

Education for a Connected World



John Connell

Education Business Development Manager

Emerging Markets

Welcome to the Human Network

“Technology is changing the way we live, communicate and learn. It also enables educators to re-frame schooling in order to meet the needs of twenty-first century learners.”

Greg Whitby





Trends?

Web 2.0 - Components

Blogs

Wikis

Podcasts

Social Networking

Social Software

Tagging/Folksonomy

RSS



User-Created Content

Power of the Crowd

Filtering the Info Overload

Web as Platform

Anywhere/Anytime

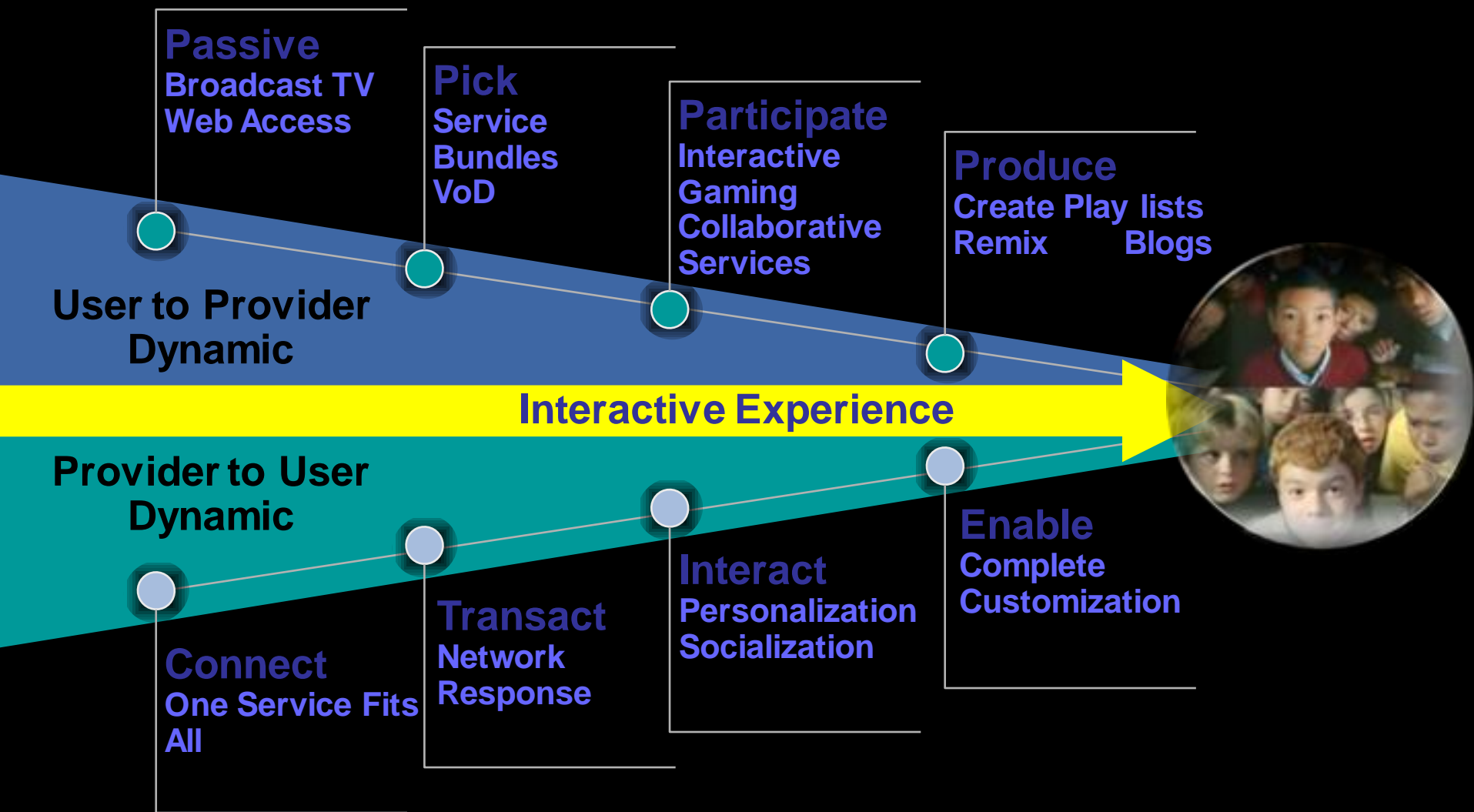
Networking Effects

Hyper-Networking

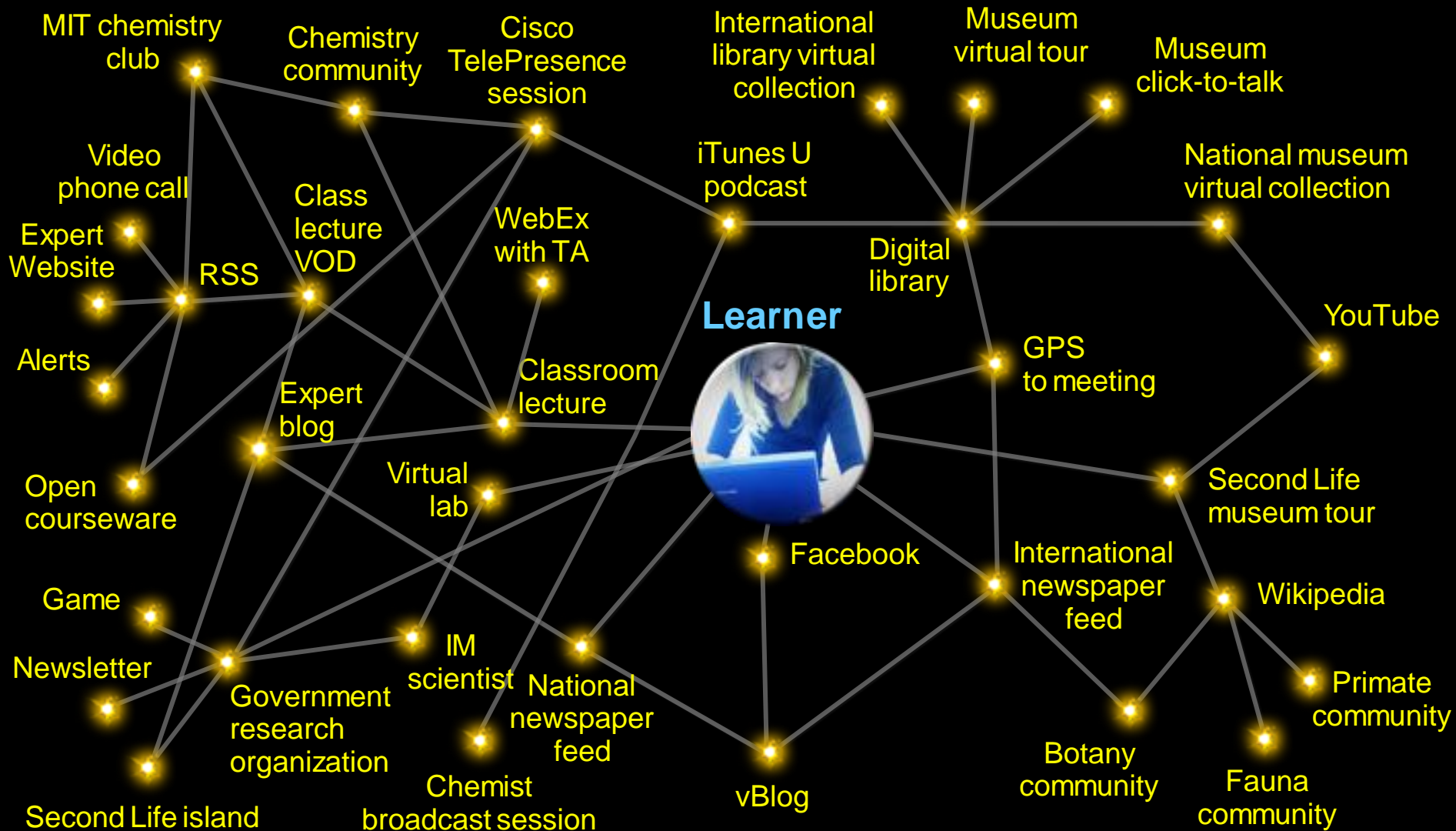
The Human Network

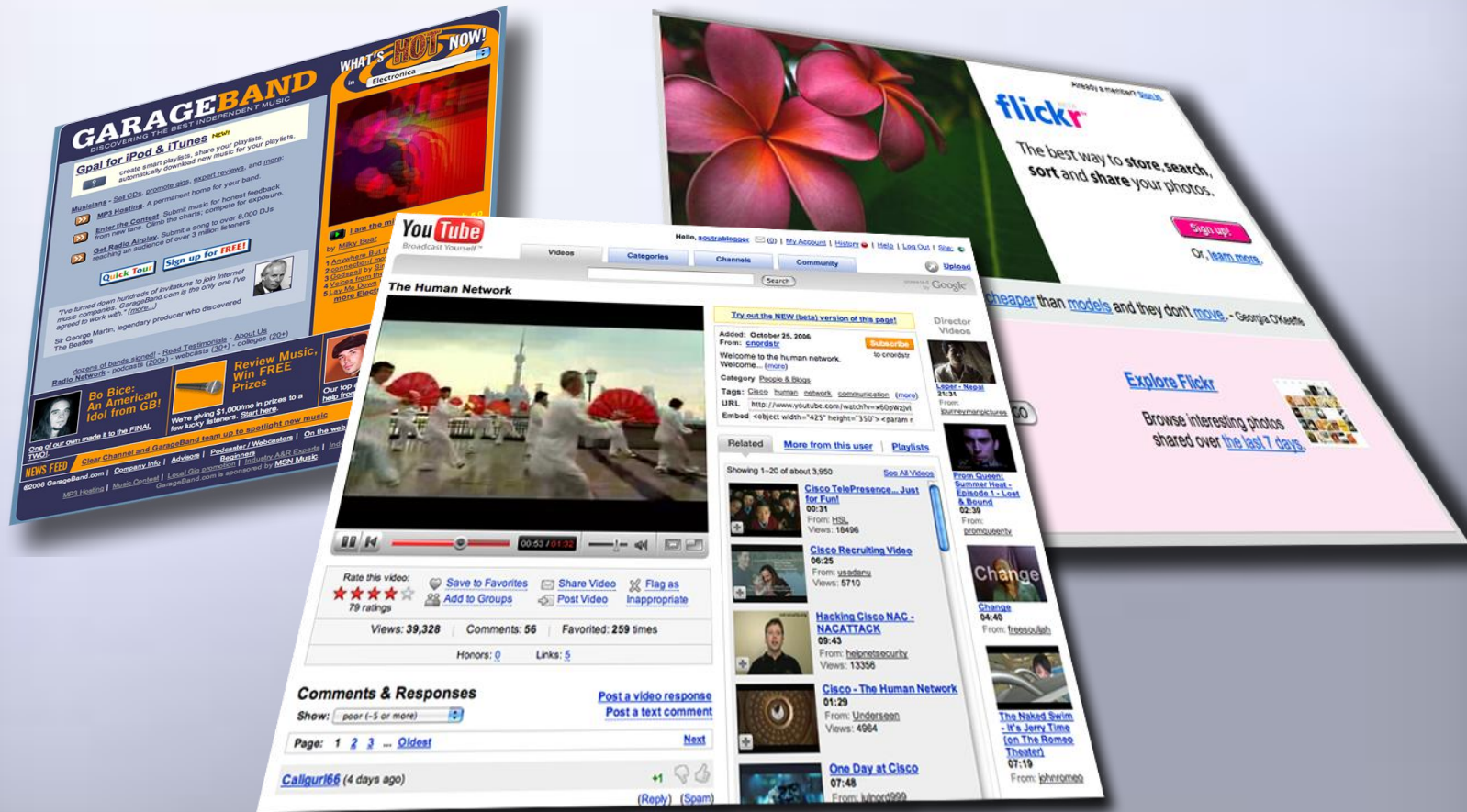


From Schooling to 21st Century Learning



The Hyper-Connected Learner





User-Created Content



Social Networking



Mobility



Virtual Worlds



Handheld Learning

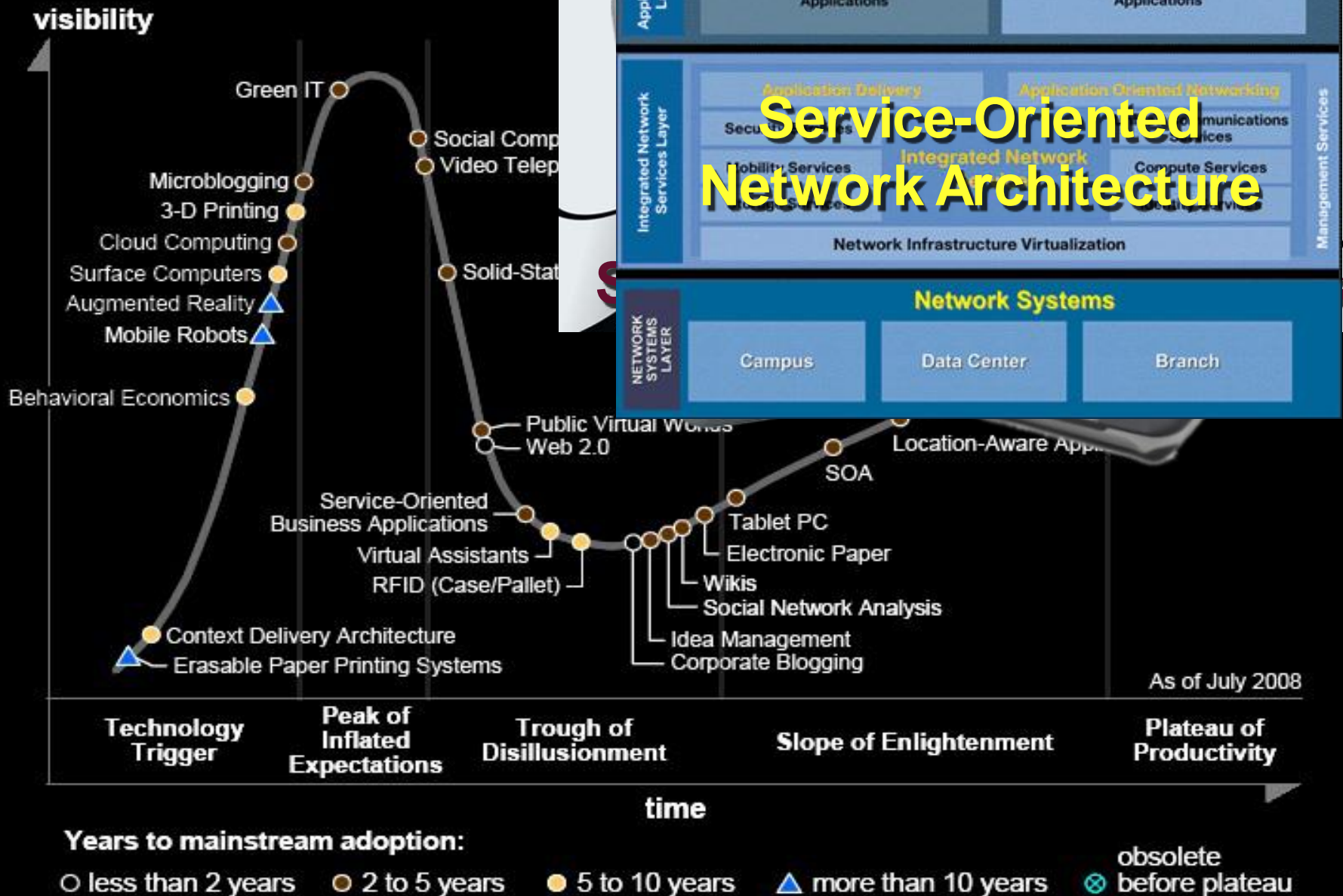


Social Operating Systems



Video in the Classroom

Figure 1. Hype Cycle for Emerging Technologies, 2008



Source: Gartner (July 2008)

Challenges





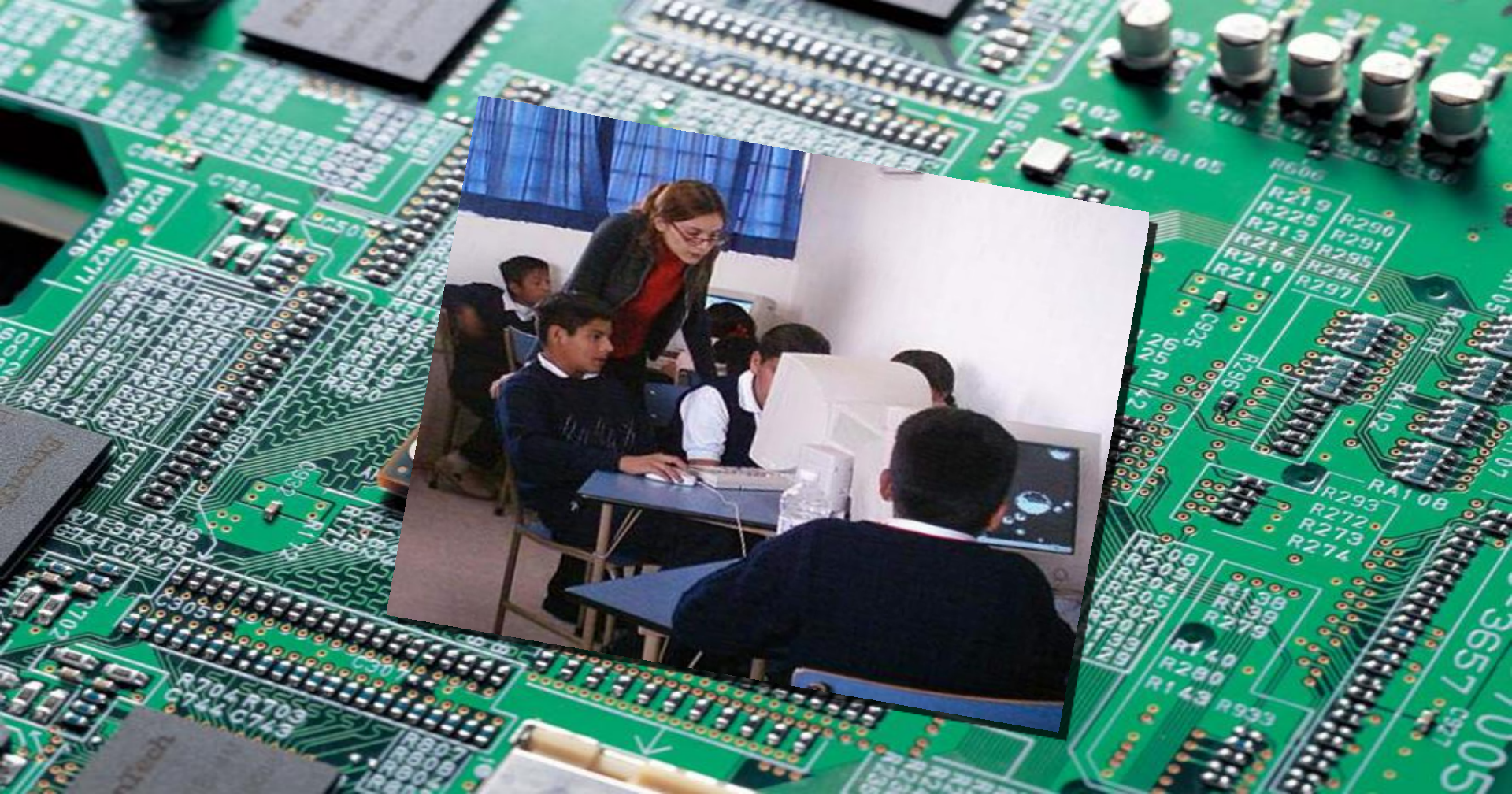
The Flattening World

Global Competitiveness



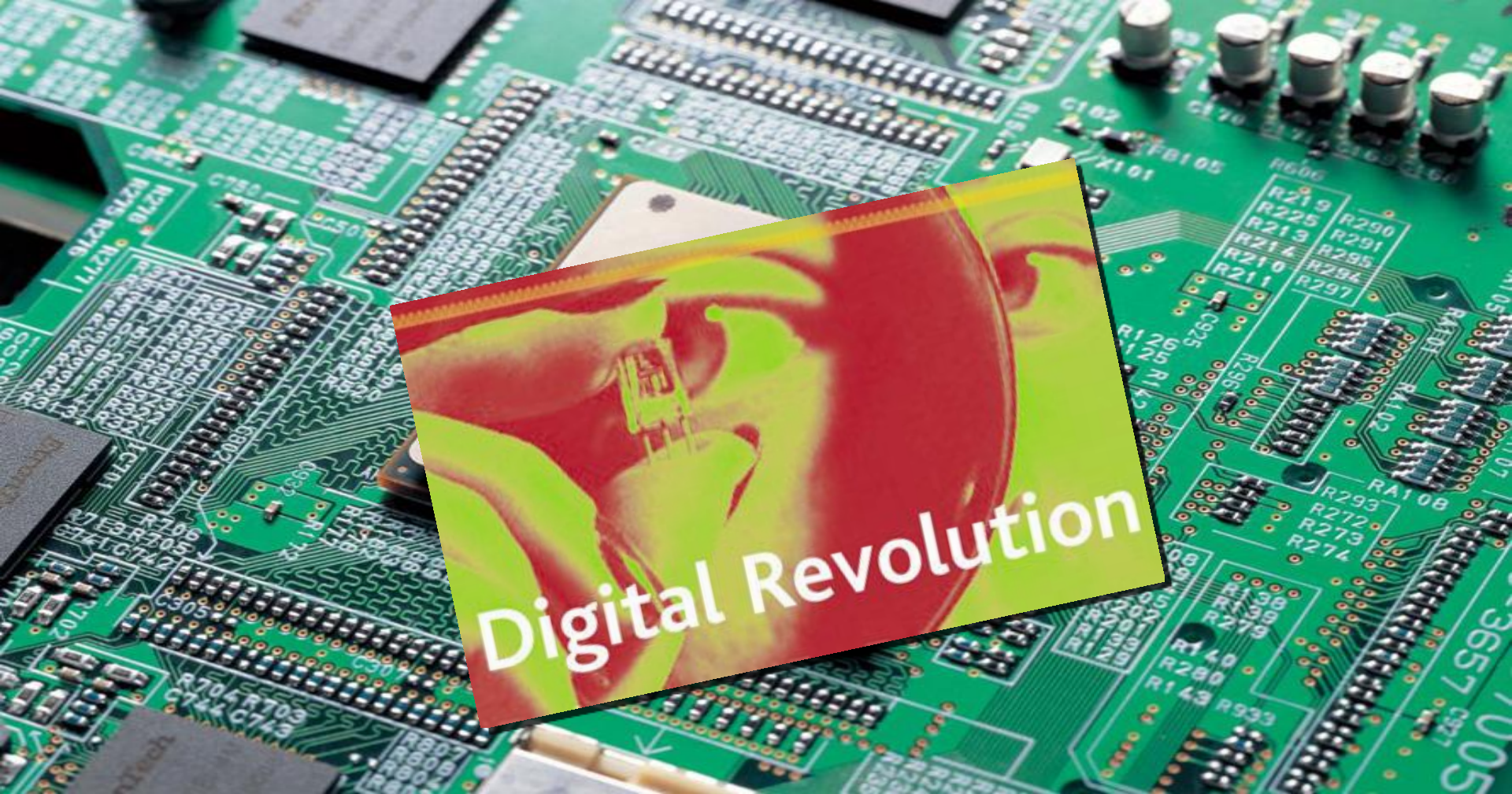
Sustainability

Doing More with Current Budgets



Technology Challenge (1)

Digital Divide / Digital Exclusion



Digital Revolution

Technology Challenge (2)

Keeping Pace with the Rate of Technological Development



© Jim S.

Shifting Nature of Education

Changing Definition of the School



21st Century Teaching

A Challenge....and a problem?



How the world's
best-performing
school systems
come out on top

September 2007

McKinsey & Company

The Best Education Systems..

....have the Best Teachers!

Transformational Themes

How do we bring about sustained change in Education?



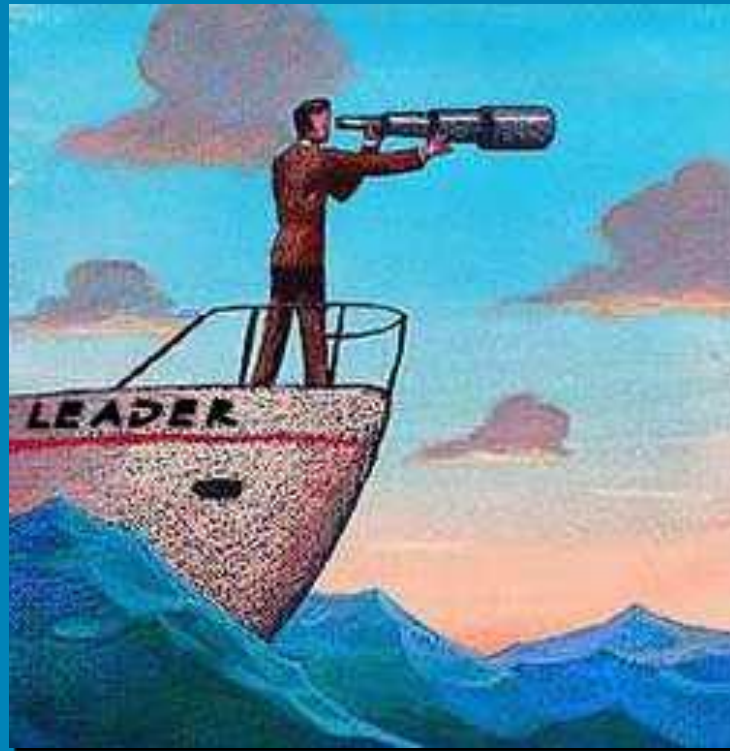
Learner-Centric Education

The Learner is the Focus

QuickTime™ and a
TIFF (Uncompressed) decompressor
are needed to see this picture.

Collaborative Learning

Learning Together



Leadership & Vision

Purposeful Change



21st Century Teacher

Empowering the Teacher

QuickTime™ and a
TIFF (Uncompressed) decompressor
are needed to see this picture.

Sustainability

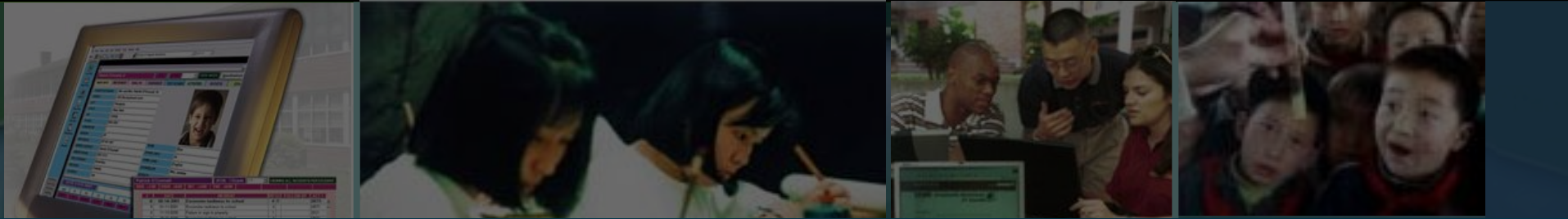
Staying Power!



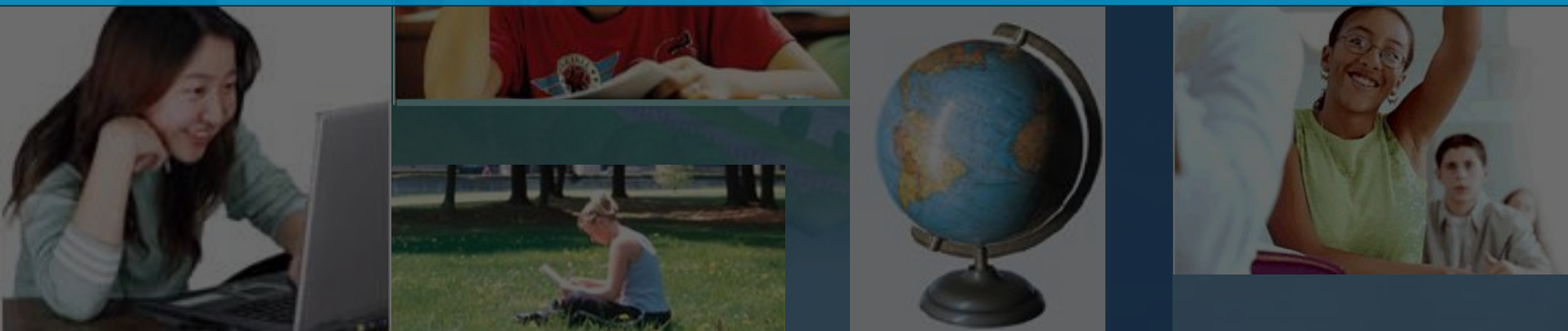
Public-Private Partnership

Working Together for Genuine Transformation

Imagine a School....



....for the 21st Century







Imagine a school...



...that addresses every student's individual learning style,
with highly engaging online curriculum to thoroughly
involve, challenge, and inspire them.

Imagine a school...



...where the learning process is invigorated by personalized feedback, proficiency reporting, and other innovative student performance data.

Imagine a school...



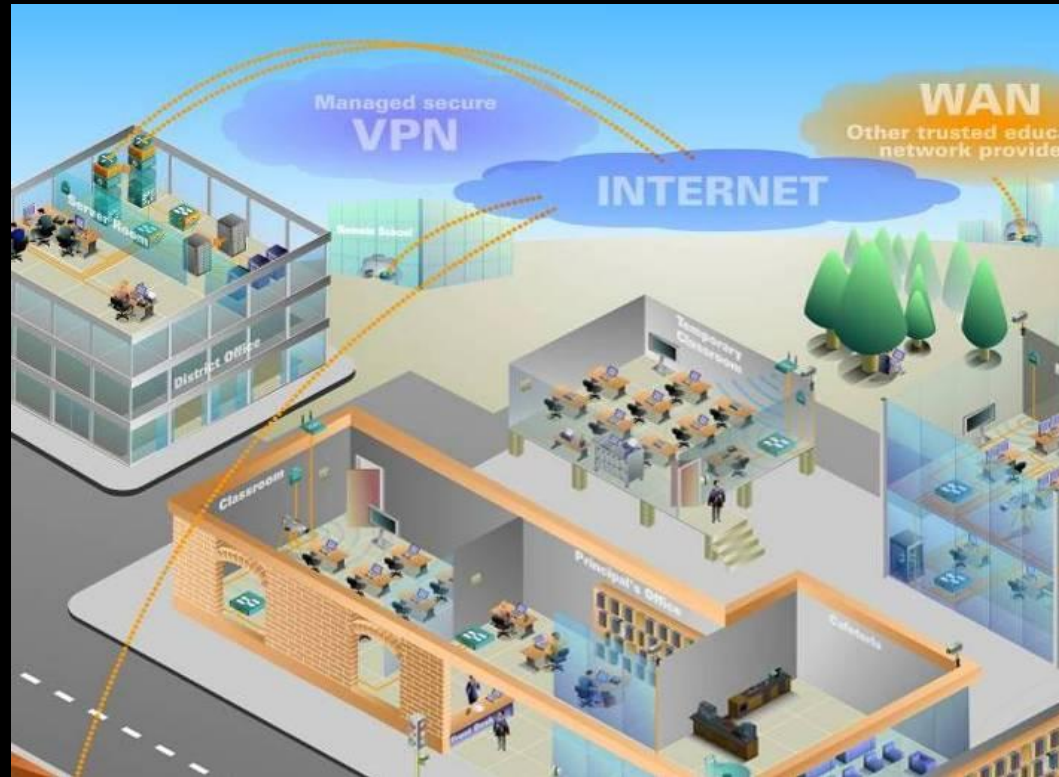
...that connects classes and experts from around the world; providing a Spanish class with a teacher in Madrid, and enabling a science class to experience an Arctic expedition in progress.

Imagine a school...



...that automatically communicates with all parents every day about homework assignments, attendance, and important school events.

Imagine a school...



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

Imagine a school...



...that gives teachers effective productivity tools, to ensure that their administrative tasks don't take away from their classroom time.

Imagine a school...



...where wireless devices free teachers from the blackboard, enabling them to interact with every student in the entire class, to improve learning and class management.

Imagine a school...



...where every student carries a PDA or a laptop instead of a backpack; where entry to buildings is granted through a student ID card; where students have continuous access to equipment, online curriculum, schedules, library check out, messages, and entertainment, at any time, from any location.

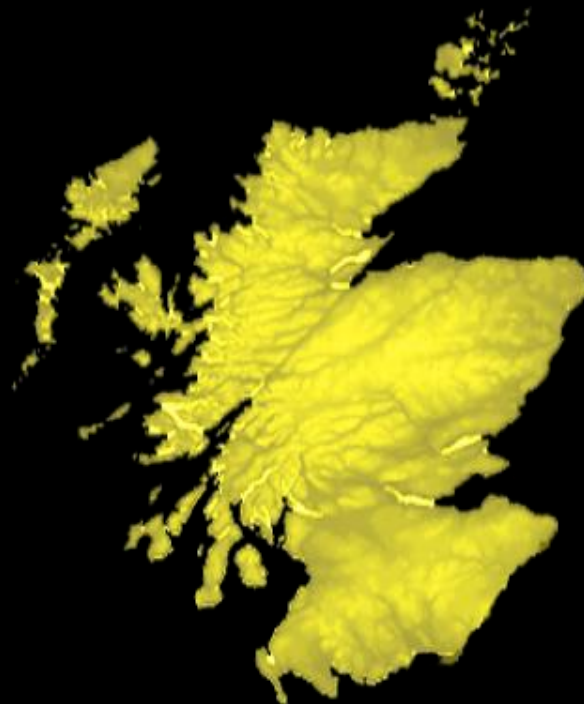
Imagine a school...



...that provides teachers and staff with the information they need about students, scheduling, and administrative matters, around the clock, from anywhere—at home, on a field trip, or even from the soccer field.



Scottish Schools Digital Network



glow

Alan Kay



“The best way to predict the future is to invent it.”

SSDN Principles

- To serve teaching and learning primarily
- Universal access - every teacher and every student
- Fully accessible
- Platform independent
- Open standards - extensible
- Safe and secure
- Single log on to all applications
- Web-delivered / browser-based

Scottish Schools Digital Network



Key Components



Broadband Network



Content Delivery

Learning Platform

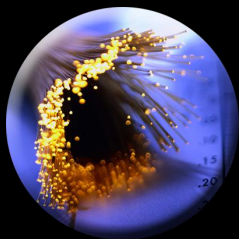


Learning Platform



Broadband Network

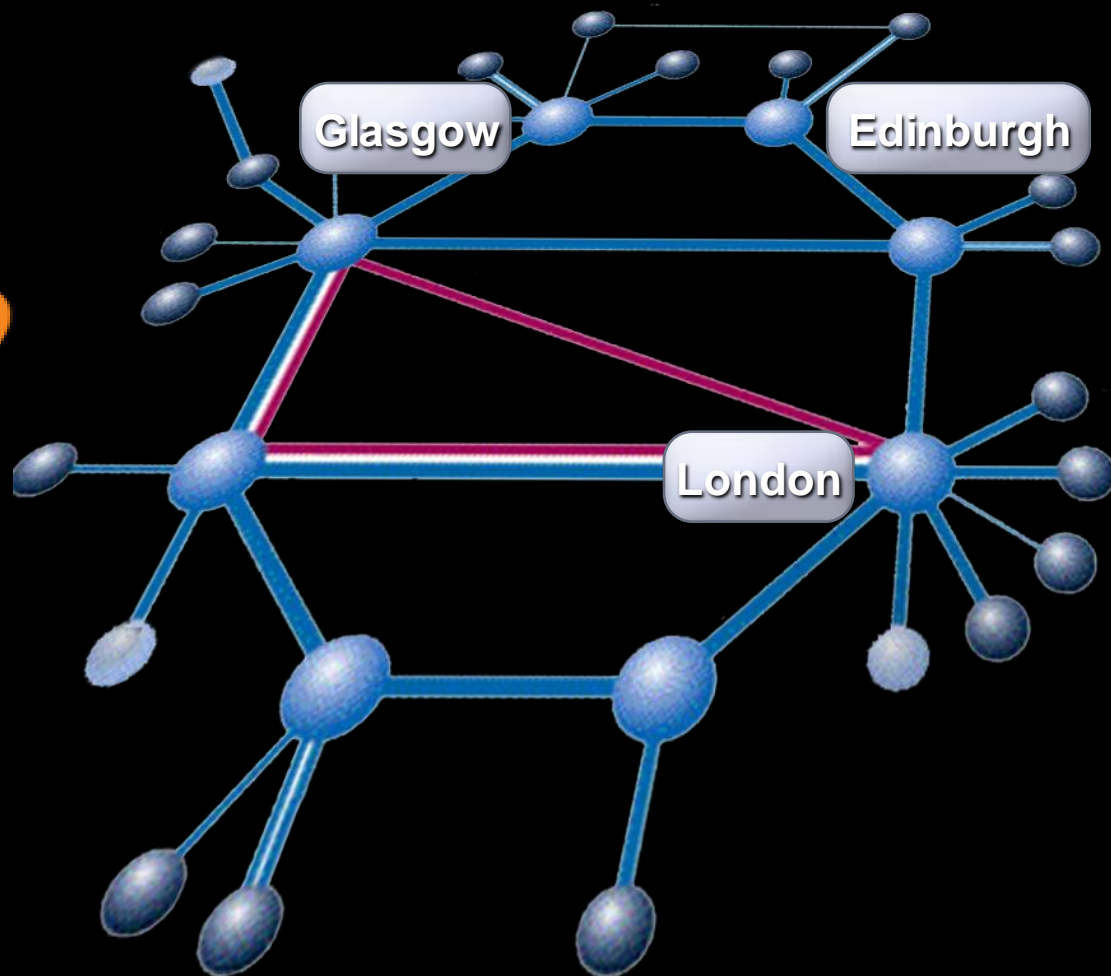
Content Delivery

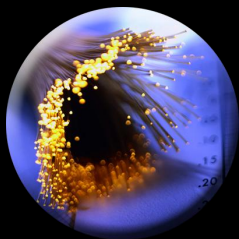


ja.net



**Broadband
Network**

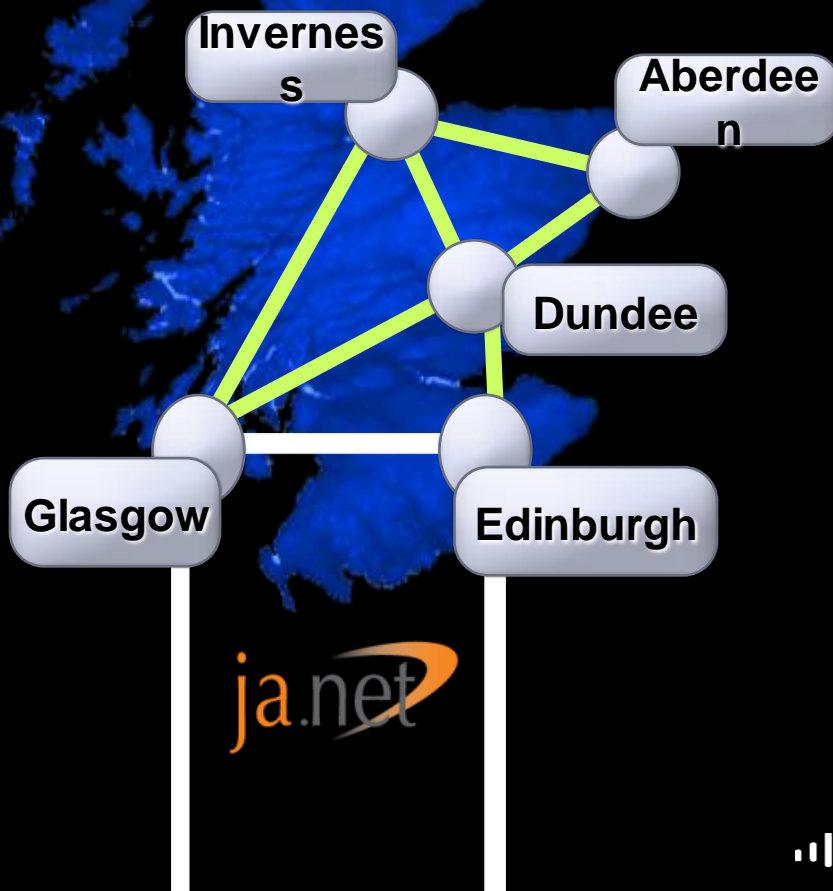


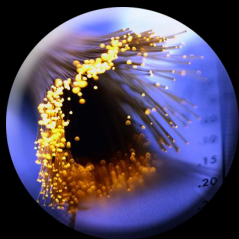


5 cities =
5 Points of Presence

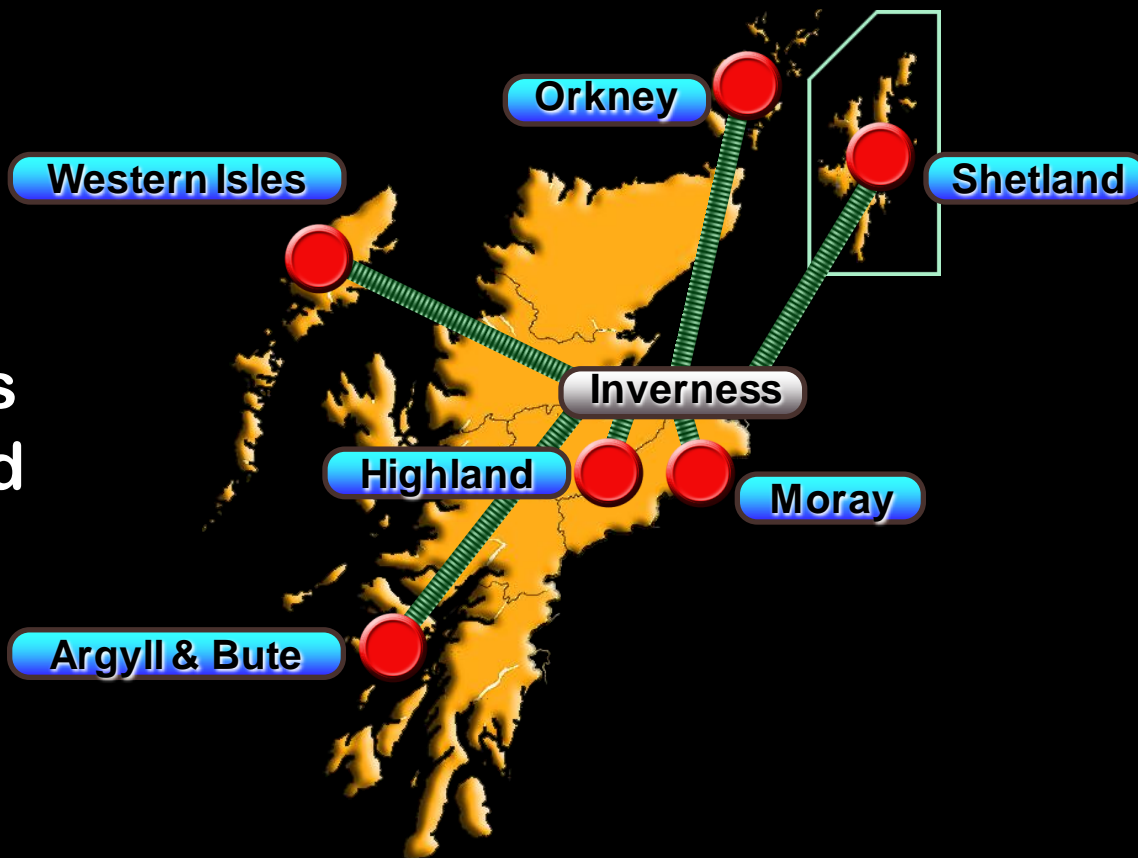


Broadband
Network

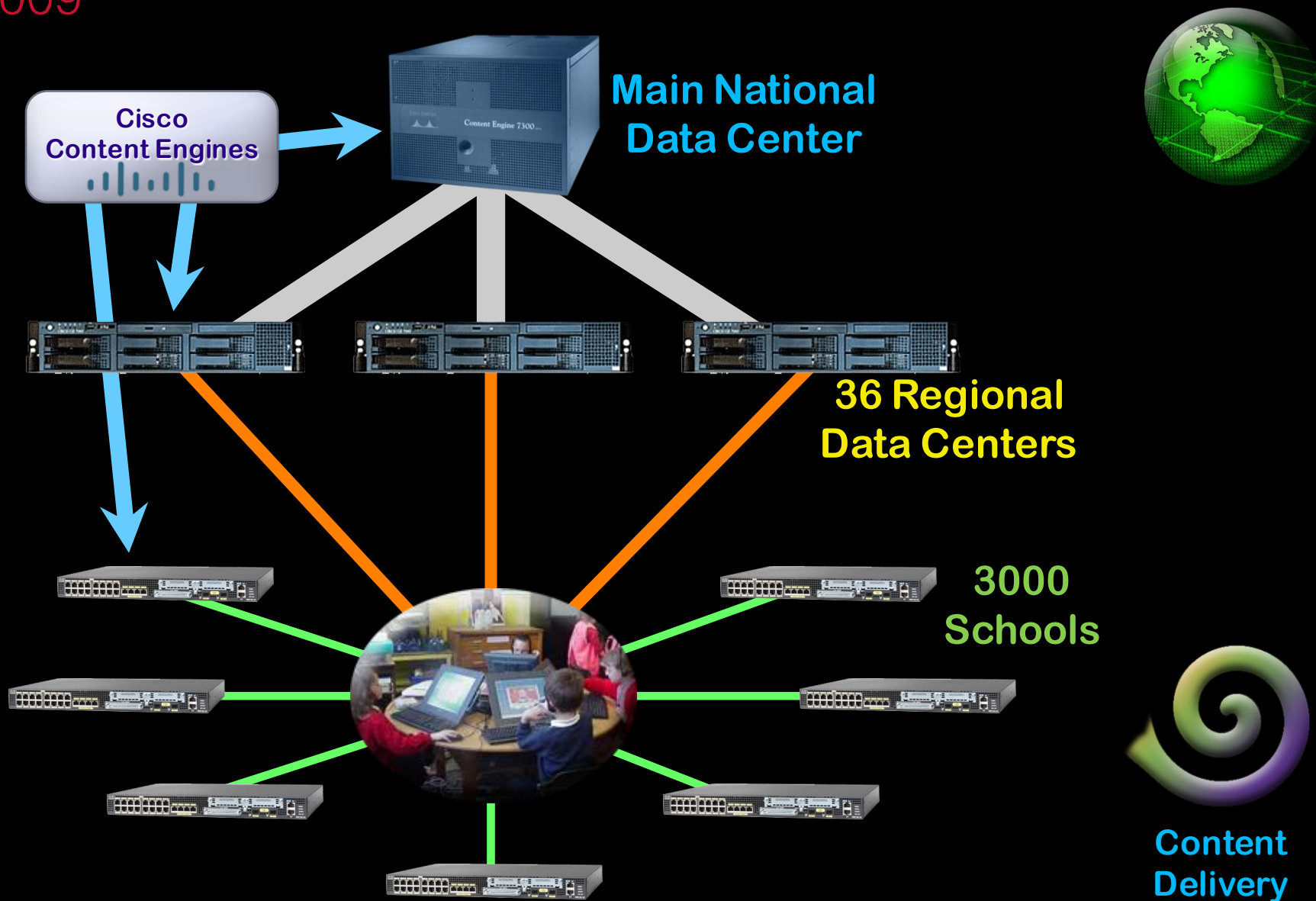




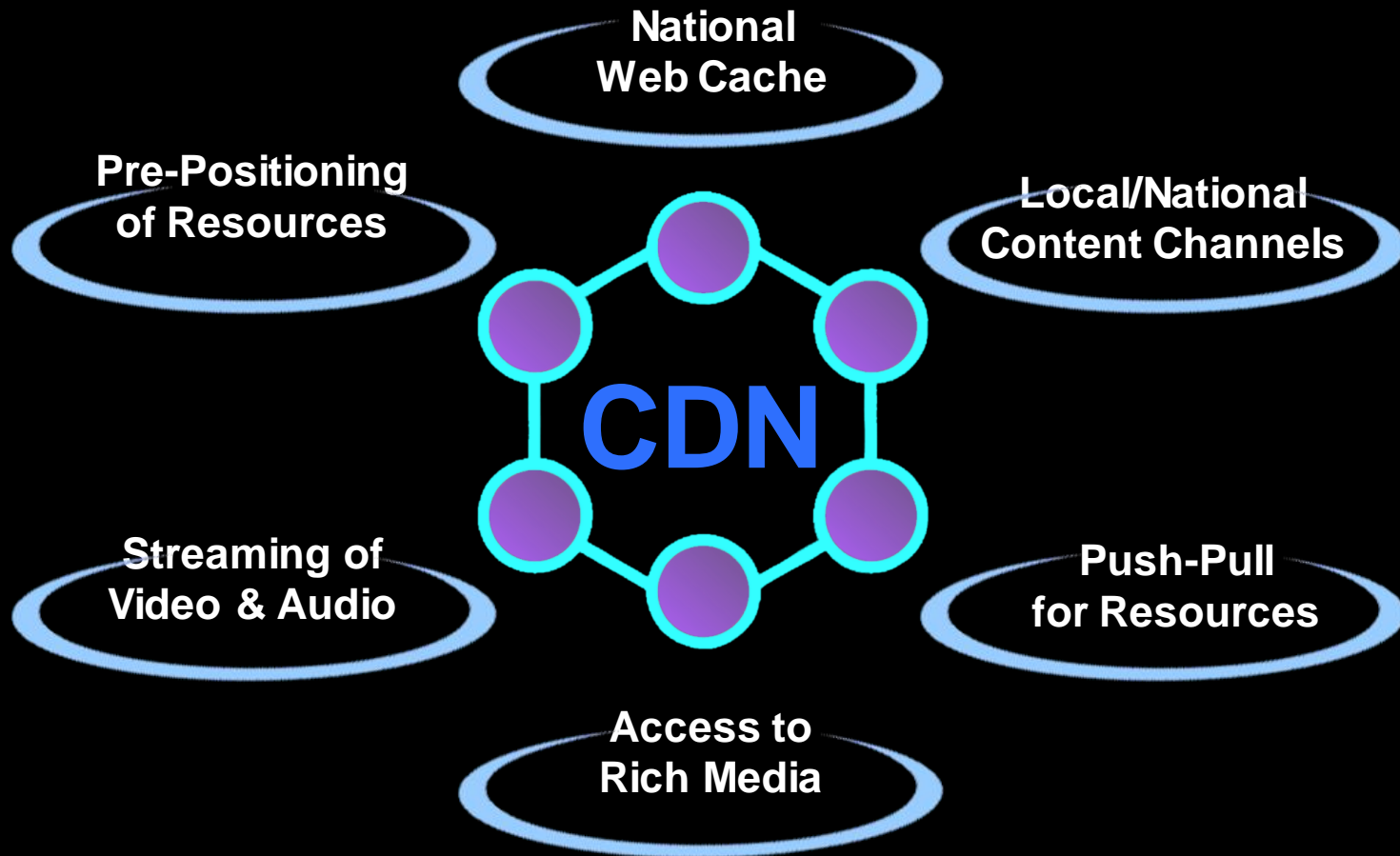
32 Local Authorities Connected



**Broadband
Network**



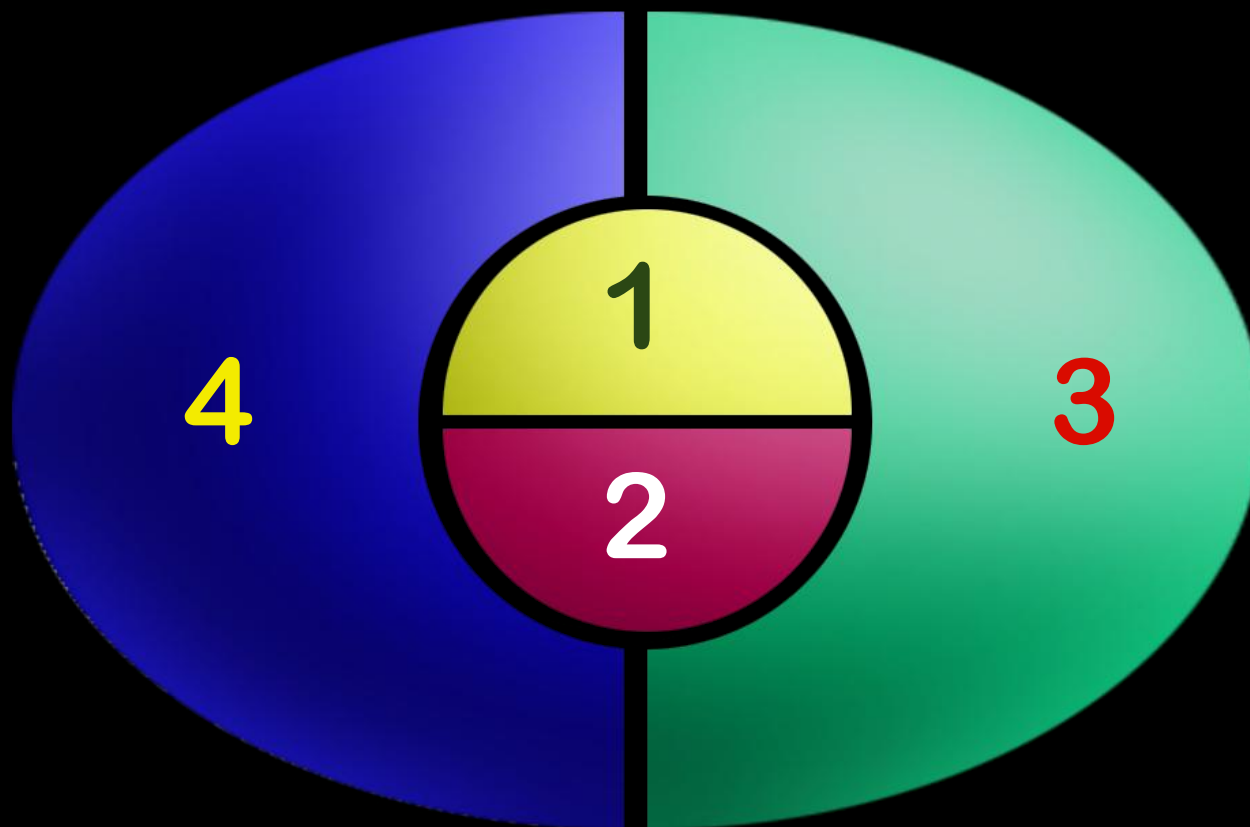
What does CDN do?



**Content
Delivery**

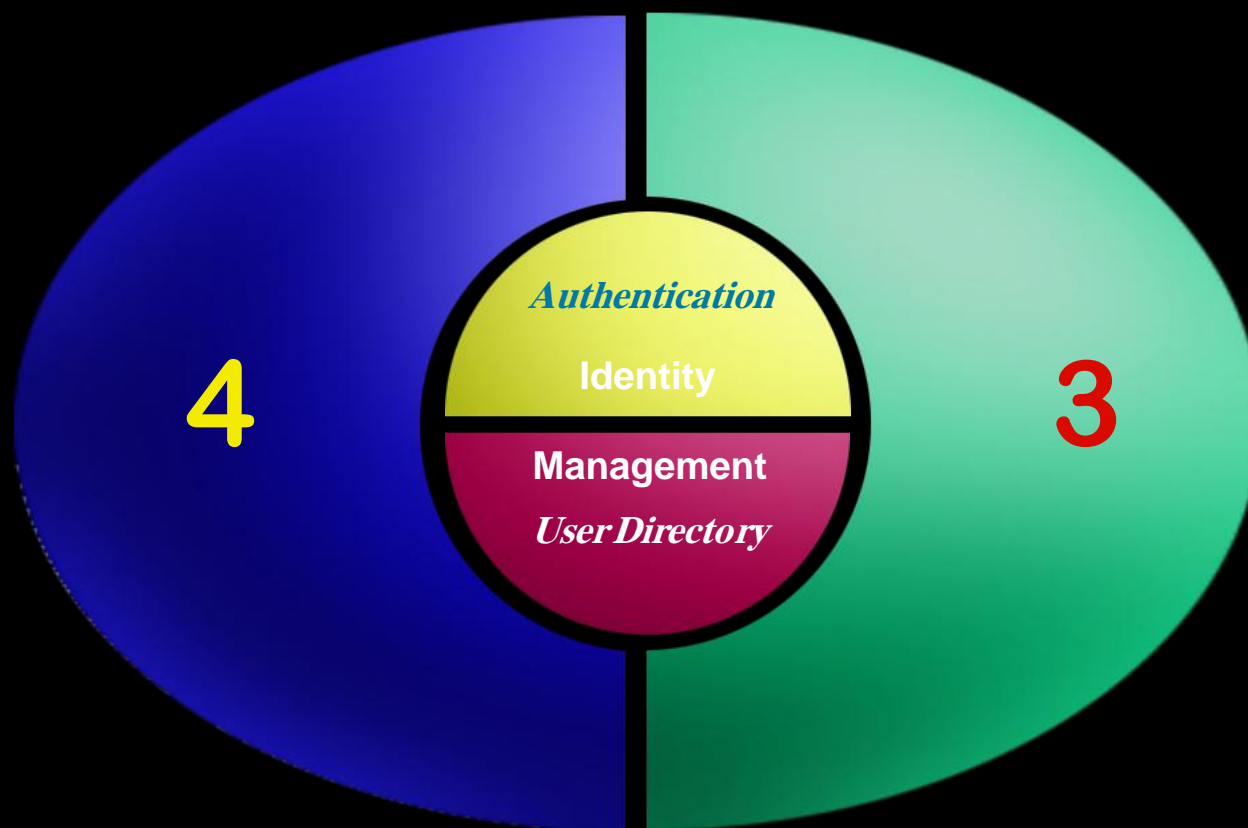
4 Integrated Web-Based Elements

Learning
Platform



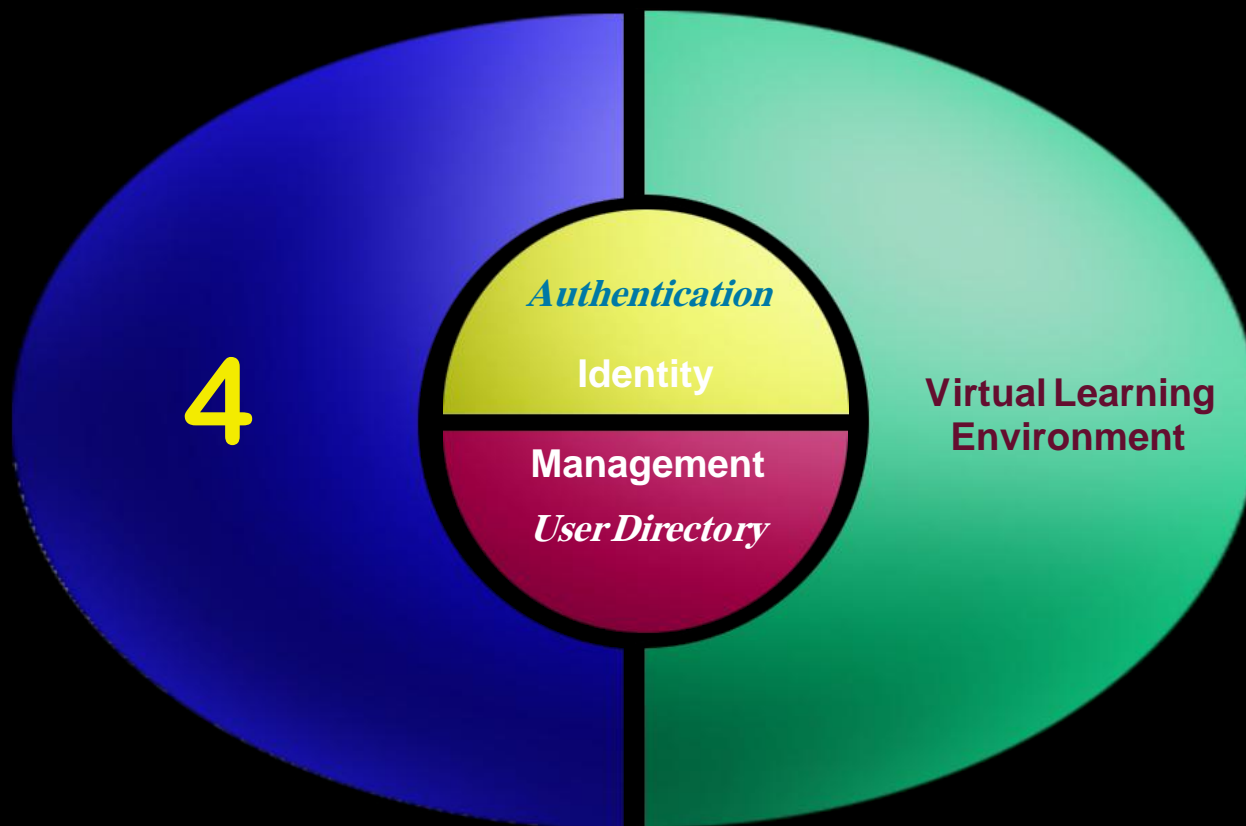
4 Integrated Web-Based Elements

Learning
Platform



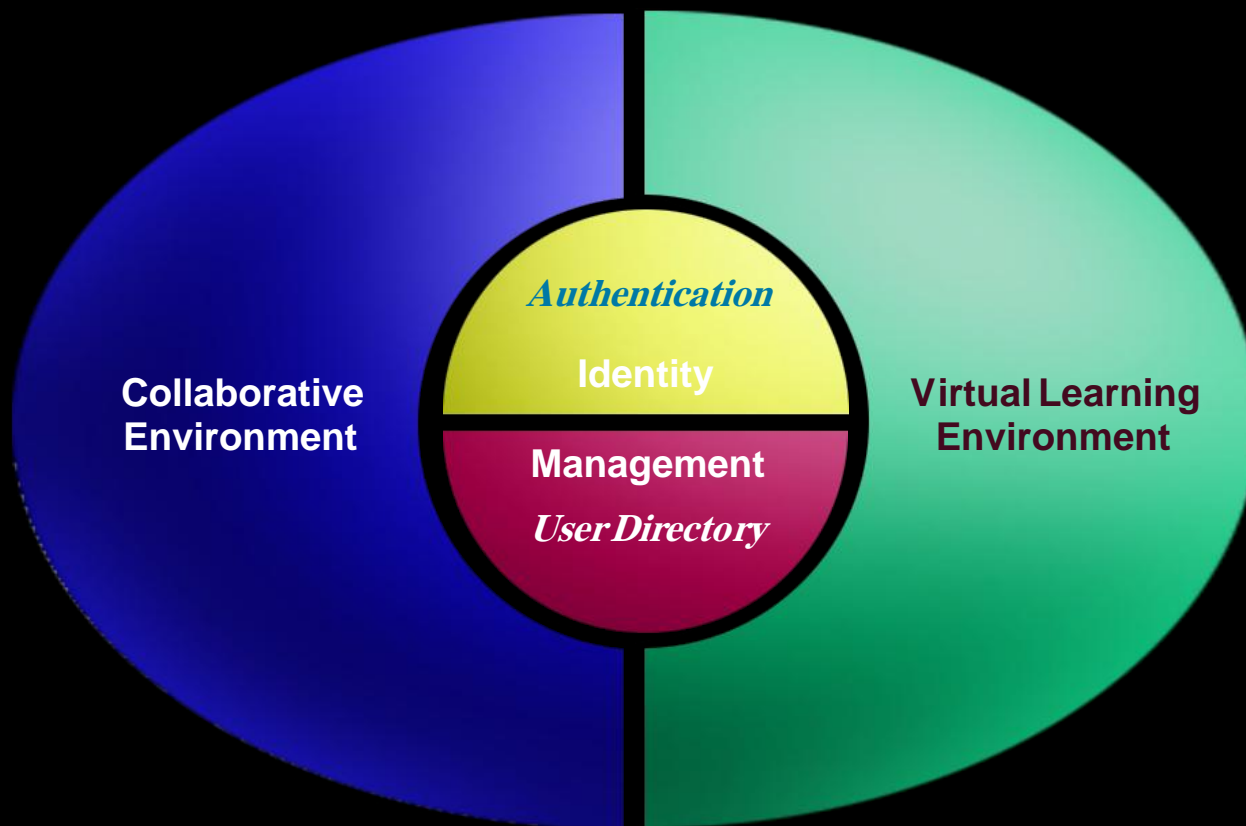
4 Integrated Web-Based Elements

Learning
Platform



4 Integrated Web-Based Elements

Learning
Platform



Learning
Platform



Every user has unique user-name
and password

Authentication

Every user's 'role' is known

Scotland will have a fully national
authenticated education community



Learning
Platform



Every adult able to make direct contact
with every other adult on the system

National contact lists enabled

User
Directory

‘Presence’ aware

Learning
Platform



Course & lesson-building tools

Assessment tools

Pupil tracking capabilities

Every user has personal 'space'
(as has every institution / organisation)

Retrieval of content

Publishing / presentation tools

National
Virtual
Learning
Environment

Learning
Platform



National
Collaborative
Environment

Video/Audio Conferencing

Newsgroups / Discussion groups

Chat rooms

Web Authoring

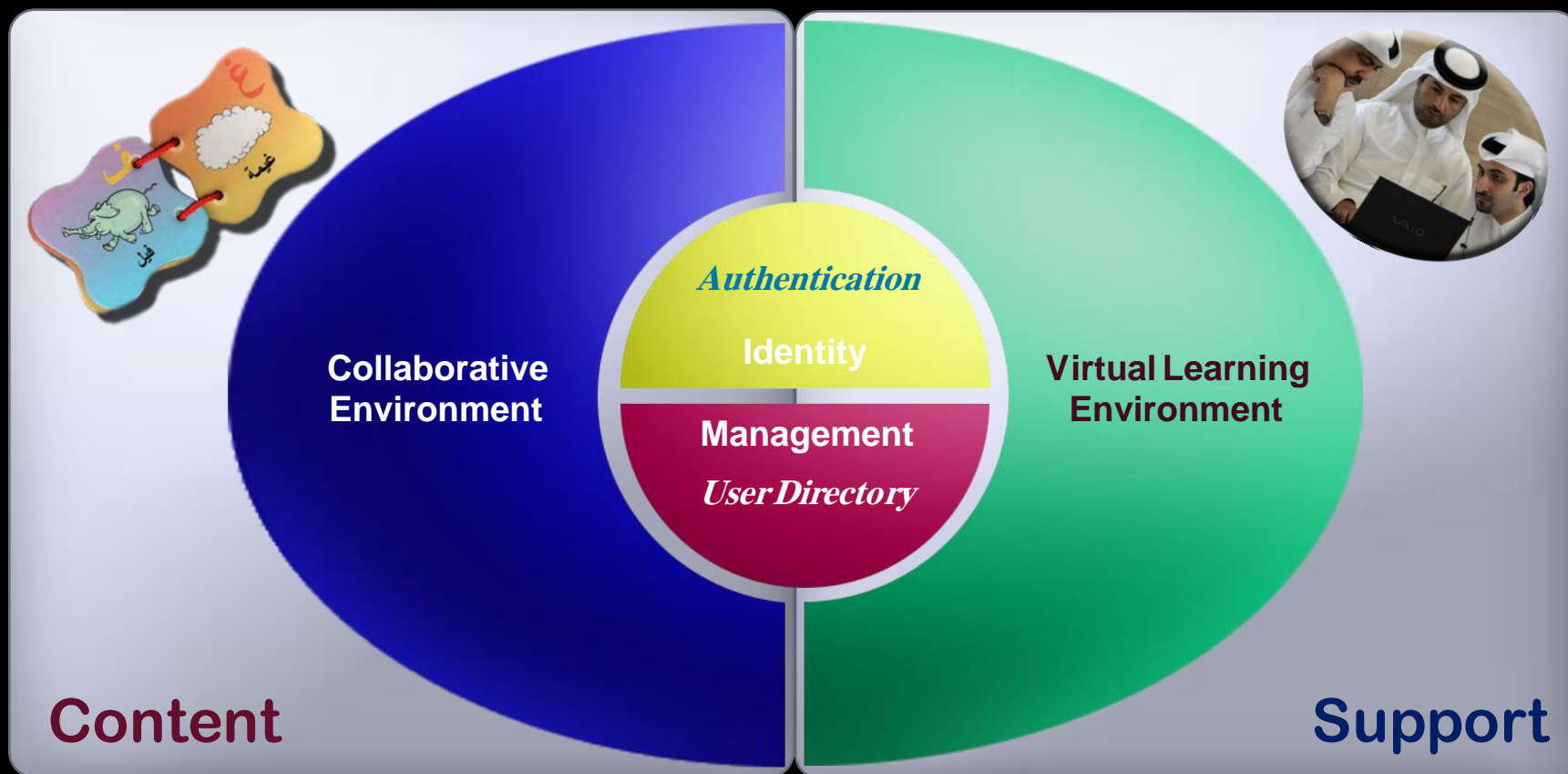
Email

Application Sharing

Virtual Whiteboards

Instant Messaging

Learning
Platform





- ☐ Services dependent on needs,
e.g. MIS / Facilities Management /
Project Management / Pupil
Tracking / Productivity
Suites / Legacy Systems

- ☐ Separation of Curriculum & Content
- ☐ Quality assured content
- ☐ Non-officially sanctioned content
- ☐ User-generated content
- ☐ Private/Commercial suppliers

Services

Curriculum

Collaborative
Environment

Web-based

VLE

ID
Management

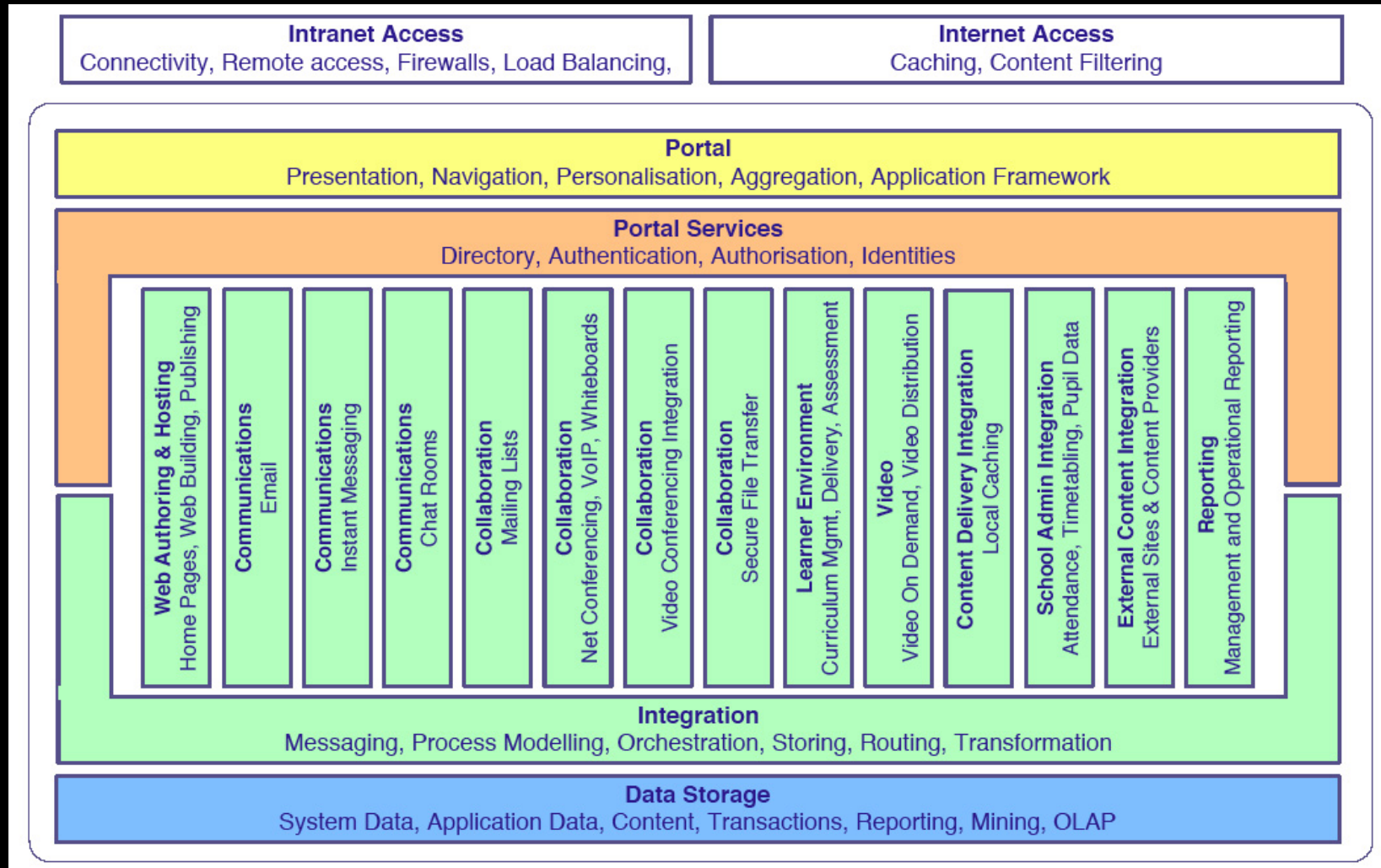
- ☐ Course and lesson
creation
- ☐ Assessment tools
- ☐ MIS & pupil
tracking
- ☐ Access to content
- ☐ Publishing tools

- ☐ Desktop video / audio
conferencing
- ☐ Newsgroups
- ☐ Chat room capabilities
- ☐ Email
- ☐ Mailing lists
- ☐ Threaded discussions
- ☐ Virtual whiteboard
capabilities
- ☐ Application sharing

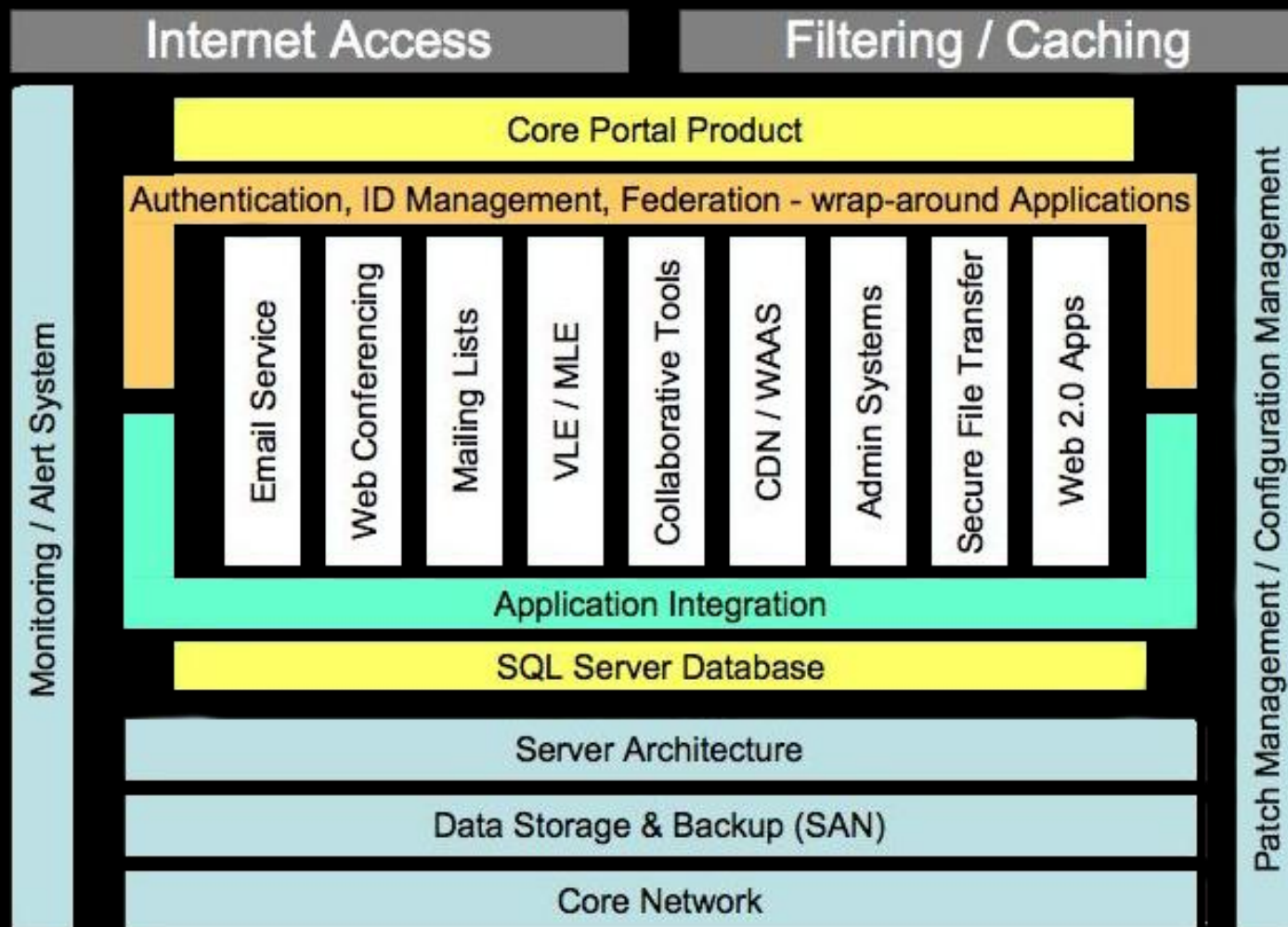
- ☐ Blogging tools
- ☐ Wikis
- ☐ Podcasts
- ☐ File sharing

- ☐ Security and safety;
- ☐ Interest Groups
- ☐ Online Communities

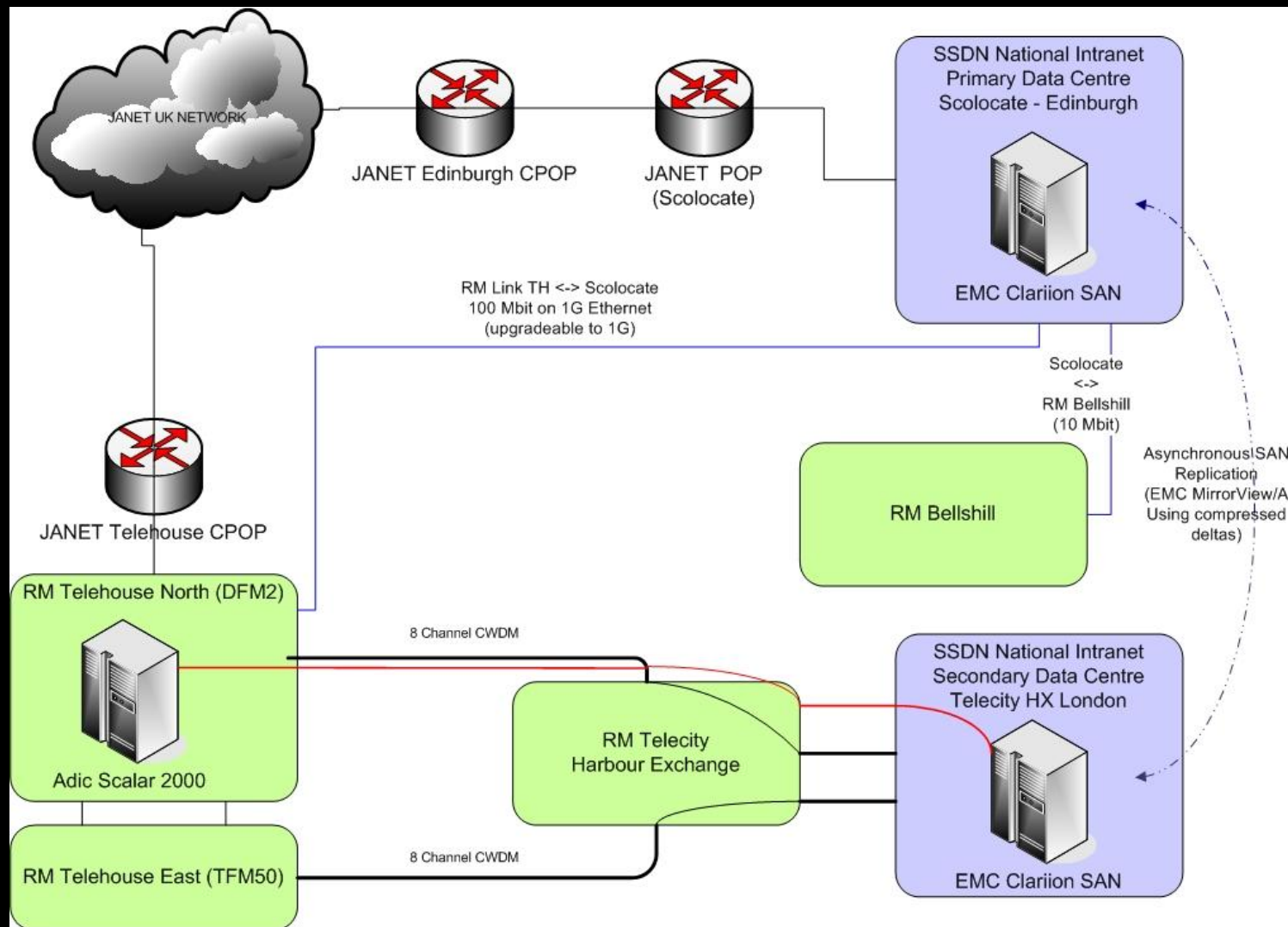
SSDN / Glow Architecture



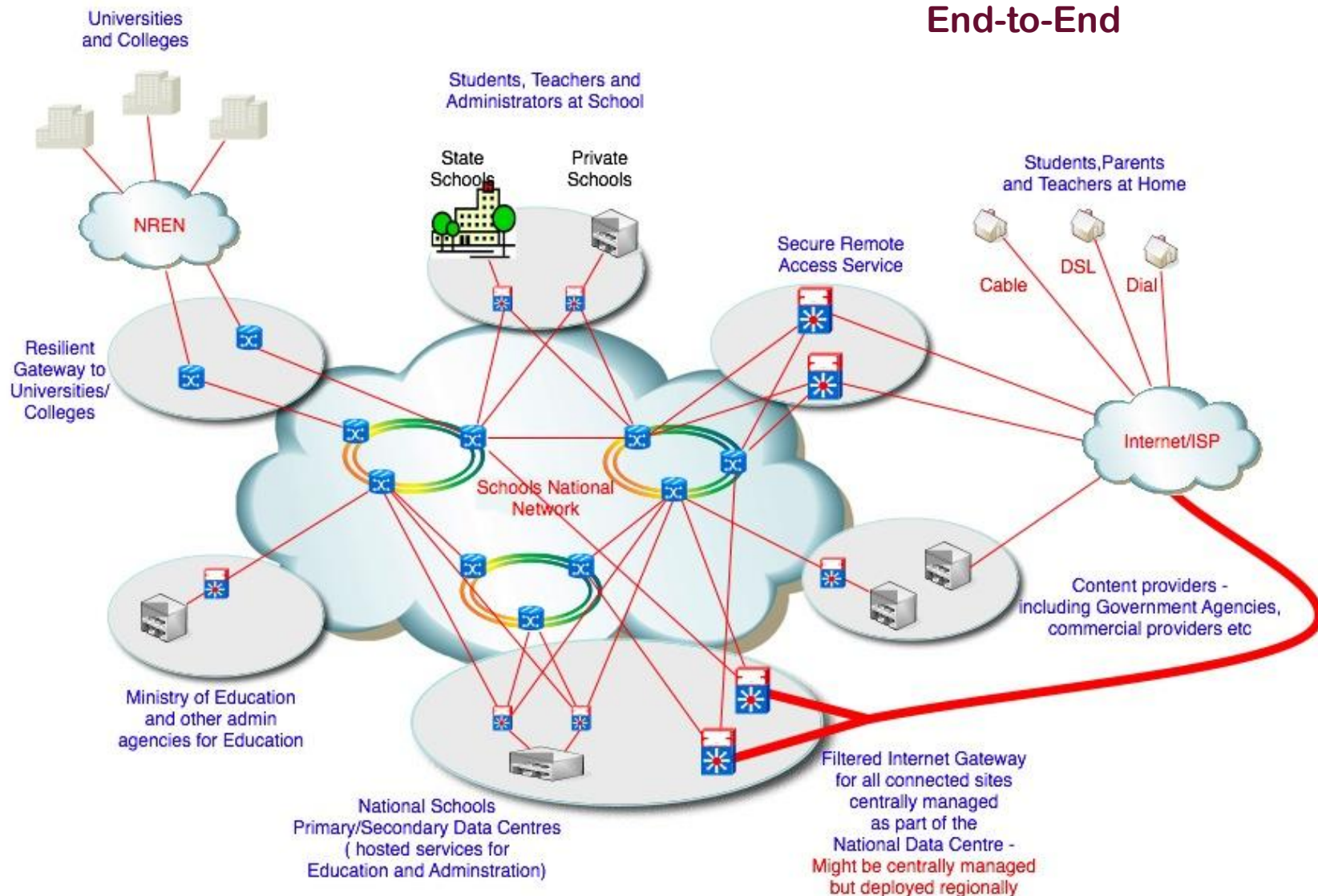
Generic Learning Platform Architecture



Main Data Center & Fallover DC



End-to-End



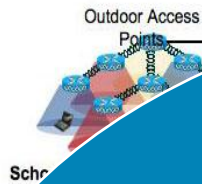
Learning Platform

- Services dependent on needs, e.g. MIS / Facilities Management / Project Management / Pupil Tracking / Productivity Suites / Lesson Systems

- Separation of Curriculum & Content
- Quality assured content
- Non-officially sanctioned content
- User-generated content

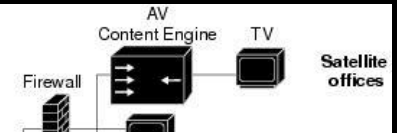
Wireless

- Desktop video / conferencing
- Newsgroups
- Chat room capabilities
- Email
- Mailing lists
- Threaded discussions
- Virtual whiteboard capabilities
- Application sharing



Content Delivery

Corporate Headquarters
Standard web server



LAN

- Medium scalability
- High availability
- Mobility – wireless
- Convergence
- Traffic separation



Collaboration
eLearning
Virtual Learning
Web 2.0
Mobile Learning
Anywhere/Anytime Learning
Integrated Education Management
The Human Network

Multi-Site Campus



Clients

Self Defending Network



Data Center Interconnect Network
Fibre Channel
Infiniband
iSCSI
FICON

WAN / MAN



Multi-service Platform
Optical DWDM Switch

WAN Link

Education for a Connected World



John Connell

Education Business Development Manager

Emerging Markets

Welcome to the Human Network