



Online Media Elements

New opportunities in Internet Video for the Education Community

AHECTA - June 2009

The risks of failing to understand change

“Who the hell wants to hear actors talk?”

H.M. Warner, co-founder of Warner Brothers. 1927

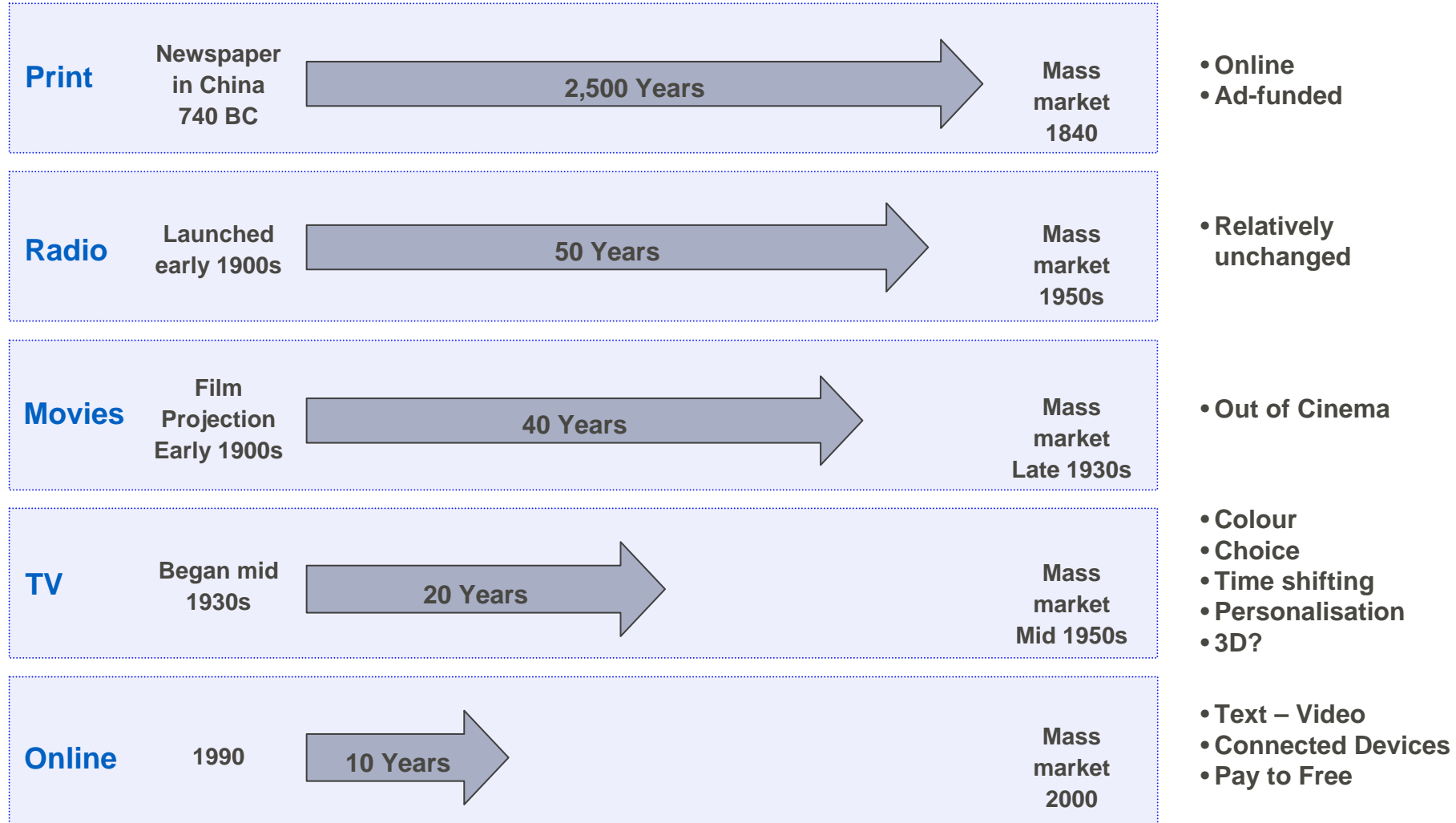
“Television won’t last. It’s a flash in the pan”

Mary Sommerville, pioneer of radio educational broadcasts – 1948

“There is no reason anyone would want a computer in their home”

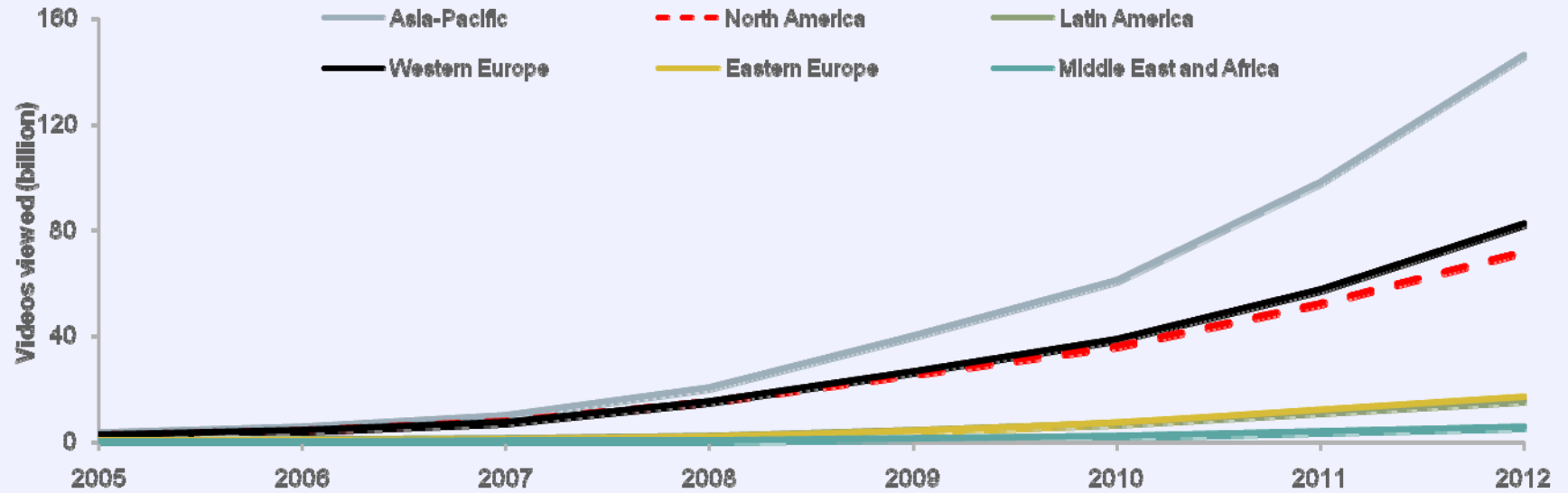
Ken Olson, president, chairman and founder of Digital Equipment Corp. (DEC) maker of big business mainframe computers, arguing against the PC in 1977.

The pace of Change is Increasing



The broadband video market has taken off

Total broadband videos viewed by region



Today

- ◆ 300 million+ broadband video consumers
- ◆ In November 2008 over 77% of US internet users watched an average of 273 minutes of online video and viewed more than 12.6 billion video streams.

By 2011

- ◆ 800 million broadband video consumers
- ◆ 240 billion clips a year
- ◆ 200 billion advertising driven clips a year

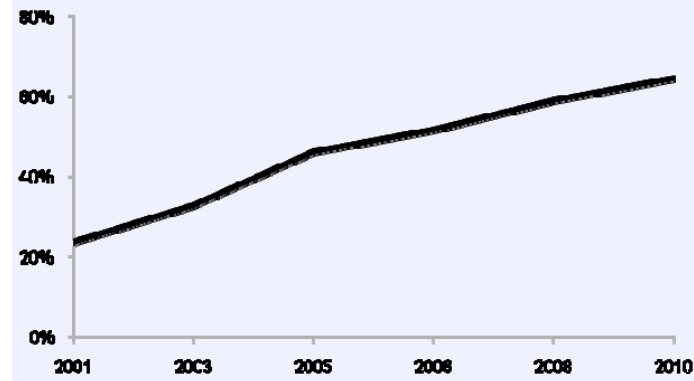
Source: Broadband Video and Internet TV, ABI Research

and is the fastest growing segment on the Internet

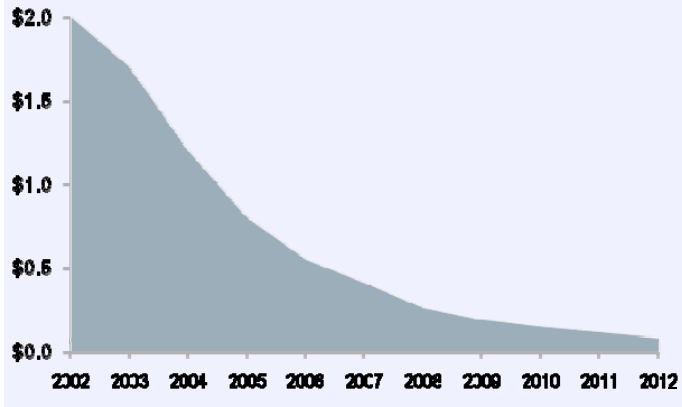
...new emerging services and technologies...



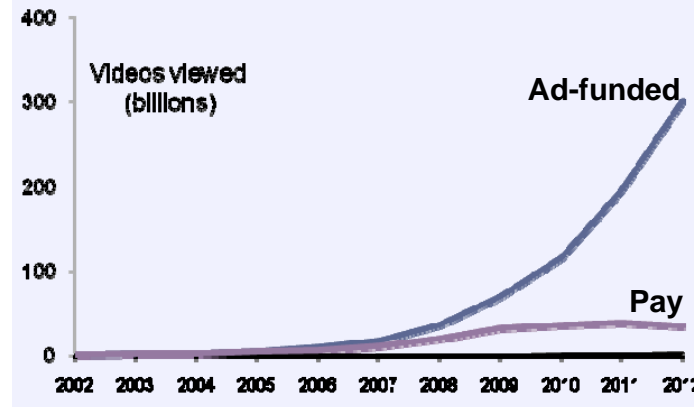
...increasing broadband penetration levels...



...declining cost of distribution per hour...



...and advertising funds migrating to the medium



Source: ABI Research

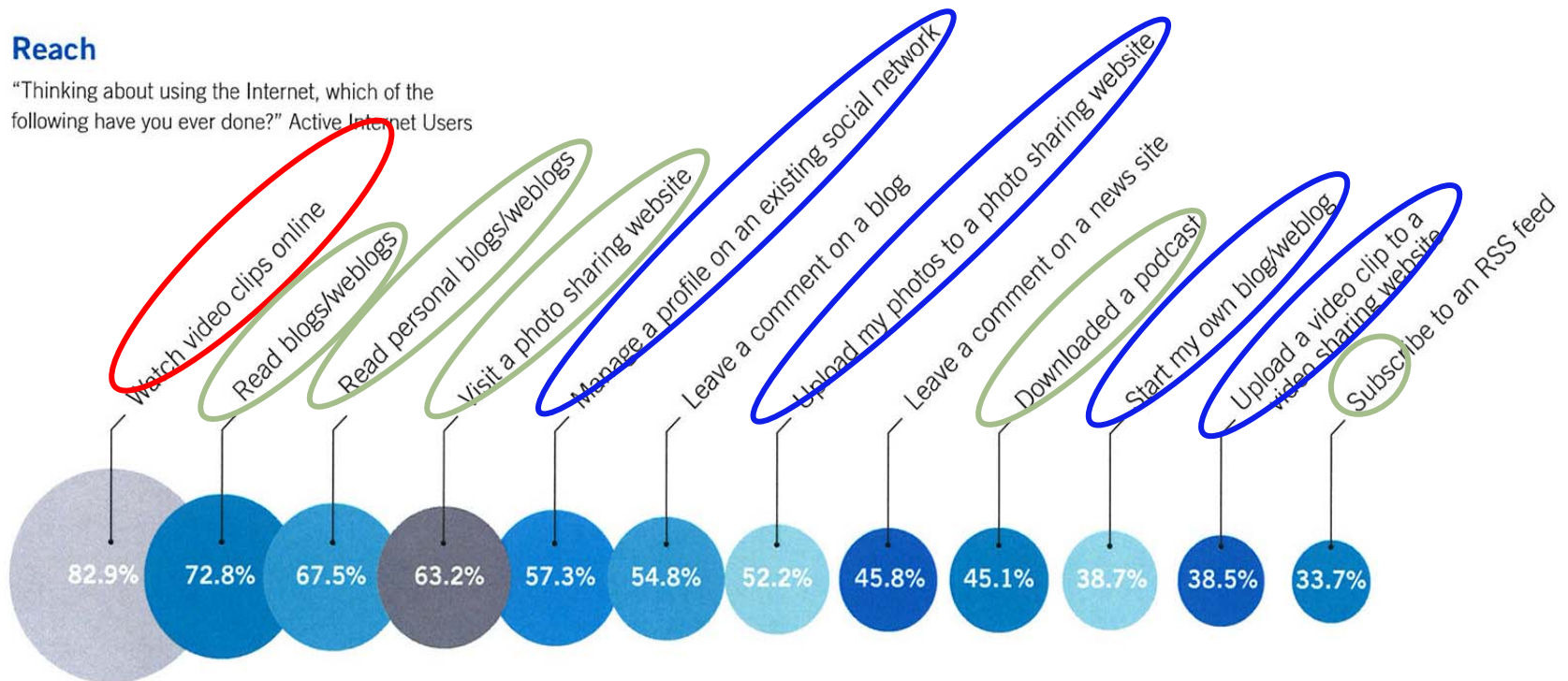
Internet Powering Interactivity “Social Media”

- Today’s students are Web 2.0 Savvy
- Watching Video
- Seeking out content (Blogs / RSS / Podcasts)
- Users getting more actively involved

Global snapshot: Wave 3

Reach

“Thinking about using the Internet, which of the following have you ever done?” Active Internet Users

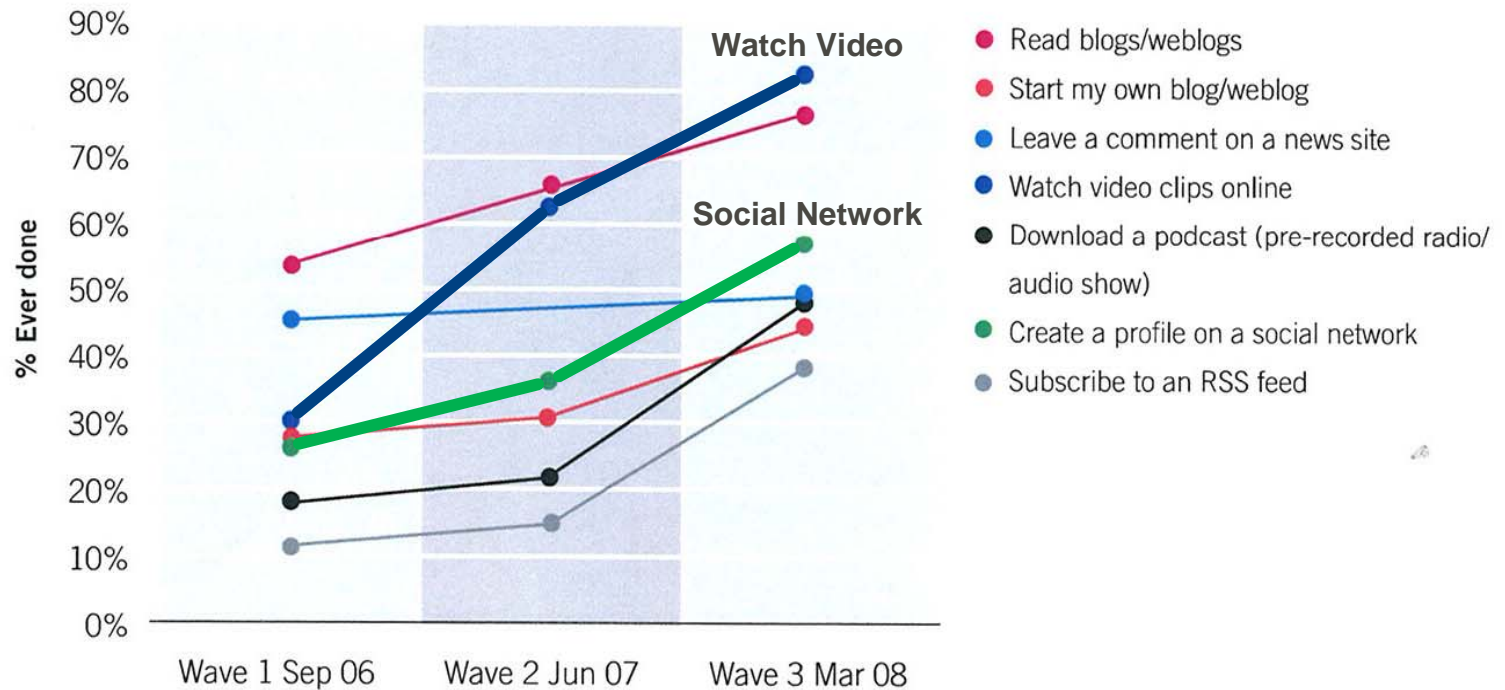


Source: Universal McCann – Power to the People, Social Media Tracker, Wave 3

Internet Powering Interactivity “Social Media”

Reach over time

“Thinking about using the Internet, which of the following have you ever done?” Active Internet Users



Power to the people - Social Media Tracker Wave 3

Source: Universal McCann – Power to the People ,Social Media Tracker, Wave 3

Education Community - Applications

- Distance Learning
- Catch up courseware/lecture content
- Enterprise Training
- Sports Content
- Local Original Broadcasting
- Fine Arts / Student Generated Content
- Live Events

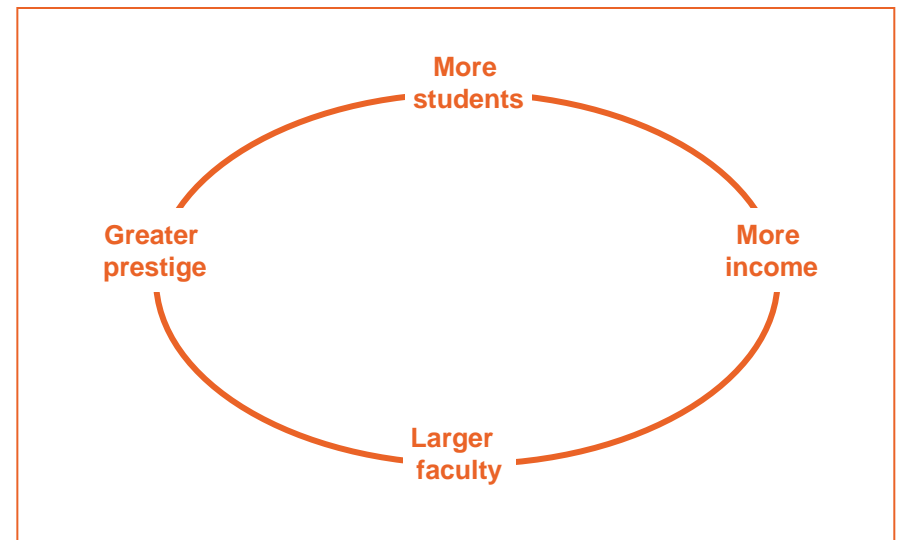
Today's Students

Want access to video applications available:

- Where they are
 - On Campus and Off Campus
 - Mobile and Traveling
 - Accessible for Remote Learning
- When they want them
 - Anytime on demand
 - Easy to find via Search with Metadata/Keywords vs. EPG
- On whatever device is convenient
 - Laptop / Netbook / iPhone

Online learning – key trends

- Increasing use of rich media and real-time interaction
- Online learning is no longer considered “second-class”
 - academics consider the outcomes of online-learning courses can be equivalent or superior to those of traditional courses
- Online learning responsibilities are shifting away from IT operations
 - Technical issues are less pressing than improving course quality
 - Outsourcing some non-core technical functions
- Internationalization of online learning
 - Huge international demand for online learning
 - Prestigious institutions set up satellite campuses



Source: Sloan Consortium

Video Solution – Considerations

- Important to have a solution which can extend outside the private network “walled garden”
- Need to use standardized video standards and players
 - Flash / H.264 / Windows Media
- Integration of Video content with other Web2.0 applications
 - Metadata exchange / Search / Social Networking / Linking / Rating
- Capability to easily adapt to provide best user Quality of Experience
 - Different network conditions and end user devices
 - Automatic adaptation with various bitrates and video resolutions

Video Solution – Considerations

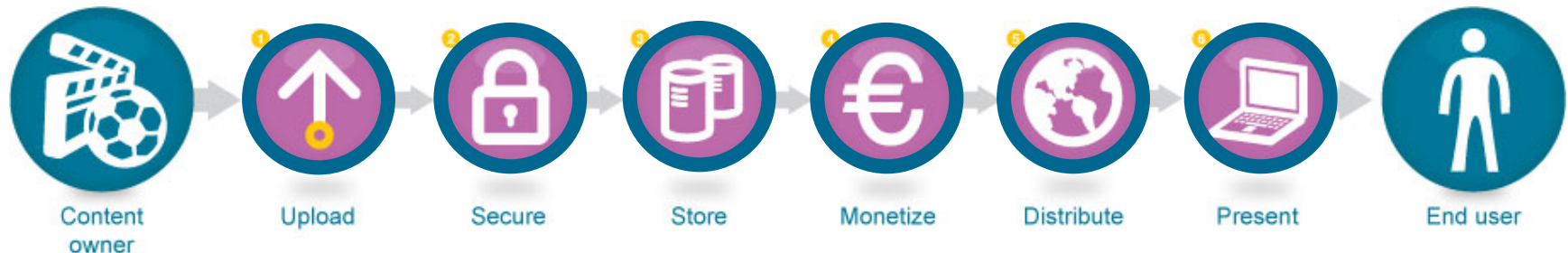
Hardware / Software Capital Expense vs. Managed / Cloud Services

- Which elements are better suited to use of a service provider
- What core expertise and resources are required for integration and operational management of the solution
- Can the hardware platform and network scale up and down to handle changing load requirements in a cost effective manner
 - Seasonal load requirements
 - Special event “burst” requirements
- Can the content producers easily self-administer access to the video applications and manage content libraries
 - What level of technical training is required
 - Can workflow automation be leveraged to ingest, transcode, and publish content
 - Are the publishing tools easy to access and use

Content Management and Distribution Elements

Key areas to consider when choosing a solution

1. **Upload** – How to publish your educational content to various types of platforms and devices
2. **Secure** – How to secure delivery and protect content provided to the end-user
3. **Store** – How to maintain central storage and distribution nodes with backup/archiving
4. **Monetize** – How to generate revenues to cover operational costs for services
5. **Distribute** – How to deliver content with good Quality of Experience to the end user
6. **Present** – How is content adapted for viewing on PC, mobile and TV



Content Management and Distribution Elements

Upload – Features to consider

- Workflow based automation of upload and ingest
- Plug ins available for automatic content transcoding and metadata translation
- Metadata manually imported with editing capability
- Wrap content with digital protection using different DRM technologies
- Multiple bitrate and resolution support for publishing to different devices



Content Management and Distribution Elements

Security – Features to consider

- User Account Verification
- Secure Ticketing with temporary Unique URL's
- Geo-Filtering for access rights based on location
- DRM – Digital Rights Management (To limit content sharing)
- Encrypted Streams
- Encrypted Storage



Content Management and Distribution Elements

Storage – Features to consider

- Sizing and growth planning based on bit rate and total hours
- Storage access speed for high loading events
- Rules based backup and archiving of content
- Disaster recovery site for all video and metadata



Content Management and Distribution Elements

Business Model Support Options

- Subscription Services
- Pay per View
- Download to Own
- Live Events – High Traffic / Waiting Rooms
- Advertising Support
- Billing/Payment Integration and Reporting
- Subscriber Account Management



Content Management and Distribution Elements

Considerations for Content Distribution

- Manage standard usage and live event “burst” traffic requirements
- Pay for bandwidth as required vs. fixed network overprovisioning
- Low latency edge content distribution via CDN
- Optimized structured Peer-to-Peer distribution
- Automated publishing workflow plug-ins for content export to syndication partners



Content Management and Distribution Elements

Presentation Considerations

- Different user device requirements for PC, TV and Mobile devices
- Automatic content selection based on device (bit rate / resolution)
- UI Presentation and functionality based on device requirements



$$QoE = QoC \times QoS$$

End-user experience depends on two major factors

Your content is of little value,
unless delivered with
the right Quality of Service.

TeliaSonera | International
Carrier

www.teliasoneraic.com/education

Main Office in Herndon, VA (Washington DC)

2201 Cooperative Way
Suite 302, Herndon
VA 20171

Telephone (Switchboard): +1 703 546 4000

Office in New York

111 8th Avenue
Suite 810, New York
NY 10011

Telephone (Switchboard): +1 212 620 0602

Headquarters in Stockholm

Vitsandsgatan 9c
SE-123 86
Farsta, Sweden

Telephone (Switchboard) +46-8-504 55 000