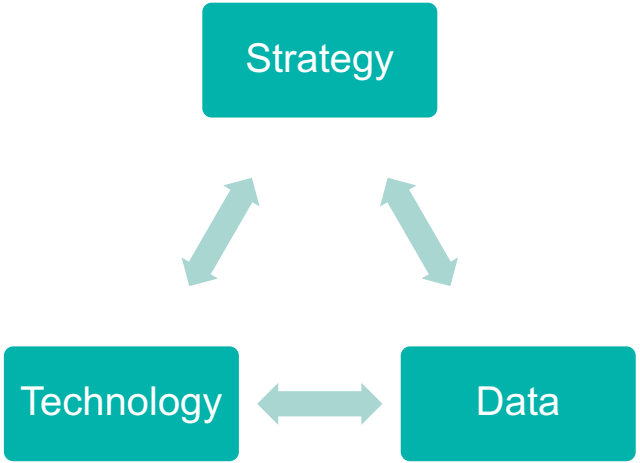
The key objective of this project is to assess the current technology environment against modern practices and standards to ensure that the organization leverages technology in direct support of EmployIndy's strategic priorities, in addition to providing modernization and flexibility for the organization and workforce.

Overarching Findings



- EmployIndy staff and leadership have articulated a vision in which data is a core element of the organization's business processes and offerings.
- Data enables the measurement of progress and success of initiatives, benchmarking for goalsetting, and feedback for programmatic development.
- Strategy and data inform one another in a cyclical process.

Overarching Findings



- Technology is the backbone that enables and supports the connection of meaningful, actionable data to the strategy:
  - Warehousing
  - Linking data sets
  - Data Privacy
  - Data Visualization
  - Etc.
- A significant pain-point across the organization is linking the technology (infrastructure and resource) decision-making with data (collection and visualization) decision-making.
- Staffing skills, abilities, and responsibilities should be aligned to this dynamic.

Interview Findings

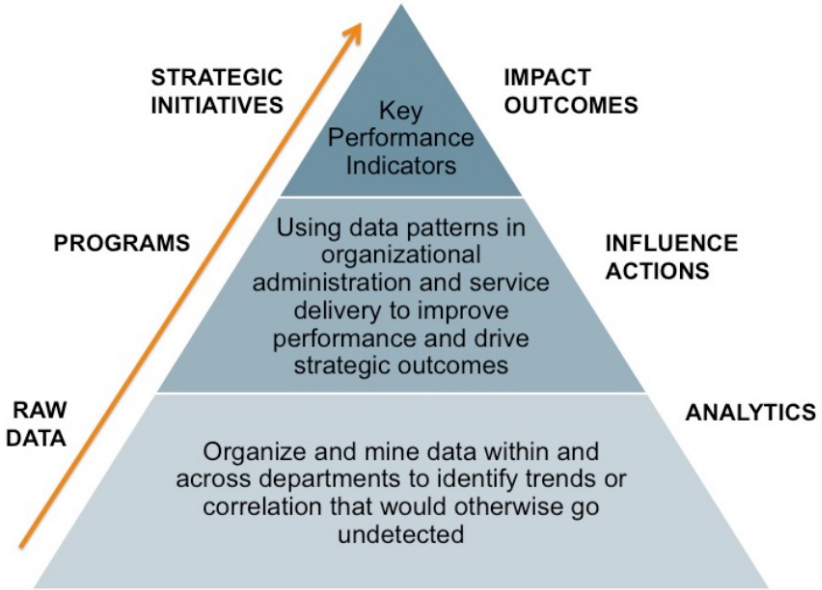
Strengths

- A common vision for data was articulated across all interviews.
- The team has recently been restructured to align staffing and roles with the data goals of the organization.
- Community-level partners are engaged and excited about EmployIndy's vision (this includes CBOs, funders, and city government).
- Leadership is committed to the strategic vision for the organization.

Opportunities

- Currently the systems are not enabling of the future-state vision. Data is scattered and not uniform.
- There is a lack of process around the tools and resources currently used and how those tools align to the future vision of the organization.
- There is a lack of access to "actionable" data that can inform strategy.
- Internal capacity is developing, but there are still skill gaps in data analytics, visualization, and technical skills.

Data Analytics Impact Pyramid



EmployIndy staff articulated the need to have a technology strategy that supports and advances their organizational mission. This can be accomplished by sourcing and storing more accurate data, evaluating programmatic outcomes to measure effectiveness, and benchmark key strategic outcomes to measure impact.

Technology is key to enabling this linkage through:

- Storing data
- Connecting data sources
- Visualizing outcomes

Aspirational Goals

Throughout the assessment, the EmployIndy staff articulated a vision in which the organization leverages data to inform strategy and future direction, in addition to measuring past performance.

Data Processing

- More accurately capture the data for the entire life-cycle of a participant in the central Indiana talent development ecosystem (Golden Record).
- Link data between organizations for a more accurate and reliable picture of the organizations' outcomes.
- Use advanced analytic techniques to assist clients (predictive modeling).

Technology

- Streamline data storage and information sharing.
- Leverage technology to share data back to the community (through dashboarding).
- Increase process automation in order to increase efficiency and effectiveness of staff.

Strategy

- Increase technology and data fluency among staff to lead internal processes.
- Utilize data to measure impact and identify needs.
- Utilize technology and data to more accurately tell the story of EmployIndy's impact on the community.

Recommendations

- Develop and align data and technology governance processes with organizational goals.
- Establish and operationalize Standard Operating Procedures (SOPs) for data policy and procedures for all staff (existing and new hires).
- Determine approach for acquiring or developing the skills needed for the organization.
- Provide professional development and support for staff to further skills and abilities.
- Articulate a vision for centralized dashboard concept.
- Establish a recurring schedule for structured and collaborative data storytelling events including marketing, communications, and strategy teams.
- Develop a project roadmap to accomplish Golden Record goal.

IT Department Structure

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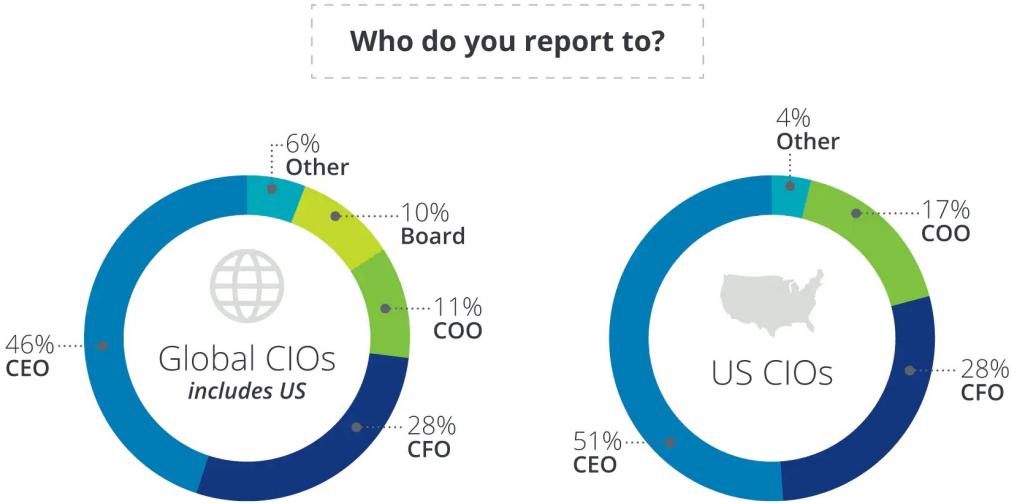
Deloitte & CIO Insider

- IT's role expands beyond value preservation to service, product, or revenue generation
- CIOs are striving to balance critical business and IT operational tasks with innovative infrastructure and applications that enable disruptive new business models, generate top-line value, and drive competitive advantage.
- With the unprecedented pace of technological change, it's critical for CIOs to move quickly, with direct and unwavering support at all levels of the organization.
- Based on an analysis of three years of data from Deloitte's CIO Program, along with interviews with CIOs and other C-suite leaders
- It proposes that although a direct line to the CEO is often the optimal reporting structure for strategic technology leaders, other reporting models are viable, can add value to the organization, and may be required in certain scenarios.
- Regardless of their reporting lines, CIOs can and should elevate technology on the organizational agenda to be a strategic business leader.

Excerpts from https://www2.deloitte.com/us/en/insights/focus/cio-insider-business-insights/trends-in-cio-reporting-structure.html?ref=pulseqa

Global & US Trends

Figure 1. Global and US CIO reporting structure



Note: Numbers may not add up to 100 because of rounding. Global n=510, US n=76.
Source: Deloitte US CIO program analysis.

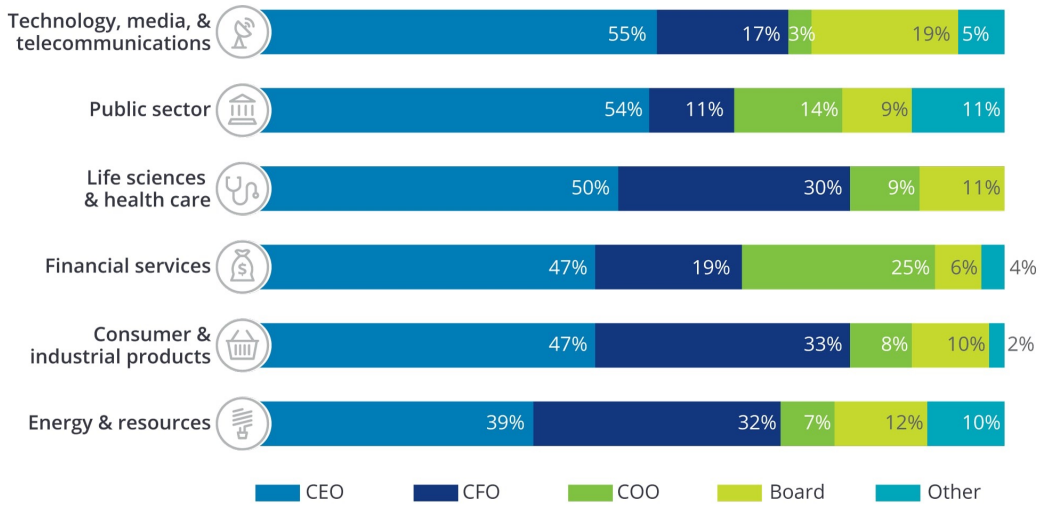
Deloitte Insights | deloitte.com/insights

Reporting Line

- A direct line to the CEO is frequently observed when the CIO is leading the enterprise through a digital transformation.
- Among the surveyed CIOs who describe themselves as leaders of developing the organization's digital strategy, more than half (55 percent) report to the CEO
- The majority of supporters (51 percent) report instead to the CFO.

Reporting Line

Figure 4. Global CIO reporting structure by industry



Note: Numbers may not add up to 100 because of rounding. Technology, media, & telecommunications n=58, Public sector n=35, Life sciences & health care n=44, Financial services n=81, Consumer & industrial products n=196, Energy & resources n=41.

Source: Deloitte US CIO program analysis.

Deloitte Insights | deloitte.com/insights

Non-CEO Reporting

- Even though the percentage of CIOs reporting to the chief executive is increasing, globally more than half (55 percent) still do *not* report to the CEO.
- Some CIOs view the so-called "optics" of not reporting to the CEO as negative—and indeed, there may be some potential points of contention associated with reporting to the CFO, COO, or other business leaders.
- For example, technology may be viewed as operational instead of strategic or it may take a back seat to other concerns.
- Some companies may seek to fill a perceived gap in strategic technology leadership by bringing in a new technology leader, such as a CDO, to report directly to the CEO.
- For these and other reasons, the leader of an executive search firm says that when the firm is recruiting a CIO to report to the CFO, a whole segment of the talent pool can be expected to pass on the job.[2]

Deloitte Key Takeaways

- **CIOs can be strategic regardless of reporting line**
  - CIOs that don't report to the chief executive can still align strategically to business objectives and lead technology-driven business transformation
- **Aligning mission and brand with business strategy can foster consistency**
  - Before the IT team and strategy can be aligned with corporate strategy, the CIO's mission and brand must reflect business needs
- **Business acumen can bring credibility**
  - CIOs who complement their technology expertise with strong business skills and industry knowledge can understand business issues and challenges and help identify potential technology-driven solutions
- **Relationship-building can help CIOs be more strategic**
  - Regardless of where the CIO reports, it can be important to cultivate significant executive relationships with the CEO, CFO, COO, other key C-suite occupants, board members, and other functional leaders
- **The proof is in the IT delivery pudding**
  - If the outcomes of technology initiatives do not add value to business objectives, the CIO reporting relationship ultimately will not matter
- **CEO reporting is mandatory in many situations**
  - In organizations where the CIO is leading digital strategy, it's critical for the CIO to report to the CEO.
  - Digital transformation requires buy-in, support, and active involvement from the chief executive.
  - Technology change is often the most straightforward aspect of digital transformation; it can be far more challenging to tame organizational resistance.
  - When digital transformation, technology-driven innovation or disruption, or other technology-focused initiative is a key business initiative, CIOs may find it easier to garner necessary resources and drive cultural change with the direct support of the CEO.

Skillsets

Identified Skills

- Several new/additional skill sets were identified during interviews, working, and discovery sessions.
- The next two slides contain the recommended resource types and skills needed to accomplish EmplyIndy's strategic goals.

Strategic & Technical Skillsets

Role	Skills	Salary Range	Experience	Function
Chief Information Officer (CIO)	Business acumen Strategic Thinking/Planning Leadership & Vision	$185K - $195K	15+ years	Executive level technology strategist
Chief Information Security Officer (CISO)	Business acumen Cybersecurity expertise Leadership & Vision	$125K - $135K	10+ years	Executive level security strategist
IT Director	Technical knowledge Management Communication	$125K - $135K	10+ years	Tactical manager of IT Operations
Solutions Architect (Infrastructure)	Project Planning Technical certifications Cloud services	$85K - $95K	8+ years	Design technical solutions to achieve business requirements or address pain points
Network Engineer	Technical certifications LAN/WAN design Cloud networking	$95K - $105K	8+ years	Implement, monitor, manage, and update network devices such as firewalls, switches, and wireless
Security Engineer	Technical certifications Cloud security Security Auditing	$90K - $100K	3+ years	Implement, monitor, manage, and update security controls such as computer policies, intrusion detection, and intrusion prevention
Systems Administrator	Technical certifications Cloud services Operating Systems	$75K - $85K	5+ years	Implement, monitor, manage, and update systems such as server Operating Systems, Active Directory, and file shares
Collaboration & Productivity Specialist	Technical certifications Cloud Services Sharepoint / Teams	$85K - $95K	6+ years	Design and implement Sharepoint workflows that align with business workflows and processes
	Salary Total:	**$865K - $945K**		

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Current Provider

Data, App, and Project Skillsets

Role	Skills	Salary Range	Experience	Function
Data Architect	Data Process & Flows Data Services Cloud Solution Design	$110K - $120K	5+ years	Creates solutions to integrate, centralize, protect, and maintain data
Data Engineer	Data transformation Data Integration Data query & processing	$100K - $110K	5+ years	Implements data infrastructure such as databases, data warehouses, and data pipelines
Data Scientist	Statistical Reasoning Data Exploration Data Prcoessing	$120K - $130K	5+ years	Transform data into meaningful information for consumption
Business Intelligence Analyst	Data Extraction Reporting & Visualization Communication	$85K - $95K	6+ years	Processes data to create reporting, dashboarding, or other visualizations that drive value
Application Development	Code & architecture creation Cloud Services Program logic	$110K - $120K	6+ years	Develops and modifies source code for software applications
Project Manager	Project Ownership Communication Change Management	$95K - $105K	8+ years	Planning, organizing, and directing the completion of projects ensuring delivery on time, in budget, and within scope.
UX Designer	Business & User process Web and App design Communication	$80K - $90K	5+ years	Improves user satisfaction with applications through research, design, testing, and collaboration with the application user base.
DevOps Engineer	Scripting CI/CD Pipeline Cloud Services	$110K - $120K	8+ years	Introduces processes, tools, and methodologies to assist and meet needs during the development life cycle
	Salary Total:	**$810K - $890K**		

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Current Provider

Building the IT Department

Internal vs Outsource

- Internalizing all roles may be cost prohibitive.
- Most roles could be used fractionally or as needed.
- Potential for disruption or distraction from core EmployIndy mission and vision.

MSP/MSI RFP Standards

Manage Service Provider (MSP) – "Outsourced IT"

Multisource Service Integration (MSI) – Outsourced IT, combined with a Strategic/Holistic Partnership, highly specialized skillsets

- An MSP acts as the IT department (or part of it) for a business.
- Depending on the contract, the managed service provider will offer services that range from simple help desk for user support to managing the whole company's infrastructure and services.
- This includes tasks for hardware or software maintenance, upgrade and replacement.
- To achieve EmployIndy's strategic goals through data, business intelligence and technology centric delivery, it is important to note that a traditional MSP will not typically provide the breadth nor depth of expertise as an MSI.
- If the MSI model is cost prohibitive, note that the other elements (data, BI, vCIO, etc.) will still need to be fulfilled elsewhere, whether through internal dedicated staff or additional vendors.

Managed Service Provider

MSI Framework

Organizational Key Users and Groups

- Leadership
- Operations
- Mfg. Engineering
- Quality
- Inside Sales
- Technology
- HR

Relationship Management

- **Ongoing Division** Needs Assessment
- Ideation, Valuation & Strategy
- Business Case Development & Value Delivery.
- Prioritization & Budgeting

IT Service Management, Governance, & Reporting

- Client Satisfaction
- Service Management
- Asset Management
- Portfolio/Project Management
- Invoicing & Budget Mgt
- IT Strategy & Innovation

Service Towers

- Help Desk
- Desktop
- Applications
- Server & Storage
- Network
- Cybersecurity

Recommendations

Outsourced

- Use MSI model to leverage access to resources with desired skillsets in a fractional method
- Use MSI model to gain Virtual CIO (vCIO) services, reporting directly to the CEO or CSO
  - Responsible for strategic oversight and direction as well as digital transformation
  - Will work with C-Suite to develop and implement business strategies for technology and data
- Include an IT director lead within the MSI
  - Report to CFO administratively, but mentored and guided by vCIO
  - Will oversee tactical and daily operations of help desk and more typical infrastructure such as connectivity
  - Will work with service provider to ensure streamlined operations and support

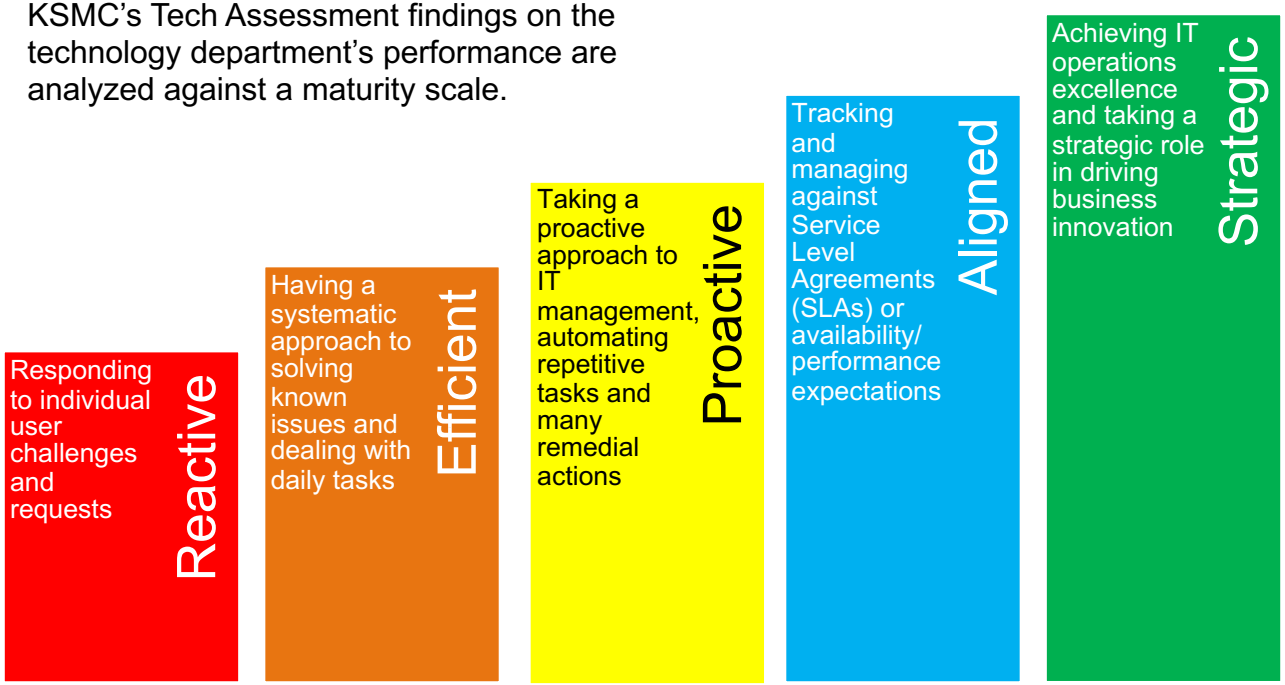
Internal

- MSI oversight through the CSO in order to align data and technical capabilities with strategic vision
- With MSI model, this may not be needed, depending upon relationship trust and contractual agreement developed with provider
  - Most providers can, as part of contract, include on site resource that could fulfill this role
  - This resource would be dedicated to your organization, but employed by provider
- Build internal capabilities under guidance of MSI and vCIO

Technical Infrastructure Observations

Maturity Ratings

KSMC's Tech Assessment findings on the technology department's performance are analyzed against a maturity scale.



Assessment Results

The KSMC assessment team focused on several areas, identifying the following overall maturity levels

Overall Status

- Reactive
- **Efficient**
- Proactive
- Aligned
- Strategic

Identified Themes

Outdated Equipment or Systems

- Windows 2003 and 2008 Servers
- Server equipment out of warranty
- Network equipment nearing 9 years old

Need for enhanced Vendor Engagement

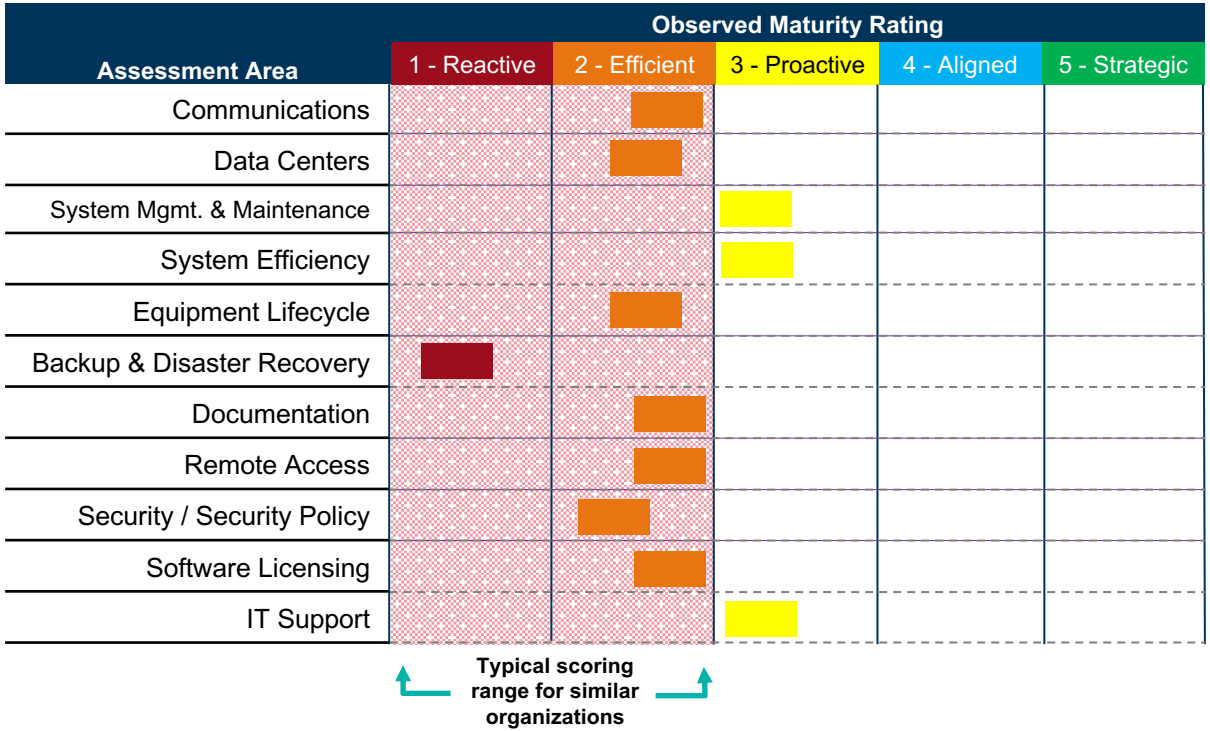
- No identified business reviews
- No identified reporting requirements
- Lack of strategic input

Unstructured Security

- No existing disaster recovery (DR) or backup policy
- Exposed accounts / credentials
- No vulnerability scanning

Overall Assessment Score: 2

Technology Maturity Results



Tech Positive Practices and Recommendations

Throughout the assessment, the team identified the following positive practices and recommendations.

	Positive Practice	Key Recommendations
Technology 	• Help desk processes and methodology are being provided current vendor • Server and workstation monitoring is being provided by current vendor	• Establish reporting requirements and frequency with vendor • Establish strategy and business review sessions with vendor to align expectations and objectives • Update equipment warranties and replace/refresh uncovered systems • Review RDS and other remote access configurations
Security 	• MFA has been configured for O365 users • Server administrative rights are being applied appropriately • Email security features are implemented via Barracuda services • Server patching performed regularly	• Extend MFA already deployed to other systems where available/practical • Review current security requirements and ensure policies and technical controls are implemented to address requirements • Create Disaster Recovery Policy and requirements

Critical Observations Based on Severity

Throughout the assessment, the KSMC team identified the following highest and lowest findings maturity scores in the technology environment.

Data Centers

- \+ Wiring in EmployIndy server room is clean and labeled.
- \+ Server closets are locked
- \- WorkOne server room equipment and cabling are not labeled.
- \- Server and storage equipment is awaiting finalizing of project for decommissioning

Communications

- \+ Barracuda is used for archiving and SPAM protection.
- \+ Firewalls for EmployIndy are configured in HA pair
- \+ Website hosted with provider
- \- No DLP has been configured
- \- Firewall at WorkOne is not under warranty
- \- Firewall at Workone is not running current firmware.

Backup & Disaster Recovery

- \+ Servers in Otava Datacenter backed up contractually by provider
- \- No defined backup policy
- \- No defined disaster recovery policy
- \- DR not tested regularly or fully
- \- No offsite backup of servers

System Efficiency

- \+ Barracuda Email security in use
- \+ Valid SPF configured
- \+ MFA is configured for O365 users
- ± On-Premises AV servers deployed to manage agents
- \- Login Scripts still used within environments.

.

- Reactive
- Efficient
- Proactive
- Aligned
- Strategic

Critical Observations Based on Severity

Throughout the assessment, the KSMC team identified the following highest and lowest findings maturity scores in the technology environment.

Security & Security Policies

- \+ Server local admins have been configured appropriately
- \+ Intrusion Prevention configured for EmployIndy firewalls
- \+ Bitlocker configured for EmployIndy workstations
- \- No recurring vulnerability scanning are performed
- \- Login auditing is not configured or showing only success vice failures
- \- Public SNMP configured on network devices

Systems Management & Maintenance

- \+ Active Directory was in good health
- \+ Endpoint Management tools are actively used to manage environment
- \- Business reviews and reporting from endpoint management systems was not well defined.
- \- AD Functional level is 2008 due to presence of 2008 servers

Software Licensing

- \+ Using O365 for Office product licensing
- \+ Licenses are being applied by type of user
- \- 26 unassigned licenses within O365

Equipment Lifecycle

- \+ OS updates applied monthly
- ± Assets are being disposed of within company policy
- \- Server 2003 and Server 2008 are still in production
- \- Physical servers are not under warranty.

- Reactive
- Efficient
- Proactive
- Aligned
- Strategic

Critical Observations Based on Severity

Throughout the assessment, the KSMC team identified the following highest and lowest findings maturity scores in the technology environment.

Documentation

- \+ Physical assets are being tracked and managed in Asset Tiger systems
- ± Documentation was provided upon request but was limited in nature.
- \- Documentation is not updated regularly as part of a recurring maintenance activty

IT Support

- \+ Clear helpdesk procedures
- ± Limited to 3 after hours incidents per month
- \- SLAs were not known by EmployIndy staff
- \- Business review process and reporting was not well defined.

Remote Access

- \+ Forticlient VPN has been deployed to support remote works
- ± Client access computers are using unmanaged Raspberry PI type devices
- \- Forticlient VPN is not configured with MFA
- \- WorkOne RDS server farm not configured to provide high availability or load balancing

- Reactive
- Efficient
- Proactive
- Aligned
- Strategic

Technical Infrastructure Roadmap

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REMEDIATION SUMMARY

Phase 1 Stabilize	1. Network Refresh 2. Security Refinement 3. DR & BC Policy Creation 4. OS & Hardware Decommission 5. Modern VDI Implementation
Phase 2 Optimize	1. Maintenance Cycle 2. DR & BC Implementation 3. Business Review 4. Document Management
Phase 3 Enhance	1. Asset Management Refinement 2. Closet Cleanup 3. Phone System Selection 4. Security Enhancement

Phase 1: Stabilize

Phase Description

Modernize and secure your technological environment to correct known deficiencies and align with best practices.

Benefits

- Updated equipment and capabilities to support future endeavors
- Alignment of security practices to business objectives
- Ease of access, increased centralized management and redundancy to VDI systems

Associated Projects	Skills Needed	Key Activities
Network Refresh	Solutions Architect Network Engineer Security Engineer	• Create network architecture that encompasses all sites • Select hardware and supporting equipment • Configure and implement solution
Security Refinement	CISO Security Engineer Systems Administrator	• Review existing and potential security requirements • Create security roadmap • Implement technical controls / draft & publish policies
DR & BC Policy Creation	CISO Security Engineer Solutions Architect Systems Administrator	• Work with business leaders to identify and develop RPO & RTO requirements • Architect solution to meet business objective • Draft and publish policy
OS & Hardware Decommission	Solutions Architect Systems Administrator	• Complete existing projects • Create upgrade / refresh solution • Implement solution
Modern VDI Implementation	Solutions Architect Systems Administrator	• Create RDS architecture that supports business requirements • Implement solution

Phase 2: Optimize

Phase Description
Building upon work performed in the stabilize phase, this phase contains work streams that will align strategic objectives to tactical implementations.

Benefits:
- Create a deeper understanding of the state of current systems.
- Build and demonstrate confidence of recovery mechanisms, timeline, and involved parties in the event of disaster.
- Take advantage of cloud-based services already purchased to reduce

Associated Projects	Skills Needed	Key Activities
Maintenance Cycle	IT Director Systems Administrator	Develop automated and manual tasks to proactively maintain systems such as servers and network devices with log reviews, patch updates, and security checkpoints
DR & BC Implementation	CISO Security Engineer Systems Administrator	Implement and test the plan created in the previous phase
Business Review	CIO IT Director	Recurring and frequent reviews to align service offerings to business needs
Document Management	Solutions Architect Productivity Specialist Systems Administrator	Take further advantage of the O365 ecosystem and reduce on-premises requirements for files

Phase 3: Enhance

Phase Description
Building upon the previous phases, your organization will be able to focus on improving user experience, minimizing cost, increasing capability and service offerings.

Benefits:
- Streamlined asset management, from procurement to disposal.
- Increase security through identity protection and centralized user management.
- Increase efficiency of support

Findings Addressed:

1. Asset Disposal
2. Asset Management
3. Procurement
4. Domain & DNS
5. Identity Protection
6. Local Admin Rights
7. Website
8. Physical Closets
9. Wiring
10. Voice Solution