



Oman Cisco Expo 2007

29 May 2007

Welcome to the Human Network

The Ultimate Technology Forum



Transforming Education



Selim J. Eddé
Strategic Country Development Officer

Agenda

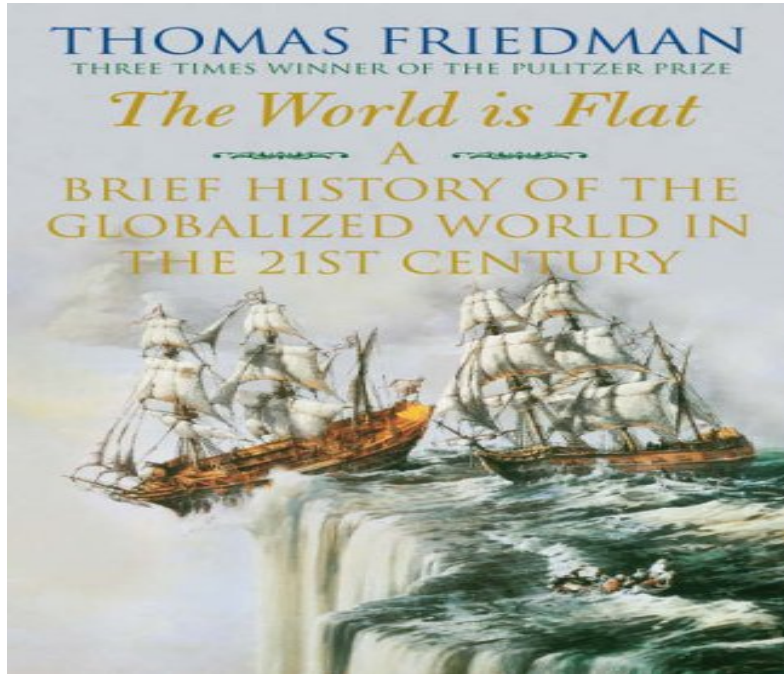
- ✓ **Cisco Connected Learning**
- ✓ **Steps to Transformation**
- ✓ **Cisco's Commitment to Connected Learning**
- ✓ **Cisco Connected Learning Solutions**
- ✓ **Case Studies**

Illiteracy Redefined

“ The illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn and relearn.”

Alvin Toffler.

The Landscape is changing



“The challenge is how to empower everyone to travel the global information highway – through access, tools, and knowledge.”

**Mohamed Muhsin,
Vice President & Chief Information Officer
World Bank**

“All agree that the single most important key to development and to poverty alleviation is education.”

— James D. Wolfensohn
President, the World Bank

- Competition is Global.
- Transformed world requires Transformed education & National Strategy that is Citizen Centric.

Just putting in computer labs
don't transform

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Economic Drivers of Transformation Globalisation

Snapshot 2050



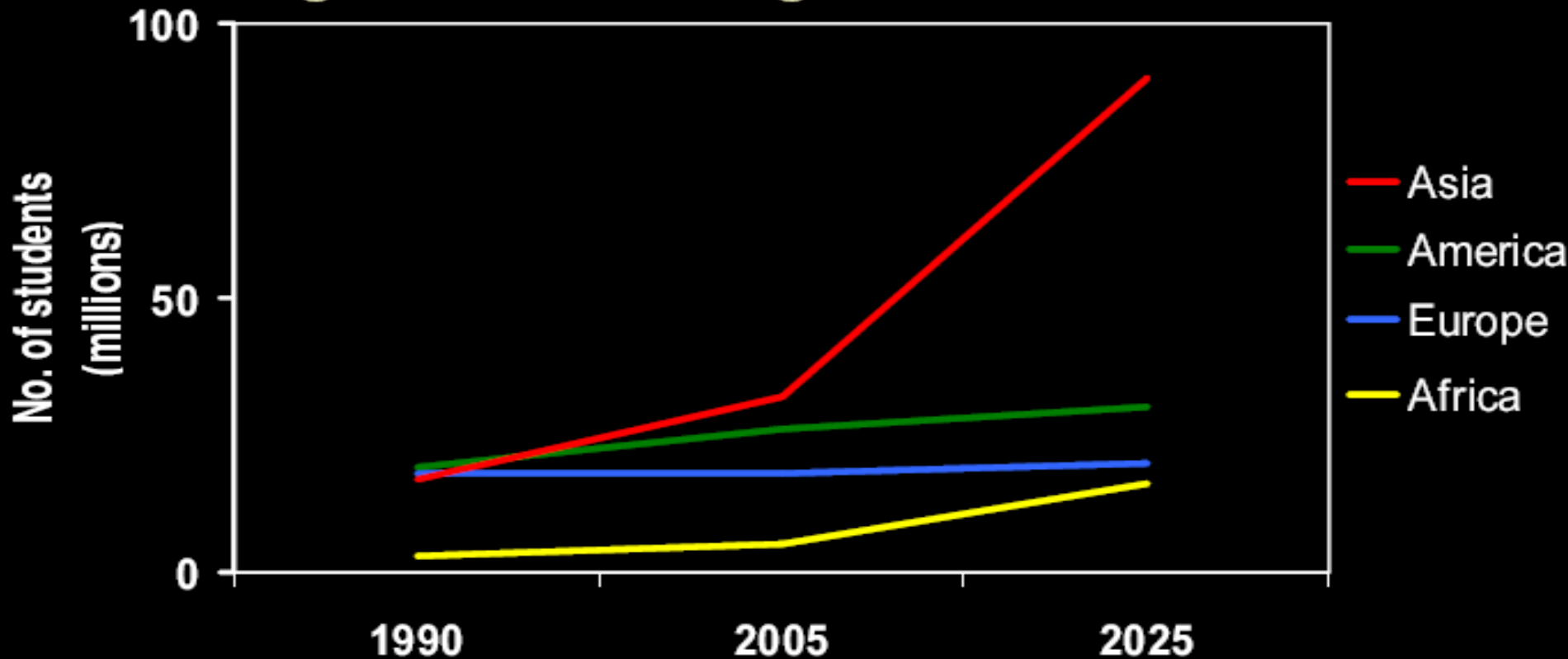
Population projections – United Nations: World Population Prospects: The 2004 Revision
GDP projections – Goldman Sachs: Global Economics Paper No: 99, 2003

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Impact on Education

Rising Demand for Higher Education in Asia



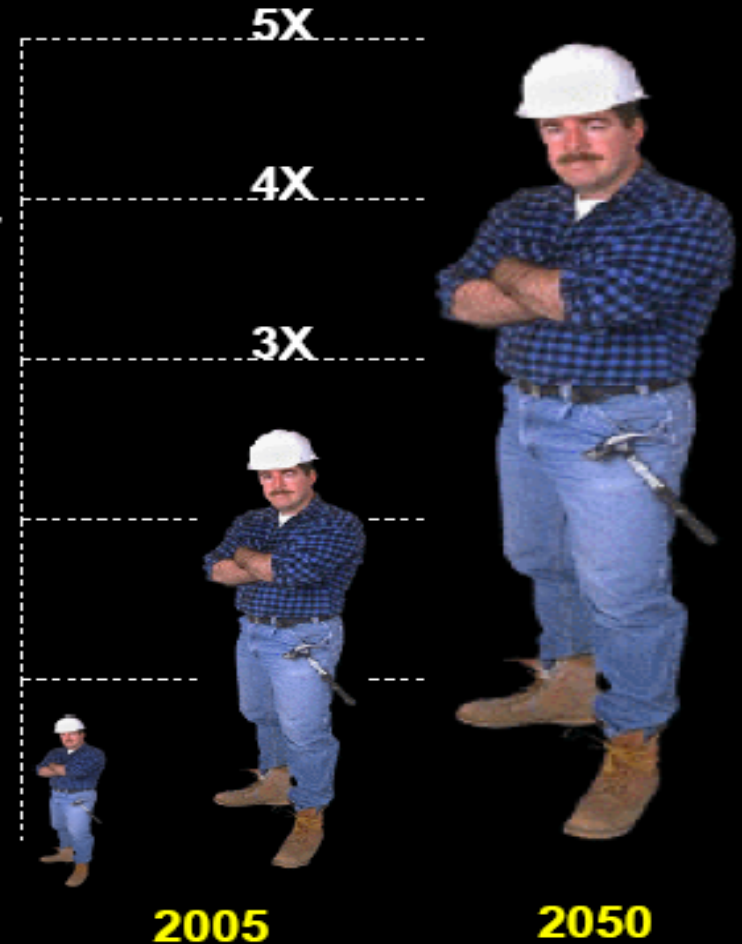
Data extracted from: The Observatory on Borderless Higher Education, 2002

Productivity Drivers of Transformation

To simply stay in place, workers will have to produce 2.5X more per hour than they do today

To continue the living standard improvements that Americans have enjoyed since 1948, each 2050 worker will have to produce 5X more than a worker today

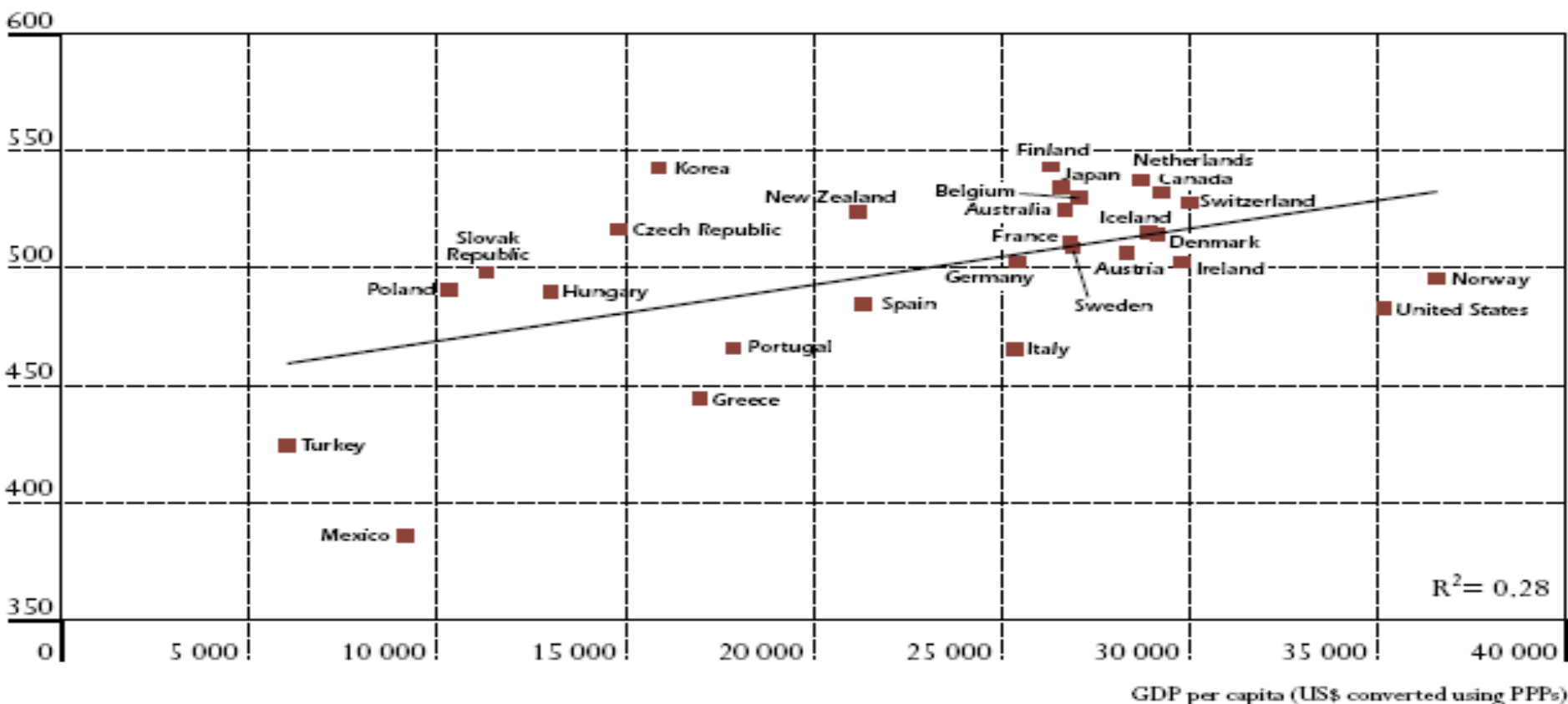
Source: Cisco IBSG Analysis



Education & Wealth correlation

Figure 2.19 ■ Student performance and national income
Relationship between performance in mathematics and GDP per capita, in US dollars, converted using purchasing power parities (PPPs)

Performance on the mathematics scale

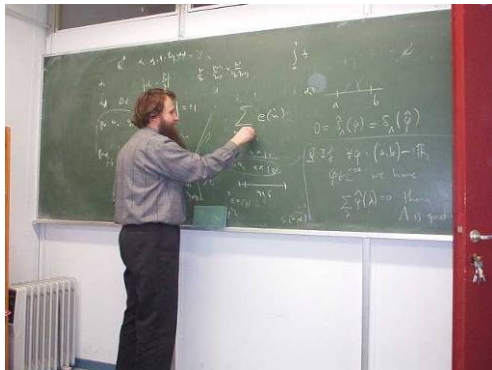


Reality Check

Millions of Pupils, Teachers and Administrators

4 REGISTER OF ATTENDANCE

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
1. Oliver Brown															
2. Thomas White															
3. John Smith															
4. William Jones															
5. Robert Taylor															



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“

The ed-tech community loves the term ‘integration.’ But our schools need transformation, not integration.

Susan Patrick, Director of Educational Technology
U.S. Department of Education
eSchool News, May 24, 2005

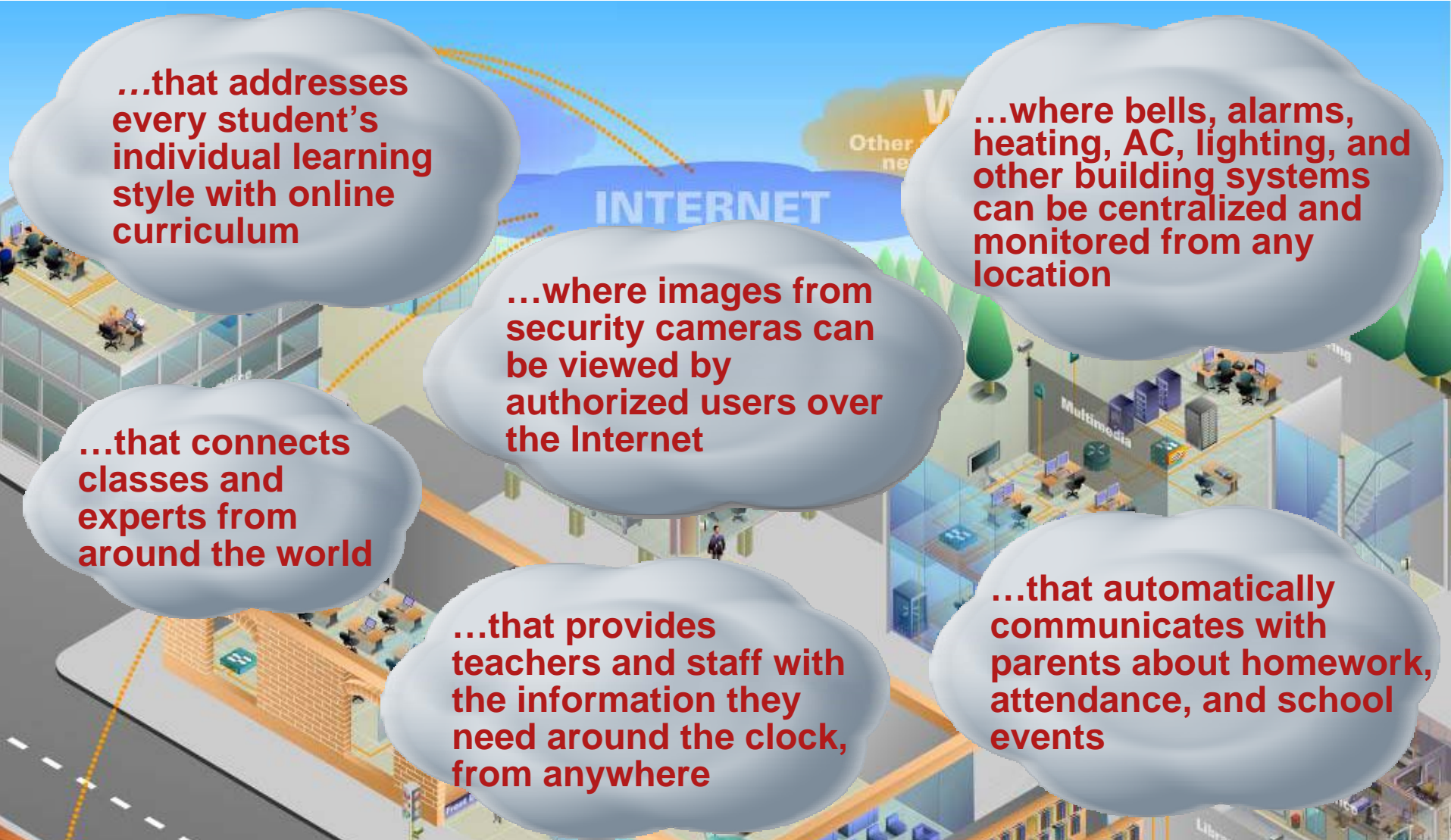
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Connected Learning



Start with the End in Mind : Imagine a School...



...that addresses every student's individual learning style with online curriculum

...where bells, alarms, heating, AC, lighting, and other building systems can be centralized and monitored from any location

...where images from security cameras can be viewed by authorized users over the Internet

...that connects classes and experts from around the world

...that provides teachers and staff with the information they need around the clock, from anywhere

...that automatically communicates with parents about homework, attendance, and school events

Cisco Connected Learning



Create in-school environments that are similar to the outside world



Offer learning 24/7



Train teachers and professors and give access from anywhere, 24/7



Automate administrative tasks

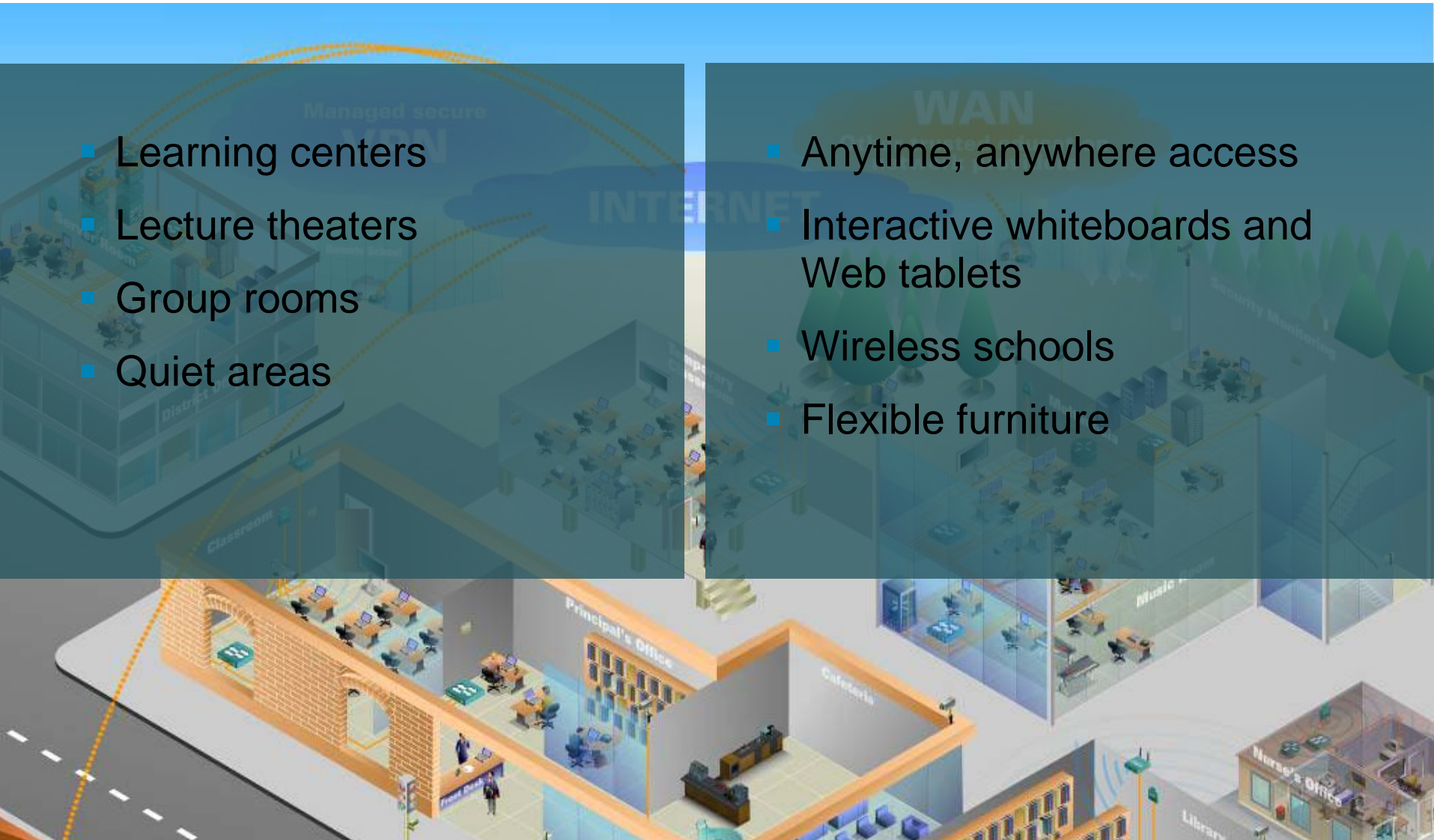


Move to a student-centered learning environment

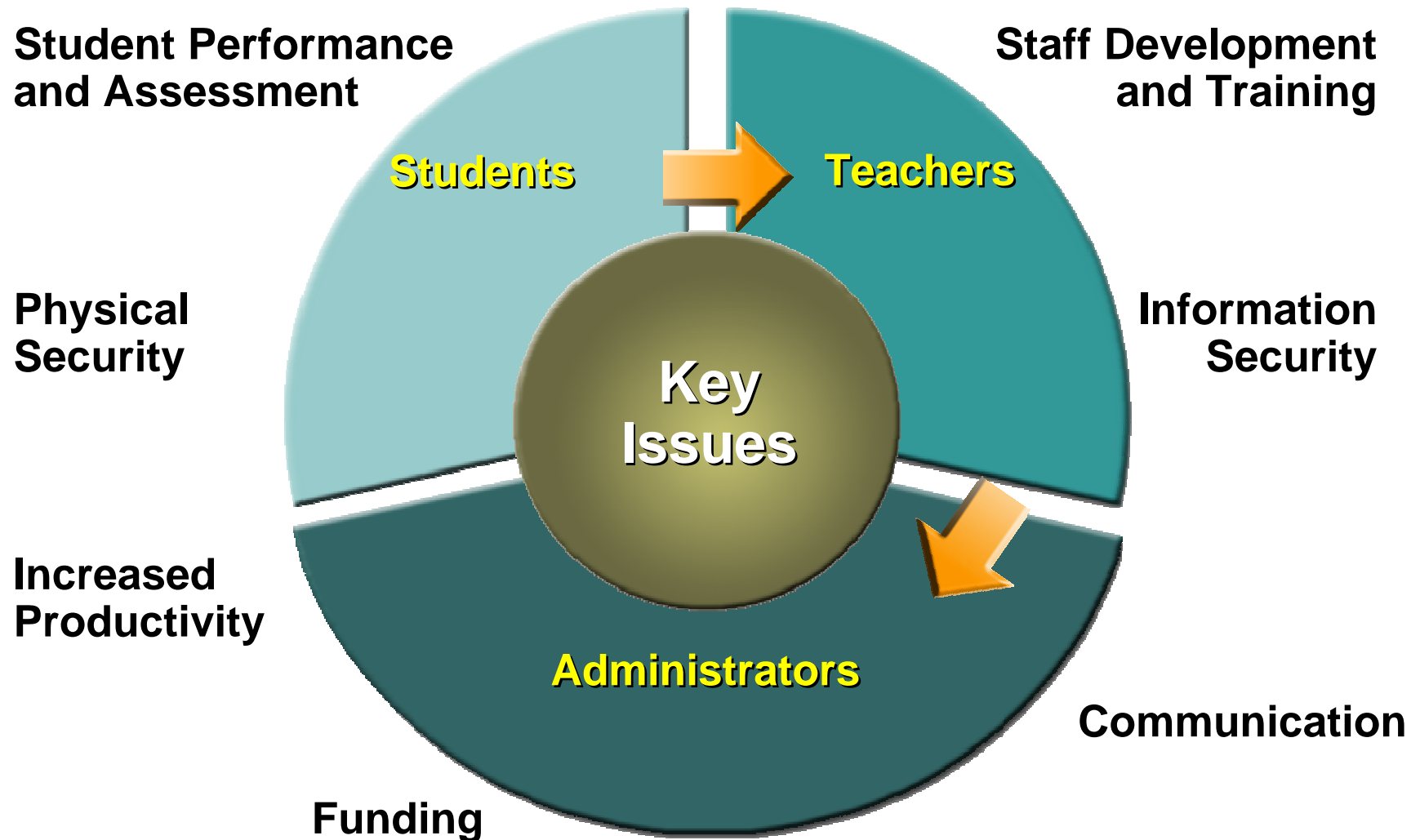
The 21st Century School

- Learning centers
- Lecture theaters
- Group rooms
- Quiet areas

- Anytime, anywhere access
- Interactive whiteboards and Web tablets
- Wireless schools
- Flexible furniture



Meeting the Challenges



Four Steps to Transformation



First Things First

TO ACHIEVE EDUCATION TRANSFORMATION,
THE ENVIRONMENT MUST BE RIGHT



Forward-thinking teachers and administration



Extensive community support



Proper funding

Four Steps to Transformation

- Step 1: Connect all buildings and provide access to critical information
- Step 2: Implement network-based applications to improve administrative efficiency
- Step 3: Put teacher proficiency and productivity first
- Step 4: Create a student-centered learning environment to achieve academic excellence





**Step
One**

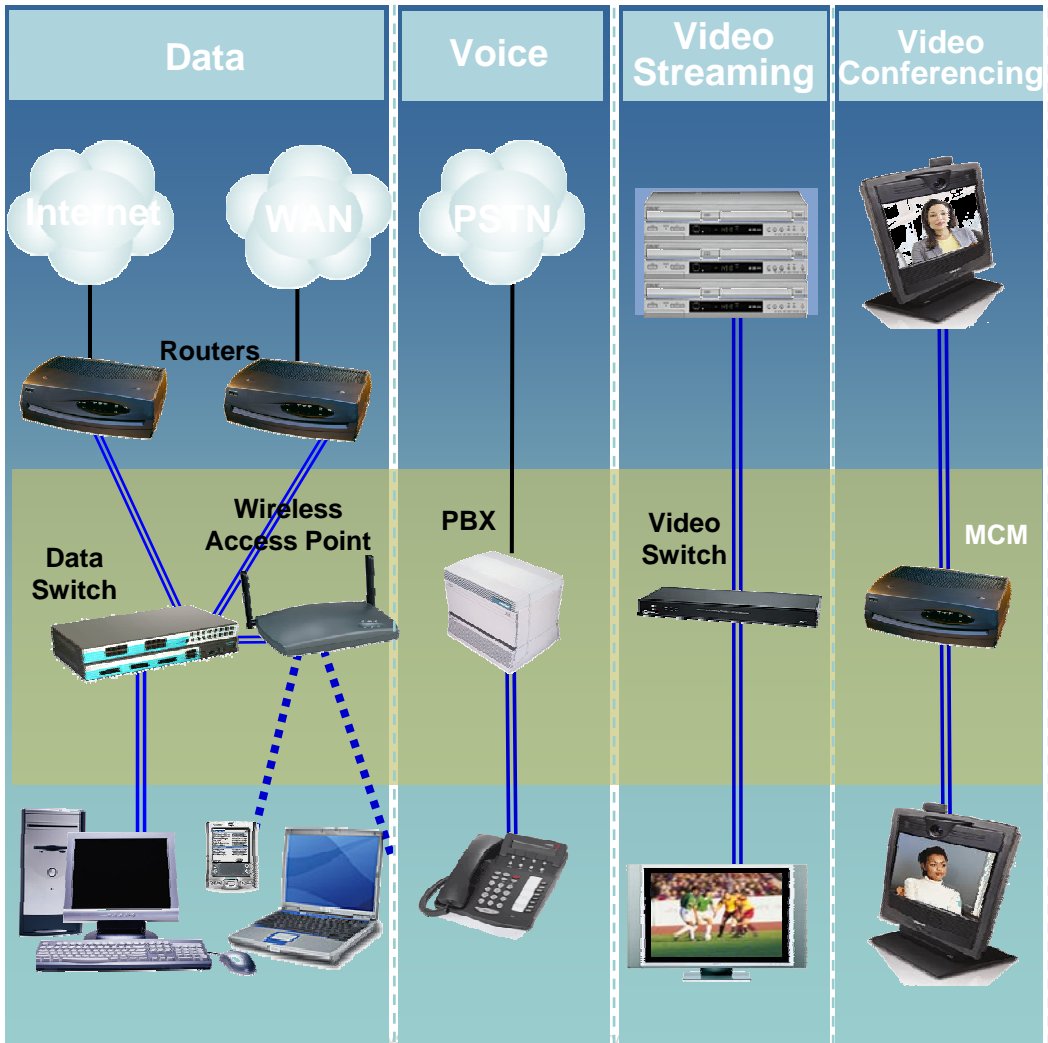
**CONNECT ALL BUILDINGS
AND PROVIDE ACCESS TO
CRITICAL INFORMATION**



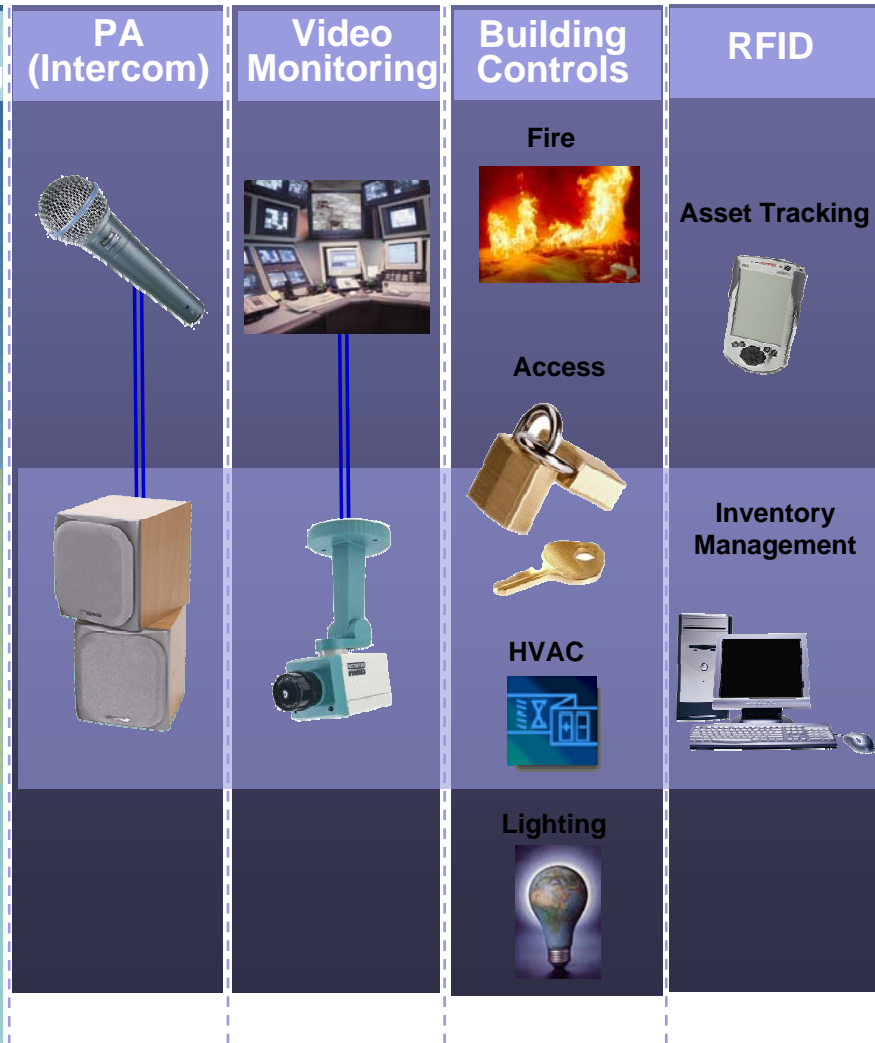
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Multiple Networks...

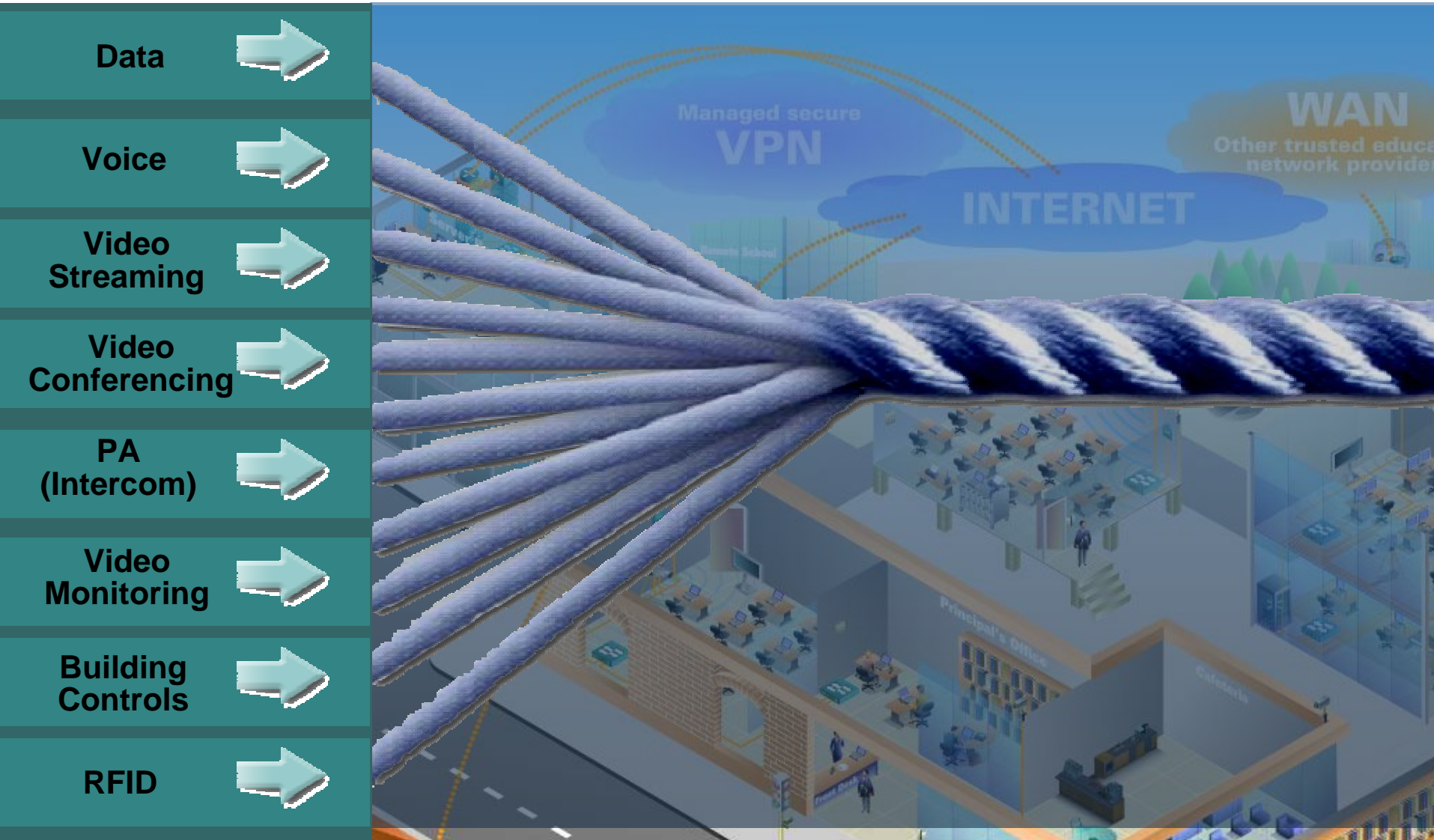
Faculty Workspace & Administration



Facilities

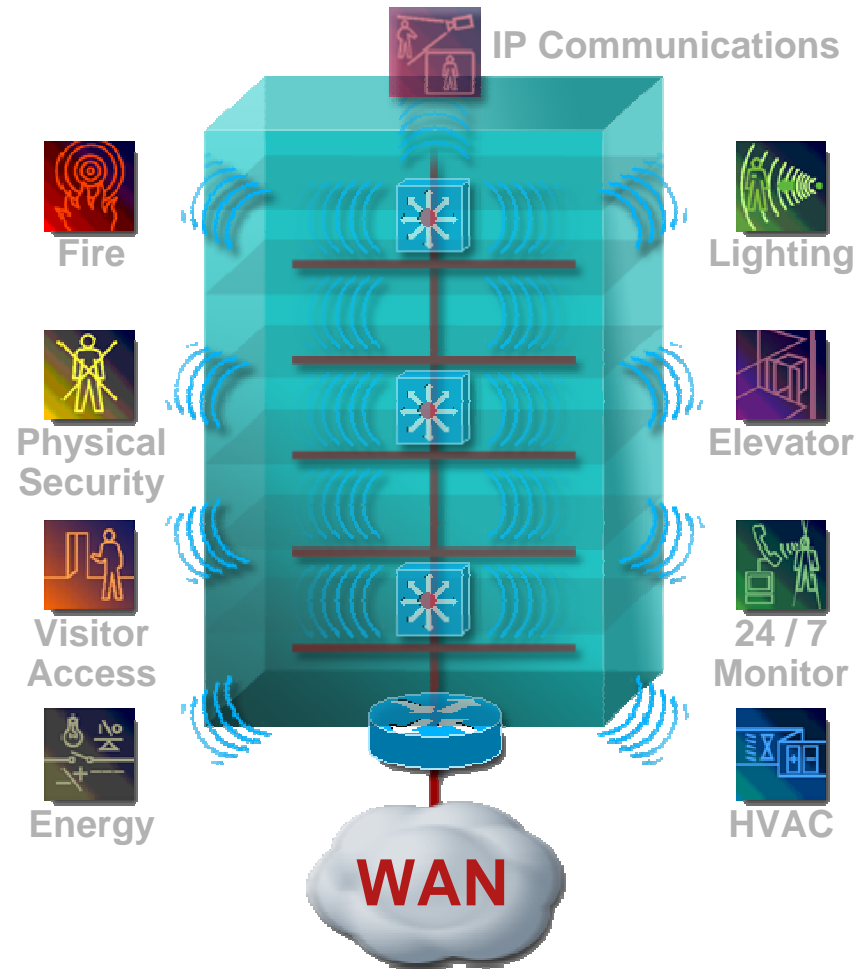


... Converged into One



Cisco Connected Real Estate For Schools

- Converges all building systems onto single IP infrastructure
- Eliminate managing dozens of stand-alone systems
- More efficient use of personnel
- Reduce capital and overall lifecycle costs of buildings
- Improve safety, security, and communication



A Converged Network Offers Many Benefits

- Secure access to important data by authorized users anytime, anywhere
- Reduced number of wiring runs, management systems and expert resources
- Elimination of or reduction in operating costs
- Flexibility for your network to evolve as student population expands or declines
- Ability to offer new enhanced communication services





**Step
Two**

IMPLEMENT NETWORK- BASED APPLICATIONS TO IMPROVE ADMINISTRATIVE EFFICIENCY

Applications



- Integrated student information systems
- Web-based Human Resources (HR) and finance applications
- Unique student identifiers
- Standard productivity applications
- Student ID cards
- Radio Frequency Identification (RFID)
- Global Positioning Systems (GPS), and Global System for Mobile (GSM) cellular, for student communication and Geographic Information Systems (GIS)

Networked Applications Offer Many Benefits

- Accessible by all authorized users via the Internet
- Improve business transactions, reporting, and everyday operations
- Automate processes
- Eliminate inaccurate and duplicate entries into systems
- Enable comprehensive reports
- Allow staff to be more self-sufficient
- Provide access to important data





Step Three

**PUT TEACHER PROFICIENCY
AND PRODUCTIVITY FIRST**

'Teachers First' Best Practices

- Applications, such as a curriculum portal, fully automated grade & attendance reporting, and data warehousing
- Online professional development
- Online district-wide meetings
- Virtual field trips
- PDAs, laptops, tablet PCs, and IP phones
- A best-practice collaborative Web site



The Benefits of Teacher Proficiency and Productivity First

- Integrate systems and curriculum, and offer 24-hour access to data
- Automate time consuming processes
- Master technologies first, and then assimilate them into the classroom
- Empowers teachers to be successful with technology





Step Four

CREATE A STUDENT-CENTERED LEARNING ENVIRONMENT TO ATTAIN ACADEMIC EXCELLENCE

Learning Tools for Teachers and Students



- Distance learning programs
- Blended learning offerings
- Simulations and virtual environments
- A new generation of hand-held devices
- Collaboration applications
- A curriculum Web site

The Benefits of a Student-Centered Learning Environment

- Create a truly individualized education model- “Learning Construction”
- Enable effective learning at any hour of the day or night, from anyplace, on or off school grounds
- Encourages Life Long Learning (LLL)



Cisco's **Commitment** to Connected Learning



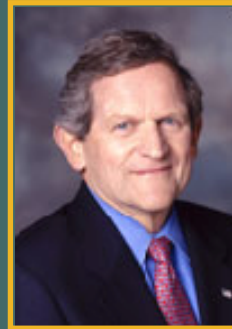
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Education is the Basis of Cisco's Genes...

1984: Stanford U.
professors Bosack &
Lerner start Cisco



***“Education and the Internet are the
two great equalizers in life...”***



**John
Morgridge**
**Chairman of
the Board**

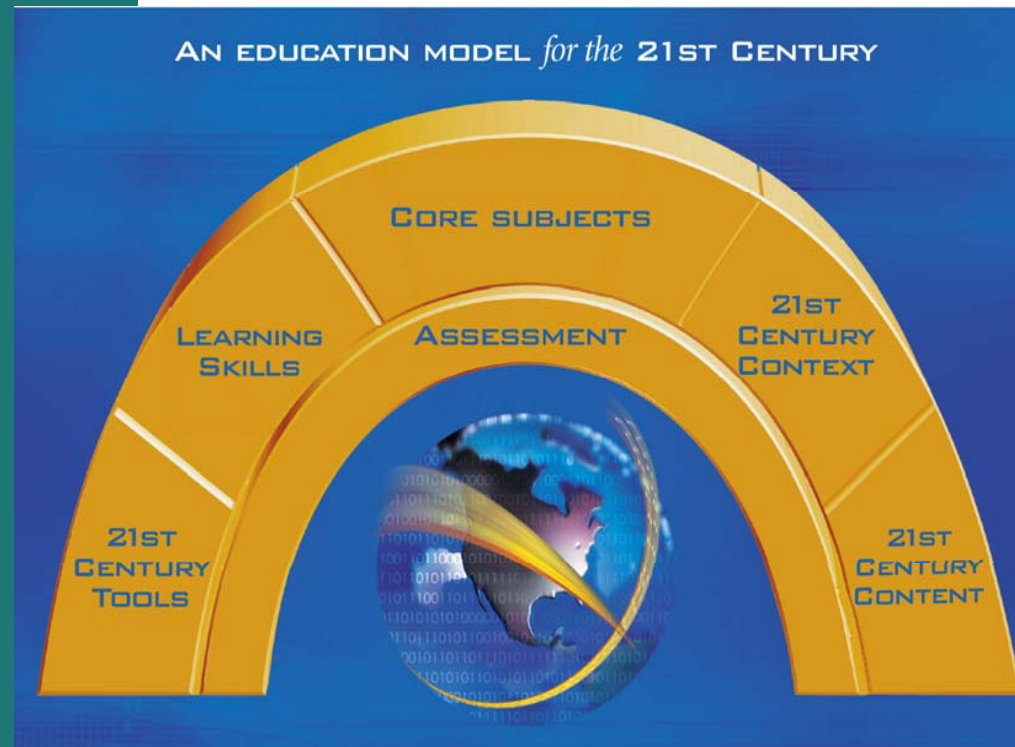


John Chambers
**Chief Executive
Officer**

***“The next killer application for the
Internet is going to be e-Learning...”***

Partnership for 21st Century Skills

- Partnership among 25 companies & educational organizations
- Prepares students for work and life in 21st century
- Cisco is a Founding Member



<http://www.21stcenturyskills.org>

Cisco Networking Academy Program

- A dynamic, philanthropic educational program that teaches students relevant technology skills
- Academy impact since 1997:

COUNTRIES WORLDWIDE
150 +

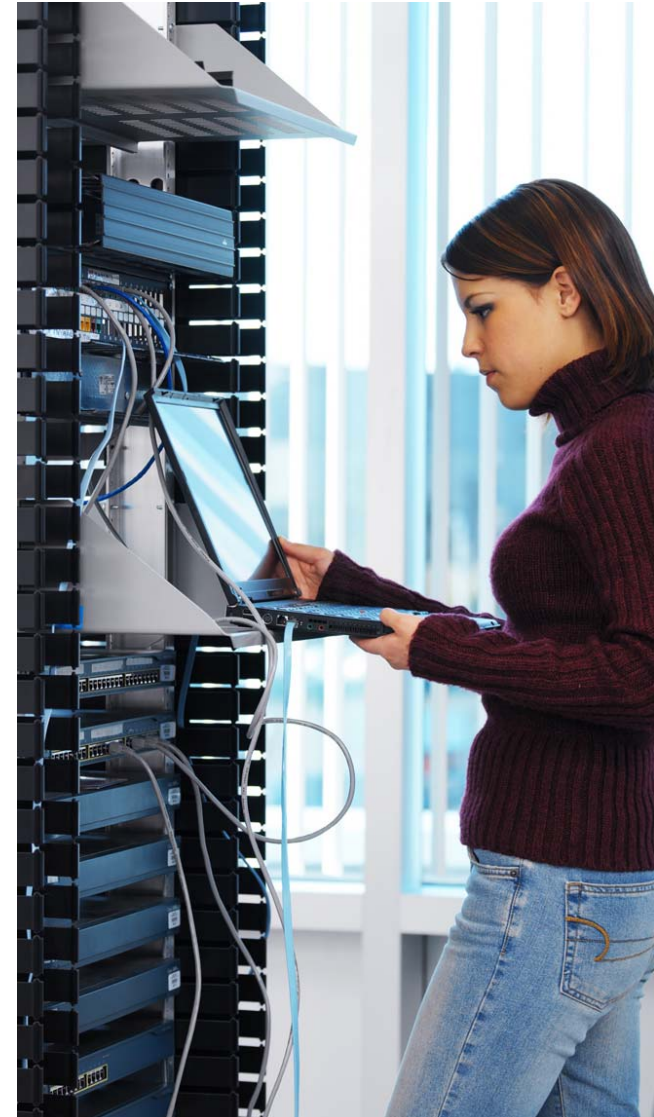
INSTRUCTORS WORLDWIDE
30,000 +

STUDENTS WORLDWIDE
1.6 million +

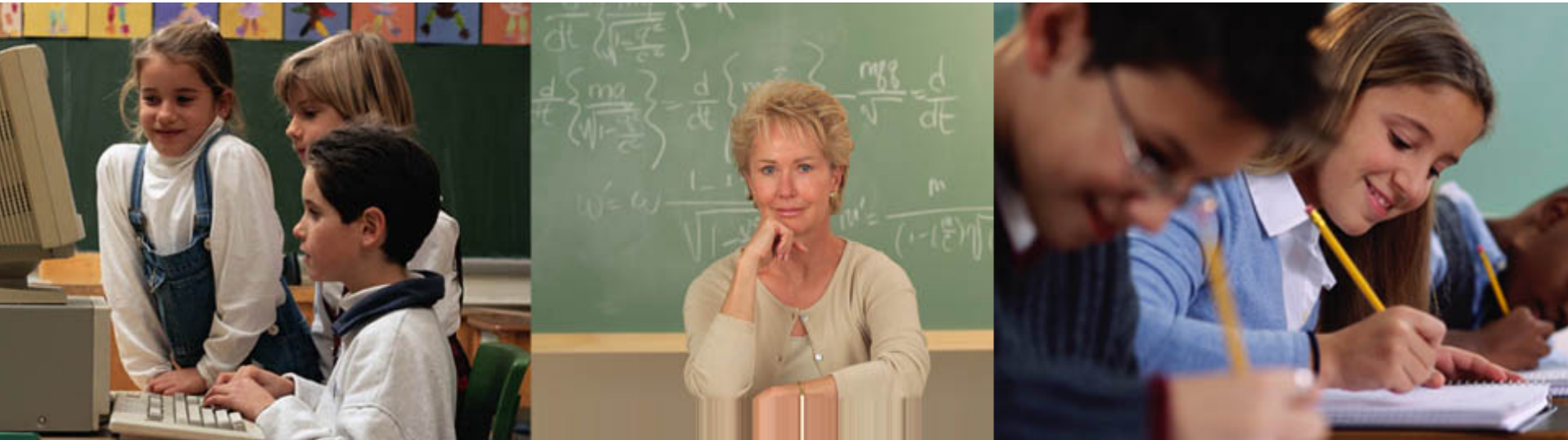
TOTAL EXAMS TAKEN
40 million +

ACADEMIES WORLDWIDE
10,000 +

LANGUAGES
9



Partner in Building 21st Century Schools



- **Experience and commitment in deploying technology solutions for schools**
- **Trusted advisor and partner to educators**
- **Extensive relationships with third-party technology vendors**

Cisco Connected Learning Solutions for Schools



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Cisco Connected Learning Solutions

School Focus	Challenges	Cisco Solutions
Administrative Efficiency <i>Driver: Cost & revenues</i>	Communication Funding Increased Productivity Physical Security Information Security	Cisco Connected Real Estate for Schools Cisco Direct Line Cisco Secure Wireless Cisco Safe & Secure
Academic Excellence <i>Driver: Mission</i>	Student Performance and Assessment Staff Development and Training Teaching technology skills	Cisco Virtual Classroom Cisco Video over IP Cisco Networking Academy

Cisco Direct Line for IP Communications

- Provides IP based voice and video services combined with K-12 specific xml applications
- Enhance communication
- Increase security
- Boost Productivity
- Save time and money



Cisco Secure Wireless Solutions

- Provides wireless connectivity to all school buildings
- Access to information anytime, anywhere
- Mobility increases productivity
- No cabling means flexibility and cost reduction



Cisco Safe and Secure

- Provides for both physical and network security
- Centrally monitor school buildings and grounds
- Prevent unauthorized access to network resources
- Eliminate “virus” and other malicious attacks
- Enable “safe” surfing environments for kids



Cisco Virtual Classroom

Drivers

- Combines voice, video and collaboration → from one vendor
- Enhance curriculum offerings
- Improve collaboration and interaction →
- Meet the needs of all learning levels → within each school



Cisco IP Video Solutions

- Provides live, on-demand and two-way video on your network infrastructure
- Facilitate media-rich learning
- Centralize resources for cost savings
- Enable access to all media assets anytime from anywhere



Case Studies



LEARN

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North Point High School/Charles County



Challenge: Improve educational opportunities for both academic-oriented students and career/technology students. Build a “21st century school” to attract businesses and families from nearby Washington, D.C. Boost academic excellence and administrative efficiency

Solution:

- Installed a Cisco converged IP network infrastructure to support new services
- Deployed IP Communications solutions, to enable data, voice, and video communications across campus
- Implemented a wireless network for use by students, teachers, and administrative staff

Results:

- Student performance is expected to improve, as both academic and vocational students have access to rich multimedia content, for more effective learning at each student's individual pace
- Teachers and faculty can access educational resources, improve collaboration, and handle administrative tasks faster and more efficiently
- Community and businesses can use technology and facilities to offer continuing education to workers and other adults
- Automated building controls enable school to manage energy use more efficiently and economically

“A ‘twenty-first century school’ elevates all areas...We value every occupation; each one is critical to the future of Charles County and this county.”

Case Studies



**Scotland: 3,000 schools
Content Delivery Network**



**Hungary: 5,500 schools
Telco and Local Govt Partnership**

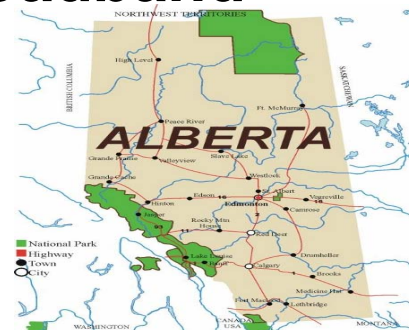


Mississippi: 800 schools

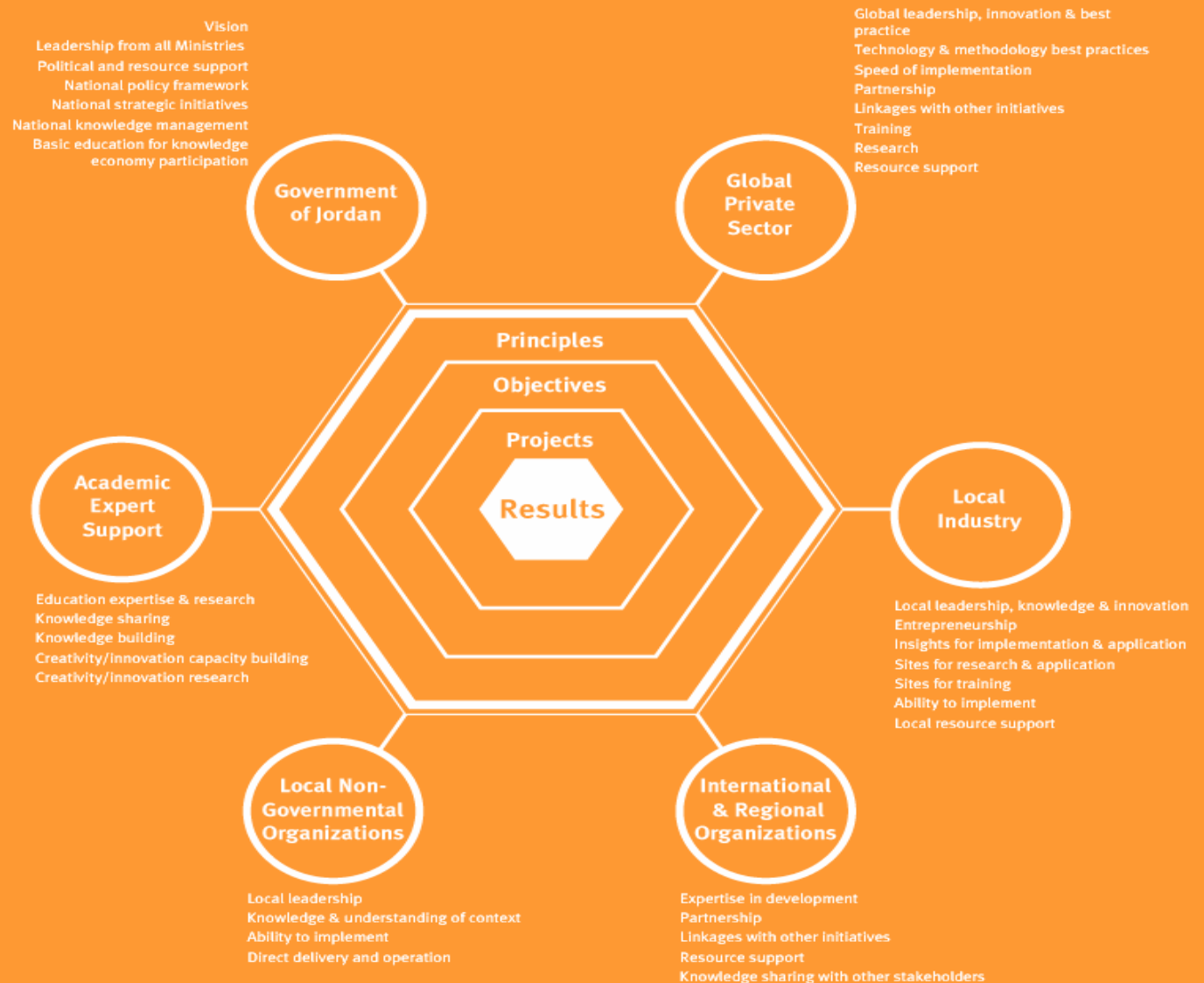


**Jordan: Broadband
Public Private
Partnership**

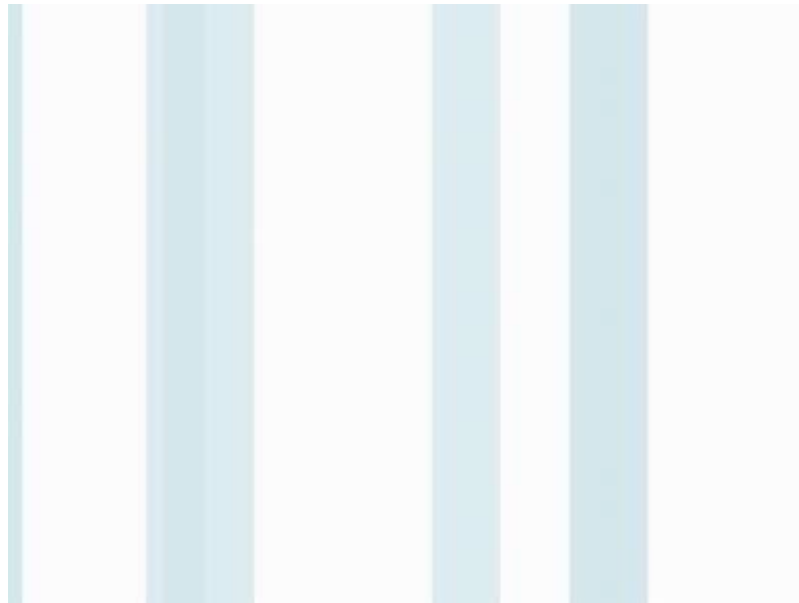
**Alberta:
Broadband**



JEI Molecular Model-Public Private Partnership



Jordan Education Initiative



Connected Administration & Student Services

- Virtualization of Financial Aid
- E-Procurement
- Student Applications
- Student information systems
- Student Services

ADMINISTRATIVE USER

High quality/performance, voice/video/data, wired/wireless secure connections for PC/phones/handhelds, for access to enterprise, executive, financial, HR applications and web services

Administrative Buildings

Technology Park

Science

e-COLLABORATION

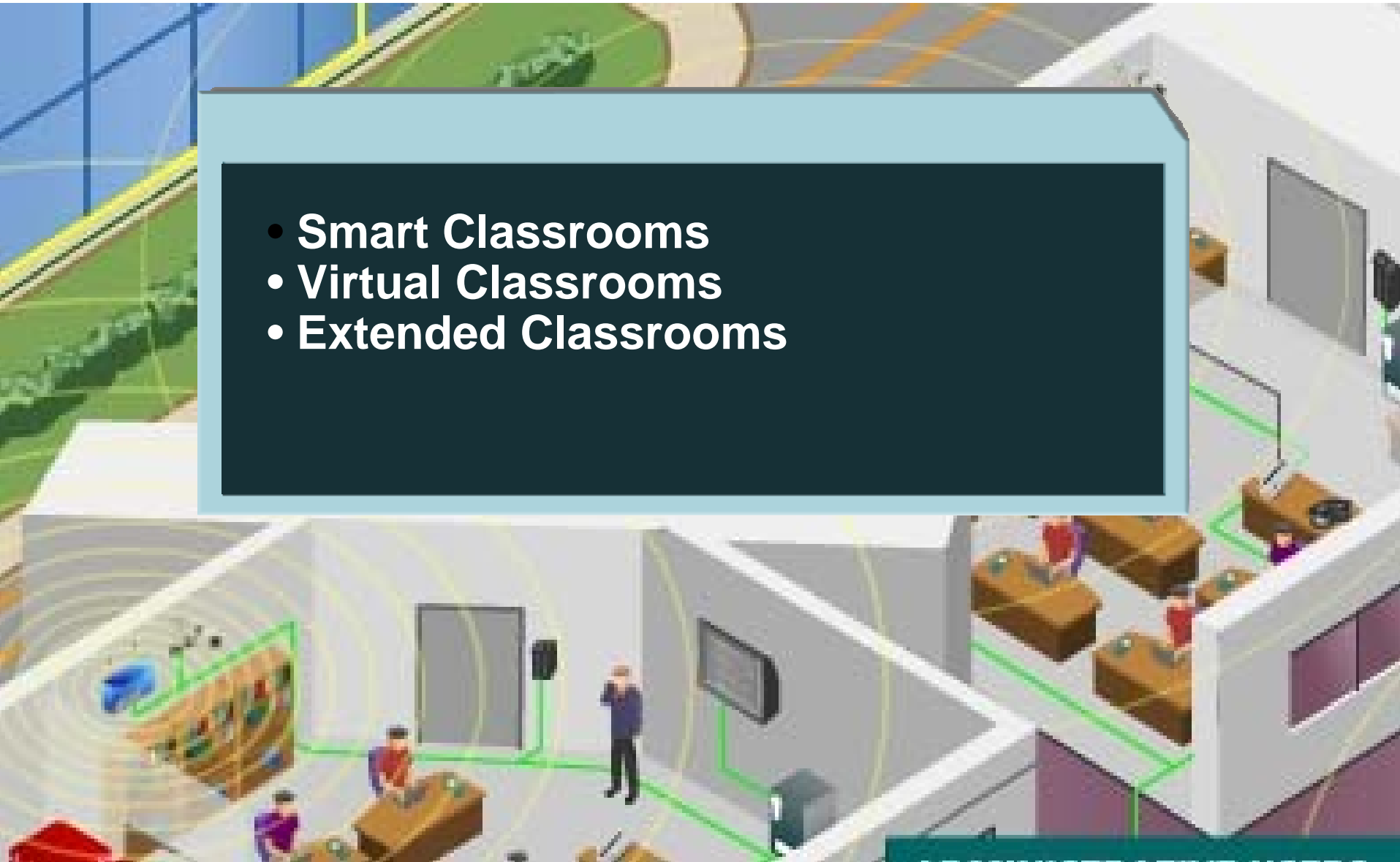
IP/TV for live streaming video and IP/VC videoconferencing, audio/video/web meeting conferencing for e-learning, e-collaboration, corporate communications/announcements

CONTENT

Content
to offer
to deliver video-
content, real-time
content, corporate

Connected Classrooms

- Smart Classrooms
- Virtual Classrooms
- Extended Classrooms



Connected Library

DIGITAL LIBRARY


High quality/p
voice/video/da
secure connect
PC/phones/har
information sy
online content
reference mate
based/RFID ne
readers to trac

- Center of Campus Activity
- Digital Collections
- Video Resources

Digital
Library

ANYTIME, ANYWHERE LEARNING

Connected Sports Center and Stadium

- 
- WiFi in Stadiums**
- Recreation centers with wireless lounges**
- Reserving recreation facilities online**
- Charging sports tickets and refreshments to smart cards**

NETWORK OPERATIONS CENTER
Real-time, centralised, integrated, scalable, multi-layer, management... integrated security, ...ult, change, system, ...and remote ...ces

RESEARCH
High quality video/d... connect... handhe... at the h... comput... manag... student

Connected Faculty

FACULTY OFFICES

High quality/performance video/data, wired/wireless connections for PC/phone/handhelds, for access to learning and content management systems, students portal, corporate services, research resources

- Faculty hold virtual office hours
- Collaborate virtually
- Conduct live-polling of students during class
- Provide course web sites

tools to collaborate and learn with experts worldwide

MEDIA-RICH CONTENT

Application and content networking system to offer flexible options to deliver video-on-demand content, real-time

Connected Residence Halls

- High speed wired and wireless Internet access in shared living spaces and individual dorm rooms
- Video Surveillance and digital access to dorms for increased physical security
- New services enabled by intelligent facilities
- Residential Villages emerging as the new standard

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eillance on

any
netw
trust
netw
802.
Intell
route
appli

Residenc

Halls

Connected Research

SONET/SDH

SONET/SDH transport
Fibre Channel over
addition to voice, video
additional IP traffic from
distributed locations
or long haul environ

- National Research and Education Networks
- High Performance Computing
- GRID Computing

WORK

primary path
for user traffic destined for the
intranet server farm and allowing
DNS and RHI to control the
granularity of applications and
state of distributed application
environments

Connected Business School

- Simulations
- Hands on applications
- Immersive environments
- Flexible Graduate Programs

STORAGE ZONE

High availability, redundant, modular, flexible, scalable server

e-COLLABORATION

IP/TV for live streaming video and IP/VC videoconferencing, audio/video/web meeting conferencing for e-learning, e-collaboration, corporate communications/announcements

ED CLASSROOMS

ty/performance,
o/data, wired/wireless,
nections for
/handhelds/projectors/
audio systems for
rich media content,
cloud conferencing

Administrative

Connected Campus Commons

- Anywhere, anytime, secure, high speed access
- Mobility enabling greater collaboration
- SMS texting
- Video broadcasting

ANYTIME, ANYWHERE LEARNING

Higher quality/performance secure wireless access for anytime, anywhere learning, development, communication and collaboration outside the classrooms, for e-commerce transactions like ordering at cafeteria via IP phone, email, web services

FACULTY ON

High quality/performance video/data, wireless connections for handhelds, for learning and management, students portable services, research

Cafe

Connected Alumni Association

- Alumni Portals
- Alumni Communities
- On-line networking
- On-Line giving

Alternate
Data Cent

Human Capital Development Initiative

The Power of Collaboration



The Challenge

“The problem with communication (or collaboration) is the illusion it has been achieved”

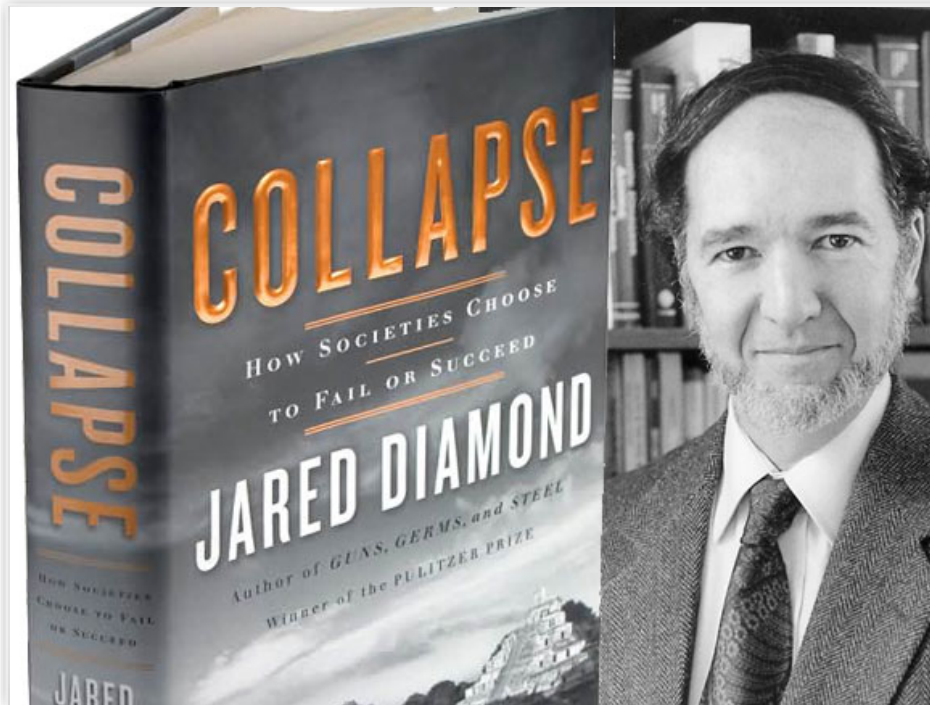
Winston Churchill



The Power of Collaboration



FiberSpdEN.exe



"The crux of success or failure is to know which core values to hold on to, and which to discard and replace when times change."