The Internet and Education
A Scottish Perspective

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Agenda

• The Internet, Education and Productivity
• The New Learning Environment
• Scotland Leading the Way
  Scottish Schools Digital Network
  Cisco Network Academies in Schools
• Conclusions
The Internet, Education and Productivity
Issues Facing Government

- Education and skills development
- Growth of GDP and standards of living based on investment in IT and networking
- Global competitiveness and attraction of investment
- Effective delivery of government services
- Levelling the “Digital Divide”
- Broadband access for all citizens and businesses
- Security & Privacy
The industrialized world faces a Productivity Imperative

• A Demographic Crunch is coming . . .
• More retired people, and fewer workers means . . .
• Workers must be more productive than today’s workers, or our standard of living will erode dramatically

Education needs to be the foundation to improve the productivity of our future workforce
European Union Population Aging

60% increase

Source: FT, 4 Oct. 2003
European Union: 2000 vs. 2050

Source: The New York Times, April 4, 2004

-16% decline

EU Adult Population

- Workers: 243M (2000) to 203M (2050)
- Retired: (2000) to (2050)

5:1 to 2:1 ratio
Global Equalizers

Internet and Education
The New Education Environment
The Reality

Education is not a place...........

................. It’s a Process

Innovation
What is Innovation?

It used to be about IP….

…now its about collaboration
Does Education Mean IQ

PQ + CQ > IQ

Passion Quotient + Curiosity Quotient > Intelligent Quotient
Education’s New Differentiator

Connect

Collaborate

Compete
Scotland Leading the Way
Education at a “Technology Tipping Point”

• **Governments:**
  - Integration of technology into classrooms is major focus for educators & governments
  - Teacher shortage: 35% of teachers to retire over next 10 years
  - Higher expectations via accountability (eg. NCLB)

• **Educators:**
  - Augment teacher’s ability to reach a distributed student body
  - Learning more collaborative: web-sharing, video conference.
  - Record the class, assist absentees or for review purposes
  - Utilize specialists & subject matter experts

• **Students:**
  - Students comfortable with technology and the internet
  - Students lives are hectic & fraught with schedule conflicts
The promise of the internet 10 years ago was of ‘a huge library based system offering infinite easy to find sources of information on every conceivable subject’.

- National Initiatives & Strategy - SSDN
  18 month roll out for CDI
- Local Initiatives & Strategy
- Pupil and Teacher needs
What do Teachers want..?

- No more changes now - too many already..!!
- Ease of use - mixed ICT confidence & skills
- Benefits to teaching process & classroom

The internet’s great. I’m sure there’s everything I want up there. However, I don’t have the time to spend wading through the **** to get to where I need to be..! Please make it easy for me.

Teacher @ BETT 2004  [widely held opinion]
Basic Objective of CDI

Deliver content in the most efficient manner.

CDI allows the Local Education Authorities to maximise the impact of communicating via the web by overcoming the bandwidth issues of delivering rich-media to the desktop.

CDI ensures that high quality video and rich audio are delivered with fast response times, and large graphics and other high bandwidth files can be delivered with speed, accuracy and consistency.
Predictable, High Quality Application Performance

Vast majority of application requests locally served

Significant performance increase (30 ms vs 5-6 second response times)

Requests

CE Latency Benefit

Vast majority of application requests locally served

Requests

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Content - 3 Types served by CDI

**On-Demand Content:**

Acquired, cached and delivered by school triggered demand.

First client request for each piece of content - retrieved from original Web Server and provided by Content Engine which also stores/caches same.

**Pre-Positioned Content:**

Means of distributing content and populating Content Engines in a managed CDI Environment (managed Centrally or at other levels e.g. LEA).

Bandwidth intensive content e.g. Java Apps, Flash, Shockwave scheduled for distribution to Content Engines during off-peak hours.

**Live Content:**

Acquired as live streaming broadcast from Satellite/Terrestrial Source. CDI configures policies for acquiring live multimedia.
Advantages of CDI

Faster content (whatever form) to the network edge / classroom:

- Bandwidth and Cost Savings
- 50% increase in throughput generally.
- 80% in Education Environments (hitting same page more often).

Centralised Management @ National & Local levels.

- Drive On-Line Content Standards Nationally & Locally.
- Stats / Reporting on usage / content value.

Pre-Positioning is the REAL ADVANTAGE

- Real time access to required content – no waiting
- Improved productivity for Teacher and pupil

Improved Learning Experience
Cisco Networking Academy Program

« Public Private Partnership between Cisco, Governments, Educational Institutions, NGO, and industry, created to teach students how to design, build and maintain computer networks »
Cisco Networking Academy Program

- 43,000 + Online Tests Daily
- 22,185,730 Total Tests Taken
- 10,590 Academies
- 151 Countries/Territories/Entities
- 25,408 Instructors
- 523,161 Students Currently Enrolled
Networking Academies in Scotland

- Social Inclusion Academy Program
- Delivered in partnership with local regeneration companies in Glasgow

Objectives

- Shortage in local IT workforce
- Create Careers, not jobs – social improvement
- Make IT training more accessible, give people a chance
- Make IT resource more accessible for SME’s
Govan Initiative – The First in Europe

• The Benefits
  • Jobs for long term unemployed
  • IT professionals available to local SME’s
  • Improved community spirit and recognition
  • More money invested locally
  • Now being replicated across Glasgow

• Now being taken in Glasgow Schools

• Being integrated through ‘Scottish Qualifications Authority’
Conclusions
Some Personal Thoughts......

• We need a new education experience
• We cannot fail any of our children
• We need to make all pupils productive future employees for our sustainability
• Give them passion
• Allow them curiosity
• Its a long road but we have started off on the right track
• Education and the Internet are the foundation!