ellucian LIVE | 2017

Any App On Any Device
Powering The Digital Backpack
With The VMware Connector For Ellucian

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March 2017
SESSION 107995

ORLANDO, FL
MARCH 19–22, 2017

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Schoolcraft College Information Technology Vision

We Enable work!
Strategy:
Position technology as an enabler and revenue generator, not a barrier

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Schoolcraft College Information Technology Strategy

We do not deploy successful technology, We deploy
Successful Users!

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From 9/22/2014 Board Meeting Presentation:

Definition of Primary Client's Expectations – Students

"The Digital Native"
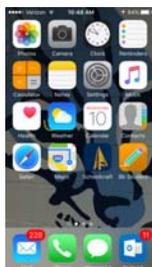
- Immersive Multimedia:
  - Smartphones, Tablets, Texting, Snap Chat, Facebook, Twitter, Instagram, Reddit, FaceTime, Video, PayPal, Virtual Escort, Campus Maps; etc.
- Instant Access from Anywhere:
  - Registration from Smartphone, WIFI Blackboard access, Portal with "always relevant content", Class notifications, Grades, Class schedules, Campus Events, Parking Availability, etc.

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From 9/22/2014 Board Meeting Presentation:

Virtual Desktop – Bad Weather Access to Labs…

…From Home

VMware® Digital Backpack™

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From 9/22/2014:

Remember where we came from…

Analog PBX

Carrier 1 Xo

BGP VSS Redundancy

Carrier 2 AT&T/Merit

Antiquated Tape Backup

Cisco VoIP Unified Communication

Cisco POE Switch

Applied Sciences   McDowell

Cisco POE Switch

IDF

Typical Schoolcraft Bldg.

Cisco Nexus Cisco Nexus

MDF

Server Racks

Cisco POE Switch
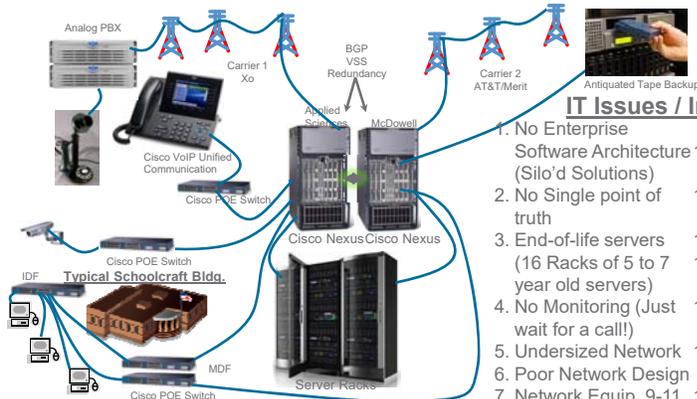
IT Issues / Initiatives

1. No Enterprise Software Architecture (Silo'd Solutions)
2. No Single point of truth
3. End-of-life servers (16 Racks of 5 to 7 year old servers)
4. No Monitoring (Just wait for a call!)
5. Undersized Network
6. Poor Network Design
7. Network Equip. 9-11 years old
8. Systems Not Upgraded in Over 5 years – Very Vulnerable
9. Colleague HW Failing
10. Sys. with no spare parts
11. EOL Nortel PBX & Phones
12. Antiquated Back-up
13. Antiquated Security CCTV
14. No Carrier Redundancy
15. Old Back-up Strategy
16. No Data Loss Protect.
17. No Enterprise Virtualization
18. No Disaster Recovery Plan

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New Network Traffic

Increased Network Traffic

This is where Schoolcraft Ended up!

New Core Network
New Distribution Network – 86 Closets

Nortel PBX

Carrier 1

Improved Redundancy & Performance Based Routing

Carrier 2

Antiquated Tape Backup

VoIP Unified Communication

POE Switch

IDF

POE Switch

Typical Schoolcraft Bldg.

CORE

Nexus 7706

MDF   Server Racks

POE = Power Over Ethernet
MDF = Main Distribution Facility
IDF= Intermediate Distribution Facility

POE Switch

Network Improvements

1. No Ent. virtualization to 95%+ virtualized
2. 10x to 100x Increase in Network Capacity
3. Decrease Building Network Congestion
4. Improve Network Redundancy
5. Identity Services Engine Eases Secure Access – Wireless network tracks devices
6. Add Intrusion Prevention System
7. Complete Monitoring Via SolarWinds™
8. Replace EOL Nortel PBX & Phones
9. Add a Modernized Back-up Strategy
10. Implement Carrier Fail-over Redundancy
11. Improved Business Continuity and Disaster Recovery
12. Add Data Loss Protection (CC#, SS#, etc.)

Network Improvements…

Then we started prototyping remote/off campus access to Virtual Desktops

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**Invitation Only: 15 Higher Ed Schools
Only 3 customer presenters**

Schoolcraft College VSI & VDI IT Infrastructure Overhaul

- **2016 VMware® CIO Symposium for Higher Education**
  - Patrick R. Turner, CIO, Schoolcraft College, Livonia, Michigan
  - 3401 Hillview Avenue, Palo Alto
  - Building A - Sequoia Room

Attendees included: Stanford, Carnegie Mellon, UC Berkley…

…Where I met Rory Clements of VMware

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What Do Schools Really Need to Know?

Best Practices
- **Do your homework** -
  - Lakeshore analysis to characterize desktop requirements across campus infrastructure – (Similar to DPACK - Dell Performance Analysis Collection Kit (DPACK)) for server analysis). How big is it?
  - Properly size the infrastructure – Storage, Memory, CPU, Network capacity, plan for growth.
  - Don't over-promise – "CAD runs great on these GPUs, Lets try a couple CGT Labs."
  - Do some testing to make sure you know what apps can be thin-app'd, App Volume'd, etc. (# of Images)
- **Find an internal champion** – Someone who can share the vision, turn detractors into advocates.
  - Many ways to do it wrong – few to do it right – ultimately can the user get their job done better…
  - Close interaction with end user is essential. VDI gets blamed for everything, like, "It's the Network!"
- **Start with a lab** – Work with the faculty on expectations and testing – stay connected.
- **Do it right** – Flash – GPU – Cores – Auto-resource management – Make solutions not excuses.
  - Be very mindful of latency between the SAN storage and CPU – monitor at capacity usage
  - Be mindful of campus network latency between data center and desktops.
  - GPU (NVIDIA Tesla M60 GPU or NVIDIA Grid K2 GPU) – and remember VDI likes all Flash arrays!
  - Be careful with thin provisioning – especially double dipping with VMware and SAN – avoid weirdness
  - Desktop warming strategy – classroom turn over and boot storms vs image explosion (N+1 Strategy)
    - SAN auto-tiering can be your enemy – pinning VDI provisioning to flash vs. auto-tiering
    - Resource Management (DRS vs other ways – need dynamic resource management not once per day)
  - End user acceptance can hinge on USB drive, DVD Player, Doc Camera, or Capture SW for microscope
 - IOPS for VDI – different than VSI – Separate the infrastructures.
  - These days look closely at vSAN, and hyper converged architecture, performance
  - Pick a good implementation vendor who has done many and has a partnership mentality
  - Training is a must.

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Applications Requiring Special / High Performance Computing

The Challenges of Virtual
Desktop Computing in Higher Ed

Finite Element Analysis

IOPS

Document Camera
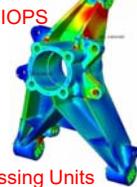
DVD Player

Projector

Computer Aided Design

Computer Graphics Technology

Mechatronics

Electron Microscope

GPUs – Graphics Processing Units

Emergency Room Operations

Special Interfaces, Drivers, etc.

Machine Interfaces

Nursing

Welding and Manufacturing

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Explosion of Platforms when heavy lifting is in the Data Center

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The Answer: VMware's Digital Backpack
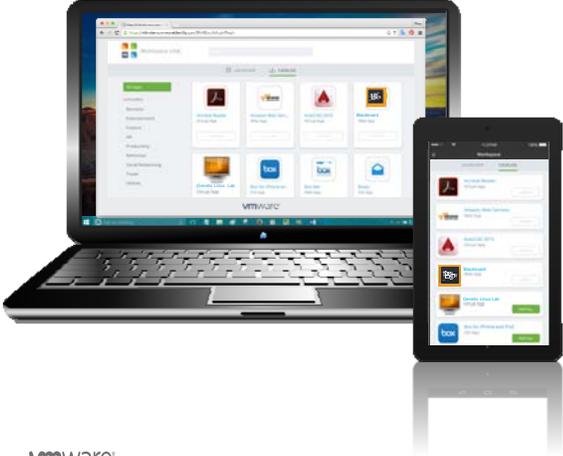
Internal web apps
(Registrar, HR)

SaaS apps
(O365, LMS, Google)

Native public mobile apps
(email client, file shares)

Internally developed
mobile apps
(Campus app, line of business apps)

Modern Windows apps

Legacy Windows apps (Line
of business, administrative)

Virtualized apps &
desktops (Computer Labs, 3D Graphics,
other)

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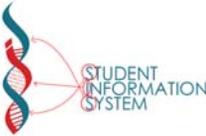
STUDENT INFORMATION SYSTEM

Typical Lab login today is User 1 - 24
We now need:
Student IDs – specific
credentials
Course IDs – Changes hourly…
The Virtual Desktop must follow
the student to wherever they
are working and be available on
their platform of choice.
Digital Backpack™
Delivers!

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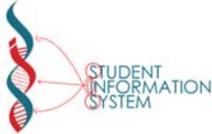
Student & Course IDs

Vmware Connector For:
Banner® by Ellucian
Colleague® by Ellucian

A Student Digital Backpack
on any device

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Value and Benefits of VMware Connector For Ellucian

HIGH-LEVEL OVERVIEW

- **Save Time:** Automate application entitlements and easily map SIS courses to AD groups and keep them in sync as student enrollment changes

- **Increase Revenue:** Deliver high performance apps and digital workspaces to remote students to increase enrollment and retain students

- **Save Money - Meter Software Use**: Easily meter software use and pay for only what is needed.

- **Innovate Faster** – Reallocate IT resources spent supporting labs on projects to help further core business initiatives

Ellucian Student ID ← SYNC → Active Directory Account

Ellucian Course ID → CREATE AND MAP → Active Directory Group

Active Directory Account ← SYNC → Active Directory Group

Active Directory Group ← ENTITLE → VMware Workspace ONE Technologies

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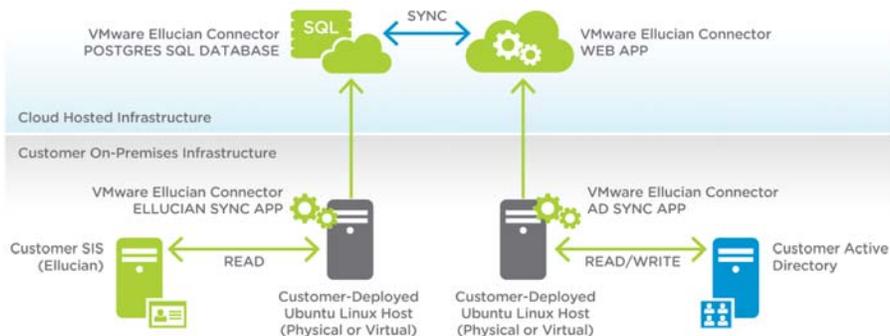
The Solution Design

How It Works
In short…IT administrators entitle resources to AD groups (offered courses) and the result is that a student's VMware Workspace ONE unified application catalog (digital backpack) stays up-to-date.

Video of Prototype

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VMware Ellucian Connector

Rory Clements - Solution Engineering
VMware End-User Computing

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Why Start With Ellucian SISs?

- Ellucian is the market leader for SIS in Higher Ed
- Ellucian is used by more than three-fifths of the nation's public and private, non-profit colleges and universities
- Global presence
- Prototype syncs the Ellucian SIS database with Active Directory

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Status Update: VMware Connector For Ellucian
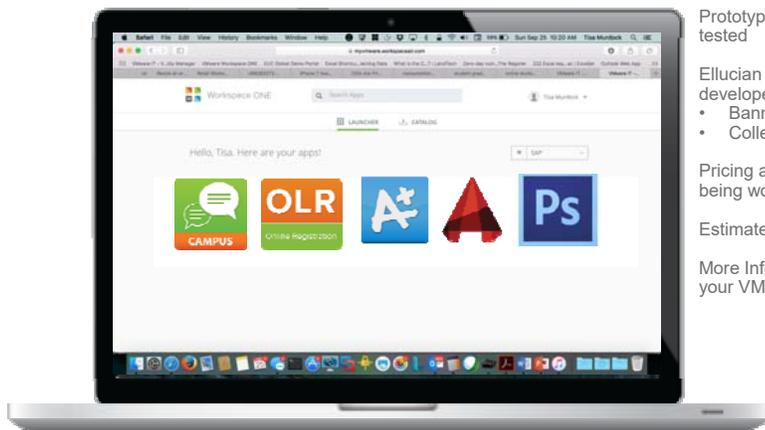
Prototype is complete and tested

Ellucian Connector is being developed
- Banner® by Ellucian
- Colleague® by Ellucian

Pricing and Bundling are being worked on

Estimate H1 2017 GA

More Info? Reach out to your VMware team.

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Transform Digital Learning And Work Environments in HE

Enable limitless learning

Simplify BYOD and 1:1

Retain students, faculty, and staff

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Streamline management

Improve productivity & performance

Reduce IT risks and costs

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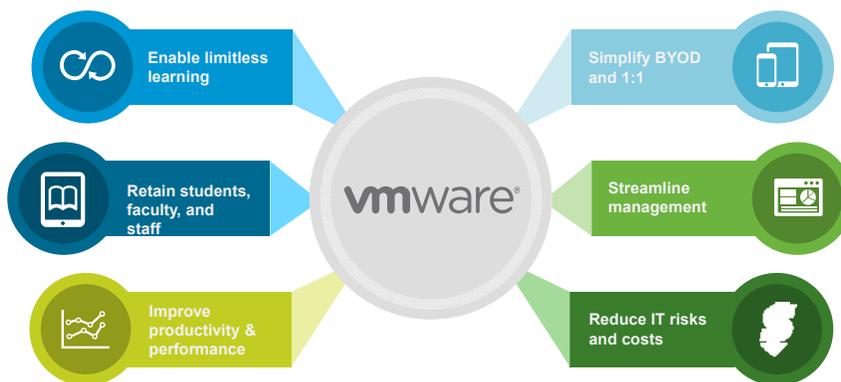
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Q&A

LEARN MORE

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Thank you

We want to hear from you— feedback survey

Access session surveys by using the survey widget on the mobile app or by logging into your session schedule builder.

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Session ID 107995

Appendix

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Modernize and mobilize learning environments

Improve The Campus Computing Experience

Enhance security and privacy

Improve efficiencies and reduce costs

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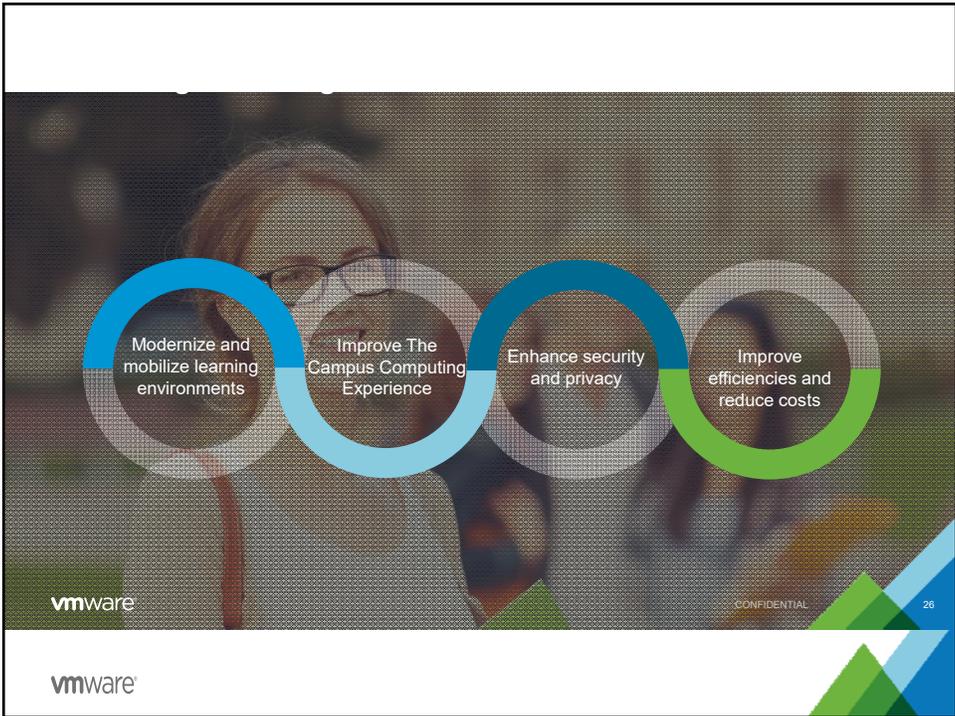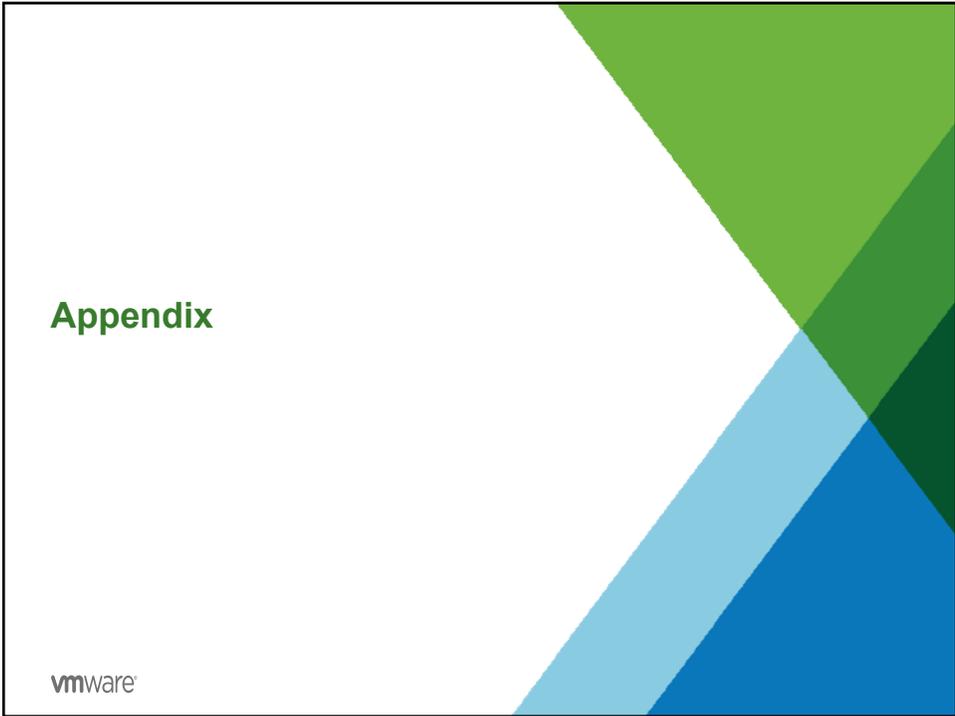
Higher Education Pain Points

Student Experience

- Inability to deliver consistent student experience across devices and locations
- Need to enable anytime, anywhere learning
- Remote access to lab software and class resources – 3D apps

Security and Compliance

- Ensuring personally identifiable information is protected and secure
- Challenged to keep network and data secure without implementing solutions that degrade end-user experiences

Mobility and BYOD

- Unable to meet increasing student, faculty, and staff demands for access to learning resources from their own devices
- Inability to deliver resources in a device-agnostic, personalized way

New & Adaptive Learning Environments

- Challenged to collect real-time data (e.g., class rosters, majors) to adapt curriculum, learning environments, and teaching methods to student and faculty needs
- Difficulty supporting new blended learning environments, flipped classroom models and makerspaces

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