

## Multimedia Services Strategic Plan Executive Summary

June 2, 1999

Information Resources, Pacific Lutheran University

In December 1998, Media Services, Television Services, and Audio Services began meeting to develop a strategic plan for multimedia services at PLU. We compiled organizational histories, identified key staff service values, conducted focus groups and individual interviews with faculty and staff, visited other comparable university multimedia service organizations, and examined service delivery models published on the web and in the literature. An outside consultant, George Orr of Quality, Inc., interviewed staff using appreciative inquiry techniques and facilitated a one-day retreat on February 23, 1999 to share results of data collected. We identified five key strategic issues and developed action plans to begin addressing them. The result of this work is the attached *Multimedia Services Strategic Plan*. This strategic plan focuses on strategies for selecting, acquiring, producing, and using multimedia content in classrooms, events, and on desktops over the next three years.

### Vision Statement

Our primary goal is to provide multimedia resources, services, and training to support teaching, learning, and scholarship. Though technologies, media formats, and distribution pathways will change continuously, we believe that the process of developing and using multimedia resources shares core competencies that can be adapted and applied as new technologies emerge. We will provide tools and competencies to enable students, faculty, and staff to capture, evaluate, select, process, display, and distribute multimedia content. We will continuously evaluate, learn, implement, and support appropriate multimedia technologies. We will acquire relevant multimedia content and improve accessibility to live events and archived multimedia from time/place-bound to 24 hours a day, 7 days a week worldwide network access. We seek to enhance interaction and collaboration in teaching and learning with interactive multimedia tools that integrate creative, aesthetic, and technical applications via network-based interactivity.

### Action Plan: Strategic Initiatives

Using instructional technology in the curriculum requires an investment in infrastructure, equipment, training, and support. Phase I of the Technology Plan put networked computers on the desks of faculty, providing access to the internet as well as basic tools for development of curricular content. The following five strategic initiatives, coordinated with Phase II of the Technology Plan, focus on providing multimedia equipment and network access to classrooms and meeting places. With this infrastructure in place, access to content, training, and support will provide a viable basis for integrating multimedia technology and content into the curriculum.

- 1. Maintain and Improve Multimedia Classroom Services** – Equip more classrooms and key meeting rooms with plug-and-play multimedia technology including computer/video displays, computers, and high-speed internet connections. Provide additional laptops, computer projectors, and digital cameras for checkout.
- 2. Enhance Web and Multimedia Training and Support** – Identify core competencies and develop just-in-time, network-distributed training materials. Provide a diversity of support options such as one-on-one assistance, workshops, web pages, email forms, threaded discussions, etc. Organize faculty workshops for training multimedia integrators and leaders across the curriculum to encourage and support faculty peers.
- 3. Simplify Interfaces, Procedures, and Communication for Providing Services** – Simplify equipment interfaces and instructions. Improve information sharing and distribution among staff and patrons. Provide comprehensive descriptions of services and a one-stop service point. Train staff in using collaboration, project management, and data-sharing tools to enhance intra and interdepartmental information sharing.
- 4. Improve Production Support for Multimedia Projects** – Acquire digital workstations, peripherals, and tools for the creation, capture, processing, and production of multimedia content. Train staff in curricular applications.
- 5. Enhance Multimedia Content Acquisition and Delivery Pathways** – Improve access to other people and their work via new technologies such as videoconferencing, streaming video, and Internet2. Explore options for receiving satellite programming and improving cable programming to residence halls. Provide webcasting for selected events and network storage for streaming media. Provide 24 hours a day seven days a week worldwide access to selected multimedia resources.

These initiatives are discussed at more depth in the attached *Multimedia Services Strategic Plan*. More details are available on the web at <http://www.plu.edu/~media/stratplan>. For more information, contact Layne Nordgren ([nordgrle@plu.edu](mailto:nordgrle@plu.edu)) at 253-535-7197.

## Multimedia Services Strategic Plan

June 2, 1999 (Updated August 17, 1999)  
Information Resources, Pacific Lutheran University

In December 1998, Media Services, Television Services, and Audio Services began meeting to develop a strategic plan for multimedia services at PLU. We began the planning process with the following goals.

### Goals of Strategic Planning Process

- Identify university needs and, in particular, academic needs for multimedia development and utilization including present and future needs for television and audio services.
- Examine service delivery models at other similar universities; develop appropriate service model plans for PLU.
- Identify roles of:
  - distance learning, teleconferencing, and satellite technologies
  - campus RF cable system and programming for residence halls
  - videoconferencing pathways using ISDN versus internet conferencing and streaming media
  - HDTV and analog to digital technology transition
- Develop strategic plans to implement academic multimedia service model, enhance delivery pathways, address equipment reliability and obsolescence, and integrate appropriate new technologies.

### Scope

This strategic plan focuses on strategies for selecting, acquiring, producing, and using multimedia content in classrooms, events, and on desktops over the next three years. Multimedia is broadly defined (see *Appendix 1. Glossary of Multimedia Terms*) to include both analog and digital media formats and their delivery via static (one-way such as cable TV, satellite reception, and webcasting) and dynamic (interactive such as ISDN videoconferencing and internet) pathways.

### Methods

*“The significant problems we face  
cannot be solved at the same level of thinking  
we were at when we created them.”*  
Albert Einstein

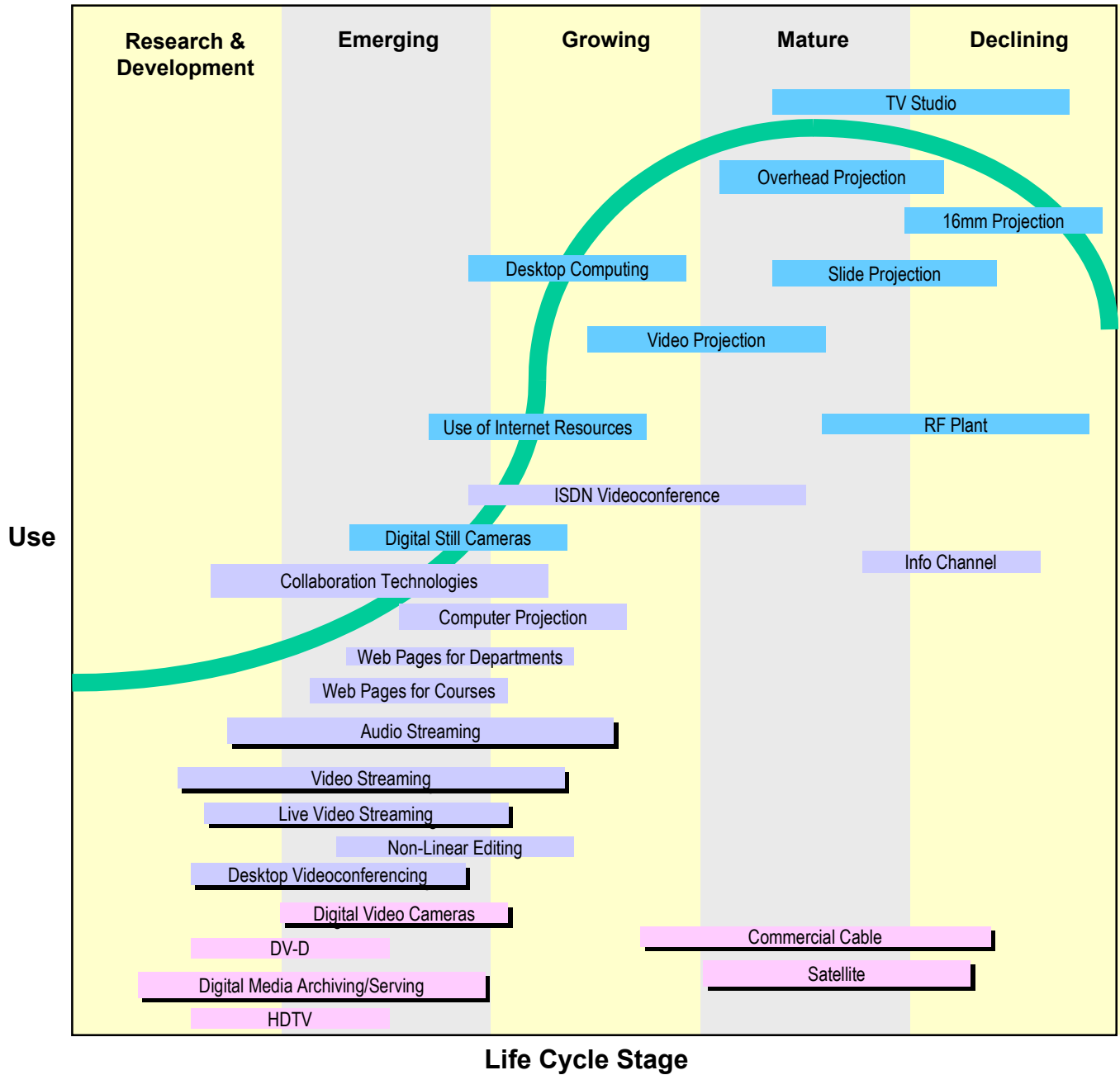
We used a number of methods to assess patron needs, identify internal and external trends, examine service models, and utilize the experience and expertise of PLU staff.

1. **Compilation of Multimedia Milestones** – Relevant milestones were compiled for Audio Services, Media Services, and Television Services. (See *Appendix 2. Multimedia Milestones at Pacific Lutheran University 1980-1999*). Current technology was compared with *Figure 1. Estimated Life Cycle Stage of Selected Multimedia Technologies* to understand the life cycle stage of each technology represented, identify potential technology transition paths, and concentrate focus on weak areas.
2. **University Multimedia Needs Survey** - Two focus groups of faculty were convened to supplement academic coverage from the *Survey on the Use of Instructional Technology in the Classroom*. Three additional individual interviews were conducted. The results are summarized in *Appendix 3. Focus Group and Interview Summaries*.
3. **Service Delivery Model Survey** - To identify how similar institutions are delivering multimedia services and dealing with digital production and delivery issues we conducted a literature analysis and web survey as well as site visits to seven comparable institutions. Results are summarized in *Appendix 4. Literature Review and Web Site Summary* and *Appendix 5. Synopsis of Site Surveys*.

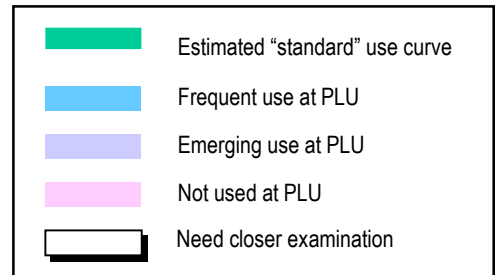
Figure 1.

**Estimated Life Cycle Stage of Selected Multimedia Technologies**

Compiled by Layne Nordgren



The diagram above is based on literature studies (Appendix 5), site visits (Appendix 6), and estimated industry trends. Pacific Lutheran University technology penetration is estimated in relation to other institutions. By comparing the vertical gap between the green curve and the purple or pink bars, one can identify technologies that need either further investigation or concerted efforts toward enhancing technology penetration. Those technologies needing closer examination in the near future are shadowed.



4. **Staff Strategic Planning** – Using methodologies from Blanchard and O’Connor (1997), Media Services and TV Services staff completed an analysis of staff and service values. Results are summarized in *Appendix 6. Perceptions of Key Service and Staff Values*. An outside facilitator, Bud Orr of Quality, Inc., conducted individual staff interviews using appreciative inquiry techniques described by Hammond (1998). He facilitated a day-long staff planning retreat on February 23, 1999 to discuss common staff themes regarding directions for the future. Results are summarized in *Appendix 7. Strategic Planning Retreat: February 23, 1999*. Two follow-up sessions were conducted to implement short-term action projects identified in the staff retreat and to identify “undiscussables” using techniques from Senge, *et. al.* (1994) and Ryan and Oestreich (1998). Action projects and their current status are described in *Appendix 8. Multimedia Action Projects*. Results and findings from the above methods pointed to a number of change continua summarized in *Figure 2. Multimedia Services Change Continua*. *Figure 3. Multimedia Cycle and Services* illustrates a refocusing of our vision away from the technology (which changes rapidly) and toward the multimedia competencies (which are more stable) and resources needed to meet pedagogical goals. *Figure 4. Multimedia Technology Adoption Life Cycle* provides an overview of the issues and strategies for promoting technology penetration into the curriculum. *Figure 5. Multimedia Content Delivery Pathways* summarizes present and future distribution pathways, trends, and relationships among pathways.

5. **Identifying Relation to Other Relevant University Planning and Assessment Documents**

*Expanded Statement of Institutional Purpose Rev: 3/19/97: Page 3.*

3. Develop and support a plan to **acquire and appropriately utilize information resources technology in the delivery of both academic and support services. Provide widespread access to technology among students and faculty. Encourage the innovative use of technology in teaching and scholarship.**

*PLU 2000, Part III, The PLU 2000 Action Plan: Authorized Initiatives*

I. Strengthening the Learning Community

1. Achieve a distinguishing reputation for academic excellence in all departments and schools by means of:

**b. Pedagogies that are guided by the concepts of collaborative learning.**

5. Shape staff and faculty development programs to:

**c. Raise the level and quality of support services.**

V. Supporting the Enterprise

- 4. Develop a plan to acquire and appropriately use technology in the delivery of both academic and support services.**

*Technology Plan*

Phase I Assumptions

- **Every PLU student should have access to appropriate knowledge resources regardless of location on or off campus**

Phase II Goals

- **Faculty and student use of technology in teaching and learning**
- **Continuing campus technology hardware and infrastructure needs**
- **Opportunities for distance learning and study abroad**
- **Ongoing mechanisms for evaluating and responding to changes in technology**

*Library Services and Resources Survey Summary (March 1998)*

The most frequent comment (45 responses) related to increasing hours of operation of Media Services. Other lower-frequency comments included the need for more VCR/TV equipped study rooms and better audio equipment. See summary at <http://www.plu.edu/~libr/staff/survey/> for more details.

*Library Retreat (January 28, 1999)*

Of four top issues of library, three are relevant to multimedia services

- Information Access and Retrieval – **change style of communication with patrons, off-campus access, satellite, remote user stations.**
- Planning for Constant Equipment Upgrading – **backup plan, upgrade for more access.**

**Figure 2.**

## **Multimedia Services Change Continua**

*Summarized by Layne Nordgren*

The following change continua can be used as guidelines to evaluate action plans in relation to strategic initiatives.

### **SERVICES**

<u>from ...</u>		<u>to ...</u>
Multiple access points for services	➤	One-stop shopping, scheduling, online ordering, help
Static information islands	➤	Dynamic information access, interchange, and sharing
5 days a week, 8am-5pm, place-based	➤	7 days a week, 24 hours a day, network-based
Doers, producers	➤	Facilitators, teachers

### **CONTENT**

<u>from ...</u>		<u>to ...</u>
Analog	➤	Best of digital & analog
Design of content for medium	➤	Design for malleability, modularity, portability
Static, non-interactive	➤	Dynamic, interactive
Video & audio tape, fast deterioration cycle	➤	Network streaming, digital archives, slow deterioration
Just in case, static	➤	Just in time, live
No standards for multimedia organization, tagging, etc.	➤	Use of IMS, HTML, SGML, HyTime standards
Multiple unsupportable file types, programs, platforms	➤	List of supported file types, programs, platforms

### **EQUIPMENT**

<u>from ...</u>		<u>to ...</u>
Analog	➤	Best of digital & analog
Bursty expenditures, equipment beyond life cycle	➤	Continuous planned, replacement and enhancement
Long replacement cycle, repairable	➤	Planned obsolescence, throwaway
Video projection	➤	Computer projection

### **DISTRIBUTION**

<u>from ...</u>		<u>to ...</u>
Broadcast, scheduled	➤	Narrowcast, on-demand, interactive, streamed
ISDN	➤	Internet2, GigaPoP, K-20 network

### **PRODUCTION**

<u>from ...</u>		<u>to ...</u>
Corporate communications	➤	Curricular applications
Diffuse, ill-defined, poorly communicated	➤	Focused, clearly defined, carefully communicated.
Studio, production professionals	➤	Desktop tools, desktop training & support, outsourcing
Broadcast/professional analog equipment	➤	Best of digital and analog desktop tools

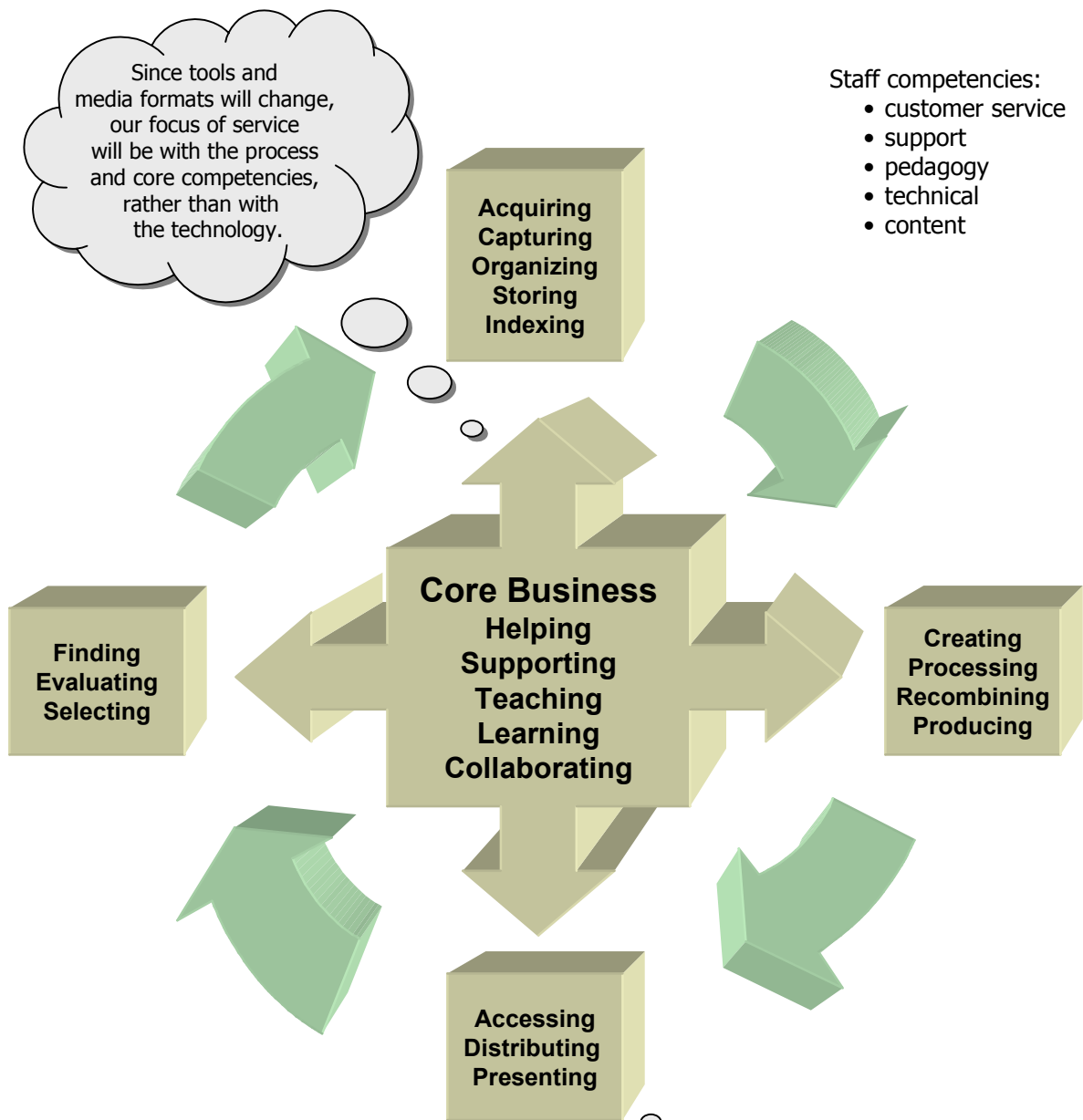
### **TRAINING**

<u>from ...</u>		<u>to ...</u>
Workshops, lectures, demos	➤	On-demand, custom, individual
On the job	➤	Conferences, workshops, site visits, books
Unplanned learning time, on demand	➤	Built in training, learning time for new technologies

Figure 3.

### Multimedia Cycle and Services

Compiled by Layne Nordgren



#### Our Mission...

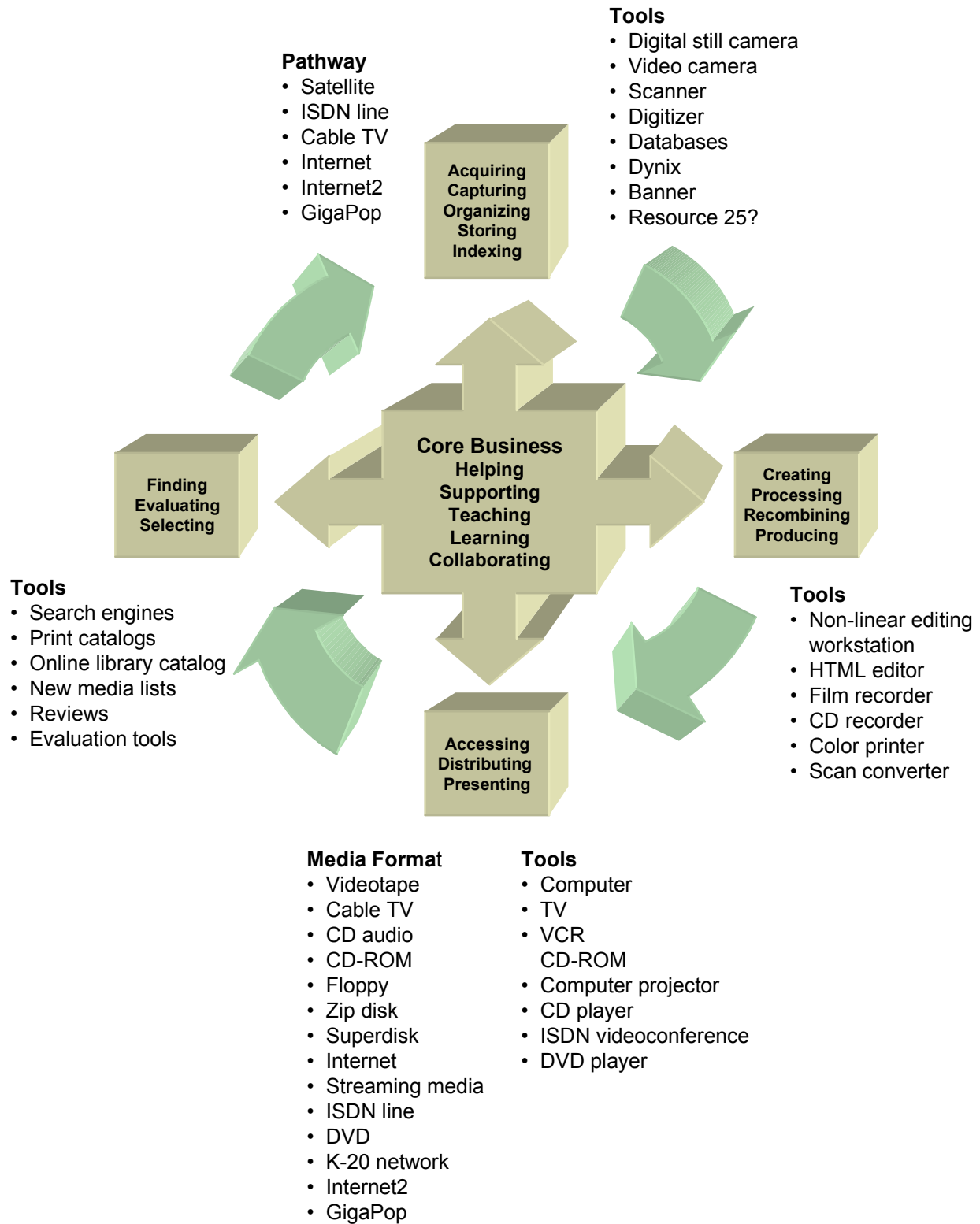
- to deliver multimedia resources and support for university classes and events
- to access and distribute multimedia content via cable and network pathways
- to provide tools and services for creating, capturing, processing, and producing original multimedia content
- to maintain and enhance a web presence for the university and to assist faculty and staff in developing supportive web resources
- to provide training and support for using multimedia tools in teaching and learning; to foster and enhance continuous learning environments to keep pace with changing technologies

Figure 3.

### Multimedia Cycle and Services

Compiled by Layne Nordgren

#### Tools and Pathways



- Continue Specialized Training – **videos for equipment use, one-on-one training, classes, on-demand training.**

*Survey on the Use of Instructional Technology in the Classroom*

This study uncovered a number of issues we examined in more detail in focus groups and individual interviews. Results are summarized at <http://www.plu.edu/~media/itsurvey>.

### Vision Statement

*"Part of the mythology dominating information technology management is that it is all about technical issues.*

*It can be argued instead that it's actually all about managing change – technical, social, pedagogical, political, and financial."*

John L. Oberlin (1996).

Our primary goal is to provide multimedia resources, services, and training to support teaching, learning, and scholarship. Though technologies, media formats, and distribution pathways will change continuously, we believe that the process of developing and using multimedia resources shares core competencies that can be adapted and applied as new technologies emerge. We will provide tools and competencies to enable students, faculty, and staff to capture, evaluate, select, process, display, and distribute multimedia content. We will continuously evaluate, learn, implement, and support appropriate multimedia technologies. We will acquire relevant multimedia content and improve accessibility to live events and archived multimedia from time/place-bound to 24 hours a day, 7 days a week worldwide network access. We seek to enhance interaction and collaboration in teaching and learning with interactive multimedia tools that integrate creative, aesthetic, and technical applications via network-based interactivity.

### Mission Statement

*"You have to understand what it is that you are better at than anybody else and mercilessly focus your efforts on it."*

Andrew Grove, CEO, Intel

The mission of Multimedia Services is:

- to deliver multimedia resources and support for university classes and events
- to access and distribute multimedia content via cable and network pathways
- to provide tools and services for creating, capturing, processing, and producing original multimedia content
- to maintain and enhance a web presence for the university and to assist faculty and staff in developing web resources
- to provide training and support for using multimedia tools in teaching and learning; to foster and enhance continuous learning environments to keep pace with changing technologies

### Action Plan: Strategic Initiatives and Goals

Five strategic initiatives have been developed which will lead us toward focused and sequential changes along the change continua suggested in *Figure 2. Multimedia Services Change Continua*. These initiatives are organized around *Figure 3. Multimedia Cycle and Services* and will be prioritized for implementation in a manner that creates critical mass of support that will lead to more extensive integration of multimedia technologies into teaching and learning. Short-term goals have been developed and many have been completed as illustrated in *Appendix 8. Multimedia Action Projects*.

### **1. Maintain and Improve Multimedia Classroom Services**

The success of multimedia use hinges on the distribution step to classrooms and meeting rooms. Focus groups and individual interviews reveal that faculty will not invest energy integrating multimedia content into the curriculum unless multimedia equipment is easy to use, predictable, and reliable.

*To accomplish this we will:*

- Develop simplified lecture hall sound systems with a single volume control and automatic mixing.
- Acquire high resolution/high brightness portable computer projector for use with large groups.
- Develop selected "smart classrooms" with computer/video projectors and network connections and work with Registrar for more effective matching of faculty with "smart classrooms".
- Acquire additional laptops, computer projectors, and digital cameras for checkout.
- Routinely check, maintain, and clean classroom equipment.
- Budget for continuous upgrades and replacement of equipment.
- Mount TV's/VCR's on walls in selected classrooms to reduce clutter in front of room.

### **2. Enhance Web and Multimedia Training and Support**

Ringle (1997) notes that "user satisfaction seem to correlate far more consistently with staff support than it does for hardware availability." Faculty and students express the need for not only workshops, but on-demand, on-network support and individual assistance with using multimedia technology. We also need to develop peer support networks since the "Early Majority" technology adopters (*Figure 4. Multimedia Technology Adoption Life Cycle*) are more likely to use this support model (Moore 1991). "The mainstream's social networks tend to be peer-based, organized along the lines of individual disciplines. Individuals typically look for advice, assistance, and collaboration within these networks. Providing support services that are peer-based can be an effective approach to meeting mainstream support needs." (Oblinger and Maruyama, 1996)

*To accomplish this we will:*

- Provide workshops and on-demand training and support.
- Develop and enhance web help pages for web and multimedia technologies; supplement content via collection of knowledgebase data from support sessions.
- Continue faculty web/multimedia pilot projects to promote peer-based diffusion to "Early Majority" faculty.
- Support professional development of staff with training materials and support for attending conferences, site visits, and training workshops.
- Bring in content experts to showcase pedagogical use of multimedia technologies.
- Identify collaborative workspace for staff and equip with collaborative tools and "smart classroom" technology.
- Investigate the use of *NetMeeting* as a collaboration and support tool.
- Support workplace-independent "learning" days for staff.

### **3. Simplify Interfaces, Procedures, and Communication**

Patrons and staff both suggest a simplification of interfaces, streamlining of procedures, and improvement of communication. Much of this can be accomplished via improved sharing and distribution of information.

*To accomplish this we will:*

- Simplify equipment interfaces and instructions.
- Provide a "one-stop" service point for multimedia services.
- Investigate the use of Resource 25 to share scheduling/facility information.
- Migrate interdepartmental charge system to Banner Finance.
- Provide software and training for staff in project management and collaboration tools.
- Investigate consolidation of repair tools and equipment.
- Investigate implementing help desk software for tracking and managing service and support requests and generating knowledgebases.

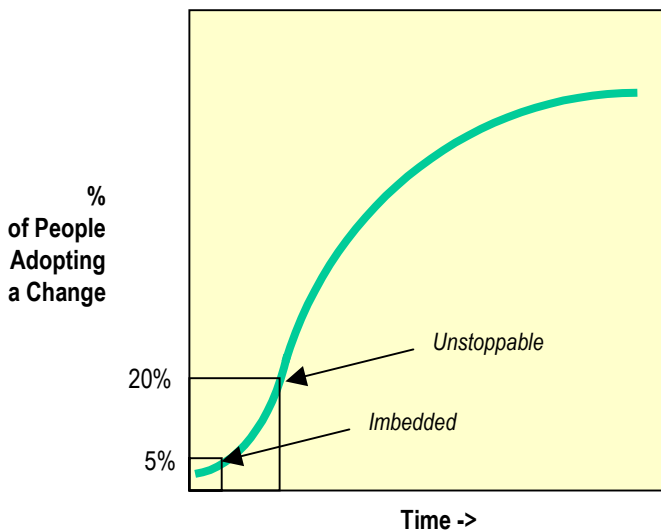
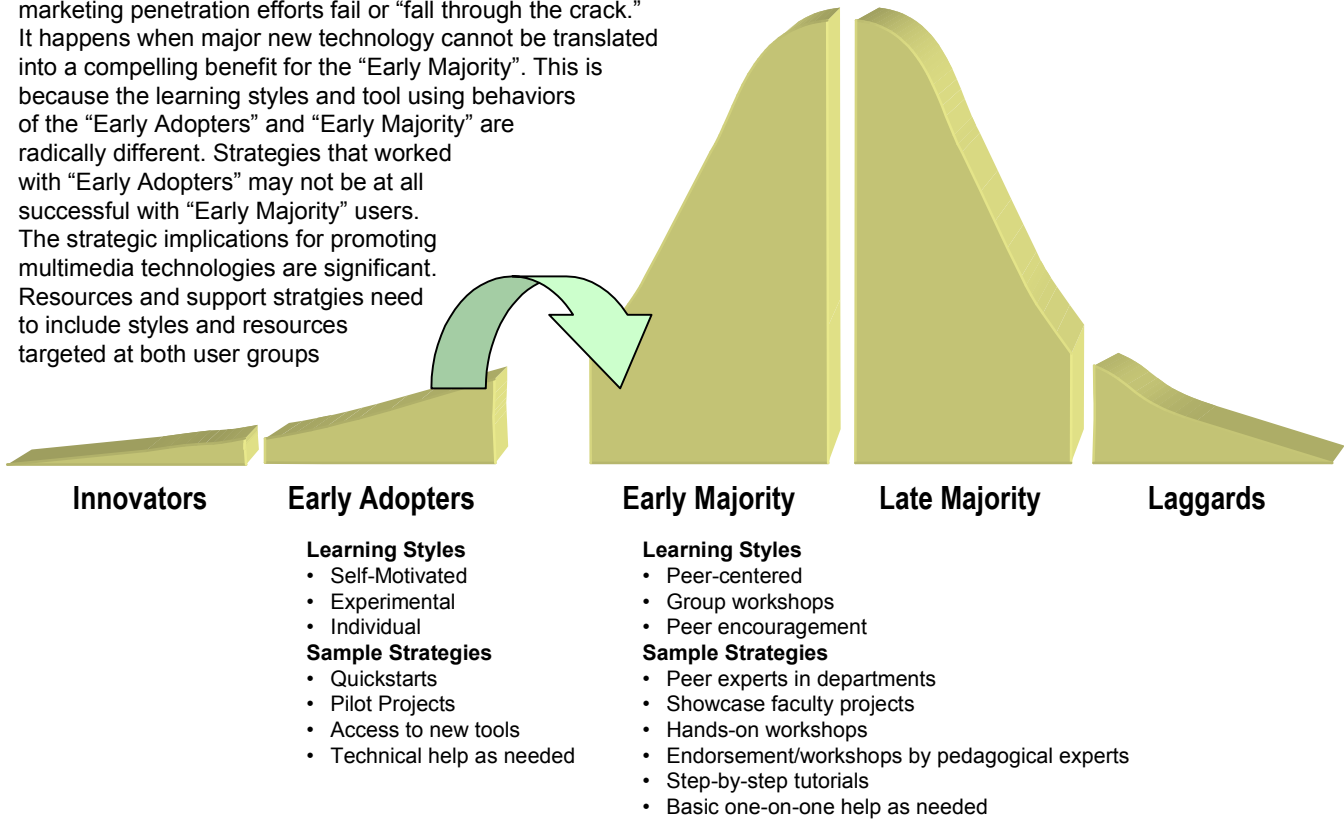
Figure 4.

### Multimedia Technology Adoption Life Cycle\*

Compiled by Layne Nordgren

#### “Crossing the Chasm” \*

Technology adaption often follows a predictable cycle illustrated below. According to Moore (1991) there is a gap or chasm between the “Early Adapters” and the “Early Majority”. This gap is where many technology marketing penetration efforts fail or “fall through the crack.” It happens when major new technology cannot be translated into a compelling benefit for the “Early Majority”. This is because the learning styles and tool using behaviors of the “Early Adopters” and “Early Majority” are radically different. Strategies that worked with “Early Adopters” may not be at all successful with “Early Majority” users. The strategic implications for promoting multimedia technologies are significant. Resources and support strategies need to include styles and resources targeted at both user groups



#### Making the Adoption of a New Technology Unstoppable\*\*

According to Scott and Jaffee (1995), when 5% of the people in a group adopt a change, the change is *imbedded*. When 20% adopt it, the change is *unstoppable*. Getting “Early Adapters” on board is not enough to make the technology penetration unstoppable. The “Early Majority” must embrace the change as well, but the service organization will have to develop strategies to cross the chasm help the “Early Majority” adopters embrace the technology.

\* Adapted from Geoffrey Moore (1991). *Crossing the Chasm: Marketing and Selling High-Tech Products to Mainstream Customers*.

\*\* Graph adapted from Cynthia D. Scott and Dennis T. Jaffee (1995). *Managing Change at Work*.

#### 4. Improve Production Support for Multimedia Projects

Portions of our production toolkit (especially video production) are out of date and past the end of their life cycle. We need to acquire digital tools for the creation, capture, processing, and production of multimedia content. These tools should provide pathways to desktop systems.

*To accomplish this we will:*

- Develop non-linear video editing system.
- Acquire scan converter for analog to digital or digital to analog conversion.
- Acquire digital video cameras as replacements for aging analog cameras.
- Evaluate and select HTML editor(s) and/or web course management software.
- Develop Multimedia Center providing support and equipment for faculty and student web and multimedia projects.
- Provide training for staff in using new technologies, especially for curricular applications.
- Develop upgrade plans to address software/equipment obsolescence.
- Support data, equipment, and software standards (IMS standards, videoconferencing standards, etc.) to reduce lock-in and protect portability, interoperability, and intellectual property of content.
- Strive to make content digital and migratory across multiple formats, platforms, and data delivery pathways (ISDN, internet, cable system, etc.).

#### 5. Enhance Multimedia Content Acquisition and Delivery Pathways

*Information is like an oyster:  
it has its greatest value when fresh.*  
Shapiro and Varian (1999)

Faculty say they have little time to spend developing high quality multimedia resources. Some high-quality live educational/informational programming is available via cable, the network, and by satellite. Students are interested in enhanced cable programming to residence halls. Changing telecommunications/network technologies will provide opportunities to broaden the distribution pathways of videoconferencing and multimedia content. Streaming technologies may support worldwide 24x7 access to selected multimedia content.

*To accomplish this we will:*

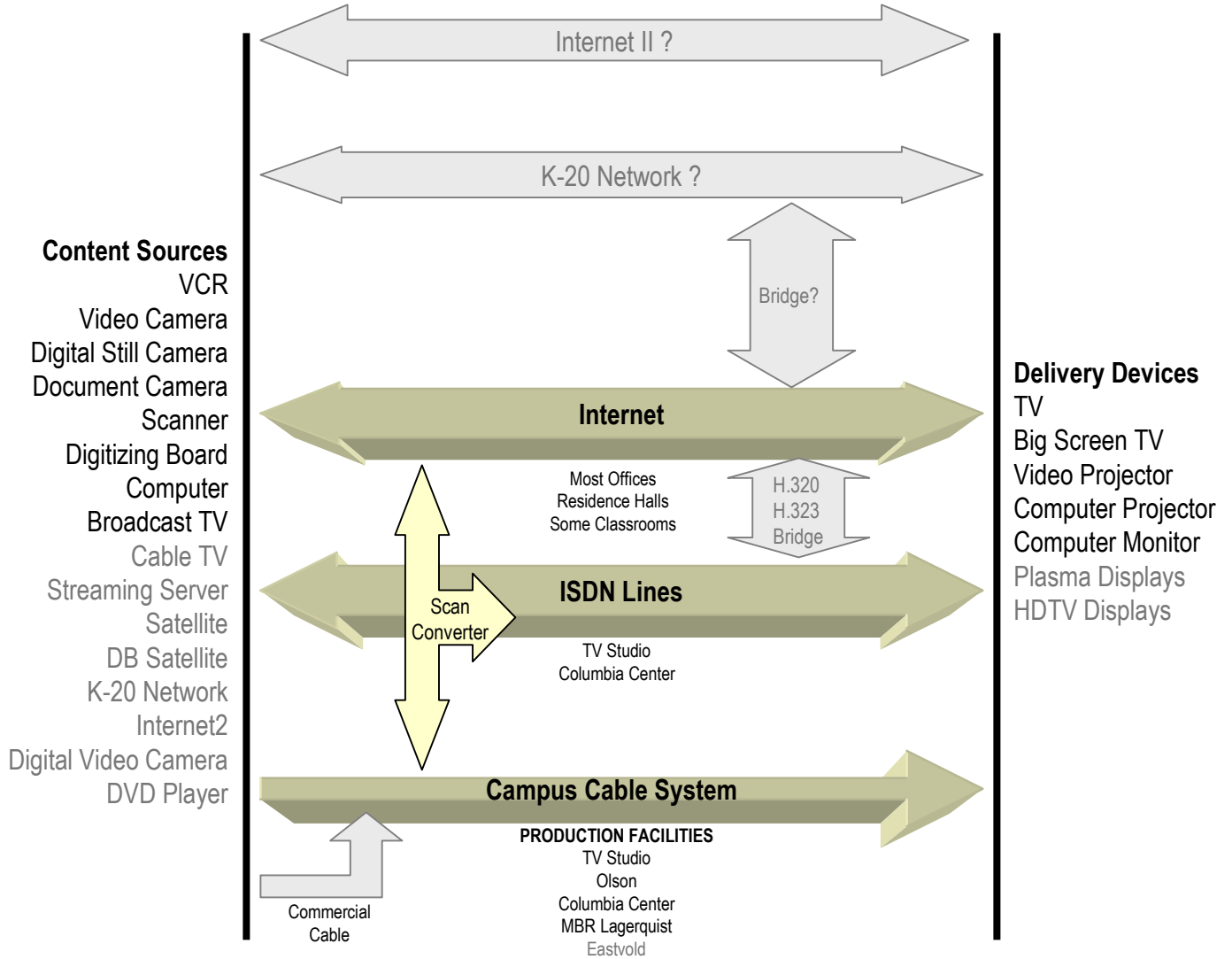
- Investigate alternatives for providing cable services to South Hall and additional cable programming to residence halls.
- Install satellite dish to access free and licensed educational programming and events.
- Develop content acquisition fund in library acquisitions budget to purchase licenses for acquiring satellite content licenses and programming.
- Migrate archived video materials to more stable optical media.
- Improve access to multimedia collection via enhancement of metadata, cataloging, and indexing information.
- Support standards like HyTime, IMS, XML, SGML to protect content investments; maintain accepted data standards to ensure interoperability.
- Coordinate smart classroom equipment installation with networking of classrooms.
- Investigate viability of using streaming servers for event distribution and distribution of archival multimedia.
- Use remote capabilities from Olsen, Columbia Center, and Lagerquist Hall for event distribution.
- Investigate installation of bridges for ISDN to internet videoconference pathways.
- Investigate connections to Internet2, GigaPOP, and the K-20 network.

Figure 5.

### Multimedia Content Delivery Pathways

Compiled by Layne Nordgren

(Grayed items not presently available at PLU)



## Guiding Principles, Values, and Assumptions

Our basic premise is constant change. Paradigms for using information and technology in teaching and learning are changing rapidly. From the teaching perspective, traditional synchronous, place-based teaching is being supplemented and/or replaced with asynchronous, 24x7, worldwide access to course materials and interactions. From the services perspective, digitization of print and multimedia formats is driving service integration among library, multimedia, networking, and computing organizations (Boone, 1998). Our challenge is to develop staff and services where continuous learning and organizational flexibility permit quick and responsive adjustments to changing technologies and service needs.

To support the vision, we draw on the following guiding principles:

- **Instructional Focus** - Our primary goal is to provide multimedia resources, training, and services to support teaching and learning. We strive to develop, maintain, and improve multimedia resources via access and ownership. We help students, faculty, and staff make smooth transitions between media and their interfaces.
- **Cross-Functional Partnerships** - Digitization is forcing the pooling of expertise into collaborative task-oriented teams, not just technical experts. "Success in multimedia is most likely to be realized by universities that form collaborative teams of content, information technology, and instructional design professionals to take full advantage of this powerful new technology." (Marquart and Fuller, 1995). Our goal is to enhance value and contribute to the success of our partners.
- **Content Protection and Portability**- Multimedia and web-based resources are important strategic resources and will be protected by appropriate backups and security. We will adhere to accepted multimedia format, data, and equipment standards such as the IMS standards to protect investments, intellectual property, and portability.
- **Support of Intellectual Freedom and Protection** - We support and promote intellectual freedom and protection in the spirit of:
  - the Digital Millennium Copyright Act
  - CCUMC's *Fair Use Guidelines for Educational Multimedia*
  - the American Library Association's (ALA) *Bill of Rights*
  - ALA's Intellectual Freedom guidelines, especially the *Policy on Confidentiality of Library Records*
  - ALA's *Access to Electronic Information, Services, and Networks*
- **Customer Orientation** - Meeting customer needs for multimedia resources is our primary concern. Customer satisfaction (students, faculty, and staff) is our key measure of success. We are accountable to students, faculty, and staff and seek their input in assessment, planning, and continuous improvement.
- **Continuous Learning** - We recognize and support the importance of continuous professional development to enable staff in multimedia services to offer the highest quality support and services. Tracking the boundaries and crossovers among media and their interfaces will provide guidelines for our professional niches and learning requirements.

Our staff supports the following key values:

- **Support** – We are people-oriented helpers, doers, and learners. We support students, faculty, and staff in the acquisition, processing, and use of multimedia resources. To support the penetration of technology into the curriculum, we promote teaching the doers rather than being the doers. We strive to underpromise and overdeliver to delight our customers.
- **Responsiveness** – We strive to be responsive to our customer's needs and follow the four f's: focused, fast, flexible, and friendly (Moss Kanter, 1995). Just-in-time acquisition, production, and delivery services are likely to be the rule rather than the exception.

- **Dependability** – Multimedia delivery and presentation is the “Moment of Truth” determining the success of all the previous steps in the multimedia process. We strive to make our services dependable and predictable as their execution may affect the success of teaching and learning.
- **Quality** – We strive to provide the highest quality resources, products, services, and support for teaching and learning.
- **Cooperation** – We value cooperation, collaboration, and teamwork, recognizing that skills of many people may be required to complete a multimedia project. We value and respect a diversity of opinions and perspectives.

We operate under the following assumptions:

- **Services Have Pedagogical Focus** - Services will be organized from a pedagogical standpoint rather than as technical solutions. Two of six recommendations of the President's Committee of Advisors on Science and Technology Panel on Educational Technology (1997) amplify this idea: (1) Focus on learning with technology, not about technology. (2) Emphasize content and pedagogy, and not just hardware. “You should be able to access services through a one-stop approach that includes pedagogical advice.” (Roberts, 1998)
- **Technology Provides Specific Benefits to Learning** - McFarland (1996) notes that "although there may well be problems or obstacles in using multimedia in higher education, there does not appear to be a pedagogical foundation for faculty resistance to the technology". Technology can benefit learning when it "(1) allows a student to take a more active role, (2) allows a teacher to express the content of a course in more than one format, (3) broadens the array of resources brought to a classroom or the student’s workstation, (4) increases the opportunities for interaction between teacher and students and for interaction among students, (5) reduces barriers to University services, and (6) increases the productivity of those who support the learning environment.” (Baker and Gloster, 1994)
- **Technology Penetration Requires Increased Investments** - DeSieno (1995) estimates that "less than five percent of college and university faculty use computing to aid classroom instruction or enrich student learning". “If technology is really to penetrate the curriculum, a more substantial investment in supporting mainstream faculty will be required. To serve faculty and to offer students the benefits of multimedia, it is critical to have well-funded and professional instructional technology development and support units operating alongside the information technology areas.” (Marquart and Fuller, 1995). Continuous learning, collaboration, and cross-training will be essential for all staff and are key factors in the curricular integration of technology by faculty. The President's Committee of Advisors (1997) recommends that “At least 30% of expenditures for educational technology should be allocated to professional development and ongoing mentoring and consultative support”.
- **Increased Use of Alternative Educational Models** - Alternative educational models are likely to become more prevalent and have significant implications for multimedia technologies and their integration into the curriculum.

<i>Exhibit 3 from Oblinger and Maruyama (1996)</i>		
<b>Alternative Educational Model</b>		
<u><b>Lecture Model</b></u>	<u><b>Alternative Model</b></u>	<u><b>Technology Implications</b></u>
Lectures	Individual exploration	Networked PCs with access to information
Passive absorption	Apprenticeship	Requires skills development and simulations
Individual work	Team learning	Benefits from collaborative tools and email
Omniscient teacher	Teacher as guide	Relies on access to experts over the network
Stable content	Fast changing content	Requires networks and publishing tools
Homogeneity	Diversity	Requires a variety of access tools and methods

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