Webcasting for Science Communication

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Presentation Outline

- **Birth of a new medium**
  - Combination of television, videotape, magazine, exhibition and field trip
  - Webcasting vs TV: pro's and con's

- **Webcasting for PCST activities**
  - Using the WEB for science communication: the NASA Science Communication Strategy, the beginnings at the Exploratorium and CERN's experience

- **Conclusions**
  - A democratic communication medium
  - Future developments
Webcast Features & Rationale

- Streaming media - Real Media, Windows Media, Quicktime
- Live and archive viewing
- Bandwidth constraints diminishing
- Distribution mechanism accessible and cost effective
- Connect people live to places of authentic science activity
Webcast Process

Remote team

V/C. link

Laboratories (LABS)

Schools (SCHOOLS)

Museums (MUSEUMS)

Encoding

Streaming

Internet
Webcasting: Beyond Television

Webcasting is...

- multimedia
- interactive
- uncontrolled
- archivable & linkable
- low cost
- niche audience

- web format
- e-mail, buttons
- democratic
- shareable
- affordable
- horizontal
Limitations of Webcasting

- **Unpredictable quality**
  - dependent on network bandwidth, traffic, saturation
  - subject to s/w & h/w incompatibilities

- **Multiple standards**
  - dependent on manufacturer and technology

- **Production aspects**
  - Smaller viewing frame
  - Lower video quality
Webcast Bandwidth

- Satellite DTV / DVD
- Good quality movies
- Near CD audio
- FM audio
- Slide/music show
- Talking head
- 1/4 scr animation
- Broadcast audio
- Slide show
- Ambient webcam
- AM audio
- Text stream
- Phone audio

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A new consumer market

- world wide choice (and competition)
- multiculturalism
- unlimited audience
- target market publicity
- on line opinion polls
- precise audience samples
WWW identified by NASA as a mechanism to strategically leverage other communication vehicles and to reach a wide variety of relevant audiences: the science attentive public, mainstream media (print, internet, radio and television), educators and government (see http://science.msfc.nasa.gov)

Source: John Horack, PCST5, Berlin 98
CERN in short

- The world’s largest particle physics Laboratory: founded 1954, 19 MbS, 6,500 physicists from 500 universities and 80 nationalities, 2,300 staff
- Mission: pure science, particles and forces
- Results: giant steps in the understanding of nature’s basic laws, Nobel prize discoveries, shining example of international collaboration
- Spin-offs: technology (WWW)
General Public: Increase the level of awareness of CERN, its cultural value and the usefulness of its technology

Schools: Help teachers to create interest for science and particle physics

HEP: Inform and motivate CERN staff and users
Special educational events within the European Week of Science and Technology - Enhancing the attraction of basic science, in collaboration with ESA, ESO, EMBL, ESRF, .......
Why Webcasting at CERN

- **Strategic target audiences (see NASA)**
  - … in particular: teachers (use of Internet in the classroom)
  - Teenagers: heavy users of the technology; hook into science

- 23 members states all over Europe: efficient way to reach the largest number

- **LIVE:** Show process of current science and connect people to authentic science activity

- ……… WWW made @ cern !
Origins of Webcasting @ the Exploratorium

- Exploratorium is a museum of science, art and human perception in San Francisco
- 650 interactive exhibits on basic science
- Difficult to show process of modern science with exhibits
- Exploratorium audience limited to physical visitors
Focus on the origins of matter, the universe, earth and life through Web connection with six “observatories” - CERN, Hubble Space Telescope, McMurdo Station (Antarctica) ...
Conclusions

- **Webcasting is the evolution of TV**
  - New encoding technologies under development (MPEG2/DVB)

- **Trends: to overcome technical limitations**
  - Multicast, broadcast vs. task to task

- **Ideal for science communication**
  - Linkable, archivable, online, interactive
A tool for Sustainable Development

- A new vehicle for information dissemination
- Beyond political and social boundaries
- Ideal for distant learning
- No need of basic knowledge
- Flexible and versatile as the Web