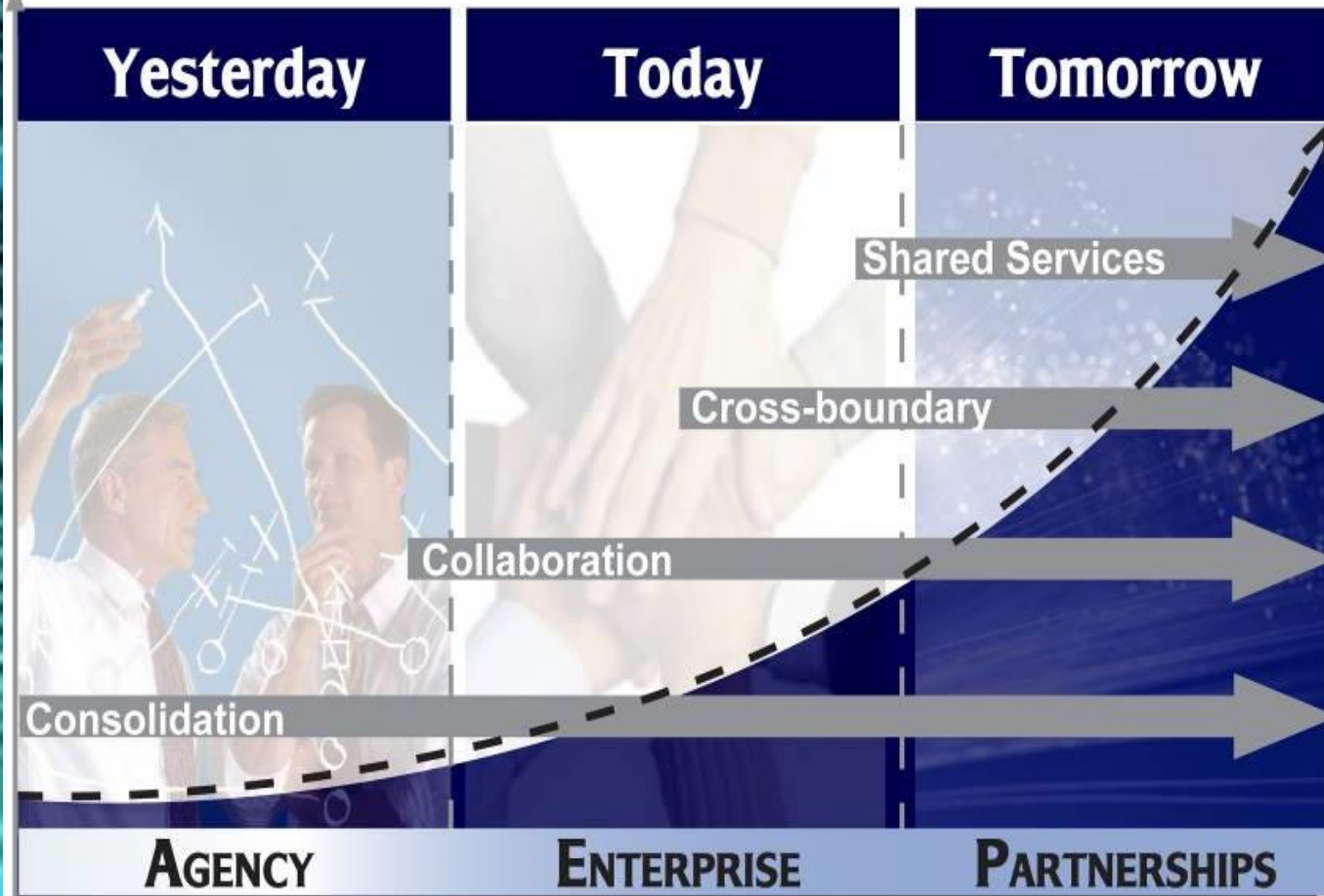


**Michigan's Cloud Protection  
Program - Disaster Recovery  
Services *Transformed* for the  
*"Perfect Storm"***



# Michigan's IT Journey



# *Consolidation paved the way for Michigan's Journey...*

*If you can consolidate it, Michigan has done it!*

**Mainframe Consolidation -1995**

**Data Warehousing – 1998**

**Enterprise Storage Consolidation -2000**

**Employees-2001**

**Data Center Consolidation - 2004**

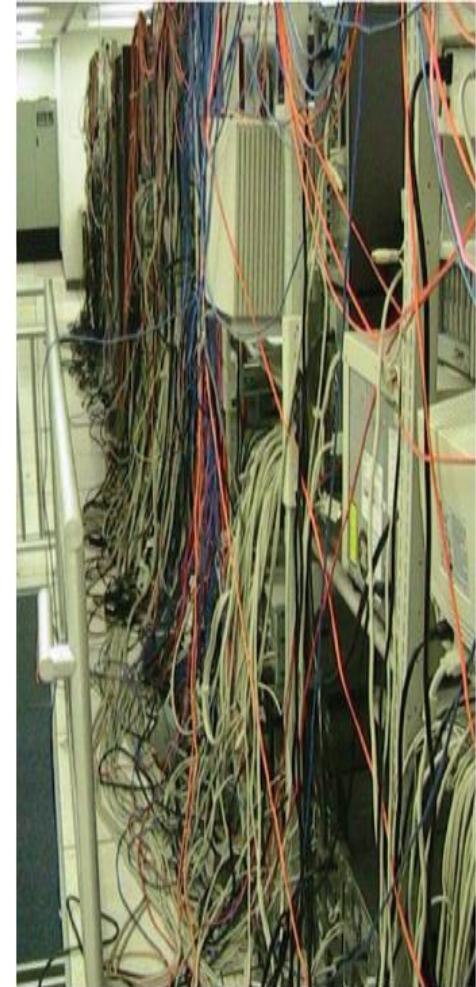
**Enterprise Backup Consolidation - 2006**

**Managed File Transfers – 2008**

**Server Consolidation/Virtualization – Now**

**Storage Virtualization - Now**

***The Benefits have been substantial!***



# BENEFITS OF CONSOLIDATION

**Consolidated 40 data centers down to 3; closed 37 with \$9.5 Million in savings the first year.**

- 30,000+ sq feet of floor space regained
- Critical systems positively affected across government
- Improved security and disaster recovery
- Improved privacy – over 4.4 Petabytes of storage
- Quick, effective operations and communication via ITIL processes

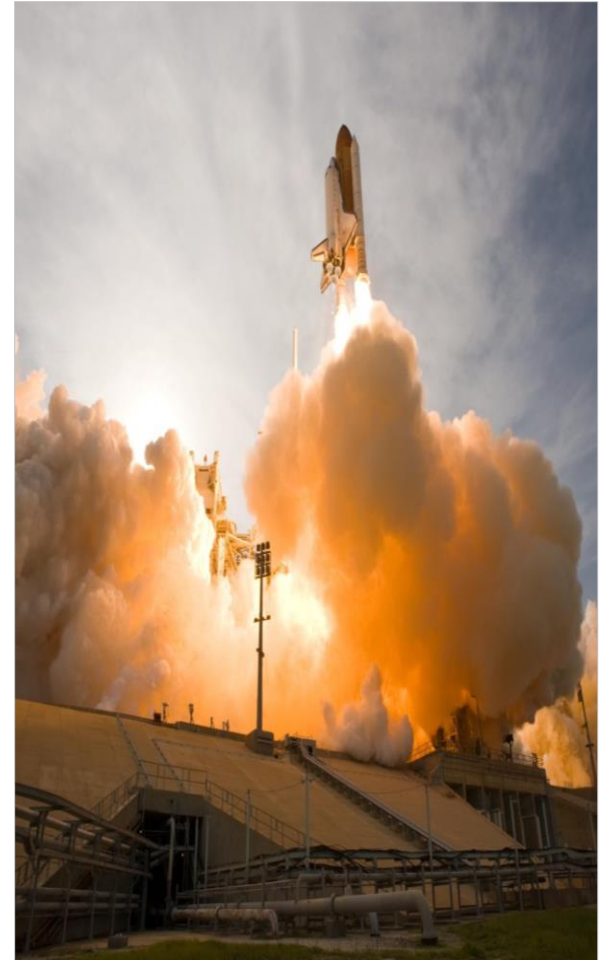
**ROI –5 year return of \$19.1 million  
Reduced Rates and Savings.**



# INCREASED USAGE AND STANDARDIZATION = DECREASED COST!

## *In the last 6 years:*

- *Level 1 Storage rates have dropped 73%.*
- *Backup & Recovery rates reduced by 64%.*
- *Managed File Transfer rates dropped by 80%.*
- *Data Translation (EDI) Rates dropped by 89%.*
- *Data Warehousing rates dropped by 37%.*
- *Data Center Monitoring rates dropped by 69%*
- *Unix Support rates dropped by 54%*
- *Windows support rates dropped by 13%*
- *Network port rates dropped by 30%*



# ENTERPRISE FOCUS AND ALIGNMENT WITH GOVERNMENT'S BUSINESS GOALS.

- **\$100 Million** reduction in IT spend based on 2001 Employee Consolidation
- **\$45 Million** returned to Clients as a result of credits and rate reductions from the Data Center's Budget in the last 5 years.

*And.....*

- Standardized platforms and enterprise architecture
- Enterprise security controls and tools
- Ability to leverage data throughout the enterprise
- Development of enterprise solutions



# THE GOVERNMENT CLOUD PROTECTION PROGRAM: DISASTER RECOVERY SERVICES TRANSFORMED FOR THE “PERFECT STORM”

Michigan’s Government Cloud includes:

- Data Centers
- Information and
- Telecommunication

Program addresses traditional and emerging risks

Sets a new standard for ensuring that end-to-end government technology is reliable despite unprecedented change



# Michigan's Bombarded by Threats to Operational Stability

- September 11, 2001 (911)
- 2003 Blackout of the Northeast
- 2008 Ice Storms
- 195,580 Daily email and spam attempts in 2009
- State Government Data Centers consolidated from 40 to 3
- Storage Consolidation – from 13 terabytes in 2001 to 4.4 Petabytes and Storage as a service in 2010

***Information has become the central asset of Government and it MUST be protected***



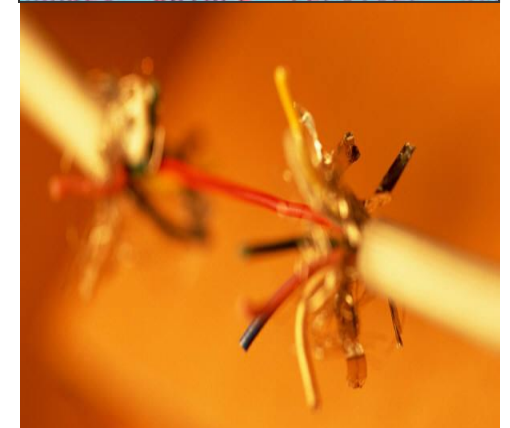


# The New “*NORM*”.....

- Hardware failures
- Network outages and cable cuts
- Computer viruses, Hackers
- Infrastructure changes
- Application changes
- Identity theft

*Consolidated infrastructure and enterprise services mean that outages now impact the work of thousands of government employees and services to thousands of our Citizens*

*Our reputation was at stake, and our budget picture was bleak!*



# OUR SOLUTION.....

**Michigan developed strategies to address risks that were inherent with consolidation opportunities AND we established the program for Continuity of Government (COG) and IT Service Continuity (DR)**

- Identification of essential Business functions (Continuity of Government)
- Implemented ITIL Service Management Strategies
- Identification of IT Applications and Configuration items associated with essential business services (Red-Card)
- Identification of IT Service Continuity and Continuous Services Strategies
- Identification of Service Availability/Criticality Standards
- Implemented Enterprise Event Monitoring

# SIGNIFICANCE.....

**Michigan's solution has the potential to be a national model for the reduction of risks associated with:**

- Consolidation
- Shared services
- Managing cloud computing environments

**The processes create new opportunities:**

- To reach local partners
- Address emerging federal cloud computing requirements
- Offer important risk reduction to complex enterprise technology architectures that ensure IT Service Continuity and Continuous Service

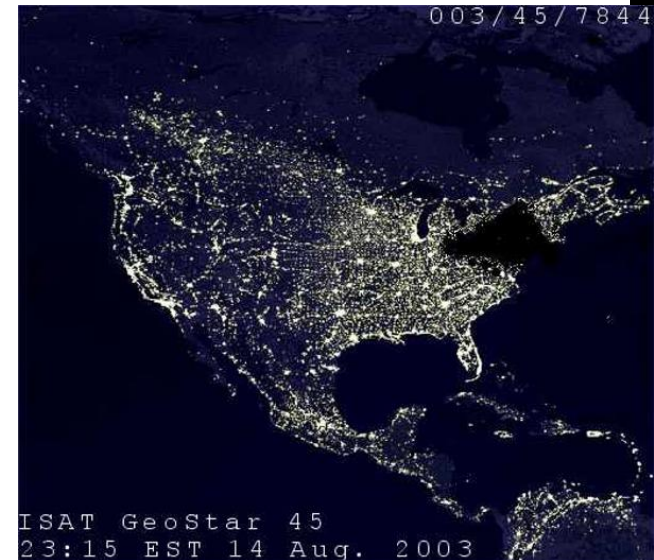


# EARLY PROJECT DRIVERS

- *2003 – Governor Granholm mandated that the Agencies plan for the continuation of Government in the event of an emergency*
- *Michigan Continuity of Government Initiative was started to address the needs for comprehensive planning*

## *Other Project Drivers:*

- *2003 East Coast Power Outage*
- *2006 Auditor General Report*



# SCOPE OF OUR PROBLEM:

- Two early employee retirement programs
- Thousands of configuration items
- Eight critical mainframes
- 3,900 servers
- 4.4 petabytes of data
- 55,000 personal computers
- Thousands of IT applications
- Hundreds of network segments and routers
- Only a *handful* of DR plans
- List of 60 IT applications associated with critical business functions
- Robust network/redundant private fiber network



**We needed a solution, and we  
needed it fast!**



**We began by addressing traditional threats and then engaged transformational challenges that are now facing public sector risk management**

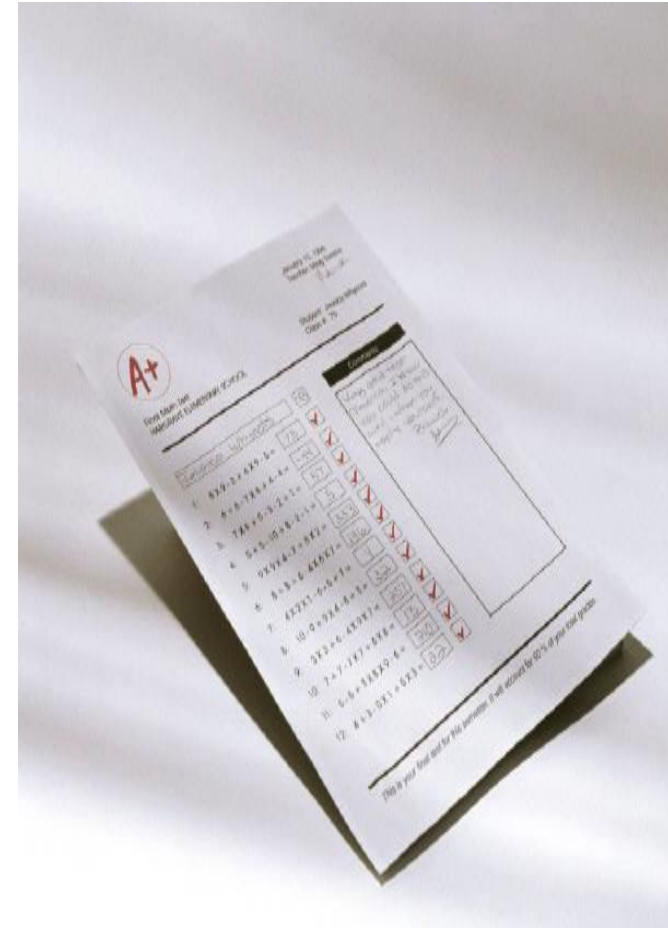
**The project was completed in three phases:**



- **Phase I: Conduct Assessment: *Understand Opportunities' and Threats***
- **Phase II: *Finding the Path to Reliability, Resiliency and Recoverability***
- **Phase III: Transform Delivery models – *Reliability, Resiliency, Recovery and “Relationships”***

# PHASE I – CONDUCT ASSESSMENT

- Review the application & Infrastructure audit findings
- Create through a manual process, a Business Impact Analysis (BIA) process for the State's top 30 critical applications
- Identify the business RTO/RPO requirements vs the achievable RTO/RPO
- Identify application dependencies and relationships
- Build a (Red/yellow/green) score card for the application to be provided to the business
- Assess Risk to the State based on the application's deficiencies





# PHASE II - FIND THE PATH

- The DR Project defined the information necessary for the Impact Analysis Summary process
- Developed assessment Teams from across all facets of IT based on Application specifics
- Gathered Data and correlated it to the business requirements
- Developed strategies and costs to strengthen the applications capacity for resiliency and redundancy

**Once the assessment was complete, it was delivered to the Agency business owner for sign off by an IT executive.**



## PHASE III – TRANSFORM DELIVERY MODELS

**We recognized that the information we had gathered was significant, and needed to be preserved.**

- Acquired a Continuity Management Suite
- Implemented 3 environments to support the program (production/test/DR)
- Employee Information integrated
- Imported Vendor partner information
- Implemented a Communication tool
- Continuity Plan templates were built
- Service Criticality was defined

# EARLY PROJECT GOALS

- Creation of policy and staffing models for a Continuity Service (DR) organization within IT
- Creation of ONE list of business functions and the related IT Systems
- Identification of all IT Configuration Items that support the business functions along with a priority for recovery that aligned to the State's business needs
- Creation of a model Business Continuity plan
- Development of Event Monitoring for Critical IT Services



# SIGNIFICANCE...

“Michigan has proactively taken steps to ensure that critical and essential government functions continue in the event of an emergency. This project has enhanced public safety while saving millions of dollars, and can be a national model for reducing the risks associated with information technology consolidation and shared services.”



# Significance:

The future of government technology relies upon our ability to deliver: efficient, reliable enterprise solutions

Our Agencies *EXPECT* that IT will deliver services to business customers that are fit for purpose, stable and so reliable that the business views them as a “*Trusted Utility*”

This program achieves significant improvements in governance, procedures, operations and risk management outcomes to deliver the continuous, reliable services our Agencies demand

# Beneficiaries:

## Policies/Strategies

- Met Governor's mandate
- Federal Requirements for DR
- Aligned with Federal, CIO & NASCIO Priorities

## Processes

- Created new opportunities for Consolidation & Shared Solutions

## Operations

- ONE single, prioritized list of Critical Functions and IT Systems
- Enhanced Communication during Incidents and DR/Emergencies

## Peace of Mind for IT *and the Business!*



# BENEFITS...

- Brought together all stakeholders to agree to use one IT Service Continuity Strategy
- Prioritized and documented all critical State business
- Created the State of Michigan “Red Card”
- Cost avoidance due to Consolidation – returned over \$46.1 million to our clients in the last 5 years
- Funding for this project came from that cost savings
- There is NO cost to agencies to use this solution



State of Michigan  
(Red Card)

Information Technology Applications that are associated with Critical Agency Business Functions

April 2010

Life Threatening if Application is not available			
Critical Application Name	Business Function	Agency	Hosting Location
ED Syndromic Surveillance	Public Health Syndromic Surveillance Database	Community Health	State Hosted
EPSC for Labs (ELMS)	EPSC for Labs	Community Health	State Hosted
Hospital Pharmacy System (CERNER)	Hospital Pharmacy System	Community Health	State Hosted
MI Disease Surveillance System (MDSS)	Local, State, and National Disease Surveillance	Community Health	State Hosted
Newborn Screening (NBS)	Screeners for life-threatening and/or disabling disorders	Community Health	State Hosted
Remedy Bioterrorism Tracking	Storage of Potential Bioterrorism Data	Community Health	State Hosted – Remote
Corrections Management Information System (CMIS)	Offender (Convicts, Parole, etc) Management	Corrections	State Hosted
Offender Management Network Information System (OMNI)	Offender (Convicts, Parole Management)	Corrections	State Hosted
Service Worker Support System (SWSS)	Service Worker Support System	Human Services	State Hosted
Criminal History Record (CHR)	Law Enforcement Communication with State, Local, Federal, etc	State Police	State Hosted
Law Enforcement Information Network (LEIN)	Law Enforcement Communication with State, Local, Federal agencies	State Police	State Hosted
MI Criminal Justice Information Network (MCJIN)	Law Enforcement Communication with State, Local, Federal, etc agencies	State Police	State Hosted
Michigan, Women Infants & Children (MI WIC)	WIC Eligibility and Food Benefit System	Community Health	State Hosted

# Other Benefits:

- Instantaneous and consistent communication
- Process are used and tested on a daily basis
- Improved and tested incident management processes
- Comprehensive and Relational CMDB
- Cloud Benefits
- Created additional opportunity for more effective and efficient Technology



**And most importantly, the program has enhanced public safety while saving millions of dollars**



# Final Thought....

The State of Michigan can't control whether our State is affected by a natural disaster, power outage or terrorist attack, but we have proactively ensured that our government cloud services are *reliable and resilient*, and we are prepared to *recover* those services with minimal impact and data loss to the business!

# Thank You!

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