A Journey Towards Digital Learning Environment

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Our Motto
To learn and to apply, for the benefit of mankind
Background

- Established in 1937
- 6 Faculties, 2 Schools and 2 Centres
- 161 Programmes
- 2,800+ Research projects
- Largest University population in Hong Kong
  - 30,000+ students
  - 6,000+ staff
  - 350,000+ Alumni
- Smallest Campus Area
  - 9.46-hectare
Digital transformation strategies
Digital Workspace - Why?

- Space Limitation – 2.6m² / user
- Mobility – city is the study space
- Accessibility – China great firewall and poor connection
- Affordability – expensive software & hardware
- Cyber attacks – protection of data
- Preparing for the Pandemic – Business Continuity
Challenges - Space Limitation

2.6m² / user
Challenges – The City is the study space

Study anywhere, anytime, with any device
Challenges – The City is the study space
Challenges – Access to applications

- Slow connection
  - Students from Mainland China
  - PolyU Hybrid Cloud
  - Slow connection

- Fast connection
  - Students from Overseas
  - PolyU Campus (Hong Kong)
  - Fast connection

Accessibility
Challenges – Affordable, Consistent Applications

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Challenges – Cyber Attack Threats

Protection
The PolyU Digital Learning Environment

- The Digital Workspace Concept
- Anytime, Anywhere, Any device
- Scalable Cloud Solution
- Information Security
  - High availability design
  - Endpoint management & protection
  - Automatic Data backup
  - User Self-recovery

Access from your own Device

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Key Principle

Students First
Design Philosophy

- Mobility
- Access
- Affordability
- High Performance
- Security - Data Protection
- Consistent User Experience
Digital Workspace Journey

- Ideation
  - Proof of Concept
- Pilot Program
  - Detailed Design
- Massive Deployment
  - Continuous Service Improvement
Scale of Deployment

- First global virtual deployment of Win10
- Largest deployment in Asia
  - students (30,000+)
  - staff (6,000+)
- High Performance Infrastructure
  - All flash storage (SSD)
  - High-end industry grade servers
  - Full campus WiFi coverage (802.11ac wave 2 standard)
  - City wide WiFi access points
- Library of virtual applications
Introductory video

https://youtu.be/xxfkppvNNy0

PolyU Digital Learning Environment
The Virtual Student Computer Center (vSCC)

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Challenges and Lesson Learnt

• Information Security and Data Privacy Issue
• Academic Freedom
• Software Licensing Control
• User Experience Design
• User Expectation Management
• New Operating Model
Information Security and Data Privacy Issue

Information Security

BYOD (Untrust)
PolyU vDesk
Applications
Data

Data Privacy

Data Request
Data Preparation & Masking
DoIT Approval
Clean Data

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Academic Freedom

Principle

学術自由 Our user always has the right to use any application in a safe environment

Facilitation & Protection

User Classification
- General (Default)
- Administrator
- Temporary
- Permanently

Self-service centre
- Applications Pool
- No administrator right required

Protection & Monitor
- Active Directory
- Microsoft System Centre Configuration Manager (Baseline protection)
Software Licensing Control

Software License Pool

Campus wide Agreement

Open Source Software

Departments Purchased License Consolidation
User Experience Design

Omni Channel

User Experience

High Performance

Unified Experience
We are not perfect & complete

We need your help to improve

Experimental Improvement

User Expectation Management
We need to transform ourselves in order to transform the University.
Current and future developments

- Virtual departmental laboratory (vLab)
- Single Sign On to all internal systems
- Support for Learning Analytics beyond the LMS
- Inter-institutional collaboration
- Integration of vSCC and online learning
- Watching new technologies
  - Blockchain
  - BOT
  - Machine Learning
Thank You