Enterprise Consolidation Projects

2012 GTC East
September 5-6, 2012
Albany, New York

IT Transformation
High-Priority Projects

- **Converged Network Services**

- **Data Center Consolidation**

- **Enterprise Identity and Access Management**

- **Email Consolidation**

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Converged Network Services
Tara Stachelski, Project Director
Kevin Ross; Enterprise Network Architect
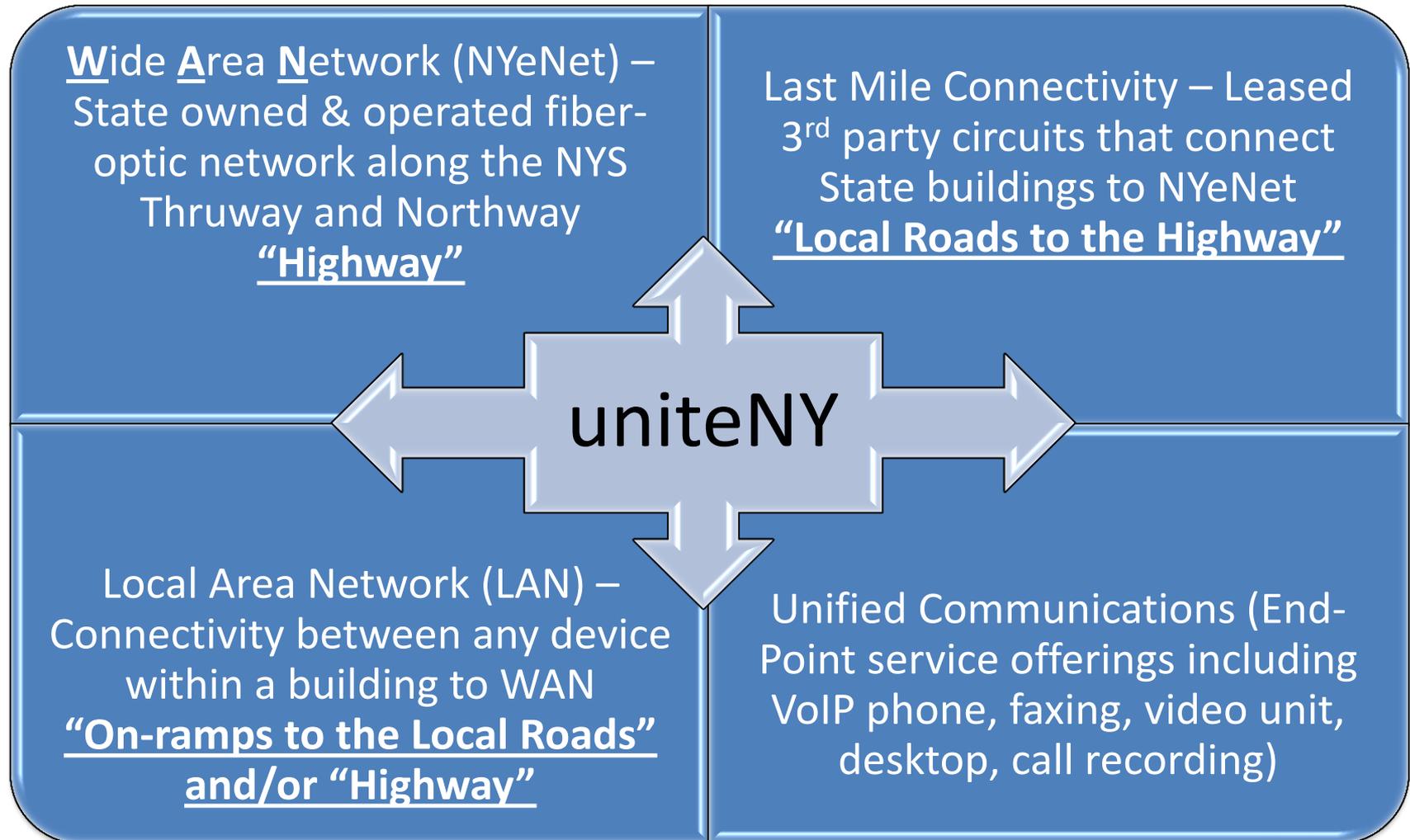
Objective / Goals

- Consolidate countless diverged networks
- Deliver data, voice, and video services to agencies using a shared service delivery model
- Allow exchange of data between agencies in a structured and secure fashion
- Replace legacy voice and data network with low cost internet-based solutions
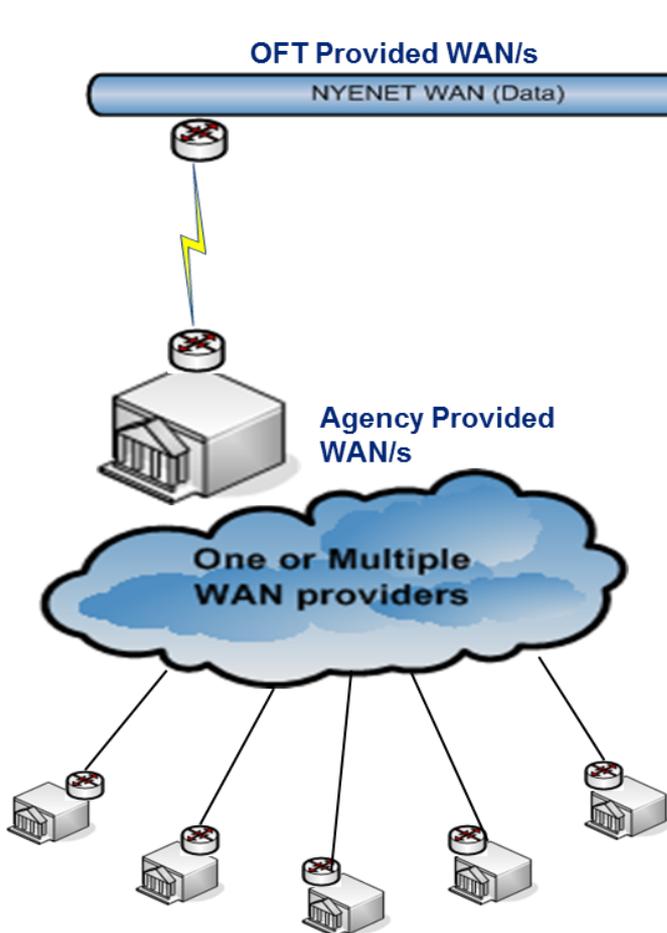
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CONVERGED NETWORK SERVICES

Wide Area Network (NYeNet) – State owned & operated fiber-optic network along the NYS Thruway and Northway **"Highway"**

Last Mile Connectivity – Leased 3rd party circuits that connect State buildings to NYeNet **"Local Roads to the Highway"**

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Local Area Network (LAN) – Connectivity between any device within a building to WAN **"On-ramps to the Local Roads" and/or "Highway"**

Unified Communications (End-Point service offerings including VoIP phone, faxing, video unit, desktop, call recording)

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CONVERGED NETWORK SERVICES

Today – NYS is Decentralized

OFT Provided WAN/s

NYENET WAN (Data)

Agency Provided WAN/s

One or Multiple WAN providers

Core Wide Area Network (WAN)

- WAN connectivity provided at the Core locations (Plaza, Large Data Centers, and sites on the Fiber Core
- Services do not address all agency locations
- Services do not address "last mile" WAN connectivity
- Services do not address customer requirements
- Classified as a shared network through OCS
- Increase costs connecting to services at remote locations

Agency Wide Area Network (WAN)

- Agencies have created their own contracts and WAN capabilities to address the limitations of the core WAN
- WAN solutions vary in service level and capability
- Multiple vendors and solutions
- Little or no volume discount pricing based on statewide service agreements

Higher Operational Costs – The network encompasses 3000+ sites, 125,000+ phones, 500+ phone systems, and 150,000 active ports.

Security Risk – At least 50% of routers and 30% of switches are running software that is no longer vendor supported.

Barriers to Statewide Mobility and Collaboration – The current configuration of the State's network infrastructure physically separates data traffic by agencies and groups within agencies.

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CONVERGED NETWORK SERVICES
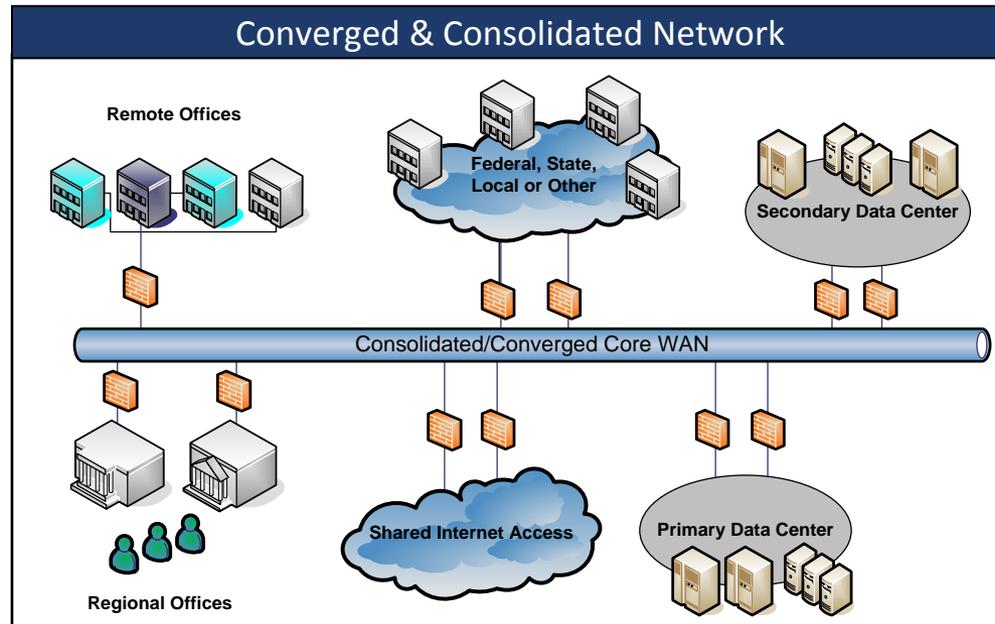
The Future – A Converged Network

Migrating to this service delivery model will reduce costs, simplify complex network operations, and provide business enabling technologies across agencies.

Standardized service delivery model meeting cross-agency requirements

Seamless network connectivity for all agencies, increasing interoperability

Converged voice, video, and data services on single network infrastructure, reducing cost of transport services

Consolidated ingress/egress access points for client and business partner connections, reducing cost and enhancing security

Converged & Consolidated Network

Remote Offices

Federal, State, Local or Other

Secondary Data Center

Consolidated/Converged Core WAN

Shared Internet Access

Primary Data Center

Regional Offices

High throughput, low latency seamless core WAN, delivering services for voice, video, and data

Centrally managed shared service organization, providing consistent business enabling solutions
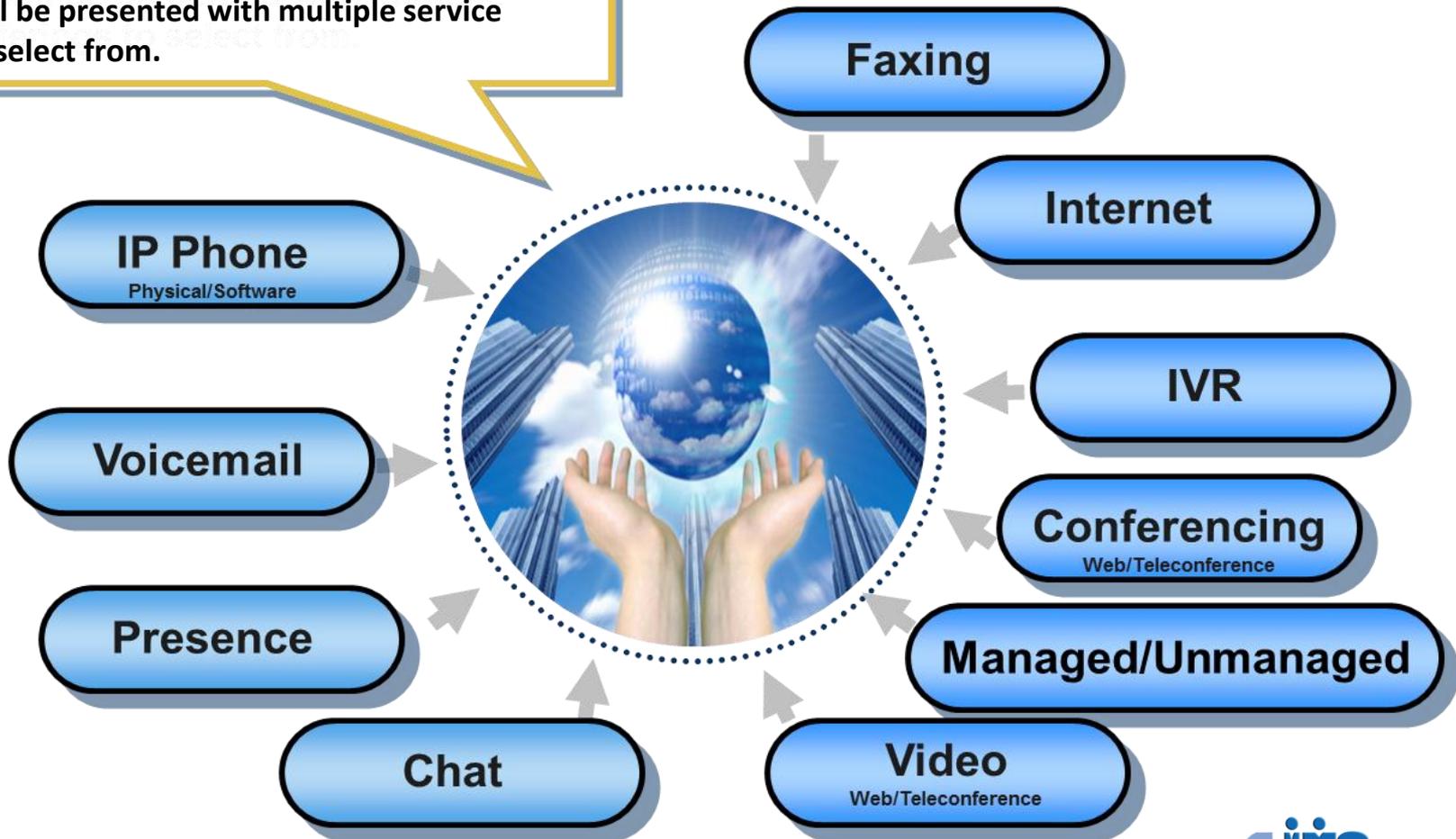
Standardized set of:
- Processes
- Tools
- Network protocols
- Hardware Standards

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CONVERGED NETWORK SERVICES

Multitude of Services

Agencies will be presented with multiple service offerings to select from.

Faxing

Internet

IVR

Conferencing
Web/Teleconference

Managed/Unmanaged

Video
Web/Teleconference

Chat

Presence

Voicemail

IP Phone
Physical/Software

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Flow to Statewide Service Offerings

Site Survey	**Extensive on-site survey of LAN/WAN, firewall and closet configurations.** (2300+ Sites)
Review	**Core Team will review results, and determine migration and implementation wave.**
Install	**Migration of surveyed site onto the new Statewide Services.**

To ensure a smooth transition to the Statewide services offerings, each site will undergo a repeatable methodology to ensure the site is ready for migration. This will identify potential issues within the site and allow the Core Team to make recommendations for the site's migration path.

Site Survey → Review → Install → Site Survey

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CONVERGED NETWORK SERVICES
Service Provider Approach

Design allows for multi-tier approach for increased security and functionality while following a service provider methodology.

Core Team

Create Service Building Blocks
Install Telephony Model (Enterprise Features)
(Cross Cluster Sign on)
Design Feature Packages & Setup Infrastructure

Set Inventory Levels
Add Divisions

Assign Numbering Block
Assign Resources to Locations

Operations

Manage Numbering Plan
Manage & Register Phones
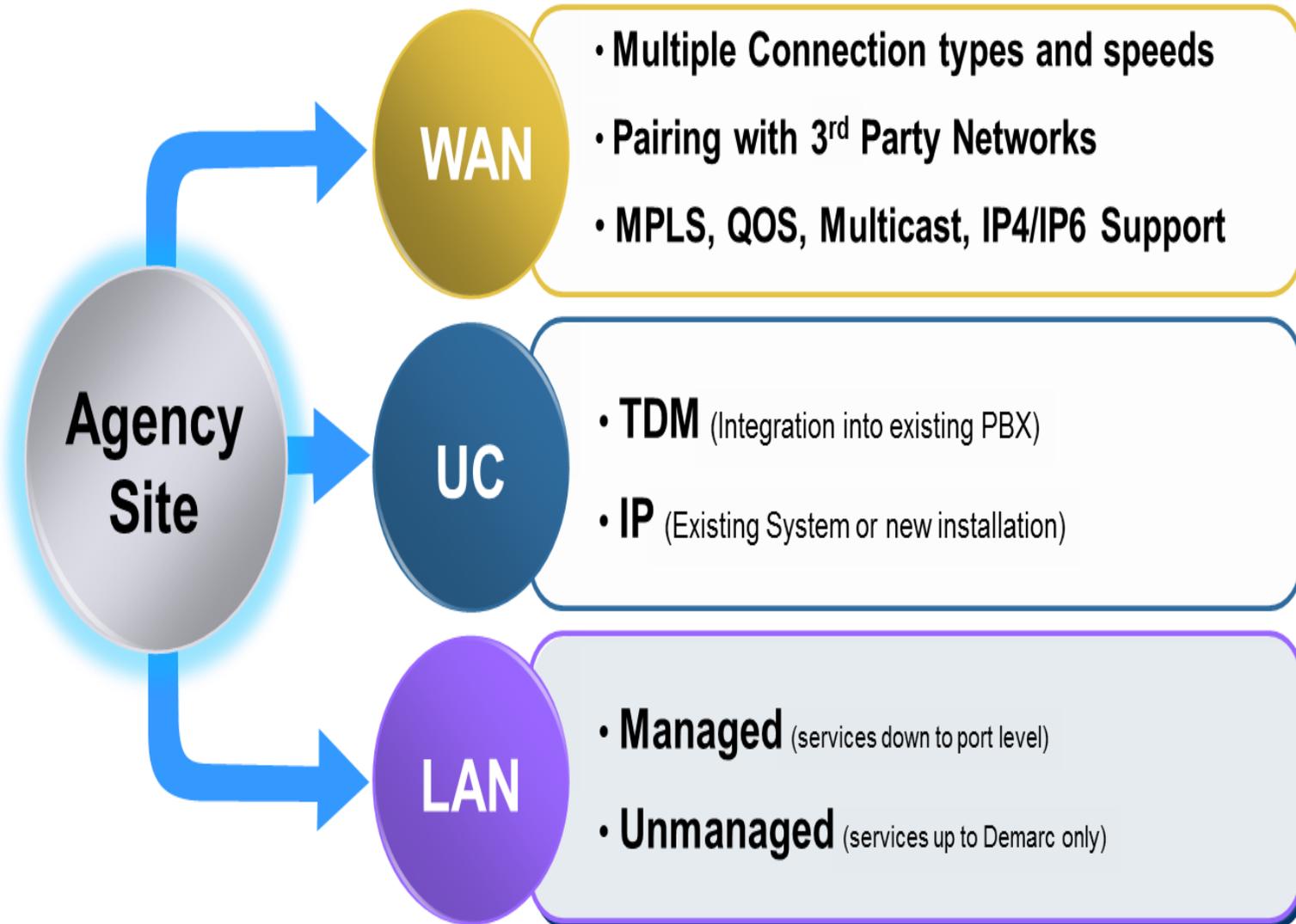Manage End Users & Mobility
Admin Group Line Features

Manage Phone Features
Manage Speed Dials
Set Single Number Reach
Change Presence Monitoring
View & Manage Directories

SES

Division

Agency

Location

End-User
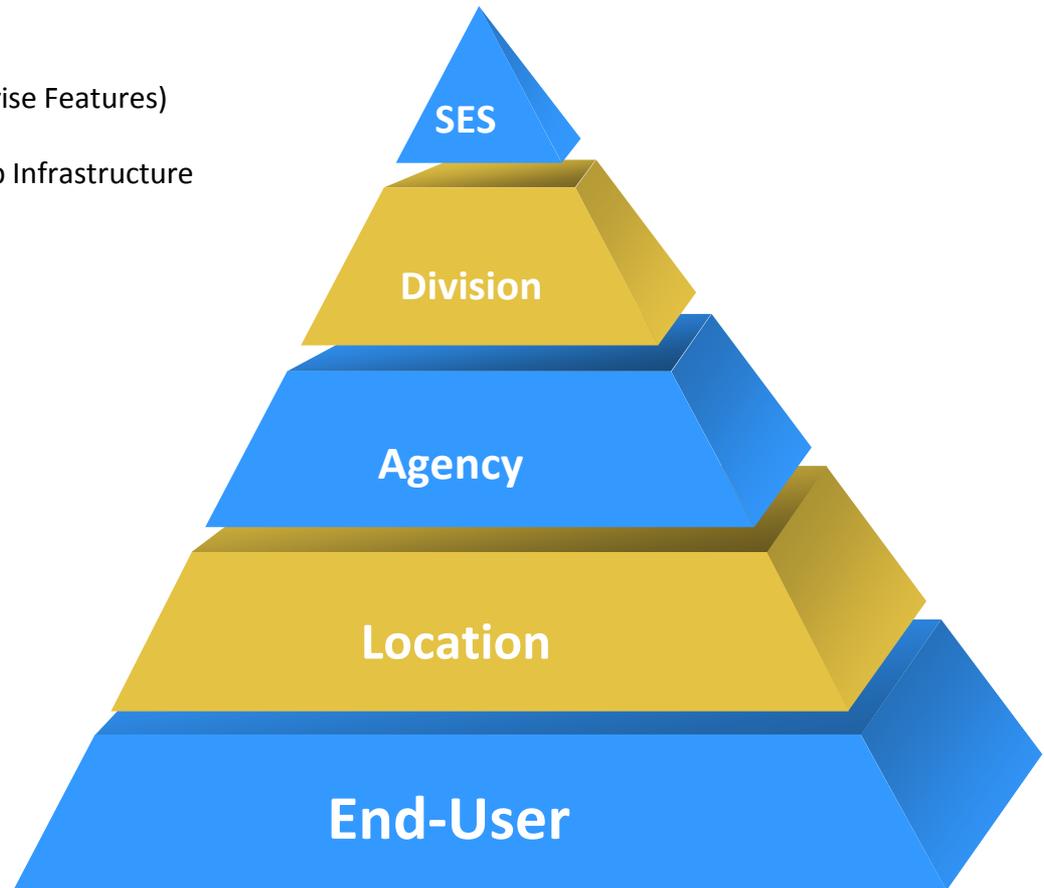
CONVERGED NETWORK SERVICES

Multiple Options - One Size Does Not Fit All

Agencies will have multiple options for interconnectivity to the SES

Agency Site

WAN
- Multiple Connection types and speeds
- Pairing with 3rd Party Networks
- MPLS, QOS, Multicast, IP4/IP6 Support

UC
- TDM (Integration into existing PBX)
- IP (Existing System or new installation)

LAN
- Managed (services down to port level)
- Unmanaged (services up to Demarc only)

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CONVERGED NETWORK SERVICES

Services Will Also Include

One Portal — 1 — Users will experience one portal for their needs, instead of separate portals for different tasks.

Monitoring — 2 — End to End Monitoring and tools to isolate and troubleshoot possible issues on the system.

911 — 3 — Enhanced 911 Support.

Self Service — 4 — Self Service (Change Display Name / Reset Password / Speed Dials / Reset Voice Mail Passwords / Online Help Guides).
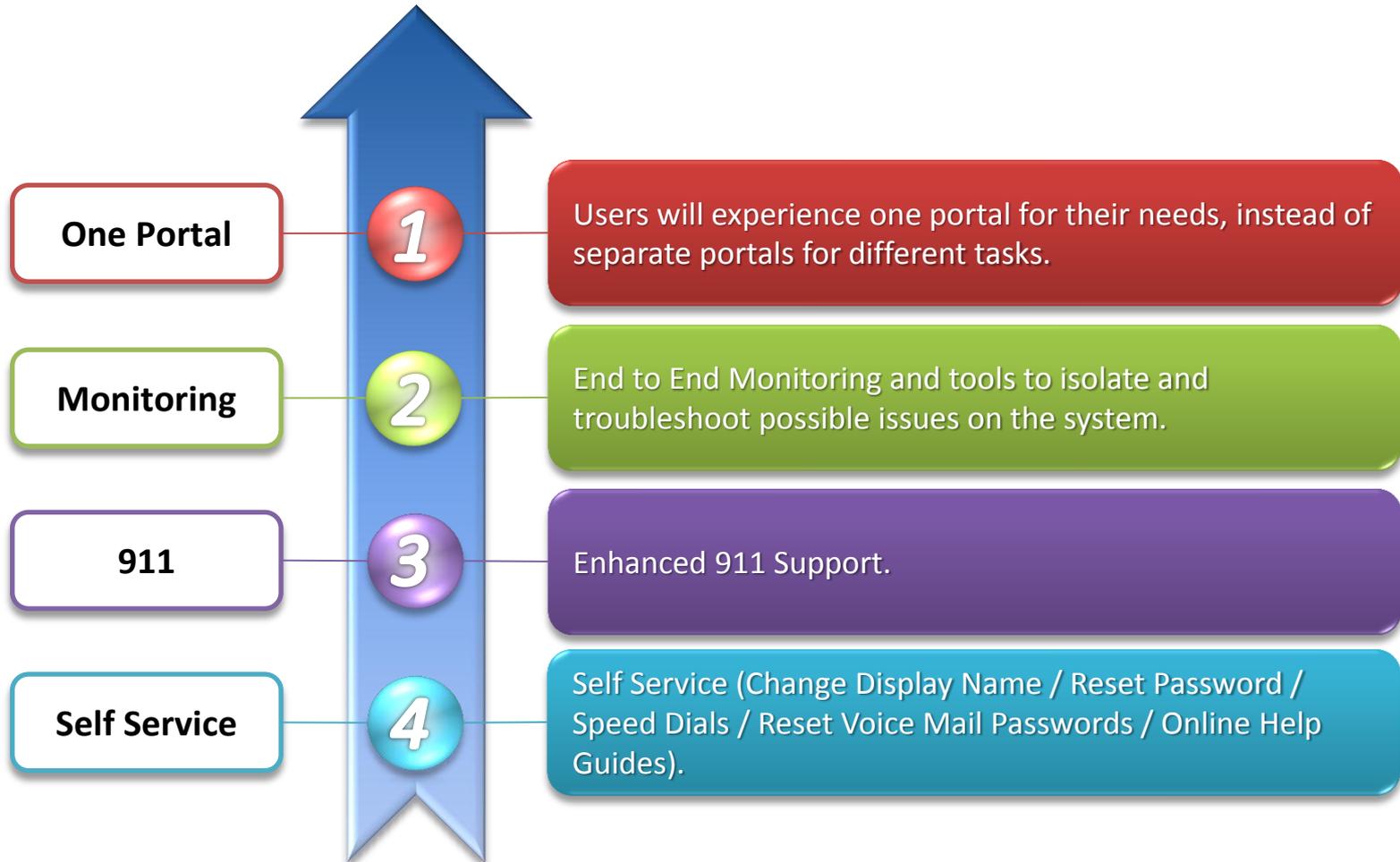
Data Center Consolidation
Gary Kuchark; Project Director
TBD; Data Center Architect

Objective / Goals

- Consolidate 11,000+ servers in 45 raised floor data centers to public or private cloud

- Provide Disaster Recovery capabilities

- Improve reliable infrastructure service at a market-driven competitive cost

DATA CENTER CONSOLIDATION
How Did We Get Here?

- Deloitte Study From Last Year

- What's a Data Center and How Many are There?

- Status of Current Data Centers

- How Does This Save Us Money?

DATA CENTER CONSOLIDATION
Where Are We?

- Identified 45 Raised Floor Data Centers (and well over 1,100 server rooms)

- Consolidated the Board of Elections Data Center this Fiscal Year

- Negotiating a Tier 3 Data Center Space

- Reduced some Costs through "Cluster Buys"

DATA CENTER CONSOLIDATION
What's Our Strategy?

- Quick Wins at the Cluster Level

- Rationalize Wave Plan for Data Center migrations

- Develop Wave Infrastructure & Application Migration Strategy

- Migrate & Consolidate the New; close the old

- Hold "Lessons Learned" Workshop After Each Wave is Migrated

Data Center Consolidation
Strategic Initiative #1
(Quick Wins At The Cluster Level)

- Develop cluster specific strategy
- Consolidate at the cluster level
- Identify security needs of agencies before consolidation
- Virtualize/Rationalize/Consolidate at the cluster level
- Aggregate purchasing within clusters to drive discounts
- Close/Repurpose data centers once consolidated
- Hold "Lessons Learned" Workshop with DCC team for information sharing

DATA CENTER CONSOLIDATION
Strategic Initiative #2
(Rationalize Wave Plan For Migration)

- Validate Wave Plan

- Are the issues raised in study still the issues?

- What security issues need to be solved before State consolidation?

- Execute Wave migration -- Enough talking, Move It Already!

- Hold "Lessons Learned" workshop after each Wave is migrated

- Migrate & Consolidate the New; close the old

DATA CENTER CONSOLIDATION
Strategic Initiative #3
(Develop Wave Infrastructure & Application Strategy)

- Develop an infrastructure and application migration strategy for each data center.

- One size does **NOT** fit all.

- What are the interdependencies?

- Combination of "solutions" – lift & shift, buy new and migrate, V-2-V, P-2-V

- Strategy depends on the Big 3 plus 1: Time, $$$, people, plus …

- Application deadlines! Business is still going on.

- Security/auditing/reporting aspects of multi-tenant environment need to be assessed and solved before moves as well (learn from cluster consolidation).

Data Center Consolidation
Strategic Initiative #4
(Migrate – Consolidate – Close)

- OK -- Plan Done, Dates Picked … Time to Do it!
- It Takes a Village….
- Everyone, All Hands On Deck
- Once Up & Running, Time to Close the Old Data Center(s)

DATA CENTER CONSOLIDATION
Strategic Initiative #5
(Lessons Learned)

- Learn from wave migrations.
- What worked?
- What didn't work?
- What did we miss?
- What needs to be changed?
- How is reporting/chargeback handled?

ENTERPRISE IDENTITY & ACCESS MANAGEMENT
Victor Stucchi; Project Director
TBD; Enterprise Identity Architect

Objectives/Goals

- Single-sign-on capability for State employees, citizens, and vendors

- Align with the Federal Identity, Credential, and Access Management (FICAM) framework

- Implement central monitoring and governance functions

ENTERPRISE IDENTITY & ACCESS MANAGEMENT
Key Elements

- Provide customers with statewide IAM services that are standards based and support key identity and account management functions.

- Provide central self-service user interface (NY.gov ID Portal) that provides a streamlined process to register and connect with agency services.

- Enhance user experience and lower risk by reducing number of user IDs and passwords.

- Ensure timely granting of access to basic agency services and revocation of access privileges.

- Reduce risk of fraud by deploying fraud prevention/detection and strong authentication solutions.

- Reduce support costs by starting to retire legacy IAM solutions where effort is duplicated with shared service solution.

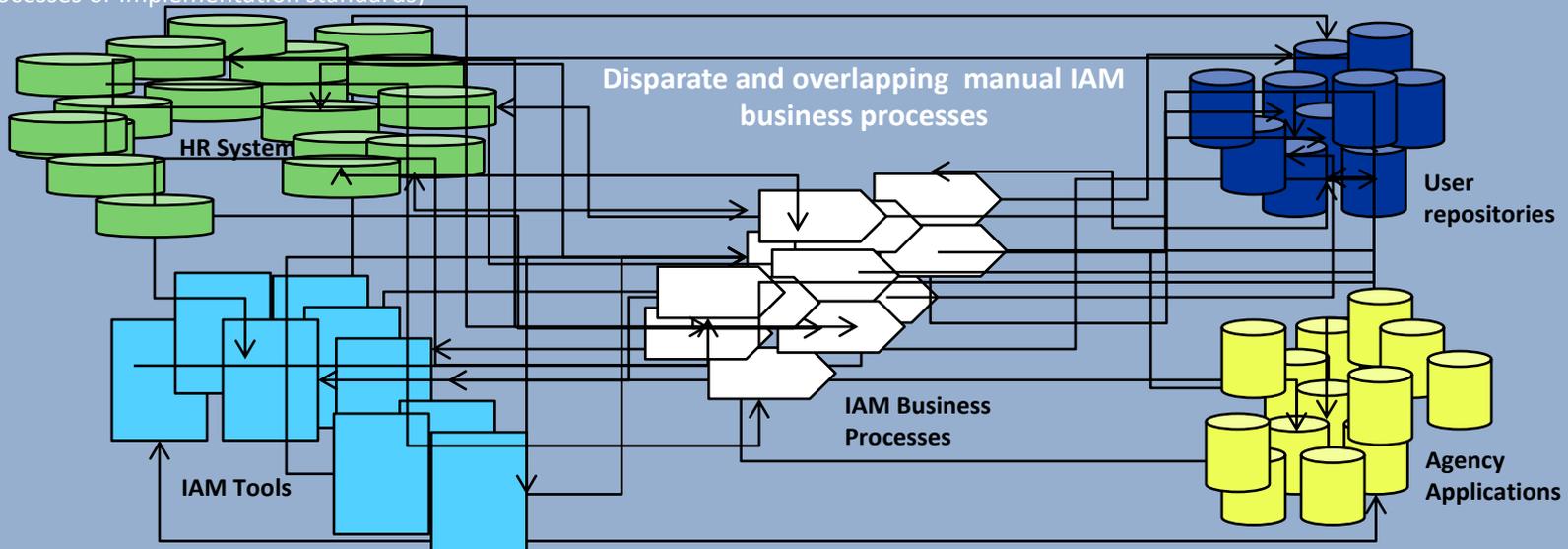# ENTERPRISE IDENTITY & ACCESS MANAGEMENT
IT Transformation Phase 2

NYS' Existing IAM Environment

Disparate sources of information for NYS employees and contractors

(Several HR technology systems exist within NYS but there are no standard processes or implementation standards)

Many user authentication repositories

(7 separate user authentication repositories are currently in use within 14 agencies)

Disparate and overlapping manual IAM business processes

HR System

User repositories

IAM Business Processes

IAM Tools

Agency Applications

Many COTS and homegrown tools providing similar functionality to manage user access

(Over 20 user provisioning tools exist across 14 agencies, including three in one agency)
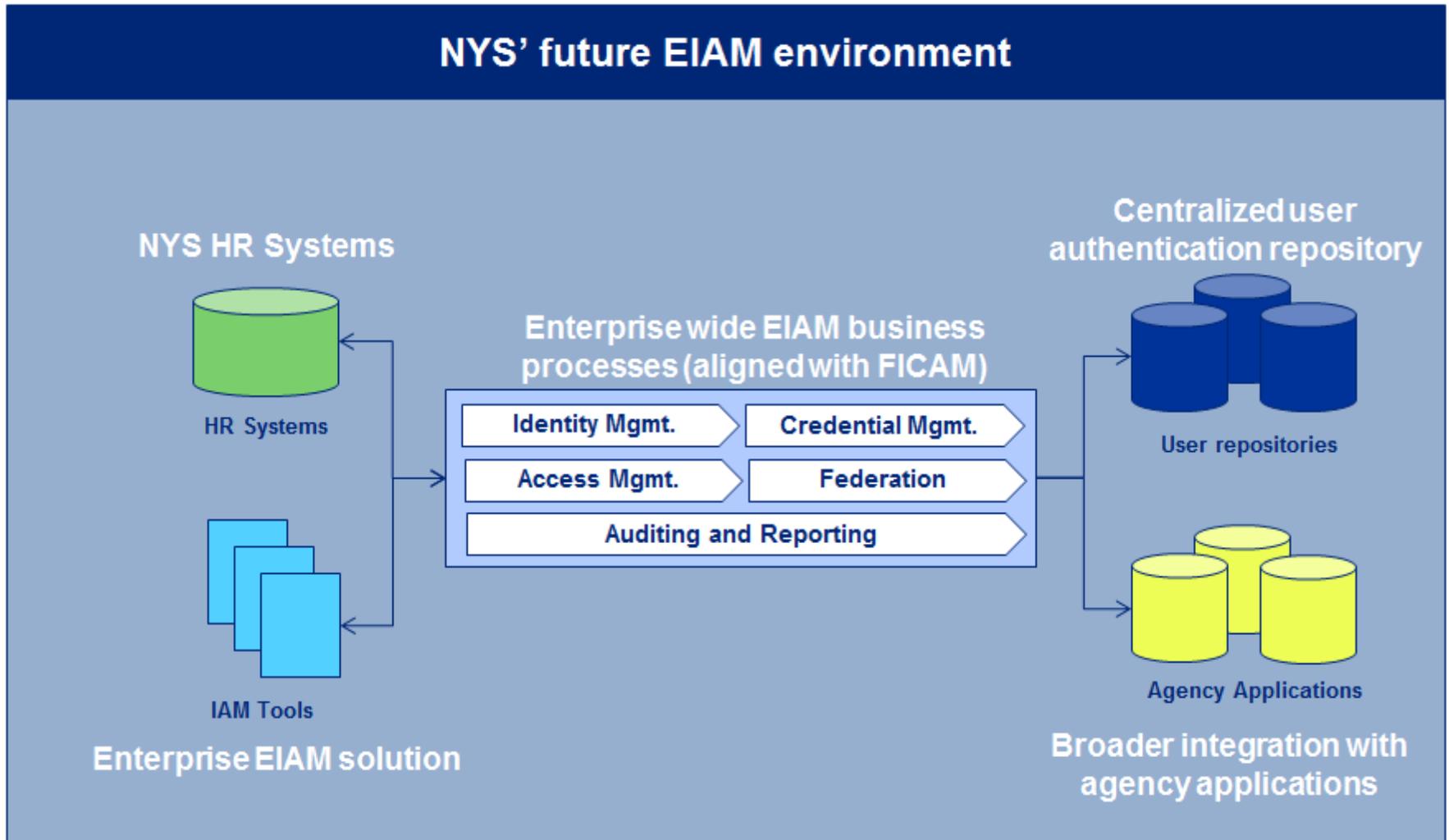
Limited integration with agency applications for user provisioning

(Only 2 agency repositories are currently integrated with CIO/OFT's homegrown provisioning tool)

ENTERPRISE IDENTITY & ACCESS MANAGEMENT

NYS' future state EIAM shared services environment is based upon standardized business processes that align with the ICAM model and national standards, and a NYS approved reference architecture.

NYS' future EIAM environment

NYS HR Systems

HR Systems

IAM Tools

Enterprise EIAM solution

Enterprise wide EIAM business processes (aligned with FICAM)

| Identity Mgmt. | Credential Mgmt. |
| Access Mgmt. | Federation |
| Auditing and Reporting |

Centralized user authentication repository

User repositories

Agency Applications

Broader integration with agency applications

ENTERPRISE IDENTITY & ACCESS MANAGEMENT
Where Are We Today?

- EIAM Request for Information

- On-Boarding of New Apps

- NYSDS Stabilization

- Outreach

ENTERPRISE IDENTITY & ACCESS MANAGEMENT
RFI Major Findings

- Based on vendor responses, we are on the right track with delivering centralized EIAM services integration for those who do not have their own robust IAM capabilities, and standards based Federation for those who do.

- The EIAM integration approach should remain application and business need focused and not infrastructure focused. Citizen and Business facing applications are the most important.

- The EIAM solution needs to include expanding NYSDS to provide robust multifactor authentication as an option, but to continue to support authorization at the application level.

- RFI responses included potentially useful identity validation services with third party authentication that could be utilized to complement existing NYS capabilities.

ENTERPRISE IDENTITY & ACCESS MANAGEMENT
On-Boarding of New Applications

Key Driver: Continue to let applications drive EIAM adoption.

- Deliver continuous on-boarding for agencies that pose immediate IAM needs.

- These early adopters, or "Champions", will lead the way for others to follow
  - OGS – Business Services Center
  - DEC – eBusiness
  - DOL – Unemployment Insurance
  - DOB - Statewide Financial System

- Applications which have met "quick win" criteria will be integrated into the existing NYSDS as soon as possible, and later migrated to the full EIAM solution once it is fully developed.

- All migrations will be executed as sub-projects within the larger scope of the EIAM Transformation project.

ENTERPRISE IDENTITY & ACCESS MANAGEMENT
NYSDS Stabilization

Key Driver: Strengthen the existing NYSDS solution through short-term strategic improvements, to ensure the operations and infrastructure can accommodate future enhancements and meet the needs of current and future EIAM customers. This includes but is not limited to:

- Analyzing and remediating current NYSDS issues and establishing sound policies and procedures to mitigate and diminish risks

- Establishing and documenting EIAM Governance and Operating Standards to provide oversight and establish support models

- Further developing and vetting of the NYS Trust model

ENTERPRISE IDENTITY & ACCESS MANAGEMENT
EIAM Outreach

Key Driver: Need to plan for the integration and migration, at an early stage, of those applications that are under development but not yet deployed so that the implementation of the EIAM shared service is seamless. This includes:

- Division of the Budget (e-Licensing)

- NYS Department of Health (Multiple opportunities)

- Establish communications with stakeholders; Cluster CIO's, ISO's, EIAM workgroup, EIAM governance board

Outreach will assist us in developing enhanced application onboarding processes and procedures and will help to ensure Consumer–Facing applications are compatible with the EIAM solution.

EMAIL CONSOLIDATION
David Walsh; Project Director

Objectives/Goals

- Manage eMail services in a single, high-availability statewide environment

- Provide common platform for eMail, statewide user directory, calendaring, IM, collaboration tools

- Provide foundation for integration with enhanced voice, text, video, audio communications

- Provide for retention and preservation of data

- Reduce costs

EMAIL CONSOLIDATION
Vision

State employees will be able to communicate and collaborate using digital tools from any location, at any time.

Email Consolidation
Strategy Focuses On Statewide Business Objectives

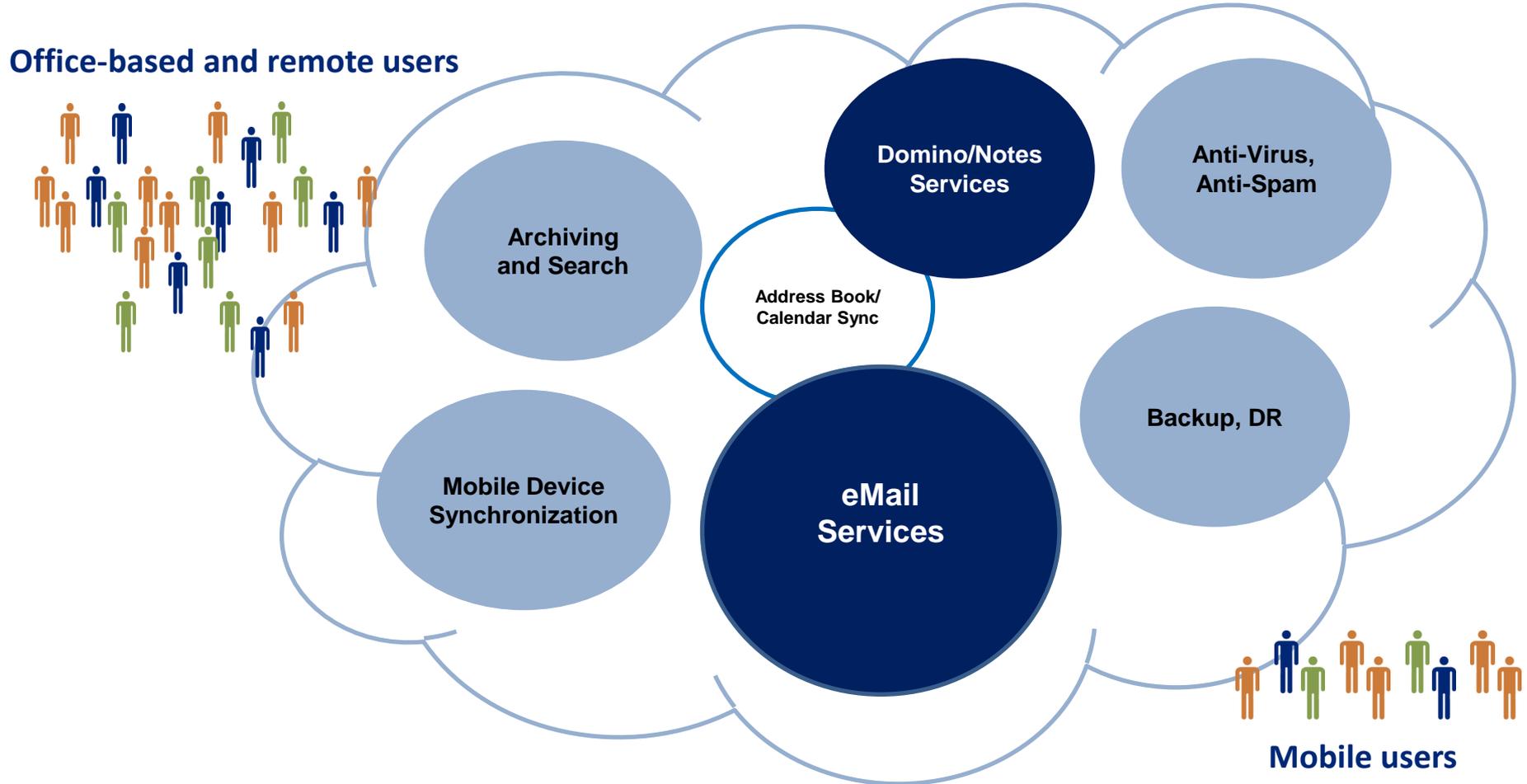| Objective	Strategy	Benefit
Ensure **mission-critical service availability** in all shared services	HA and DR solution	Achieve 99.95% availability
Manage mail services in a **single statewide environment**	Private cloud	Control, security, proximity
Continue to **support key business processes** that rely on email	Incorporate Notes/Domino email	Conserve agencies' application investment, avoid unneeded redevelopment cost
Establish an **open integration approach** for new processes	Define and publish standard interface specs	Reduce development and support costs through reusable approaches
Comply with laws and regulations for **retention and preservation** of data	Integrated archiving service	Avoid potential penalties, improve case outcomes, reduce cost for litigation support
Enable enhanced inter- and intra-agency **collaboration**	Enterprise IM, address lists, calendaring	Meet collaboration needs of newly forming clusters and cross-agency initiatives

EMAIL CONSOLIDATION
Services And Functions

ITT Email Deliverables	ITT Converged Deliverables
• Email	• Presence integration with UC
• Contacts/global address list	• Voice integration
• Global calendar/scheduling sync	• Text
• Tasks	• Video chat: point-to-point, fixed and mobile
• Instant messaging (chat)	• Audio conferencing
• Collaboration space (content libraries)	• Video conferencing
• Archiving	• Web conferencing
• eDiscovery	
• Anti-virus / anti-spam / anti-malware	
• Mobile sync with services (mobile messaging)	
• Presence	

EMAIL CONSOLIDATION
Strategic Recommendation

Deploy private cloud that includes platforms for Domino users

Office-based and remote users

- Archiving and Search
- Domino/Notes Services
- Anti-Virus, Anti-Spam
- Address Book/ Calendar Sync
- Mobile Device Synchronization
- eMail Services
- Backup, DR

Mobile users

EMAIL CONSOLIDATION
Current State Email Systems

Email systems by brand as reported in the September 2011 Email surveys

Email Systems	Agencies	Mailboxes
Total Executive Branch Mailboxes	**43**	**156,306**
NYSeMail	17	72,000
Exchange	14	32,888
Groupwise	5	29,722
Lotus Notes	7	16,219
Oracle SMC *(OPWDD secure mailboxes)*		5,477

EMAIL CONSOLIDATION
Delivery Strategy

- Design and implementation of consolidated, private cloud platform that provides uniform services to all State agencies

- During interim period, migrate additional agencies to an enhanced NYSeMail

EMAIL CONSOLIDATION
Risks And Issues

- Security
- Authentication
- Network Access
- Archiving / eDiscovery / Records Retention
- Confidentiality
- Integration with Converged Network
- Integration with Enterprise Identity & Access Mgt. (EIAM)
- Payment Methodology
- Communication and User Transitions
- Dual Migrations for Some Agencies

Thank You

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