5th Generation Distance Education: A Sustainable Approach to Development

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The World Bank expects the number of higher education students will more than double from 70 million to 160 million by 2025.

Leadership Challenge

The fact that the present traditional approaches based on conventional classroom-based teaching and learning will not be capable of meeting the escalating demand for higher education and professional development presents a real leadership challenge.
Cost-Effective Access

In both developed and developing countries, the Internet will provide the only viable cost-effective conduit to provide access to ongoing opportunities for education and training.
Five Generations of Distance Education Technology

- The Correspondence Model
- The Multimedia Model
- The Telelearning Model
- The Flexible Learning Model
- The Intelligent Flexible Learning Model
# Models of Distance Education and Associated Delivery Technologies

<table>
<thead>
<tr>
<th>Models of Distance Education and Associated Delivery Technologies</th>
<th>Characteristics of Delivery Technologies</th>
<th>Institutional Variable Costs Approaching Zero</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>The Correspondence Model</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Print</td>
<td>Yes</td>
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</table>

**First Generation (Asynchronous)**

<table>
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<tr>
<th>Flexibility</th>
<th>Highly Refined Materials</th>
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### The Multimedia Model

- Print
- Audiotape
- Videotape
- Computer-based learning (e.g., CML/CAL)
- Interactive video
Variable costs tend to increase or decrease directly (often linearly) with fluctuations in the volume of activity.

In traditional distance education delivery, the distribution of packages of self-instructional materials (printed study guides, audiotapes, videotapes, etc) is a variable cost, which varies in direct proportion to the number of students enrolled.
## Third Generation (Synchronous)

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<td>FLEXIBILITY</td>
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<tr>
<td></td>
<td>Time</td>
<td>Place</td>
</tr>
<tr>
<td>THE TELELEARNING MODEL</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>• Audio-teleconferencing</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>• Audiographic communication</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>• Videoconferencing</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>• Access Grid</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>• Broadcast TV/Radio and Audio-teleconferencing</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>• Webcasting (live)</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
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<td></td>
</tr>
<tr>
<td></td>
<td>Time</td>
<td>Place</td>
</tr>
<tr>
<td>Interactive multimedia (IMM)</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Internet-based access to WWW learning resources</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Computer mediated communication (CMC)</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Audio on demand</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Video on demand</td>
<td>Yes</td>
<td>Yes</td>
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<td>Campus portal access to institutional processes &amp; LMS activities</td>
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- Interactive multimedia
- Internet-based access to WWW learning resources
- CMC using automated response systems
- Campus portal access to institutional processes & LMS activities
To meet the demand for education and training in the knowledge society:

GDLN needs to capitalize on its investment in ICT infrastructure and synchronous activities, and expand its commitment to blended and especially asynchronous approaches.
Digital Repository Project

- Focussing on Repository Infrastructure
- Supporting the Australian contribution to the e-Framework for Education and Research
- Partners – USQ, UNE, USC, Newcastle, Massey
- DEST funding of $6.4million for RUBRIC and related extension projects.

Regional Universities Building Research Infrastructure Collaboratively (RUBRIC)
ICE (Integrated Content Environment)

RENDITIONS:
- Print
- Web
- CD
- DVD

ICE:
- OPEN SOURCE SOFTWARE

CONTENT REPOSITORY:
- User’s “working copy”
- Version Controlled Central Repository

INPUT:
- Word processor (Microsoft Word or OpenOffice.org)

Managing the fixed costs of courseware design and development

USQ’s Open Source e-Publishing System
The Goals of the OCW Consortium

- Extend the reach and impact of open courseware around the world
- Foster the development of additional open courseware projects
- Ensure the long-term sustainability of open courseware projects by identifying ways to improve effectiveness and reduce costs
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Welcome to USQ OpenCourseWare

The University of Southern Queensland's OpenCourseWare (USQ OCW) provides access to free and open educational resources for faculty, students, and self-learners throughout the world. USQ OCW does not grant credits or degrees, and does not provide access to faculty.

USQ is initially offering sample courses from each of the five faculties and also a course from its Tertiary Preparation Program. We hope the content will be a valuable resource for learners and educators.

Available Courses

- CMS2016 Communication, Technology and Policy
- CSC2402 Object Oriented Programming in C++
- EDU5322 Teaching students with special needs: behaviour management
- EN32002 Technology and Society
- FET3622 Creating Interactive Multimedia
- TEA3101 Exploring Teaching and Learning in Tertiary Contexts
- TOU1003 Introduction to Tourism
- TPP7120a Studying to Succeed: Part 1
- TPP7120b Studying to Succeed: Part 2
- TPP7155 General Science

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Incoming “new” admin question from student

Managing the Variable Costs of Student Administrative Support

Search / Match

USQAssist: Self-service Q & A Repository

Previous Questions
Previous Answers

USQ staff member – “New Answer”

“Immediate” admin feedback to student

Ask a question/ send an email

Trigger
Web Self-Service Knowledge Base

- 2002: 48,983 student visits
- 2003: 209,926 student visits
- 2004: 299,900 student visits
- 2005: 441,459 student visits
- 2006: 624,244 student visits
Managing the Variable Costs of Customer Contacts

- Face-to-face contact: US $8.00
- Phone contact (average): US $4.00 - $6.00
- Email: US $0.50 - $2.50
- Web Self-Service: US $0.24

Source: Gartner Group Inc.
During 2006, USQAssist processed 624,244 student visits at an approx. cost of $149,819, compared to an estimated equivalent phone enquiry cost of approx. $3.12 million.
Incoming “new” academic question from student

Metadata Schema Model

Reusable Learning Objects
Academic Content Repository

Previous Questions
<meta tags>

Previous Answers
<meta tags>

Search / Match

Duty Tutor

New Answer

“Immediate” academic feedback to student

YES

Trigger
Incoming “new” academic question from student

Reusable Learning Objects
Academic Content Repository

Previous Questions <meta tags>

Previous Answers <meta tags>

Search / Match

Duty Tutor

New Answer

“Immediate” academic feedback to student

YES

Trigger

NO
Welcome to Academic Volunteers International

This site will give users of the University of Southern Queensland’s Open Courseware access to free online assistance with academic questions or problems learners may encounter as they work their way through the material.

Academic Volunteers International are experts in their field, mainly – but not solely – retired academics, who freely volunteer their time to assist learners with questions about the Open Courseware being studied. Please offer these volunteers the respect they deserve.

Your question will be answered within the next 48 hours.
• USQ has registered the relevant internet domain names for Academic Volunteers International

• USQ intends to develop an extensible web architecture and associated software as an open source initiative
5th Generation

As the intelligent databases and academic volunteer initiatives become more comprehensive, the institutional variable costs for the provision of effective student support will tend towards zero.
In effect, fifth generation distance education will provide students with quality tuition and effective pedagogical and administrative support services at much lower cost.
Leadership Challenge

“The single greatest challenge facing managers in the developed countries of the world is to increase the productivity of knowledge and service workers”

The Virtual Revolution?

“Any new technology environment eventually creates a totally new human environment”

Marshall McLuhan