

# Technology and Michigan

*Building a stronger tomorrow*

**Ken Theis**, Director and State CIO

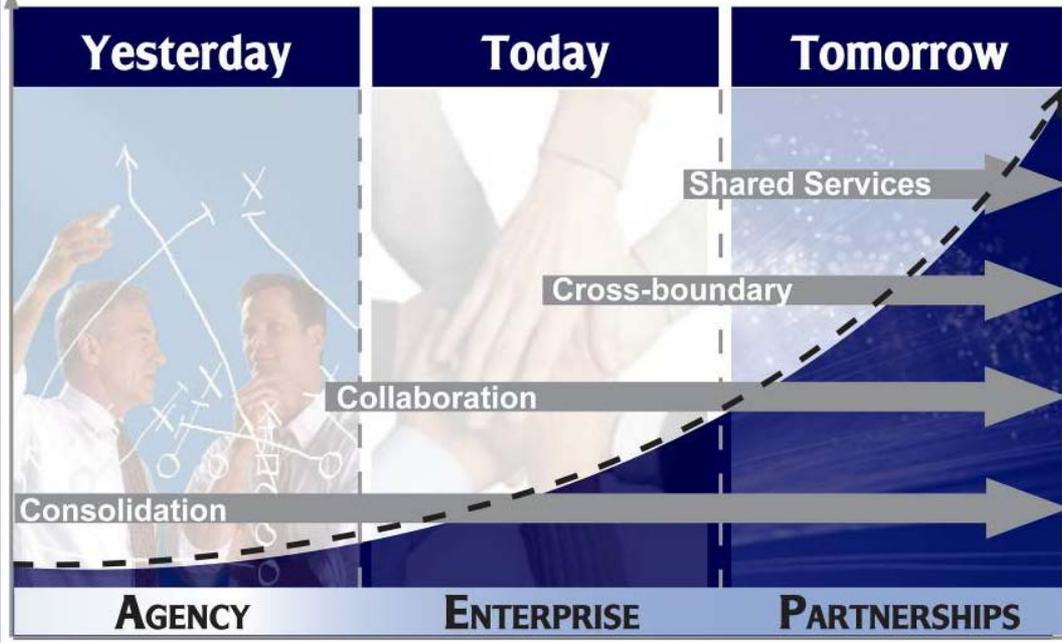
*Michigan Department of Technology, Management & Budget*

# Today's Highlights

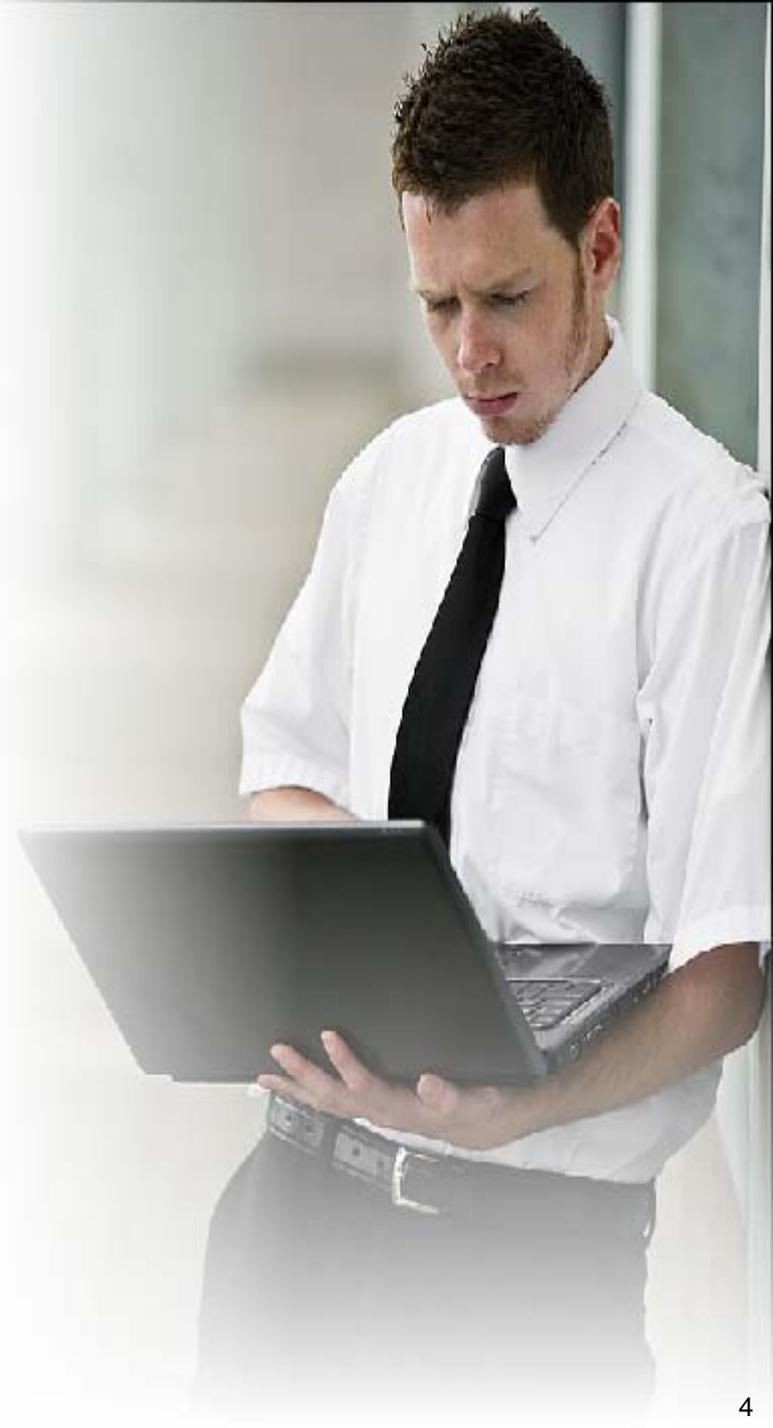
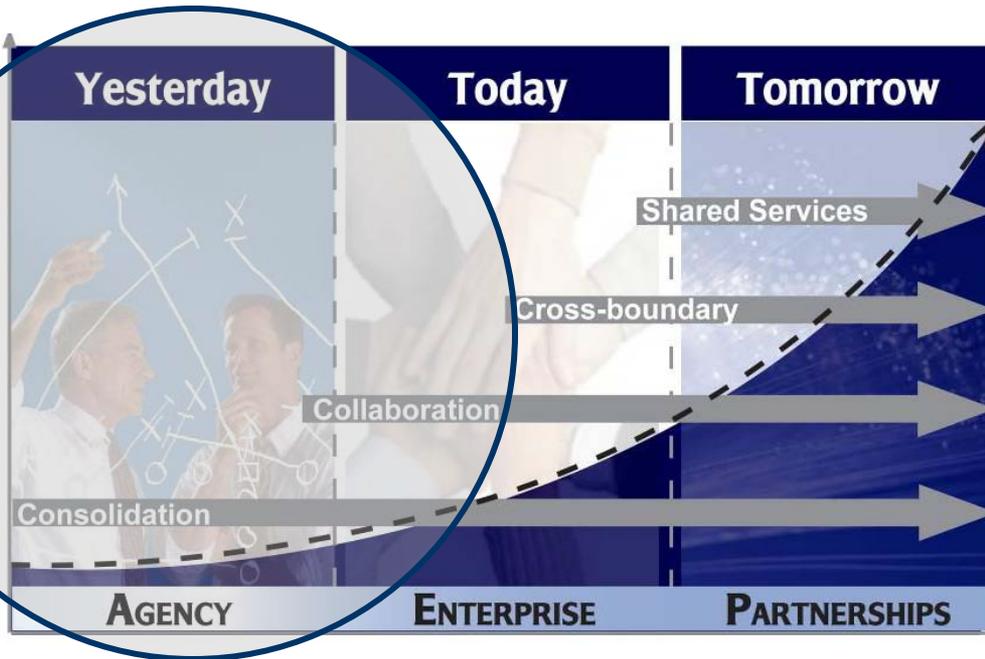
- Our Consolidation Journey
  - Yesterday and today
    - Daily fires and disparate agencies
    - Consolidation and efficiency
    - Rated services success
- Enterprise solutions
- Tomorrow's Opportunities
  - A look at what's next for Michigan...
    - Partnerships and shared solutions
    - MiCloud
    - Investing in a bright future



# Michigan's IT Journey



# Yesterday's focus: Daily fires

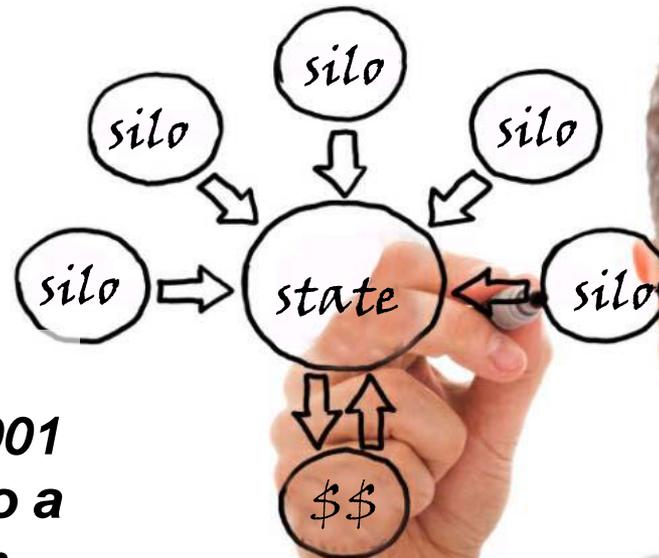


# Nature of the beast...

*Focus was on running the railroad and fighting daily fires.*

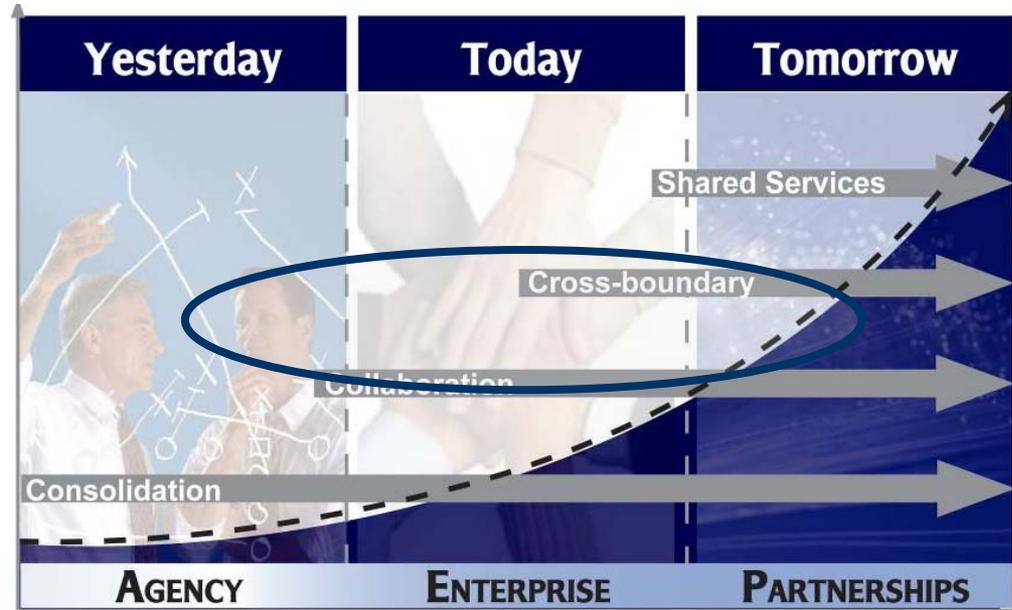
- Disparate agencies
- Inconsistent project methodology
- Runaway projects / cost overruns
- Uneven security
- Multiple technologies and versions
- Inefficiency, high costs

*An executive order in 2001 consolidated IT and led to a **new era** for Michigan...*



*Today's Focus:*

# Enterprise!



*Today's Enterprise Focus*

# Then and Now

<b>Eight Years Ago</b>	<b>Today</b>
<p><b>19 Agencies / 19 IT Departments</b></p> <ul style="list-style-type: none"><li>• 70 email systems</li><li>• 34 desktop/server processes</li><li>• Disparate security</li><li>• Struggling projects</li></ul>	<p><b>Standardized Platforms</b></p> <ul style="list-style-type: none"><li>• 2 email systems</li><li>• Streamlined technologies and tools</li><li>• Security framework</li><li>• Project management</li></ul>

*The scope of our consolidation was far reaching...*

# Michigan's IT Consolidation

- 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

*An early challenge was our **server rooms...***

*Today's Enterprise Focus*

# Operational Stability of Server Rooms

***The scope of problem was tremendous***

- Maintenance and upgrades went undone
- Wide spread site-level outages
- Privacy concerns
  - Thousands of storage devices
  - Inconsistent legacy backup solutions

*Today's Enterprise Focus*

# Michigan's Four Phase Data Center Consolidation Approach

- **Phase 1**  
Conduct Risk Assessment
- **Phase 2**  
Strategize and Prepare
- **Phase 3**  
Communicate & Create Momentum
- **Phase 4**  
Consolidate!



## *Today's Enterprise Focus*

# Phase I – Risk Assessment

*Our Focus: 24 legacy data center / server rooms and 3 hosting centers*

- Hard to believe what we found....
  - Centers located in flood areas
  - Oscillating fans substituted for cooling systems
  - Critical servers plugged into wall outlets
  - Non-existent wiring standards
  - Room temps commonly over 85°
  - Rats & anarchy



# *Today's Enterprise Focus*

## **Phase 2 – Strategize & Prepare**

***Migration of targeted **critical applications** left no room for error***

- Lives, safety and state operations hinged on our success
  - Law enforcement support
  - Emergency management systems
  - Health facilities
  - Human services eligibility
  - Prisoner tracking systems
  - State's revenue collection

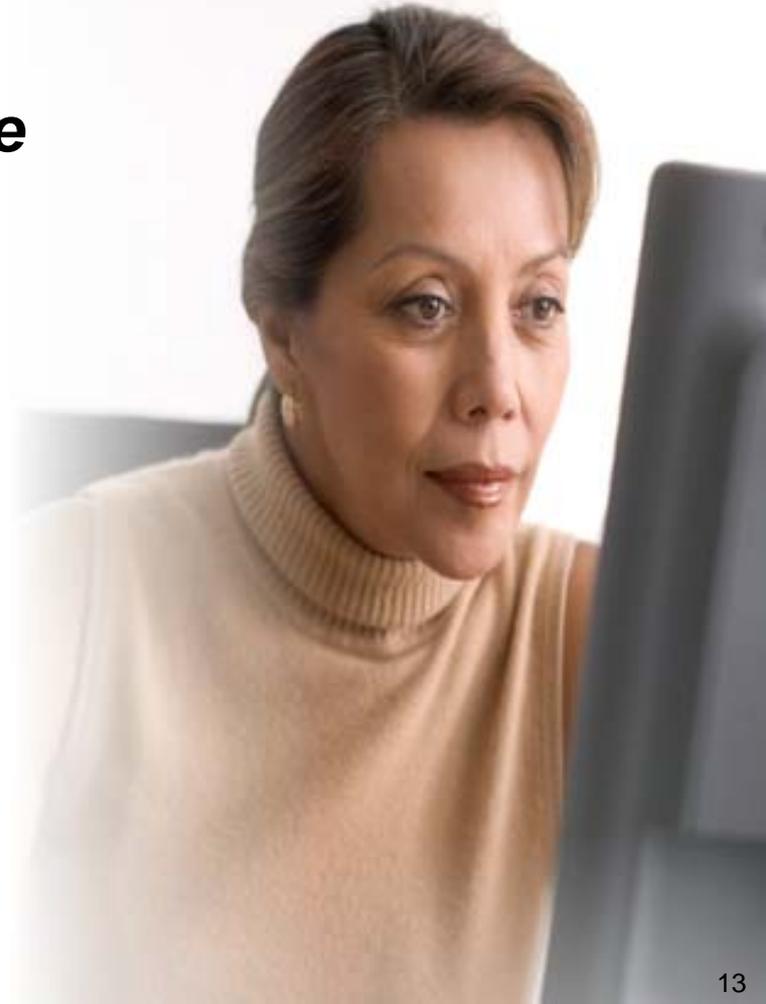


## *Today's Enterprise Focus*

# **You Get One Chance to Make a First Impression ...Proceed Strategically!**

### *Facilities, infrastructure and staff needed to be up to the challenge*

- Bring target centers up to Tier 3
- Overcome capital shortfalls
  - Homeland security grant, vendor contracts, savings
- Implement ITIL practices (results are dramatic!)
- Create a dedicated PMO
  - Using a common migration approach was critical



*Today's Enterprise Focus*

# Phase 3 – Communicate & Create Momentum

*Agency collaboration and a  
common vision was key*

- We needed buy-in from client agencies
- Pictures were worth a thousand words, but actual visits helped seal the deal
  - Time for show and tell!
  - Most had no idea **how vulnerable** they were



*Today's Enterprise Focus*

# Open Dialogue and Common Sense Go a Long Way

- Show them the money
- Buy-in has to make \$\$ sense
  - We carefully reviewed financials and presented consolidation as bottom-line friendly



**Our commitment to clients:**

- **No increase in charges for data processing**
- **Promised an eventual, if not immediate, reduction in data center costs**



## *Today's Enterprise Focus*

# Phase 4 – Consolidate!

### *Agency collaboration and a common vision was key*

- Emergency scenario prompted first consolidation
  - Child Support Data System
    - Cooling system failed, UPS batteries melted, HAZMAT team deployed
    - Flawless migration over 2 days
    - Became our standard for moving forward
- Michigan's success:
  - Closed 36 data centers to date, migrating to 3 energy-efficient centers and reducing nearly 1,000 servers
  - \$9.5 Million in costs avoided
  - Projected \$19.1 million in savings thru 2012



*Today's Enterprise Focus*

# Hindsight Lessons

*We learned a lot the hard way...*

- Engage politicians and department executives early
- Put key tools and processes in place
- Keep your migrations simple
- Communicate status to key stakeholders (often)
- Reuse any found assets
- Don't leave any trace of the old facility
- Transition staff to new location a.s.a.p.!

***The results are tangible***



## Today's Enterprise Focus

# Benefits of Consolidation

- Standardized platforms and enterprise architecture
- Enterprise security controls and tools
  - 195,580 email and spam blocked daily
- Improved disaster recovery
- Ability to leverage data throughout the enterprise
- Development of enterprise solutions

*Allows us to be more agile and responsive in our effort to transform government services.*



*Through an **enterprise approach**, we are now delivering better government services*



*Today's Enterprise Focus:*

# Michigan's Rated Services

A uniform and standardized **process** for developing new service rates

- Service catalog
- 3 year financial analysis
- 3 year projected usage summary
- Financial impact of proposed service on agency

**Establishing Rates – Anchor Tenant Approach**

- Rates formed around anchor tenant(s) service offering
  - Project anchor tenant usage / funding over 3 years
  - Fully cost a solution
- Rates are reduced as more clients adopt the service



*Today's Enterprise Focus:*

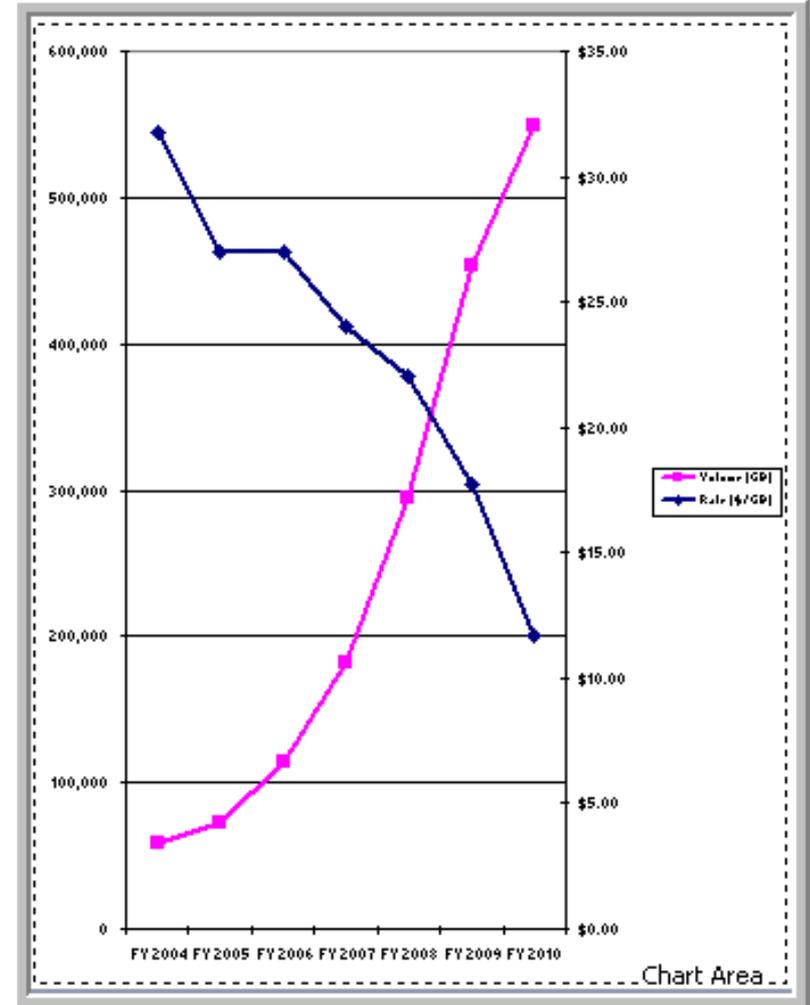
# Funding Technology

With consolidation, Michigan's funding strategy entered a new era of efficiency, realizing a **\$100 Million** reduction in IT spend.

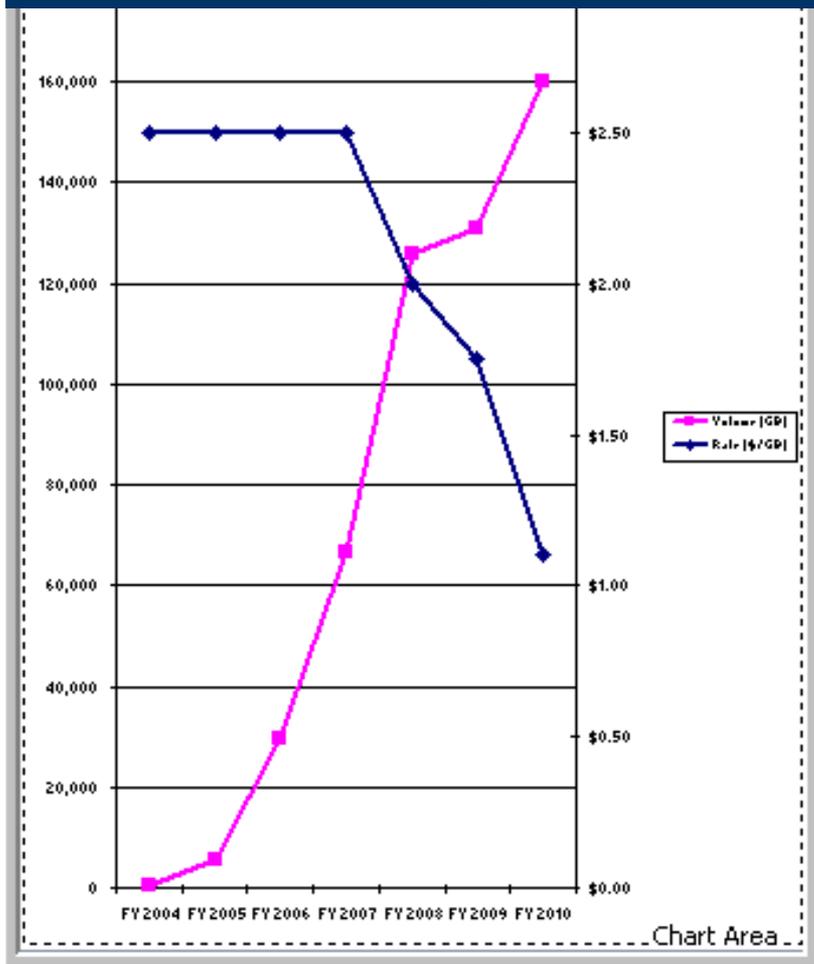
Our **rated services** record for storage tells the story.



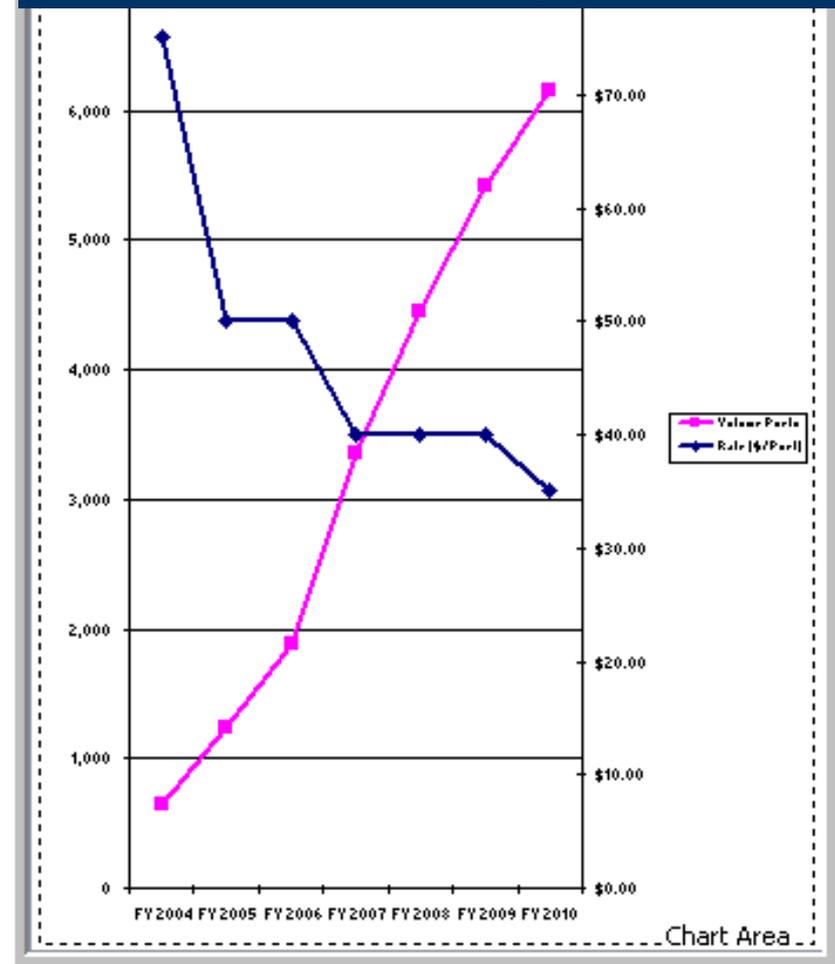
***Other rates have also fallen as usage goes up...***



## Backup Usage Rates



## Server Hosting Rates



***A word to the wise:  
Success hinges on **compliance**....***

*Today's Enterprise Focus: Rated Services*

# Advice: Get Ahead of the Curve with the **Feds**

Michigan worked early in its consolidation (2003) to give the feds a heads up on its funding approach.

We provided...

- An overview of our IT consolidation
- Anticipated reporting changes
- Rate development strategy
- Cost recovery structures (invoicing)

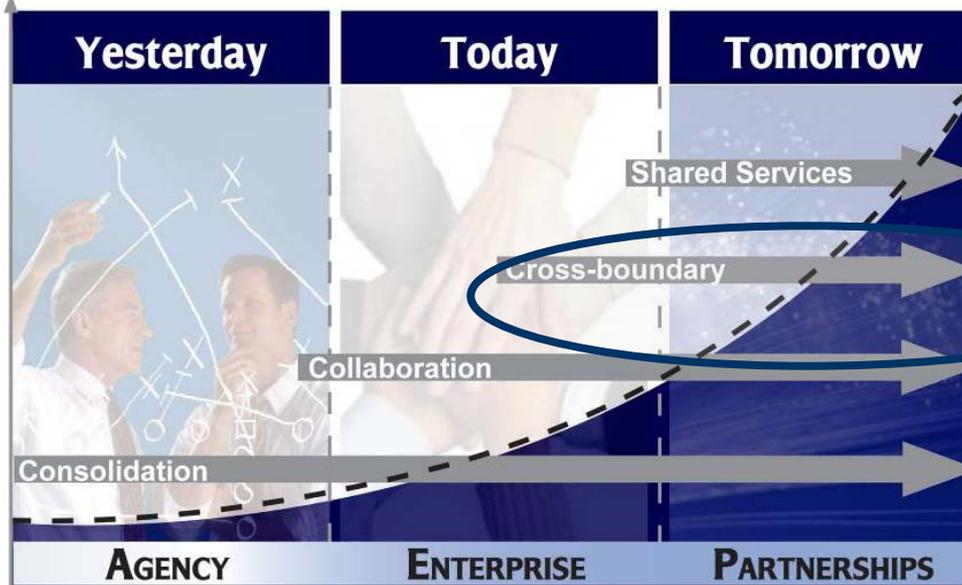
This strategy paid off.



From FY 2003 to FY 2009, Michigan billed \$3.7 Billion of IT services with a federal disallowance of **.015%**

Tomorrow's Focus:

# Government Transformation



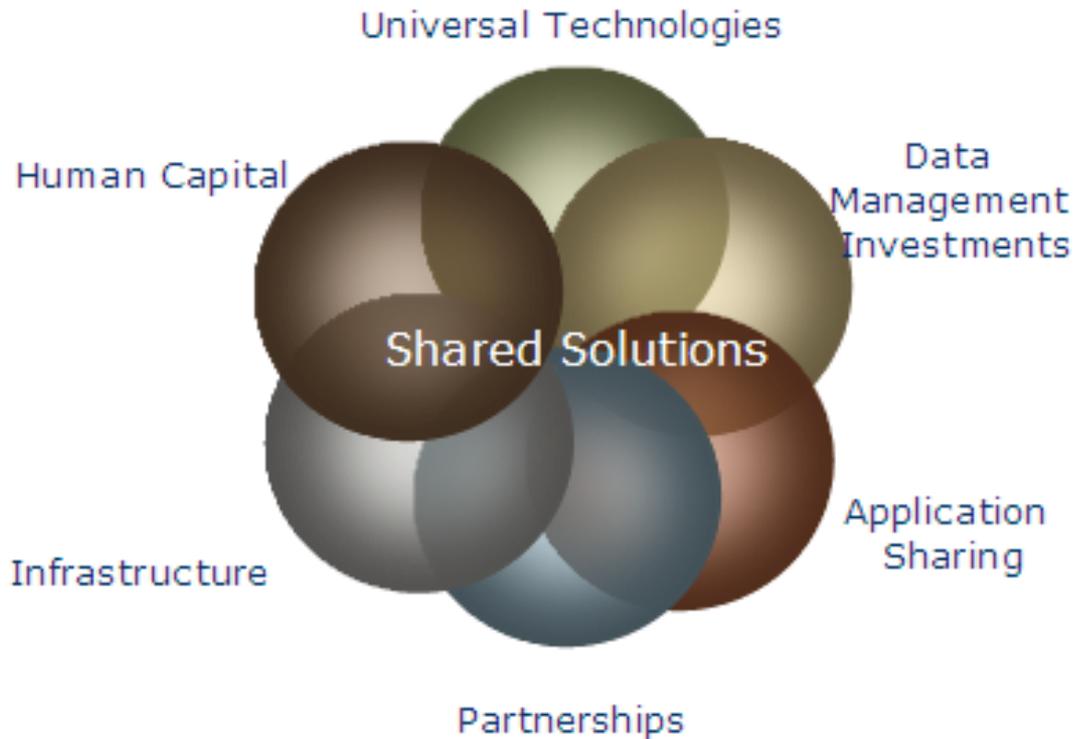
One opportunity is **shared solutions...**



*Tomorrow's Focus:*

# Partnerships and shared solutions

- Networks
- Email
- GIS / Imagery
- Business intelligence
- Applications
- Data center



***The future is all about employing IT service-oriented business models***

*Tomorrow's Focus:*

# Great Lakes Information & Technology Center

The demand for energy, technology and computer room floor space are **outpacing** Michigan's current hosting center capabilities.

- Michigan is pursuing a public-private partnership to replace two hosting centers with a **purpose-built center** that will:
  - Leverage critical services **across government entities**
  - Improve efficiency
  - Maximize energy utilization
  - Deliver economic development; support job creation
  - Promote better government and collaboration.
- **Request for Information** (RFI) process underway
  - 60 responses; 15 firms selected for in-depth oral discussions



*Tomorrow's Focus:*

# Cloud Computing

Virtualization of our servers along with the consolidation of 36 data centers to 3 primary hosting facilities have provided us with an **operating model** that enables Michigan's next steps in cloud computing.

*The question is where to go from here?*



*Tomorrow's Focus:*

# The “MiCloud” Vision

A strategic tiered approach that accounts for **primary** and **secondary** functions based on the criticality and security of the function



*Tomorrow's Focus:*

# Primary Functions = Government Cloud

For functions that are **critical** or have a **security need**, Michigan will continue to securely house them in its government cloud.

Examples: health records, taxes, criminal justice



*Tomorrow's Focus:*

# Secondary Functions = External Clouds

Key targets for external clouds are vast and provide exciting opportunities for the delivery of **non-critical** functions.

Examples: Human resources, email, messaging



*When it comes to managing external clouds,  
there are **two extremes** ...*

# One extreme is blind trust

- Adopt a commodity cloud function as-is (cloud sets the rules)
- BUT: Provider accountability is low while risks are high

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- Dictate the standards, terms and conditions, etc.
- BUT: No longer a commodity (and no longer cheap!)

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- Adopt a commodity cloud function as-is (cloud sets the rules)
- BUT: Provider accountability is low while risks are high

The best approach lies somewhere in the **middle...**

## ...Opposite extreme is all about control

- Dictate the standards, terms and conditions, etc.
- BUT: No longer a commodity (and no longer cheap!)

# The Middle Road

It's our job to find the right balance by setting some **basic parameters** for external cloud computing...

- Ownership
- Security
- Legal issues (privacy)
- Location for hosting
- SLAs

*This gives us the best of both worlds in terms of **reduced costs, accountability and agility***

# Our Strategy

Michigan's MiCloud strategy is to truly **transform** how we deliver functions by leveraging cloud computing and providing clients with:

- Rapid service request fulfillment
- Secure services
- Satisfying user experience
- Much lower costs

*A word to the wise about clouds...*

# Michigan's approach

- Develop a strategy **now** (or others will)
- Create a **tiered set of cloud offerings** that are safe, easy to use
- **Block** clouds that don't meet standards
- Know your **cloud**
- Be the leader and manage the cloud (**or the cloud will manage you**)



# Final Thought on Clouds

Financial pressures

Commoditization of services

+ Need for rapid service request fulfillment

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A new era for government

The old paradigm is already dead.

The new wave of cloud computing is here.

For CIOs and CTOs, today's focus  
is not about running the railroad.  
It's about **transforming the delivery of services.**

**Questions**

