

NORTH
Dakota

Be Legendary.™

Information Technology

Team North Dakota

**EMPOWER PEOPLE
IMPROVE LIVES
INSPIRE SUCCESS**

House Government Operations Committee
March 15, 2021 | Brynhild Haugland Room
Bismarck, ND

Empower People | Improve Lives | Inspire Success



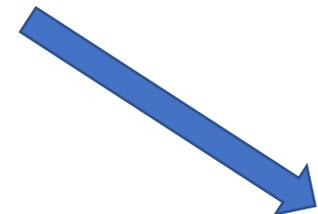
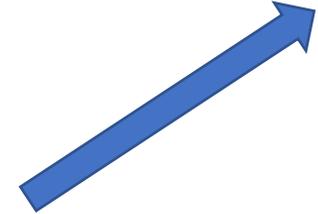
IT Service Rate Structure

Rate Methodology

- Hourly chargeback
 - What's included:
 - Salary & Benefits
 - Hardware and software needed
 - Time for skill and team building
 - Supervision and Overhead
 - Move towards M&O and SOW/Deliverable based billing
- Enterprise level chargeback
 - Technology Fee
 - PeopleSoft Fee
 - Records Management
- Consumption based chargeback
 - Licensing, mainframe, telephones
- Hosting services

What do we want to achieve?

IT is becoming more efficient and lowering the cost per unit of service, but we must make choices on how to retain those savings given skyrocketing demand for technology



Cost Conversations

Even though NDIT's rates and desktop models have been studied three times in the last four biennium, there are still several misconceptions about the costs and models

The Common Misconceptions:

IT is incredibly expensive! I can buy a computer for \$800, and I will keep it for 5 years. Why do I have to pay \$100/mo for a machine from IT? That's \$6,000 for the same thing!

This is a misunderstanding of what is included in costs

My computer at home does everything I can do at work! I bought a router at Best Buy for \$99, and a printer for \$49 – it is so much cheaper at home!

This is a misunderstanding of residential vs. enterprise

My team of professionals are very highly trained in their field, they can easily figure out this computer stuff and pick it up easily and do it cheaper!

This is a misunderstanding of the depth of knowledge necessary to manage technology

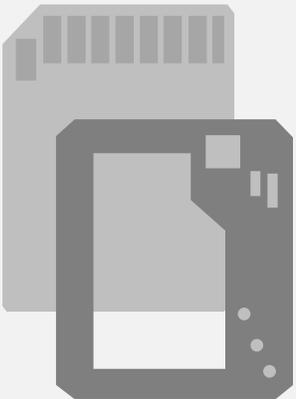
Residential Vs. Enterprise

Residential Technology

Made to be consumed as a commodity, meaning little consistency in the technology even over a few months of time (meaning no standardization and compatibility issues)

Does not allow for bulk contract purchases

Makes maintenance & cyber security harder



Non-Standard laptops will cost ~\$15,600 per hundred devices more just for hardware support, and ~30% longer time to support for the same tickets as standard devices

Enterprise Technology

More expensive upfront, but huge advantages over time:

- Made for consistency in hardware and software for large environments
- Vastly integrated systems and platforms
- Data accessibility and reporting
- Improved visibility into support topics
- Incorporates best practices
- Enables economies of scale for using standards

Simple example:

North Dakota saved ~\$250,000 by moving to 1 contract of HP devices instead of numerous small agency contracts

While Residential technology can be lower costs per unit, the long-term costs are VASTLY higher

What is included

Correcting the first misconception:

The Reality:

Rate	Description
\$77.25/mo	Standard Desktop Device
\$87.25/mo	High End Desktop Device
\$98.50/mo	Laptop Device
\$68.25/mo	Internet / Network

Costs include one of the Device Options and the Internet/Network for a range of \$145.50-\$167.00 per month

Percentage of Costs	Descriptions
46.5%	Related to the actual hardware (laptops, desktops, monitors, etc.)
4.9%	Overhead
8.9%	Infrastructure Software, Help Desk, Inventory, etc
39.7%	Staff that support the devices, systems, and software, Internet access, mobile phones, etc.

Now compare to your personal costs. What do you pay for Internet, cell phone, software, and devices? Let's compare....

Cost Comparisons

		NDIT Service		SAO	DOA	
Standard Equipment	46.5%	45.86		45.86	45.86	HP Machine w/warranty
Base Level Staff	39.7%	39.09		143.68	106.84	1 FTE Minimum
Infrastructure/Tools	8.9%	8.73		5.17	5.17	SCCM, imaging, patching
Overhead	4.9%	4.82		??	??	Supervision, HR
		98.50		194.71	157.87	

- Will a per call fee need to be developed for when incidents exceed the knowledge of part time support staff?
- Will this create even larger, more complex issues?

Depth of Knowledge

Correcting the third misconception:

“But desktops are easy, especially for a small agency”

Desktops are not “easy”

- Replacing Operating Systems
- Upgrading / Repairing RAM and hard drives
- Upgrading BIOS
- Maintaining Drivers
- Maintaining software patching
- Maintaining inventories
- Installing and managing software
- Managing security

All of these things require people, process, and technology deployments

“Free like a puppy” ...



Unification's Effect on Rates

- Unification may not change a specific rate
- Unification DOES change an agency's approach to technology solutions
 - Customer Success Management
 - Identifies **efficacy opportunities** through enterprise solutions and cost sharing opportunities
 - Provides services traditionally done by IT Coordinators within a single agency who typically had a narrow technology context
 - Collaborative Purchasing Power – Desktop Machines
 - Deeper Support Team – Desktop/Help Desk/Development/App Support

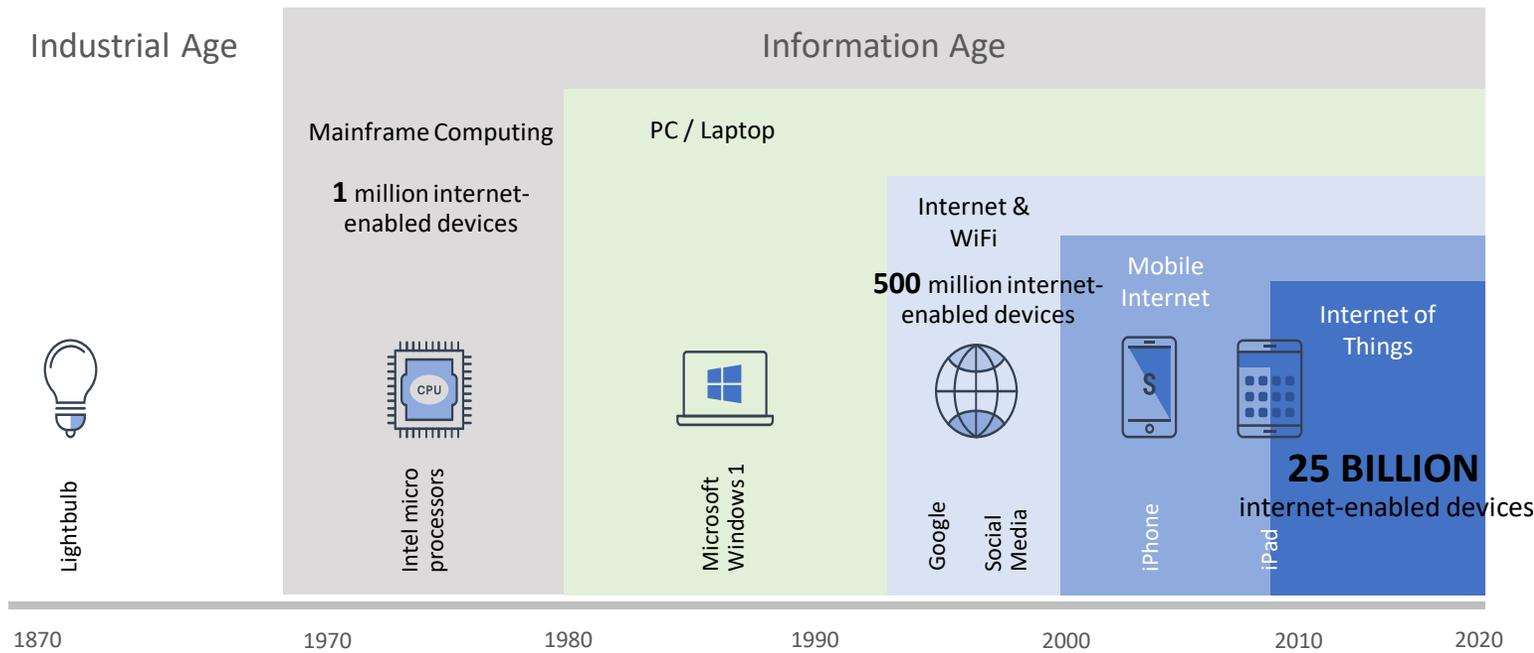
.....Ultimately saving time and money for the agency

Summary

- Lower cost per unit of service versus demand management continues to be our emphasis.
- Chargeback needs to be done consistently across the customer base
 - No separate rate for Executive versus non-Executive agencies
 - No separate rate for federal agencies versus general fund agencies
- Enterprise services are based on best practices and are highly integrated, supported by professionals, and are less costly than individual deployment of the same services

Unification

What is the problem we are trying to solve?



Technology is incredibly complex

- Many technology fields are comparable to doctors in required knowledge levels

Workforce is difficult to recruit and expensive

Agencies need integrated, data-enabled decisions, secure technology to serve the citizen

Multiple strategies in the state overlap and thus cost more

Processes don't align, making them slower to respond and requiring more FTE

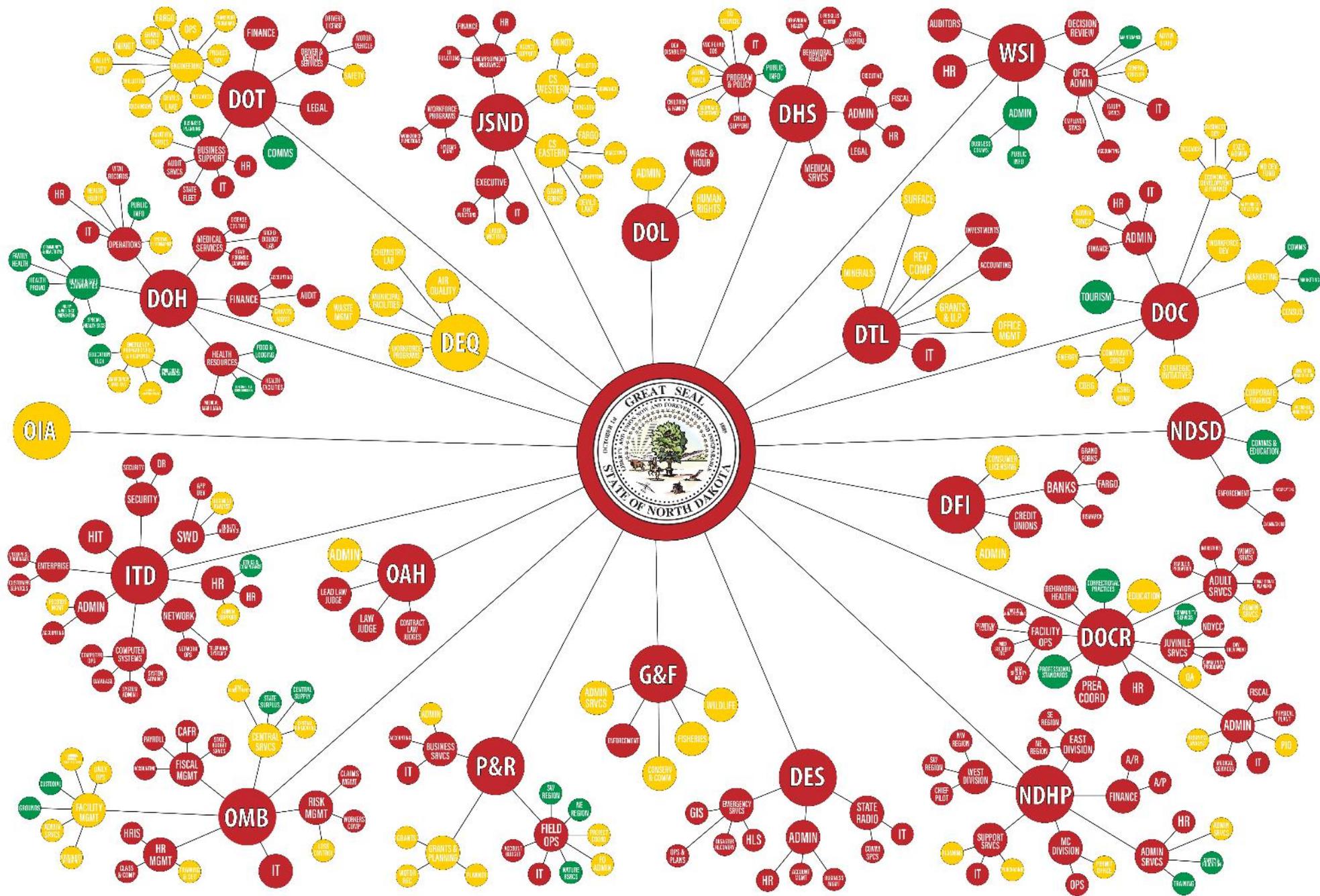
Citizens expect Integrated, modern technology

GRATITUDE
COURAGE

CURIOSITY
HUMILITY



Complexity of Data in North Dakota



AGENCY LEGEND

- OIA Office of Indian Affairs
- DOH Department of Health
- DEQ Department of Environmental Quality
- DOT Department of Transportation
- JSND Job Service North Dakota
- DOL Department of Labor
- DHS Department of Human Services
- WSI Workforce Safety Insurance
- DTL Department of Trust Lands
- DOC Department of Commerce
- NDS ND Securities Department
- DFI Department of Financial Institutions
- DOCR Department of Corrections & Rehabilitation
- NDHP ND Highway Patrol
- G&F Game & Fish
- OMB Office of Management & Budget
- P&R Parks & Recreation
- DES Department of Emergency Services
- OAH Office of Administrative Hearings
- ITD Information Technology Department

CHARACTERIZATION INFORMATION:

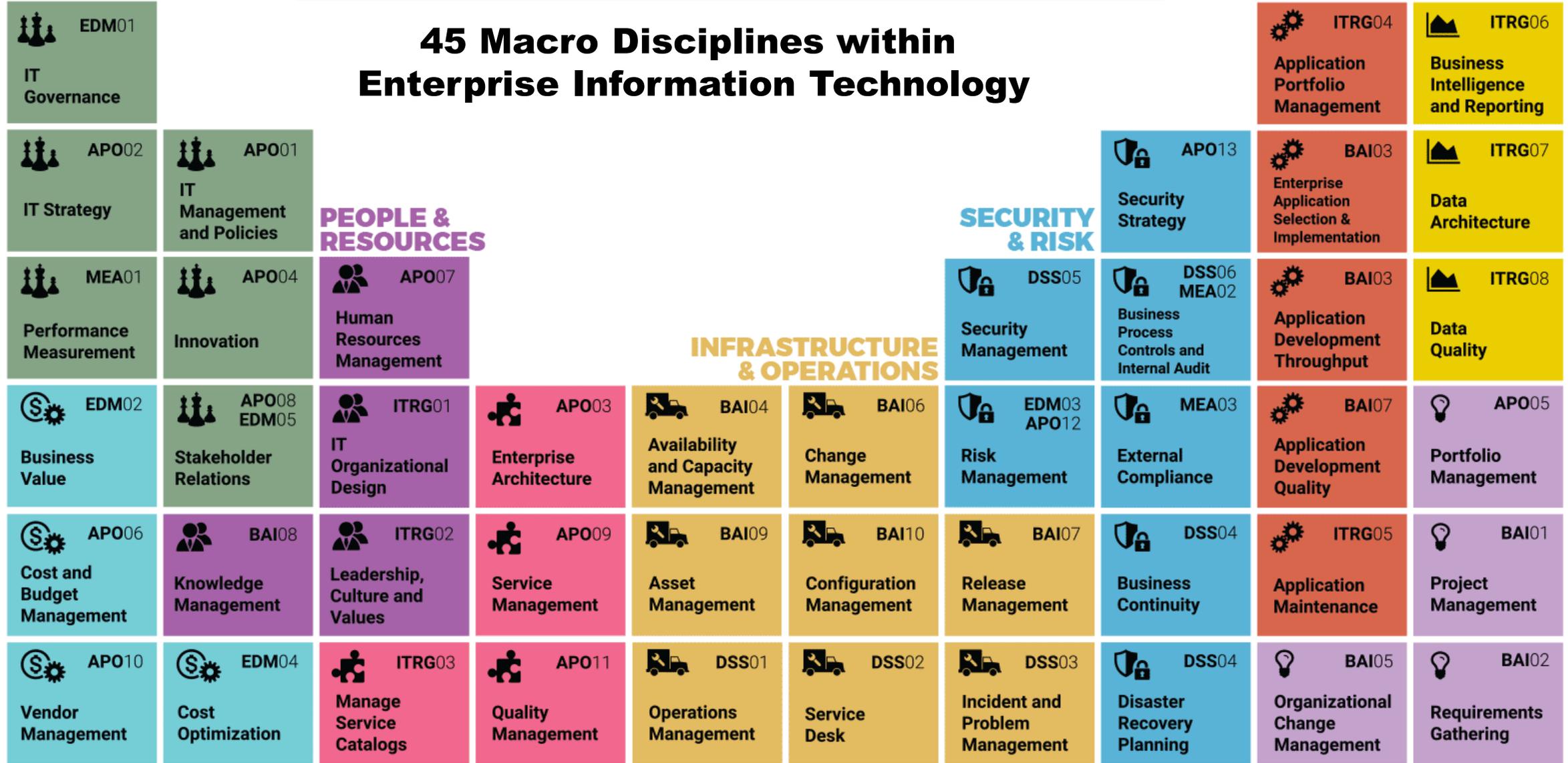
- Utilizes Sensitive Data
- May Utilize Sensitive Data
- Utilizes Non-Sensitive Data

*Data sensitivity ranking based on type of data user will utilize, not associated risk
 **Data utilization does not imply that user has access to data, rather the specific data used for job functions

STRATEGY & GOVERNANCE

IT Management & Governance Framework

45 Macro Disciplines within Enterprise Information Technology



FINANCIAL MANAGEMENT

SERVICE PLANNING & ARCHITECTURE

PPM & PROJECTS

Strategy - Goal



Unify all IT services to the extent possible across all Governments in ND (all 7 segments)

None of North Dakota's entities have the individual scale to be cost effective as singular units or can obtain highly specialized staff that are necessary



Software licensing, contracts, and development



Desktop, storage, and network support



Cyber Security



Highly Skilled Labor

The major consideration with this strategy **MUST** be Constitutionally mandated segmentation

NDIT is pursuing an executive branch only Unification, but still offering services across all 7 segments of government

We are only requesting for **19 of the 37 agencies** identified with IT staff in the exec branch to be unified. Additional conversations and data collection need to be completed for any further agencies to be considered

IT Unification

How are we operating in a Unified model?

Integrated Teams



- Teams are embedded together and with the customers (physically and virtually)
- Focus on customer needs and technology alignments

Performance Measurement



- Customer based, and enterprise-based measurements to manage performance
- Transparent dashboards



- Consistent meetings with agency leaders to ensure work is meeting their business objectives

UNIFICATION – FOUNDATIONAL

Technology staff Resources across Executive Branch

Shared Service	Fully Managed by Shared Service (cabinet)	Matrix Agencies	Engaged in Unification Study	~FTE	No engagement to date	~FTE
Transportation	Governor's Office	Workforce Safety & Insurance	Historical Society	3	Attorney General	17
Trust Lands (partial)	Indian Affairs	OMB	Trust Lands	1	Housing Finance	3
Human Services	Securities	Health	Industrial Commission	5	Career & Tech Ed	5
Emergency Services	Financial Institutions	Environmental Quality	Insurance Commission	1	School for the Blind	1
Parks & Rec	Labor	Highway Patrol	Public Emp Retirement	2	School for the Deaf	1
Information Technology Dept		Job Service	Public Instruction	5	State Library	1
		Commerce	Public Service Commission	3	Tax Commissioner	8
		Game and Fish	Secretary of State	1		
		Bank of North Dakota	Retirement & Investment Office	2		
		Corrections	Water Commission	2		
Total: 402 FTE	Total: 0 FTE	Total: 65 FTE	Total: 25 FTE	Total: 36 FTE		

Agencies Unifying in 2019 & 21

37 Agencies

45 Disciplines

Approximately: 528.5 Technology FTE

Unification Summary

Today's Technology in Exec Branch

37
Agencies

Approximately:
528.5
Technology FTE

Jack of all trades
everywhere with
no backups

Redundancies
Everywhere

No cohesive
strategies

Unification wins

- Substantial service improvements in DHS and DoT
 - Device turnover times reduced, throughput of services
 - \$4.7M in IT savings for DHS alone
 - \$1.2M in savings through the first 8 months across multiple agencies
 - Many redundant technologies eliminated
 - Set the stage for next levels of Unification
 - Significant cost avoidance and working towards lowering cost per unit of service
 - Many Economies of scale obtained

2021 Proposal

Fully align 19 agencies IT structures (totaling 468 IT staff) with no new costs for unifying

Cyber Security

GRATITUDE

COURAGE

CURIOSITY

HUMILITY

Informing Legislators of Confidential Cyber situations discussion



Informing Legislature of Cybersecurity Issues

- Need to have capabilities confidential "executive sessions"
- House Bill 1314
 - *The department shall report to the legislative management all disclosed cybersecurity incidents as required by this chapter, including the status of the cybersecurity incident and any response or remediation to mitigate the cybersecurity incident. The department shall ensure all reports of disclosed cybersecurity incidents are communicated in a manner that protects victims of cybersecurity incidents, prevents unauthorized disclosure of cybersecurity plans and strategies, and adheres to federal and state laws regarding protection of cybersecurity information.*

GRATITUDE

COURAGE

CURIOSITY

HUMILITY

Cyber



Citizen
Focused

Growth
Mindset

Leadership
Everywhere

Work
As One

Make A
Difference

Workforce: Current vs Proposed State

Workload 8X larger than peers = Significant Human Cost

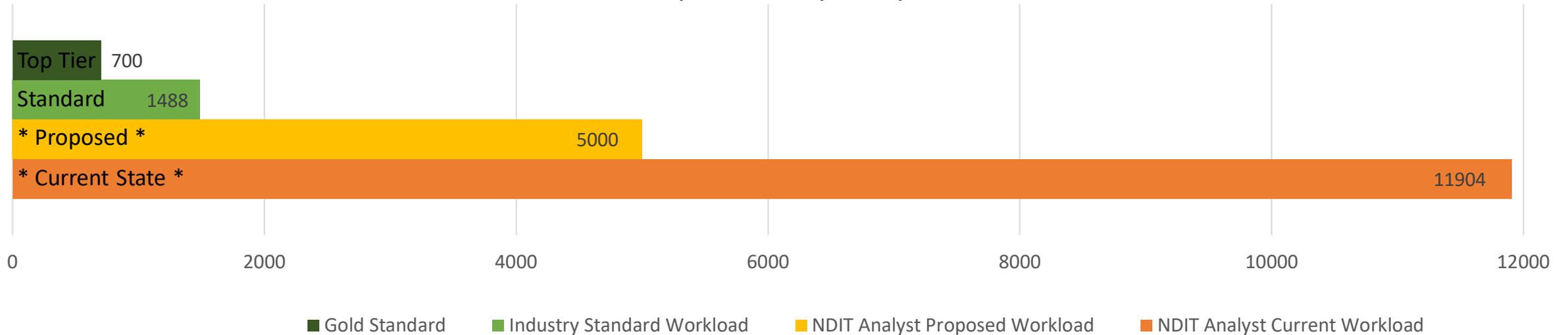
-60 to 100+ Hour Work Weeks

-No/Very Little Time Off

-Always on Call

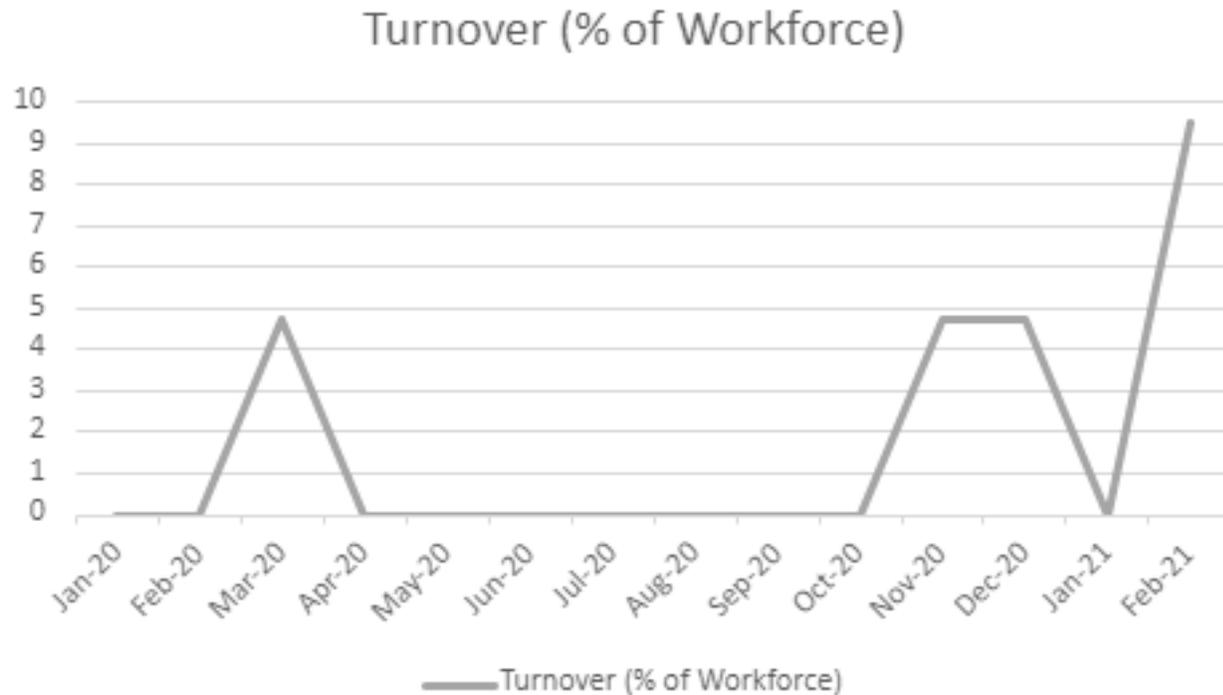
-1/3 of the team will lose unused PTO in 2020 and $\frac{3}{4}$ will of the team will lose PTO in 2021

Workload – Devices per Security Analyst



1. Based on industry average of 1 analyst per 1,488 endpoints for large organizations documented in Osterman Research - The Evolving State of Network Security, 2018, Cited by InfoSecurity group (September 2018). <https://www.infosecurity-magazine.com/news/security-staffing-low-in-midsized/>

Human Impact of Workload

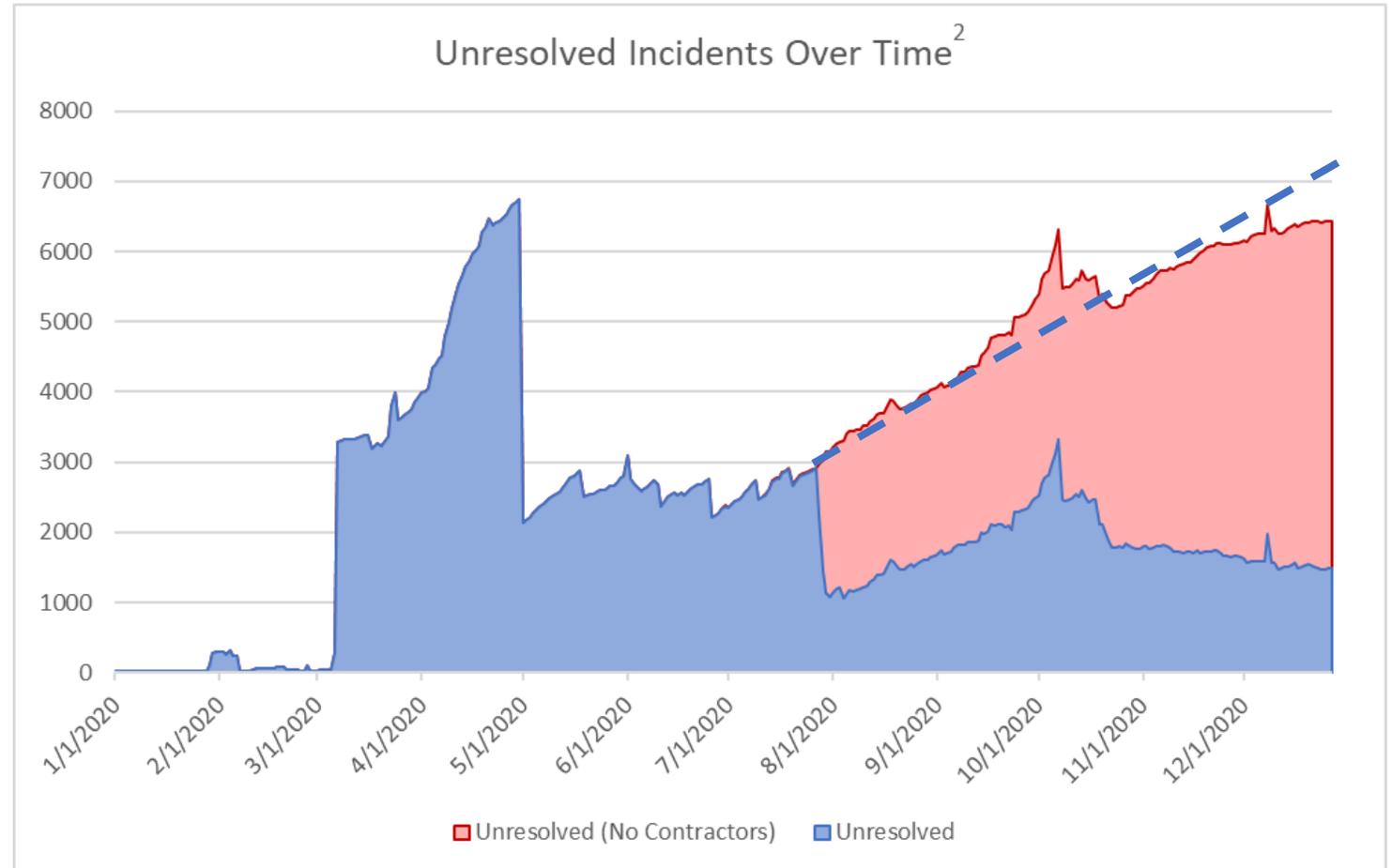


- Turnover Rate Climbed from 4% to 19% since November
- Main reason was employee workload and work life balance
- Security turnover has a very high cost in training and unaddressed incidents

Cyber Risk of Maintaining Current FTE

~100,000 unaddressed cybersecurity incidents by next biennium

~\$15,000,000 in unmitigated damages (not including operational risks and legal liabilities)



1. Averages based on Cortex XSOAR data

North Dakota is the Most Cyber-Regulated State

- Ability for BND to operate (FFIEC)
- Loss of ability of Government to use Credit Cards (PCI DSS)
- Up to **\$50,000** Fines per disclosed Record - 30,000 records in last breach (HIPAA)
- Millions in Medicaid/Medicare project funding - MMIS (75%) Funded & portion of Spaces (CMS)
- Loss of Law Enforcement Offices ability to access federal investigation systems (finger printing, background check, etc.) (CJIS)
- Loss of processing access to Job Services, DHS, Tax (IRS FTI)



Over 300 laws (state, federal, international) regulate data security

Attack Surface
X
Capability

No
Unification

Current
FTE



With
Unification



29 FTE



Proposed Additions

Over 121,134 Total Incidents in Next Biennium

Prevents 72,680+ Incidents Next Biennium, and Satisfies Compliance Requirements:

- 11 Governance Risk and Compliance (second level analysts - \$6,150 average base salary)
 - 6 Information Security Officers – Compliance and Risk
 - 5 Assessment and Risk– Compliance and Risk
- 6 Cyber Operations Center (mix of manager level and second level - \$7,500/\$6,150 a.b.s)
 - 3 Active Defense – Vulnerability Management
 - 3 Infrastructure – Secure Systems Design
- 2 Awareness and Education (second level analysts - \$6,150 average base salary)

Responds to 48,454 Incidents Next Biennium:

- 10 Cyber Operations Center (entry level analysts - \$5,814 average base salary)
 - Incident Response

Cyber Positions

Prevent:

- GRC – Works with Agencies and PSDs to ensure systems are operating securely and within the tolerances of their various compliance and legal frameworks
- Cyber Education – Runs cybersecurity training, phishing training and testing
- Cyber Infrastructure – Fixes cybersecurity problems with systems and designs, builds, and maintains cybersecurity tools

Incident Response:

- Cyber Analysis and Response – Responds to cybersecurity incidents across the network
- Cyber Active Defense – Looks for threats on the network and reports them. Works with State Local Intelligence Center (DES, BCI, National Guard)



Discuss
FTE
Spreadsheet

Operational Updates

GRATITUDE

COURAGE

CURIOSITY

HUMILITY

Teams Voice Migration



Voice Solution:

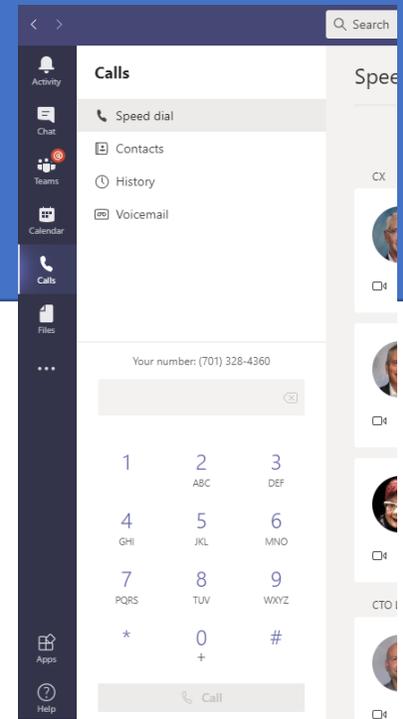
Avaya Voice:

- Traditional Voice Solution
- VoIP Since 2008
- End of Life or near End of Life infrastructure
- Poor mobile and telework solution
- Limited integrations



Teams Voice:

- Modern Voice Solution
- Software part of the owned 0365 bundle
- Significantly improved mobile and telework experience
- Integrated experienced with MS Teams that is already the standard collaboration tool
- Cost Avoidance:
 - \$1.4M estimated in desk phones (strongly encouraging softphones – desk phones are available)
 - \$1.2M estimated core infrastructure



SIRN

**Phase 1
Public Safety
Answering Point
(PSAPs)**

Phase 1 Group 1

5 PSAPs/Core Completed

Phase 1 Group 2

6 PSAPs Complete 2021-Q2

Phase 1 Group 3

7 PSAPs Target 2022 Q1

Phase 1 Group 4

5 PSAPs TBD

Budget

Estimate: \$15M (State & Local)

**Radio
Reimbursement**

20,000 Radios

- Portable – Mobile
- \$1,500.00 each

Budget

\$30M (Approx. State)

2020

2021

2022

2023

2024

2025

**North
Dakota
Statewide
Interoperable Radio
Network**

Portable
800 MHz
Go-Live

Mobile
800 MHz
Go-Live

Phase 2 Group 1

40 State Towers

Phase 2 Group 2

22 State / Lease Towers

Phase 2 Group 3

20 State / Lease Towers

Budget

\$50M (Approx. State)

Phase 3 Group 1

58 State / Lease Towers

Budget

\$35M (Approx. State)

**Phase 2
800 MHz Mobile
Coverage
(Towers)**

**Phase 3
800 MHz Portable
Coverage
(Towers)**

Cap Ex – Green
Op Ex - Risk

Legislation:
SB 2111
HB 1146

**COVID-19
Schedule Impact
Supply Chain Impact**

Firstnet/LTE
Interop

PSAP Direct
Communication

Budget Summary

- Total Budget:
 - \$207M- includes local radio devices
- State Budget
 - \$120M
- Total Spend
 - \$17.5M
 - Splits:
 - \$13.6 State
 - \$3.9 Local
- 911 Fee Revenue:
 - \$14.9M
 - \$4.5/Y Avg.

Current Spend Detail

	State	Local	Total
Core/PSAPS	\$2.4M	\$3.9M	\$6.3M
Towers	\$9M		\$9M
Radio Stipend	\$2.2M	N/A Yet	
Total	\$13.6M	\$3.9M	\$17.5M

Operation Funding

Revenue:

65th Legislative
Assembly – HB 1178:

- \$0.50 addition to the 911 fee
- Generates an average of **\$4.5M** per year

Cap Ex Funding:

66th Legislative
Assembly – HB 1435:

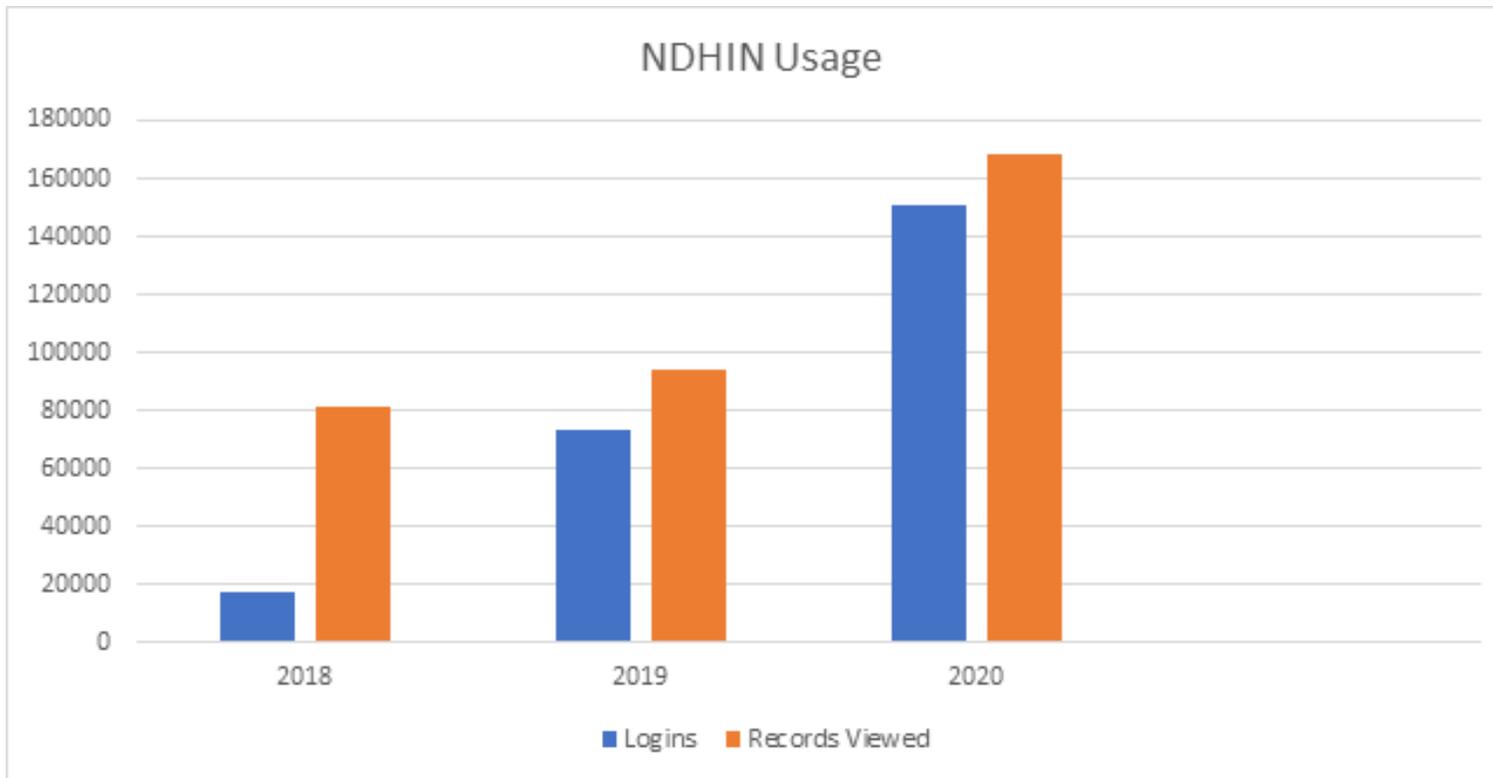
- \$20M SIIF
- \$20M BND Profits
- \$80M BND Line of Credit

Operating Expense:

- Program: \$6-\$10M / Y
- Loan Payment: \$5M / Y
- **Issue 23-25 Biennium**

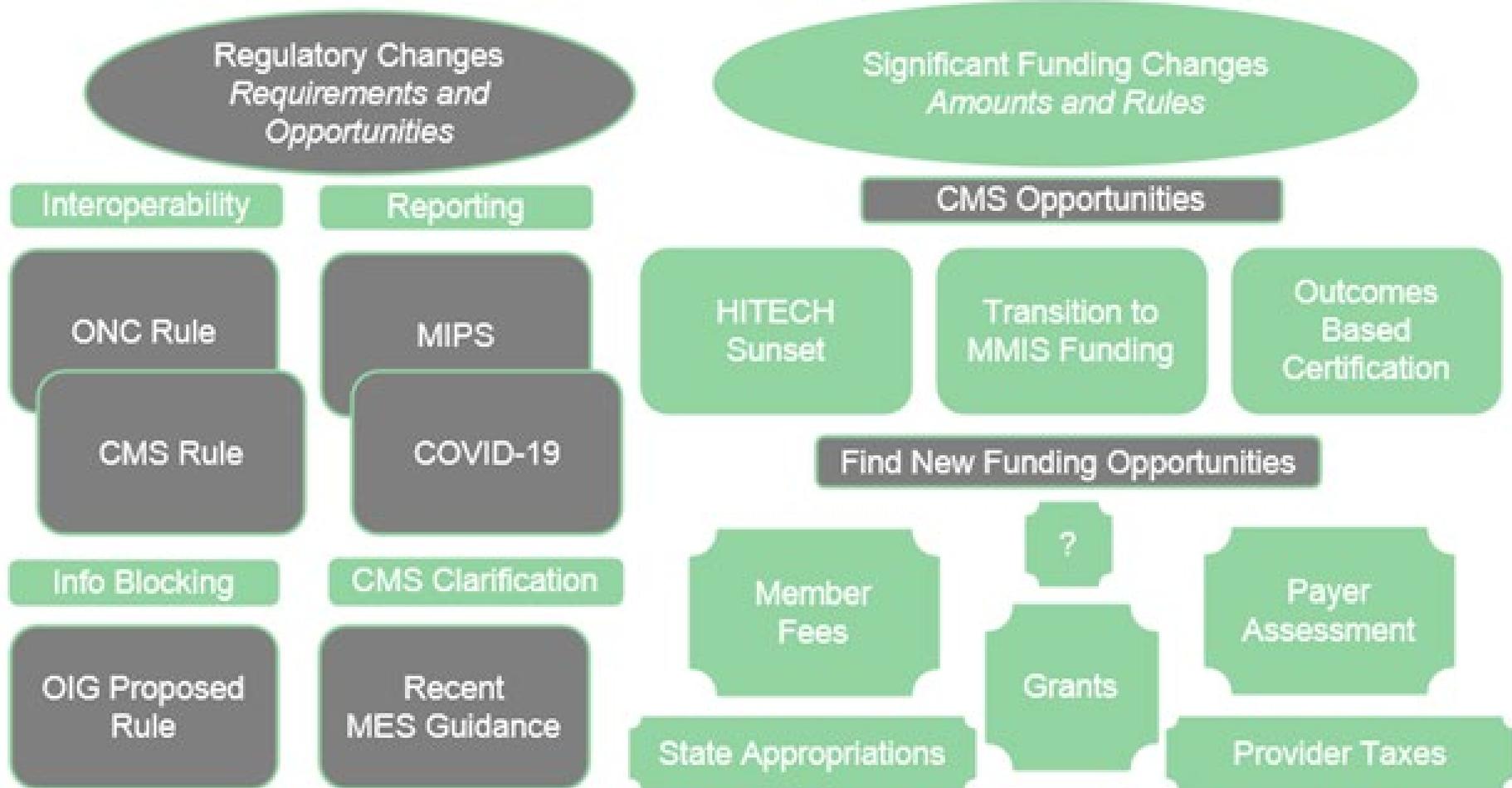
Health Information Network

Health Information Network



- Public / private partnership of healthcare stakeholders
- Charged with expanding the secure exchange of health information in the State of North Dakota
- Provides electronic public health reporting to NDDoH
- Provides electronic public health reporting to Centers for Disease Control

Factors Impacting Health IT Landscape



North Dakota Health Information – Key Messages

- HITECH funding expires September 30, 2021 (6 months)
- New federal funding *may* provide some initial funding pressure release
- Proposed language to transfer unused HIT Loan funds to operations
- Lack of continued funding impacts
 - 200+ participant organizations lose health information exchange access.
 - Negative impact of regulatory compliance for providers and increased public health reporting burden for providers and NDDoH
 - Additional challenges to providers for meeting value-based payment model requirements
 - Loss of gateway to national health information exchange networks

2021-2023 EXECUTIVE BUDGET – HEALTH IT

Program - Health IT	FTE	General Funds	Special Funds	Federal Funds	Total
Health IT - 2019-21	4.0	\$ -	\$ 47,934,279	\$ 500,000	\$ 48,434,279
One-Time Funding Reductions		-	(43,555,133)	-	(43,555,133)
Budget Changes		100,000	(1,675,000)	5,831,472	4,256,472
Compensation Package		-	30,748	-	30,748
Total Executive Budget - Health IT	4.0	\$ 100,000	\$ 2,734,894	\$ 6,331,472	\$ 9,166,366

The Budget Changes include removing the one-time funding (\$43.5M) for the NDHIN Medicaid Expansion Project. The majority of the project is funded with federal funding in the Department of Human Services. This federal grant will expire September 30th 2021.



2021-2023 HEALTH IT BUDGET

Program - Health IT	FTE	General Funds	Special Funds	Federal Funds	Total
Health IT - 2019-21	4.0	\$ -	\$ 47,934,279	\$ 500,000	\$ 48,434,279
One-Time Funding Reductions		-	(43,555,133)	-	(43,555,133)
Budget Changes		-	4,324,999	5,500,000	9,824,999
Compensation Package		-	25,378	-	25,378
Total Budget - Health IT	4.0	\$ -	\$ 8,729,523	\$ 6,000,000	\$ 14,729,523

The Budget Changes include removing the one-time funding (\$43.5M) for the NDHIN Medicaid Expansion Project. The majority of the project is funded with federal funding in the Department of Human Services. This federal grant will expire September 30th 2021.

GRATITUDE

COURAGE

CURIOSITY

HUMILITY



N O R T H
Dakota

Be Legendary.™

Appendix

GRATITUDE

COURAGE

CURIOSITY

HUMILITY

NDIT Staff



Citizen
Focused

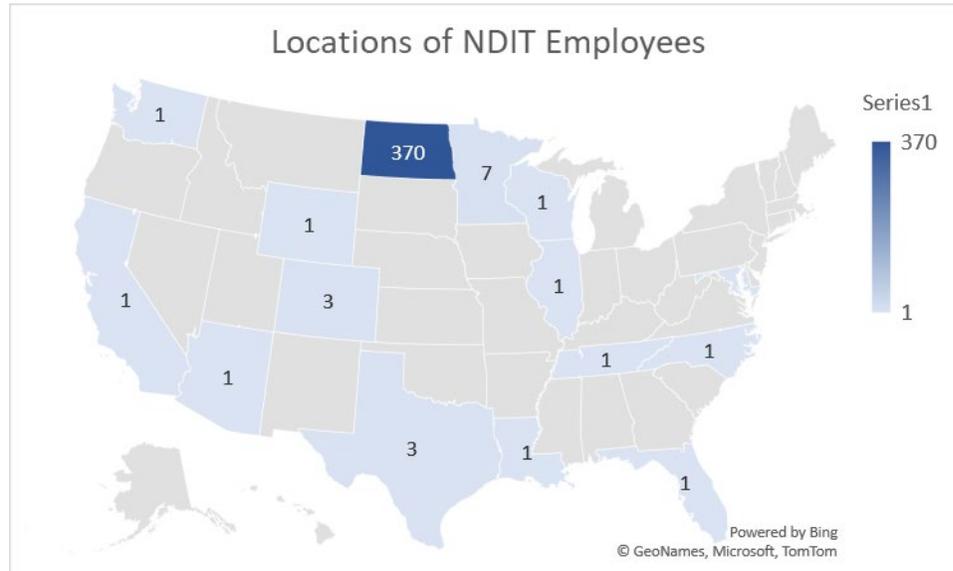
Growth
Mindset

Leadership
Everywhere

Work
As One

Make A
Difference

Staff Locations



Staffing is a major concern for NDIT

- 94% of NDIT staff live in North Dakota
- Staff are hired from other states due to skill set shortages nation wide
 - Cyber Security
 - Data Management
 - User Experience / Design
- Some staff move to ND, while some are able to work from a remote location. All work locations are assessed on a case-by-case basis based on business and customer need. This also allows for staff to work all over the state of ND instead of just the Bismarck/Mandan area (next slide)

GRATITUDE

COURAGE

CURIOSITY

HUMILITY

Strategy



Citizen
Focused

Growth
Mindset

Leadership
Everywhere

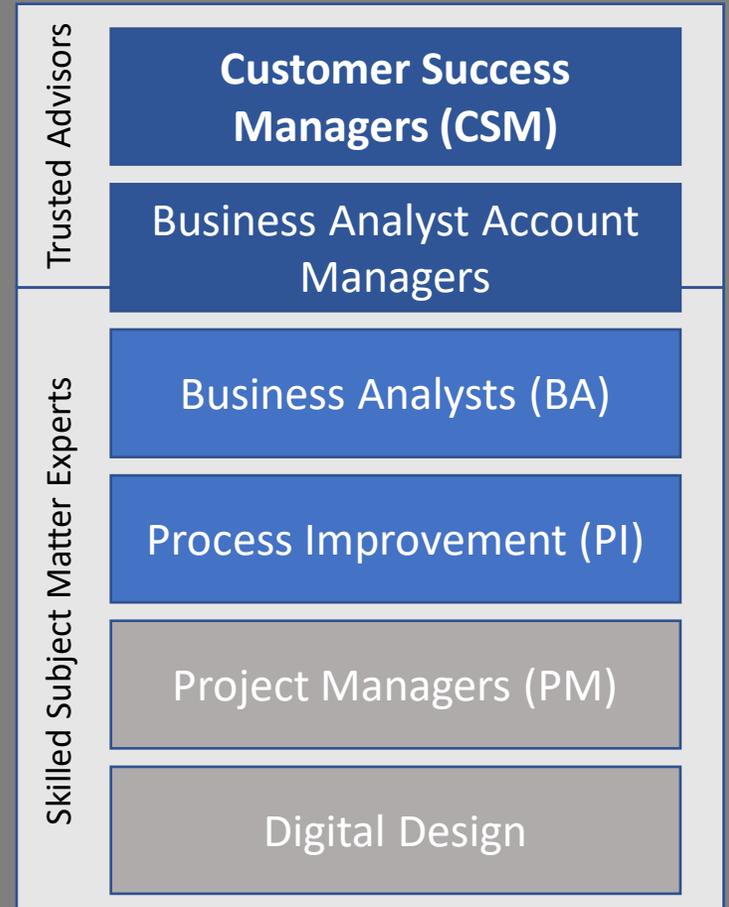
Work
As One

Make A
Difference

Customer Success Management



Customer Success Organization



A Customer Success Manager:

- Is a **trusted advisor** who brings a "whole of government" approach to finding solutions from the breadth of technology options available
- Creates **ongoing agency partnerships** to deeply understand their business and connects resources within NDIT to support their technology needs
- Identifies **efficacy opportunities** through enterprise solutions and cost sharing opportunities
- Focuses on **improved citizen experiences** across agencies
- Delivers **shorter time-to-value** through technology launch support and change management leadership
- Provides services traditionally done by IT Coordinators within a single agency who typically had a narrow technology context

"Our ongoing Steering Committee meetings with NDIT are adding significant value in terms of strategy alignment and decision-making" - Arnie Strebe, CFO – Department of Human Services

WHAT DO OUR VISION & GOALS LOOK LIKE?

(WHY DOES GRANDMA CARE?)



If Grandma works for the state

- Attaining our goals means:
 - Majority of commodity, redundant, repeating, mundane, boring work is gone – personal growth and more meaningful work
 - Little to no data entry work
 - Projects get done in weeks instead of decades
 - Data is accessible and meaningful



If Grandma is a resident of the state, but doesn't work as a state employee

- Attaining our goals means:
 - Citizens have 24/7/365 access to the vast majority of services
 - No standing in line for commodity government services
 - Single point of access to government services
 - Secure, worry-free, elegant, intuitive systems



If Grandma lives in another state, but wants to move back

- Attaining our goals means:
 - Data is resident and does not need to be reentered across the board
 - Finding services is easy
 - Transferring services is easy
 - Starting a new company is easy

For all Grandmas

- The cost of state government comes down by a minimum of \$640M per biennium – lower taxes
- Response time of government cut by years to add new services or grow existing services
- Working with the state of ND is similar to services from any other organization – timely, easy to use, flows across the organizations



GRATITUDE

COURAGE

CURIOSITY

HUMILITY

Normandy Building



Citizen
Focused

Growth
Mindset

Leadership
Everywhere

Work
As One

Make A
Difference

NORMANDY STREET BUILDING

- Lease Effective Date of June 1st, 2014
- Term of 133 months terminating on June 30th, 2025
- Renewal options do exist within the contract
- Rental payments of \$12.00 per square foot for 85,000 square feet
- Common Area Maintenance charges of \$5.00 per square foot
- Currently occupying some areas of the building
- As agencies review their space needs in Bismarck, NDIT is working with John Boyle, OMB Facilities Manager, to provide opportunities for agencies as needed