MC•OECN Membership Meeting

Technology Challenges In Education

September 30, 2011

Ohio Education Computer Network[2]

We provide efficient, effective and secure technology that enables student learning in a 21st Century economy that demands global competitiveness.

[2]*The Original Education Cloud Network*

mc·oecn

Fundamental question moving forward for all organizations…

How can they meet the *rising* technology expectations of their organizations and end-users in a time of economic uncertainty and rapid technology change?

Disruptive Technologies

A disruptive technology or disruptive innovation is an innovation that helps create a new market and value network, and eventually goes on to disrupt an existing market and value network (over a few years or decades), displacing an earlier technology there. The term is used in business and technology literature to describe innovations that improve a product or service in ways that the market does not expect, typically first by designing for a different set of consumers in the new market and later by lowering prices in the existing market.

Distruption#1: Mobile Computing

Personal computing "era" has ended

Mobile devices are now the predominant computing platform

60% of the world's population have cellular phones – that's four billion users

By the end of 2013 1 in 4 cell phone users – that's 1 billion users – are expected to own smartphones

Since its introduction in April 2010, it is estimated that Apple has sold 25m iPads

Disruption#2: Rapid Application Provisioning

PC era applications came in a cardboard box, cost hundreds or even thousands of dollars and had to be "installed" from a disk, CD or DVD

Users had to go to a computer store to buy them, or order them and wait for them to be delivered

Then they had to be installed and configured

Due to their expense, most end-users only had a handful of only the most important applications they could afford

Distruption#2: Rapid Application Provisioning

The combination of modern software development tools, open source initiatives and always available real-time distribution to a global installed base, provided mobile users with unprecedented access to millions of new applications that were free or available at greatly reduced costs. They can be installed and used within minutes of a click of a button

Distruption#3: WorldWideWeb

For many people, especially young adults, the Internet isn't a medium – but an extension of their personal identities, self concept, circle of friends, and very way of life

Personal Brands

facebook

Blogger

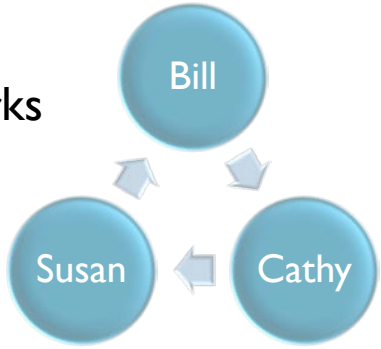
twitter

Rich Media Content

YouTube

PANDORA internet radio

Social Networks



Disruption#4: Personal Cloud Computing

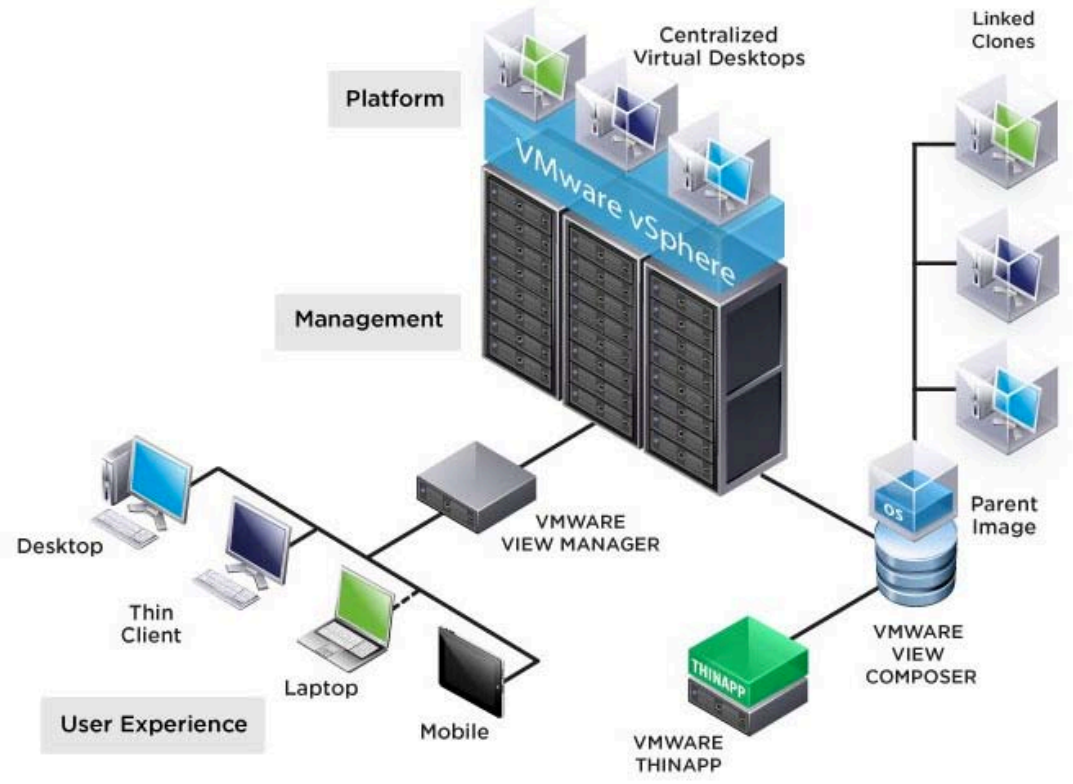
Enabled by the Internet, mobile and PC users have access to on-line tools and data-stores that provide them with access to powerful productivity applications and data storage that gives them the ability to communicate and access data anytime and anyplace they can connect

Many services "synchronize" personal information such as electronic mail address books, contact databases, calendars and other personal information across multiple devices

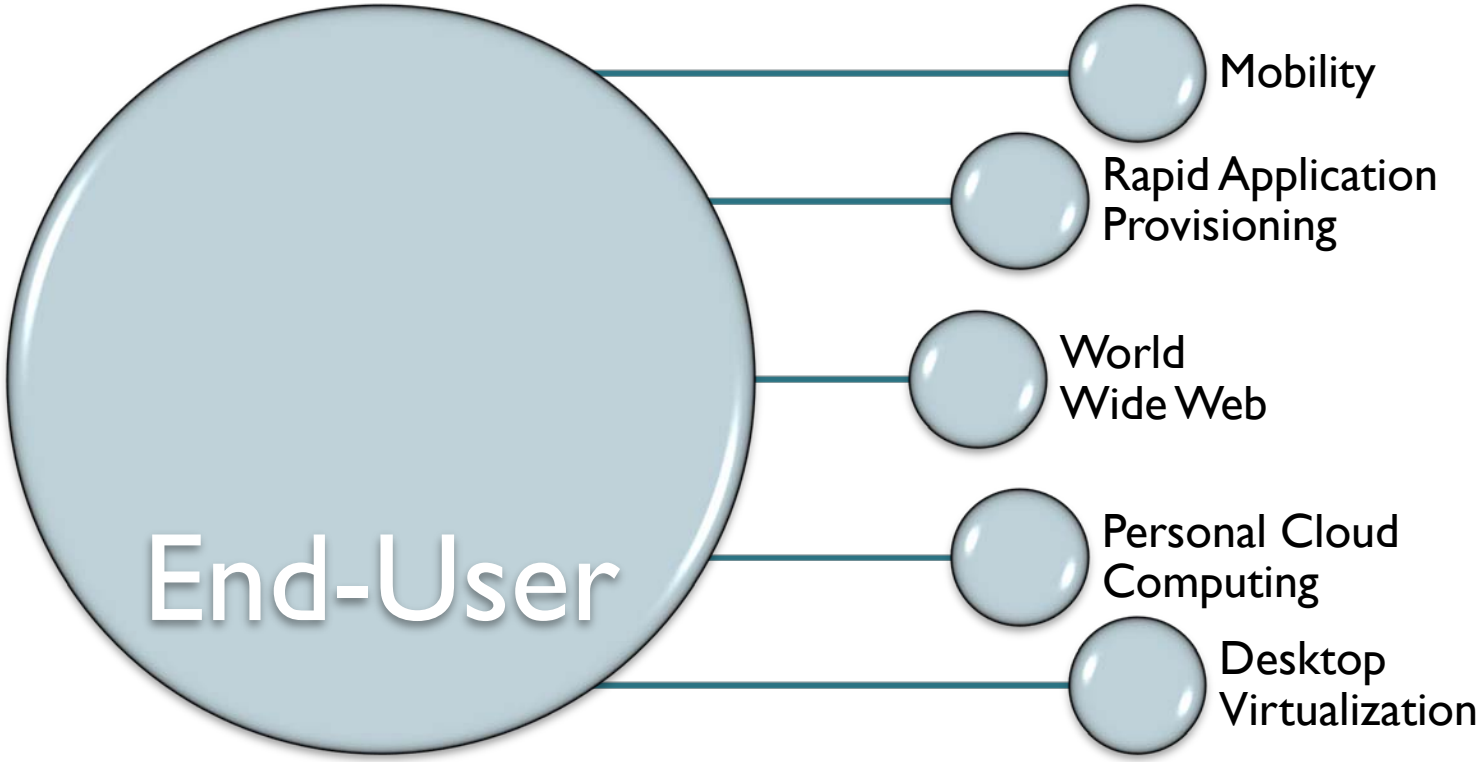
Distruption#5: Desktop Virtualization

With access to broadband networks – desktop virtualization decouples the dependency on local storage of the user's OS, apps and custom settings stored on a single personal computer.

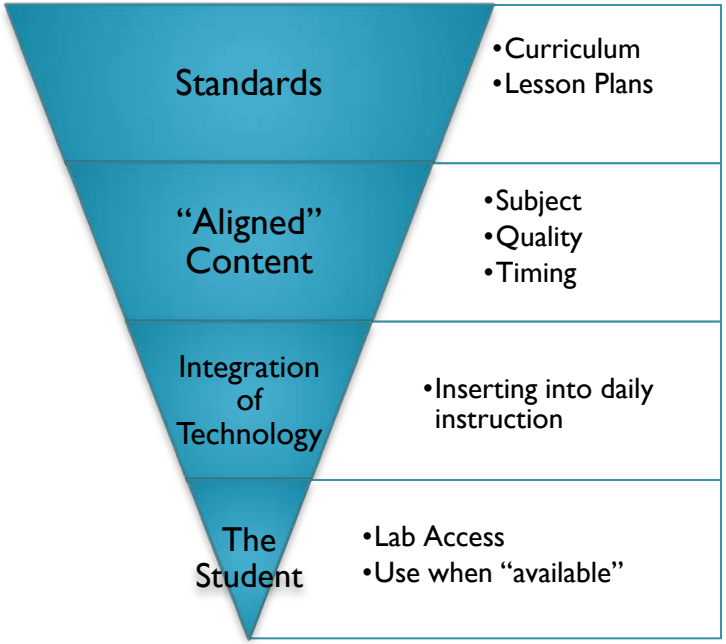
A user's customized desktop environment– their operating system, applications and personal setting follow them regardless of what device they use.

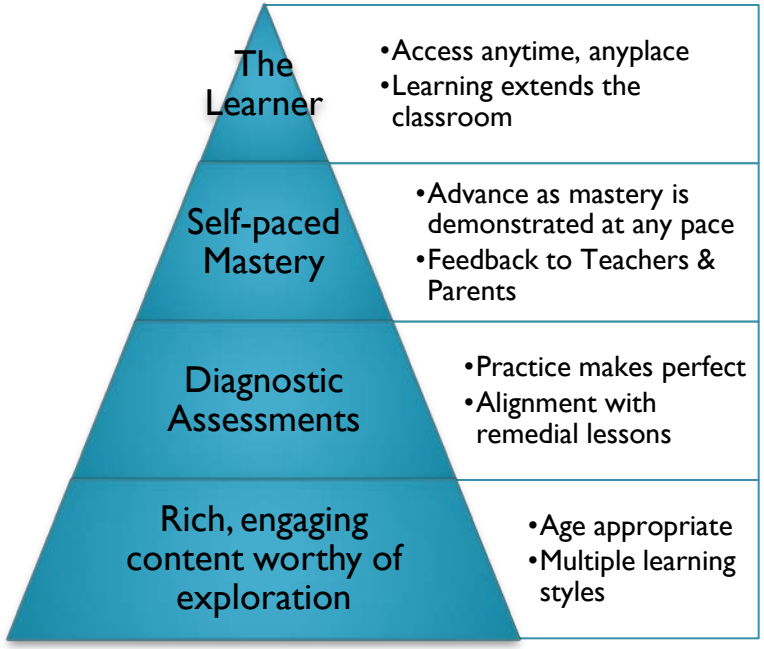


Multiple Disruptions Amplify User Expectations



The shift to student-centered technology design

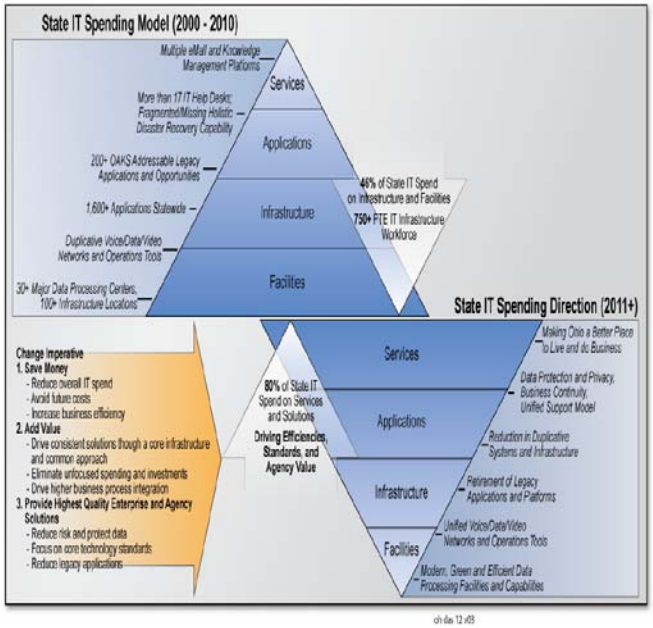




- Learner-Centric Environment is achievable
- All of the piece / parts – client technologies, broadband networking, content delivery platforms, development tools, and expertise exists
- We have to decide as a state how we will make this vision a reality

Absent access to new sources of funding, where will the capital come from?

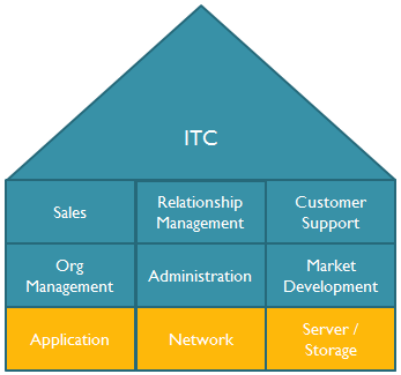
- If you look at IT as an "investment portfolio" you can loosely categorize IT investments as Infrastructure or Applications.
- After decades of investment in IT, many organizations, are over-invested in infrastructure. (80/20, 70/30, 60/40)
- Without new capital investment, cost reduction achieved through various forms of IT consolidation (shared services, centers of excellence, cloud computing, etc.) are the only strategies available to IT managers to re-balance their portfolios



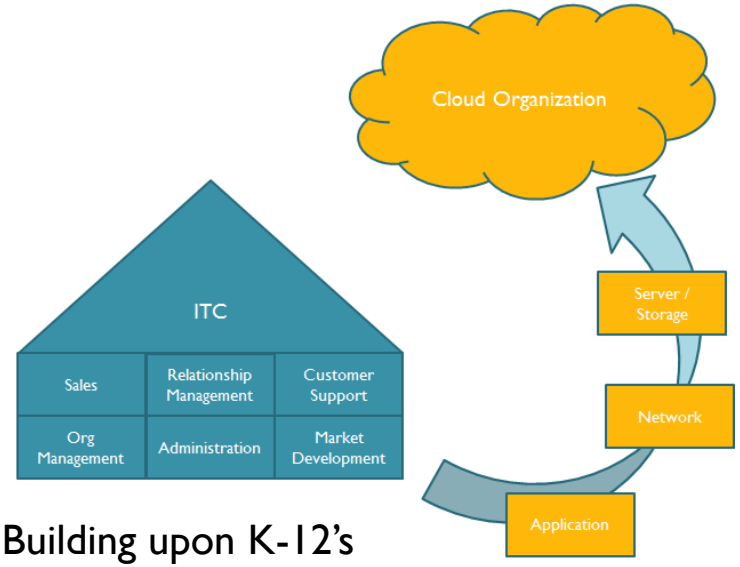
What happens if IT cannot turn this fundamental "imbalance" around?

- In under-capitalized IT environments – re-investment of efficiencies into additional efficiencies, improved customer service, and new applications is necessary for central IT to maintain the value proposition for their end-users.
- Without reinvestment, customers leave the environment, with an increase in costs and decrease in capability and greater risk to the organization.

The OECN's Goal: A Shared K-12 Private Cloud

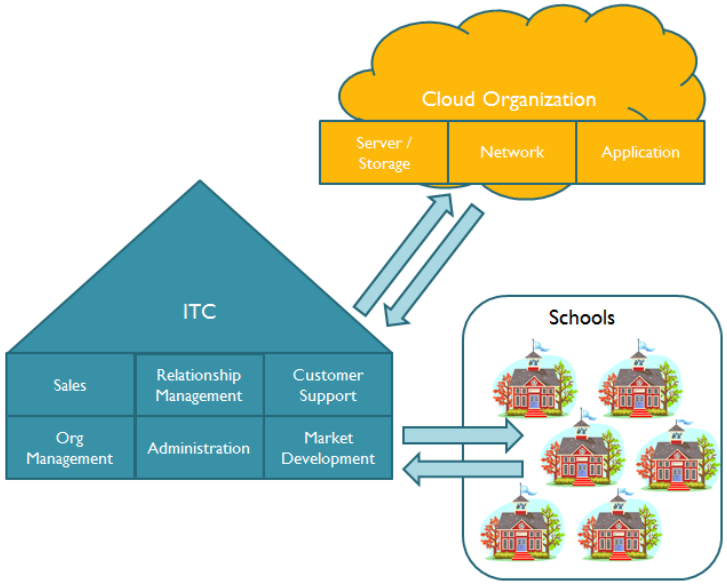


Currently, 22 organizations provide a majority of technology support to the state's public schools. Each of these organizations as well as other educational entities and some schools hosts its own infrastructure and provides access to and support for repetitive instances of the same or similar technologies.



Building upon K-12's robust network infrastructure combined with server and storage virtualization technologies, a Private K-12 Computing Cloud, will enable ITCs, regional entities and schools to share computing hardware and support resources.

A shift to the cloud will generate reduced infrastructure costs which can be reinvested in additional applications and services for administrative and instructional technology purposes



mc·oecn

Journey to the Cloud © IDC

Experience and Sophistication Payoff

Impact \ Phase	Pilot	Consolidation	Assured Computing	Private Cloud
Staff Skills	Little or no expertise	Hands on expertise; some formal training	Formal training; certification desirable	Certification required
Technology & Tools	Simple static partitions	Simple Mobility: Manual & Off-hours Matched application pairs	Portable Applications: Automated Failover CMDB Implemented	Policy based automation; Service management; Lifecycle Mgmt; Self Service Delivery
Financial Impact	No substantial financial impact	Measurable Hard Cost Savings: Consolidation Power/Real Estate	Justified TCO savings: Business Continuity	Variable costs recognized or charge back models established
IT Process & Policies	Skunk Works	Ad hoc	Partially Integrated; Partially Standardized	Fully Integrated Fully Standardized
Line of Business	Hidden	Revealed	Transparent	Engaged in Governance Process
Application Usage	Test Development	Production: Non-critical	Production: Business Critical	Production: Service Profiles & Catalogs
% of Customers	15%	55%	25%	5%
Average VM Density	4	6	10	35
Experience	9-12 months	9 months - 2 years	1.5 - 3 years	3-5 years
% Virtualized Servers	<10%	25%	50%	80%

Questions

Ohio Education Computer Network[2]

We provide efficient, effective and secure technology that enables student learning in a 21st Century economy that demands global competitiveness.

[2]The Original Education Cloud Network

orth@mcoecn.org
614-285-4465

mc·oecn