



5th Generation Distance Education: A Potentially Powerful Development Tool

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Key Questions

Which e-learning business model, policy framework and organizational structure, will best serve:

(i) The University of the 21st Century?

(ii) The Global Development Learning Network?



Joseph Schumpeter (1934) predicted that every 50 years or so, technological revolutions would cause

"gales of creative destruction"

in which old industries would be swept away and replaced by new ones.



Significant Forces Driving Change in Higher Education

- Impact of information and communication technologies
- Globalisation of culture and commerce
- Exponential growth of new knowledge and new disciplines
- Exponential growth in the need for professional development/lifelong learning in all disciplines

Future Projections

- A recent IBM report forecasts a threefold (US\$4.5 trillion) jump in global education expenditure during the next 13 years.
- The World Bank expects the number of higher education students will more than double from 70 million to 160 million by 2025.

*(Source: Richard Gluyas, New Nabs e-School Deal
<http://finance.news.com.au>, 22 April 2000).*



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 continuing professional development in the knowledge society **presents a real leadership challenge to the higher education sector.**



Cost-Effective Access

In both developed and developing countries, **the Internet will provide the only viable cost-effective conduit** through which corporations and educational institutions will be able to provide access to ongoing opportunities for the **continuing professional development of working individuals.**



Leadership Challenge

The leaders of education and training institutions are badly equipped and supported to implement changes needed for successful introduction and mainstreaming of meaningful eLearning and the use of ICT

Policy Paper of the European ODL Liaison Committee, November 2004.



USQ's Strategic Direction

**To be a world leader in
transnational education
through the effective
deployment of information
and communication
technologies**



**2004 Commonwealth of Learning
Award of Excellence for Institutional Achievement
in Distance Education**



**2000 – 2001 Australia’s Good Universities Guides’ Award
for Developing the e-University**



**1999 ICDE Institutional Prize of Excellence
for Dual Mode Operations**



Sydney



TOOWOOMBA



TOOWOOMBA



Enrolled Students USQ 2004

- All students 25,557
- On-campus 6,407
- Off-campus (Australia) 13,225
- Off-campus (Overseas) 5,925

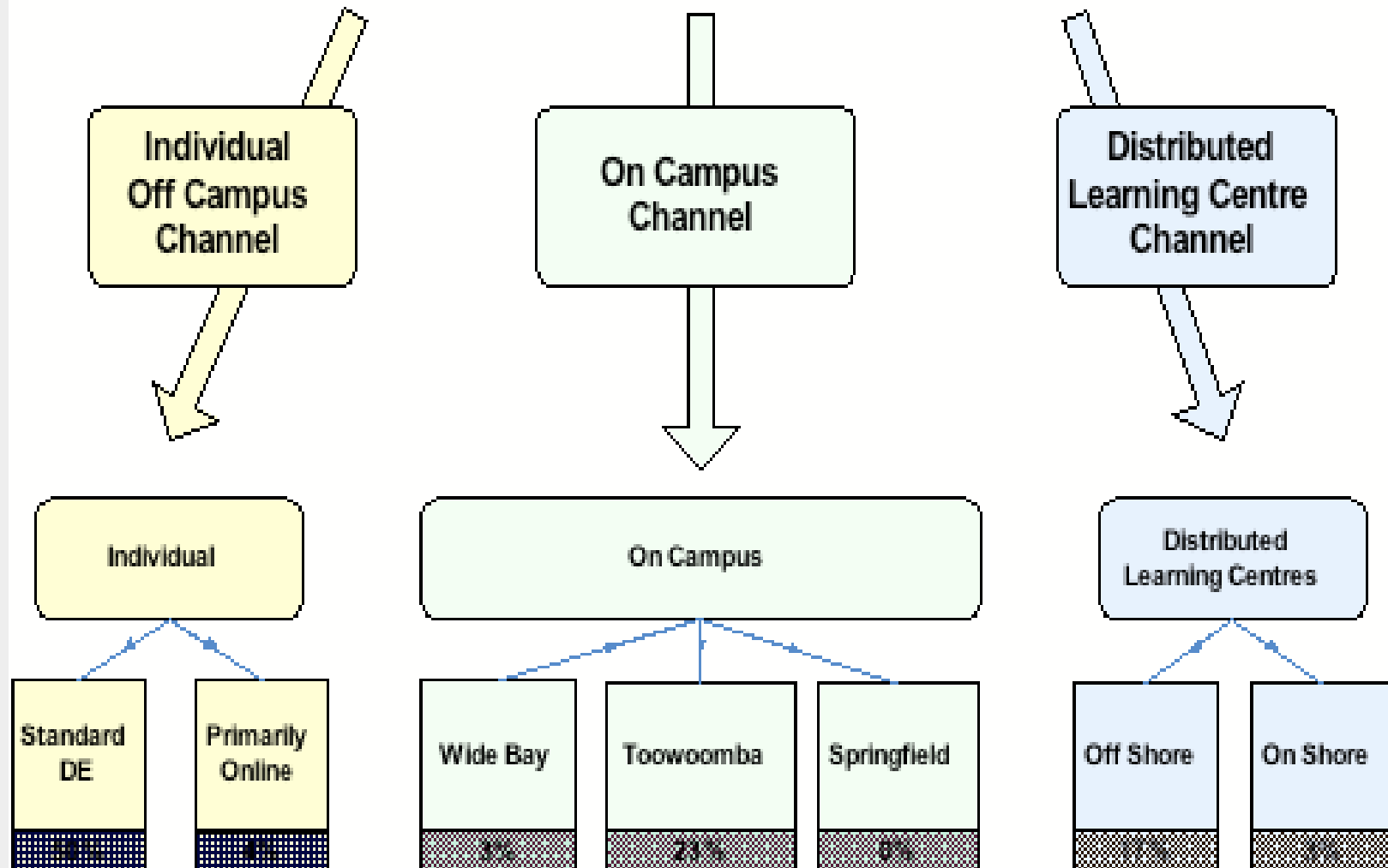
Note: Students studying solely online 902



USQ's International Students 2004

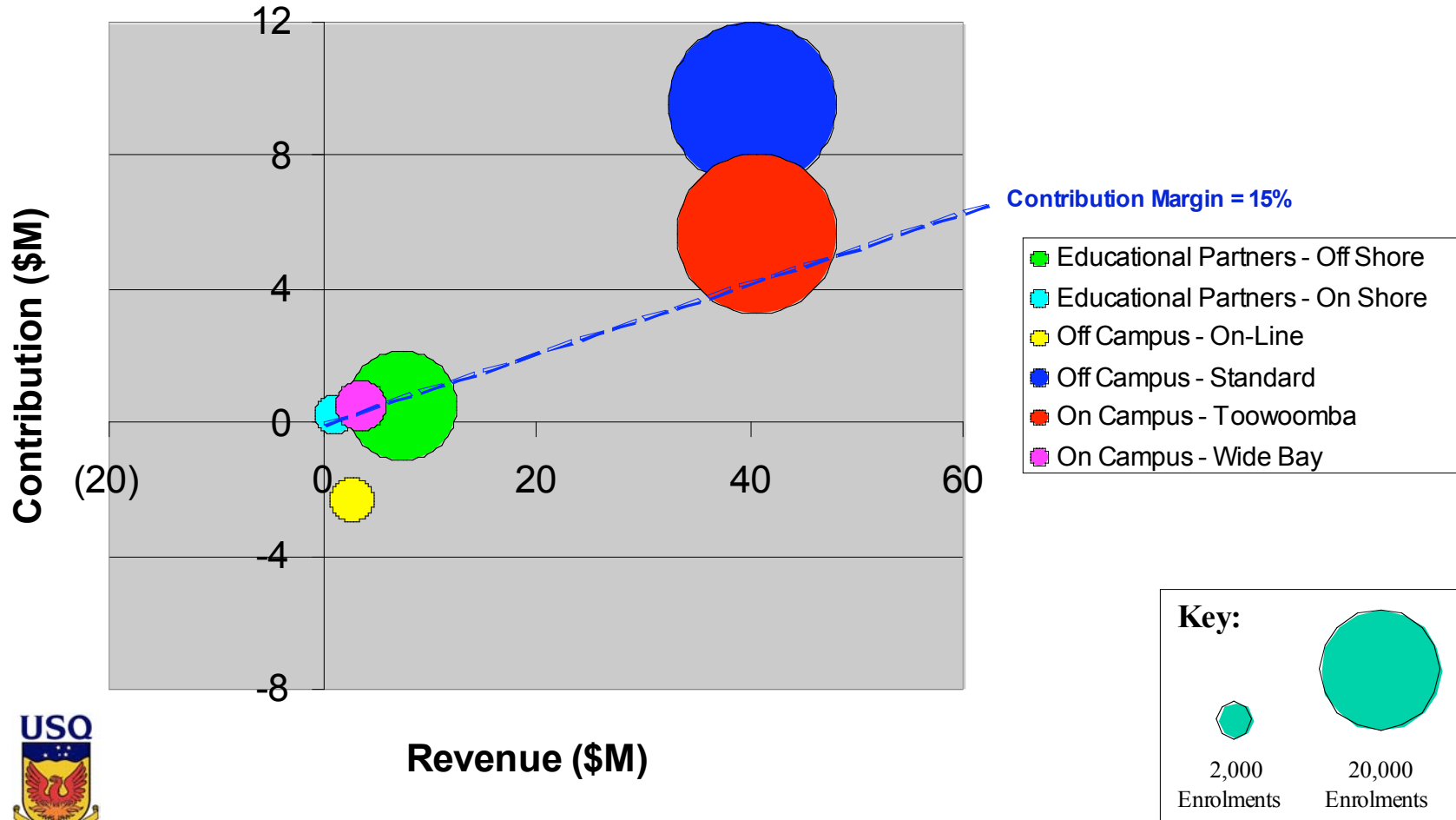
▪ Malaysia	1,605
▪ Singapore	1,225
▪ India	562
▪ China	421
▪ Hong Kong	396
▪ Taiwan	259
▪ Fiji	202
▪ South Africa	195
▪ Bangladesh	193
▪ United Arab Emirates	172
▪ Canada	142
▪ Germany	124
Total, incl. students from 106 other countries	6,843

USQ Delivery Channels



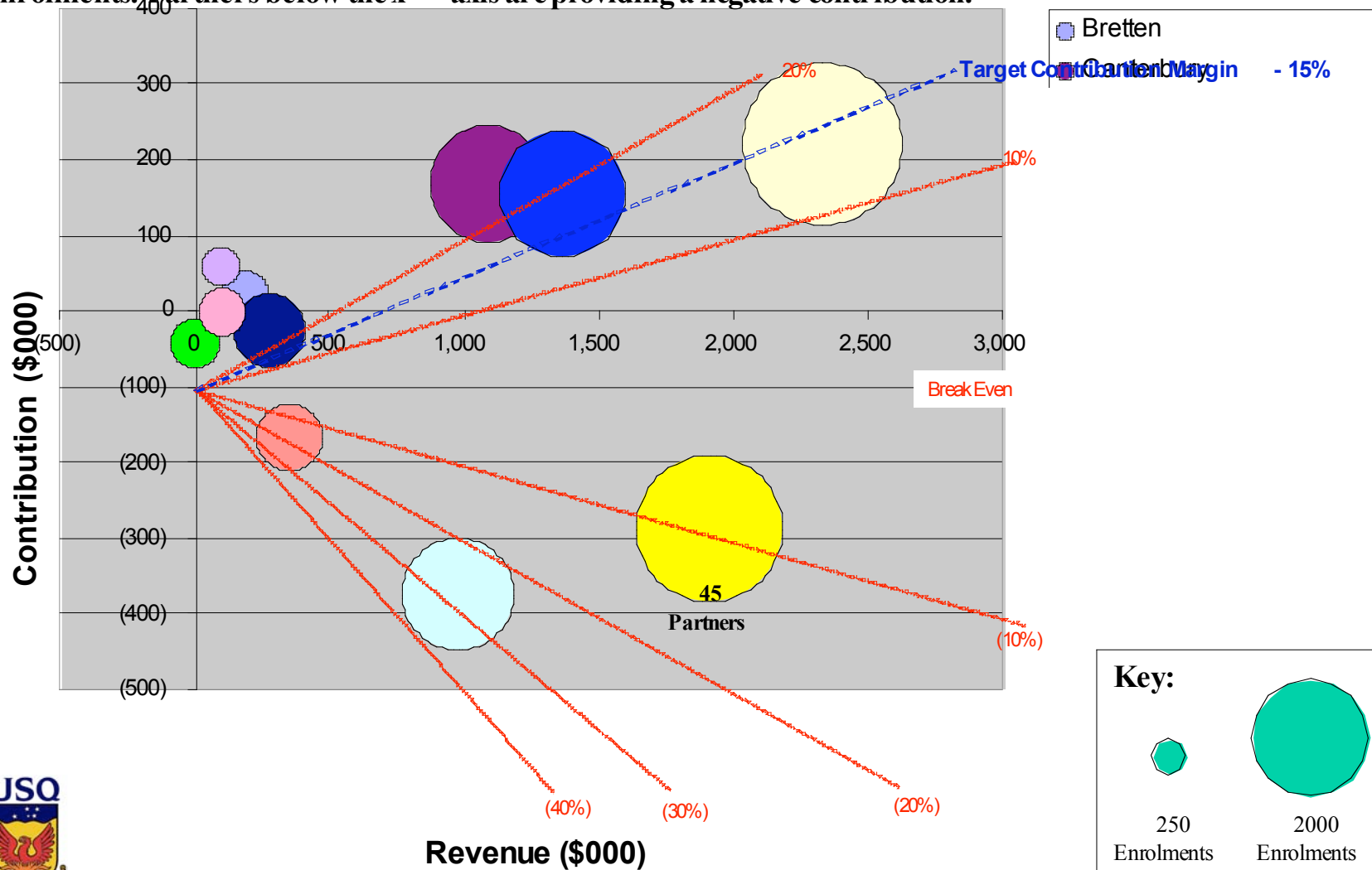
Activity Based Costing: Results by Delivery Mode

The contribution from teaching from each of the modes is shown below. The size of the Bubble represents the number of enrolments. Modes below the x-axis are providing a negative contribution.



Activity Based Costing: Results by Educational Partner

Educational Partner Results are shown below. The size of the Bubble represents the number of enrolments. Partners below the x-axis are providing a negative contribution.





Five Generations of Distance Education Technology

- **The Correspondence Model**
- **The Multimedia Model**
- **The Telelearning Model**
- **The Flexible Learning Model**
- **The Intelligent Flexible Learning Model**

First Generation

MODELS OF DISTANCE EDUCATION AND ASSOCIATED DELIVERY TECHNOLOGIES	CHARACTERISTICS OF DELIVERY TECHNOLOGIES					INSTITUTIONAL VARIABLE COSTS APPROACHING ZERO
	FLEXIBILITY			HIGHLY REFINED MATERIALS	ADVANCED INTERACTIVE DELIVERY	
	Time	Place	Pace			
<i>THE CORRESPONDENCE MODEL</i> <ul style="list-style-type: none"> • Print 	Yes	Yes	Yes	Yes	No	No

Second Generation

MODELS OF DISTANCE EDUCATION AND ASSOCIATED DELIVERY TECHNOLOGIES	CHARACTERISTICS OF DELIVERY TECHNOLOGIES					INSTITUTIONAL VARIABLE COSTS APPROACHING ZERO
	FLEXIBILITY			HIGHLY REFINED MATERIALS	ADVANCED INTERACTIVE DELIVERY	
	Time	Place	Pace			
<i>THE MULTIMEDIA MODEL</i>						
• Print	Yes	Yes	Yes	Yes	No	No
• Audiotape	Yes	Yes	Yes	Yes	No	No
• Videotape	Yes	Yes	Yes	Yes	No	No
• Computer-based learning (eg CML/CAL)	Yes	Yes	Yes	Yes	Yes	No
• Interactive video	Yes	Yes	Yes	Yes	Yes	No



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

MODELS OF DISTANCE EDUCATION AND ASSOCIATED DELIVERY TECHNOLOGIES	CHARACTERISTICS OF DELIVERY TECHNOLOGIES					INSTITUTIONAL VARIABLE COSTS APPROACHING ZERO
	FLEXIBILITY			HIGHLY REFINED MATERIALS	ADVANCED INTERACTIVE DELIVERY	
	Time	Place	Pace			
<i>THE TELELEARNING MODEL</i>						
• Audio-teleconferencing	No	No	No	No	Yes	No
• Videoconferencing	No	No	No	No	Yes	No
• Audiographic communication	No	No	No	Yes	Yes	No
• Broadcast TV/Radio and Audio-teleconferencing	No	No	No	Yes	Yes	No

Fourth Generation

MODELS OF DISTANCE EDUCATION AND ASSOCIATED DELIVERY TECHNOLOGIES	CHARACTERISTICS OF DELIVERY TECHNOLOGIES					INSTITUTIONAL VARIABLE COSTS APPROACHING ZERO
	FLEXIBILITY			HIGHLY REFINED MATERIALS	ADVANCED INTERACTIVE DELIVERY	
	Time	Place	Pace			
<i>THE FLEXIBLE LEARNING MODEL</i> <ul style="list-style-type: none"> • Interactive multimedia (IMM) • Internet-based access to WWW resources • Computer mediated communication (CMC). 	Yes	Yes	Yes	Yes	Yes	Yes
	Yes	Yes	Yes	Yes	Yes	Yes
	Yes	Yes	Yes	Yes	Yes	No

Fifth Generation

MODELS OF DISTANCE EDUCATION AND ASSOCIATED DELIVERY TECHNOLOGIES	CHARACTERISTICS OF DELIVERY TECHNOLOGIES					INSTITUTIONAL VARIABLE COSTS APPROACHING ZERO
	FLEXIBILITY			HIGHLY REFINED MATERIALS	ADVANCED INTERACTIVE DELIVERY	
	Time	Place	Pace			
<i>THE INTELLIGENT FLEXIBLE LEARNING MODEL</i> <ul style="list-style-type: none"> • Interactive multimedia • Internet-based access to WWW resources • CMC, using automated response systems • Campus portal access to institutional processes & resources 	Yes	Yes	Yes	Yes	Yes	Yes
	Yes	Yes	Yes	Yes	Yes	Yes
	Yes	Yes	Yes	Yes	Yes	Yes
	Yes	Yes	Yes	Yes	Yes	Yes



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”

Peter Drucker (1991).

Managing the Variable Costs of Student Administrative Support



Incoming
"new"
admin
question
from
student

Search / Match

USQAssist:
Self-service
Knowledge Base
Previous Questions
Previous Answers

Ask a
question/
send an
email

NO



USQ staff
member –
"New
Answer"

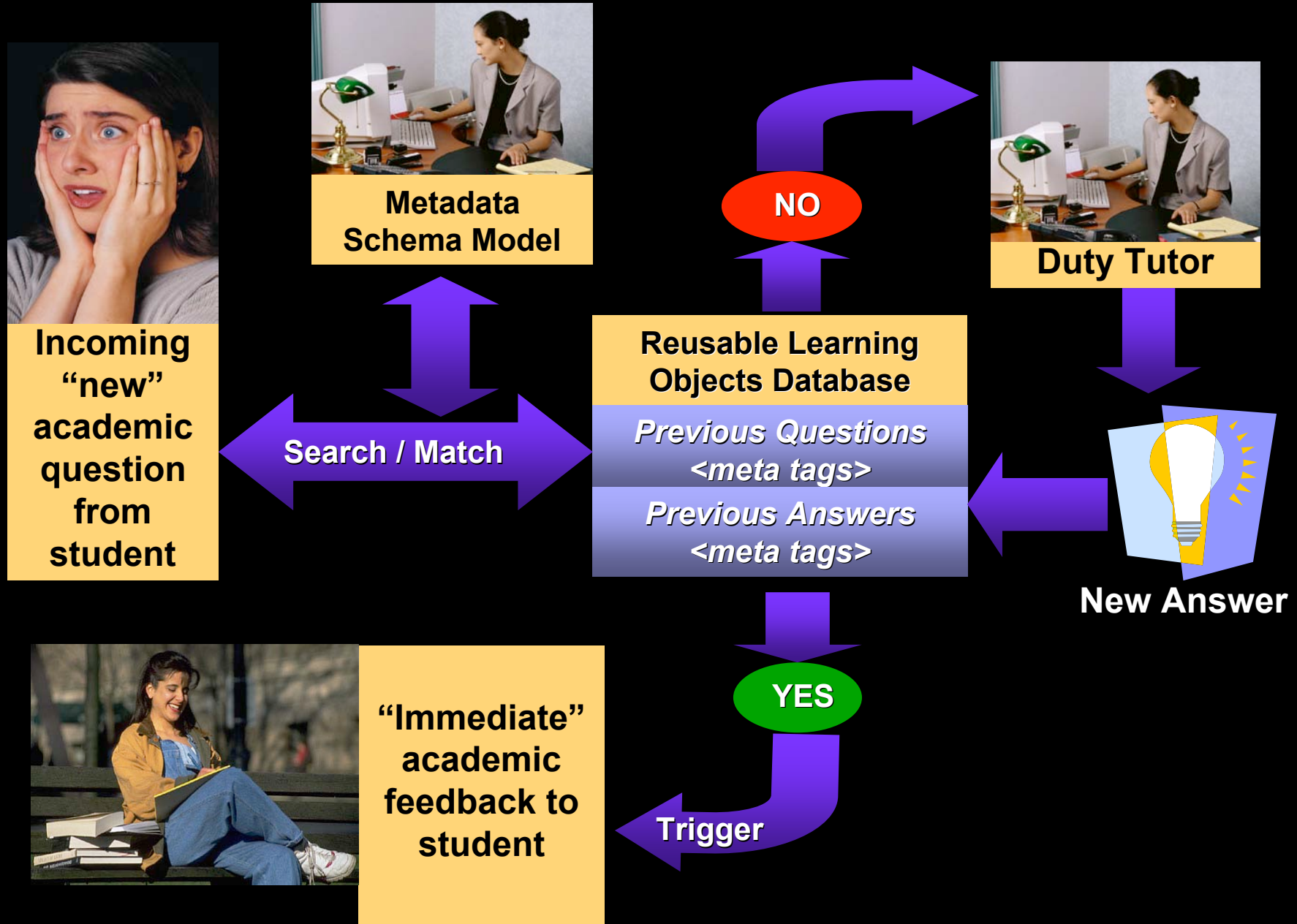
YES



"Immediate"
admin
feedback to
student

Trigger

Managing the Variable Costs of Academic Support



e-University

USQ
AUSTRALIA

USQ Corporate Information Systems


Legend:  e-Content/Data Repositories

e-University

USQ
AUSTRALIA

USQ Content Management Systems

USQ Corporate Information Systems

Legend:  **e-Content/Data Repositories**

Managing the fixed costs of courseware design and development

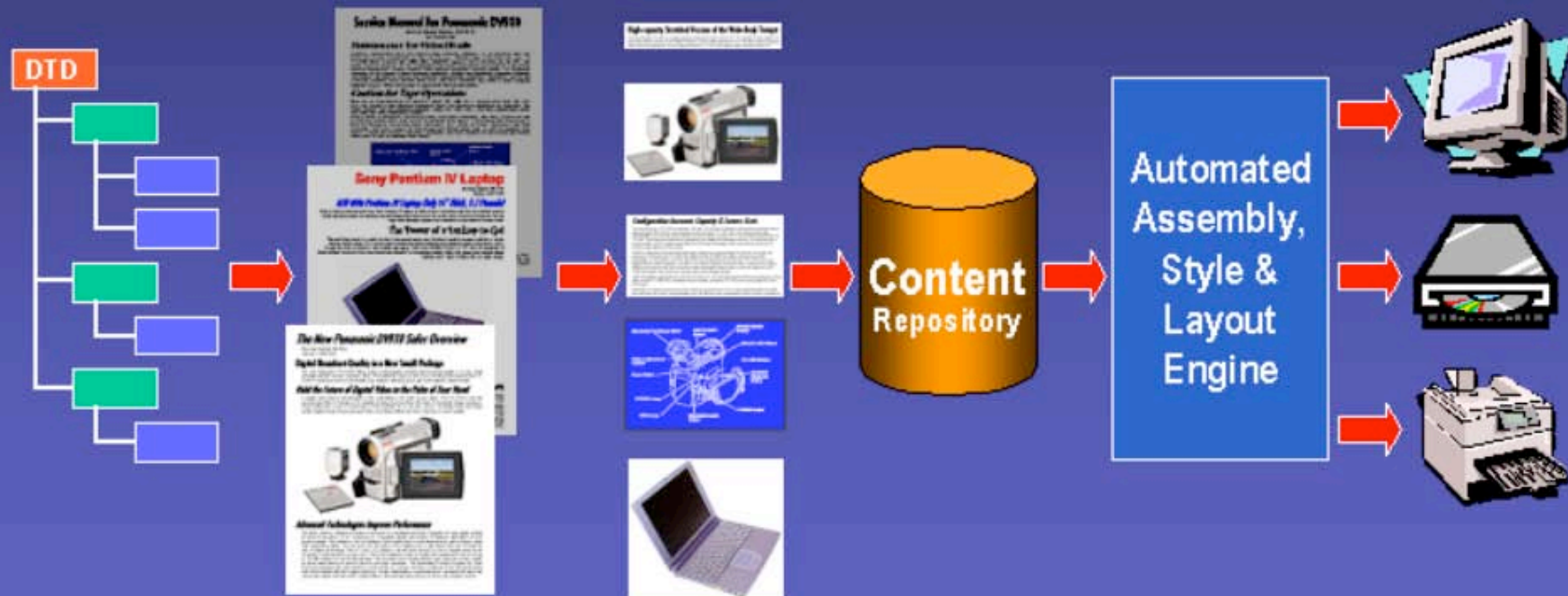
Document Structure & DTD are Designed

Authors Create Structured Source Documents...

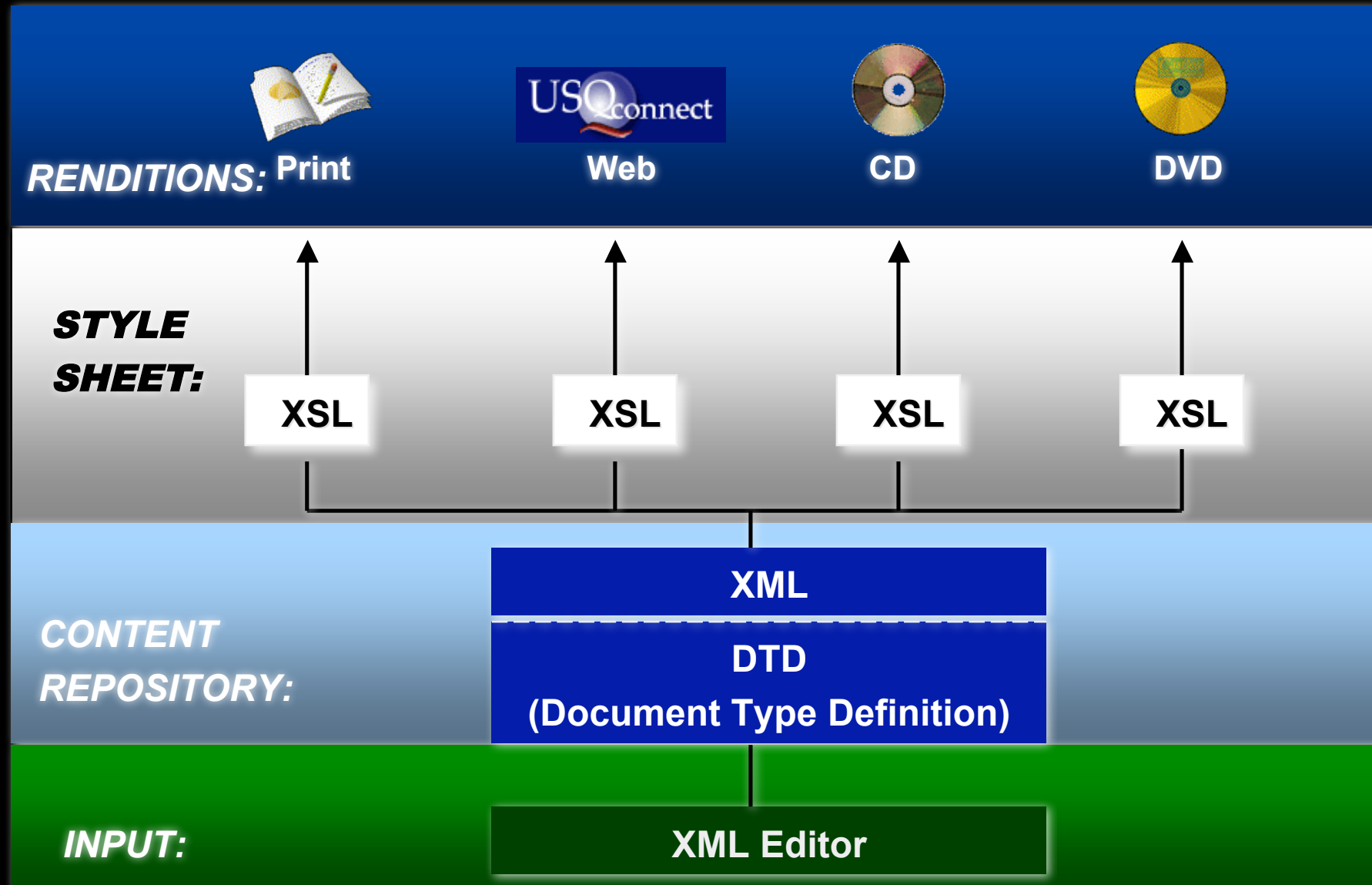
...Which Are Broken Into Reusable XML-based Content

XML Content Is Indexed & Stored

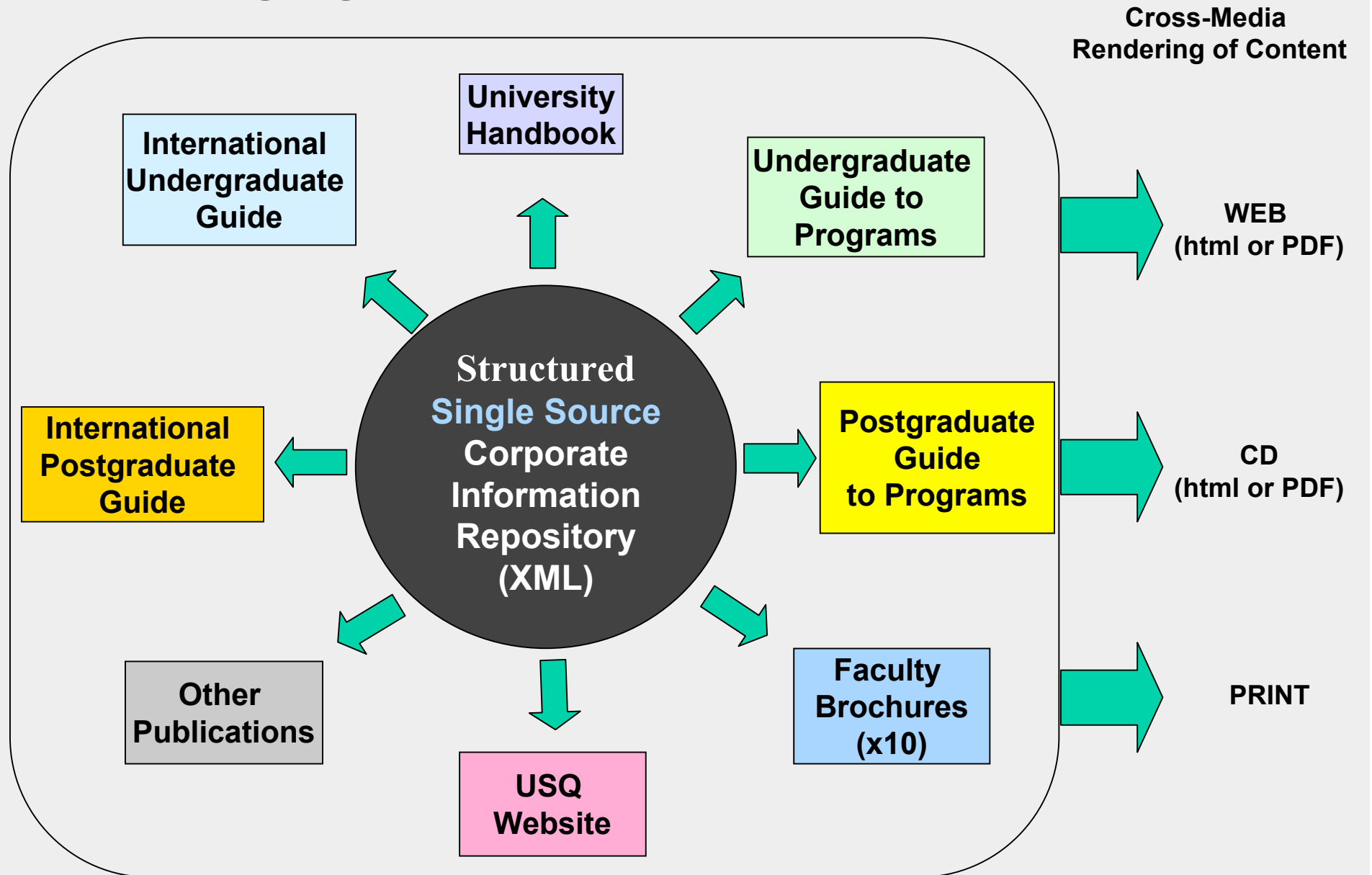
XML Content Is Reused for New Applications



XML (eXtensible Markup Language)



Managing the Fixed Costs of Publication



e-University

USQ
AUSTRALIA



Legend: e-Content/Data Repositories e-Applications

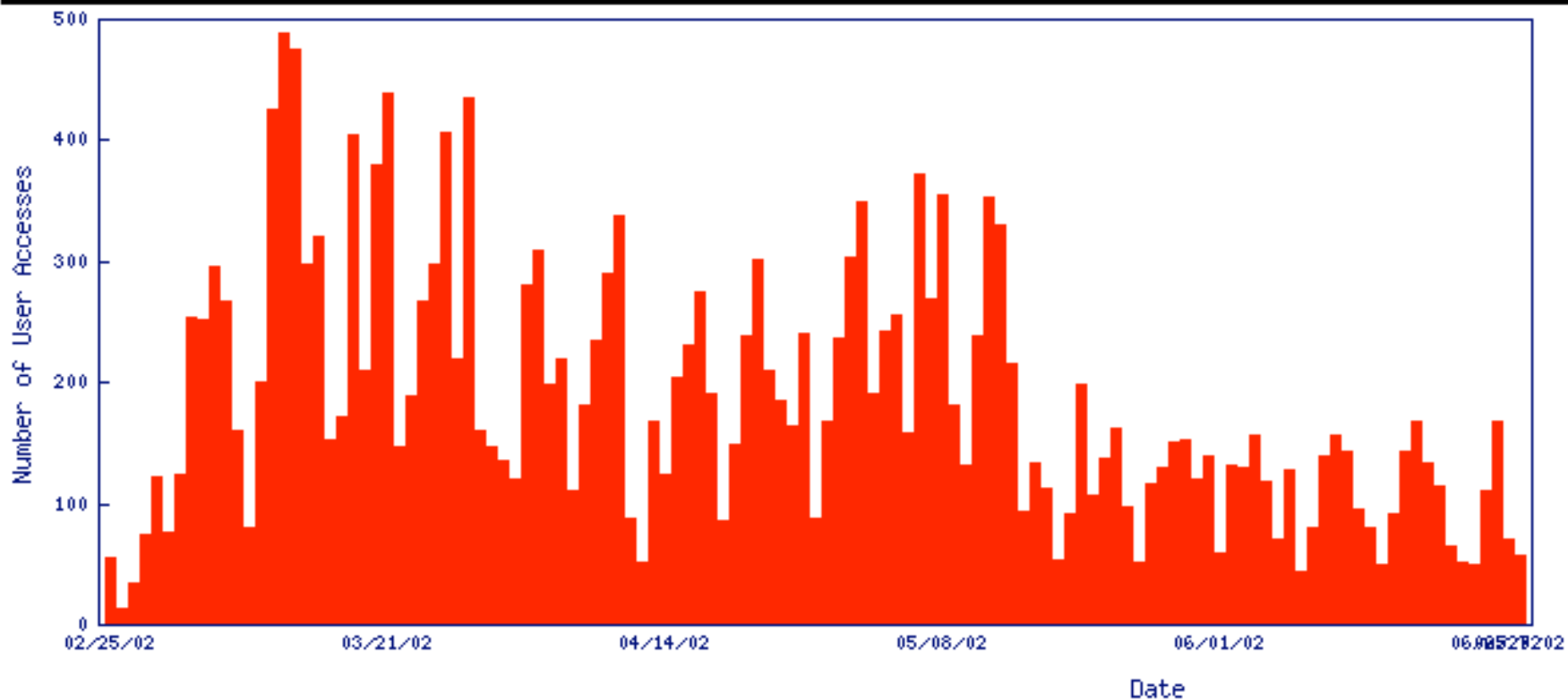


The Potential of e-Learning

- From transmission to transaction
- From the independent learner to the inter-dependent learner

Number of Accesses over Time

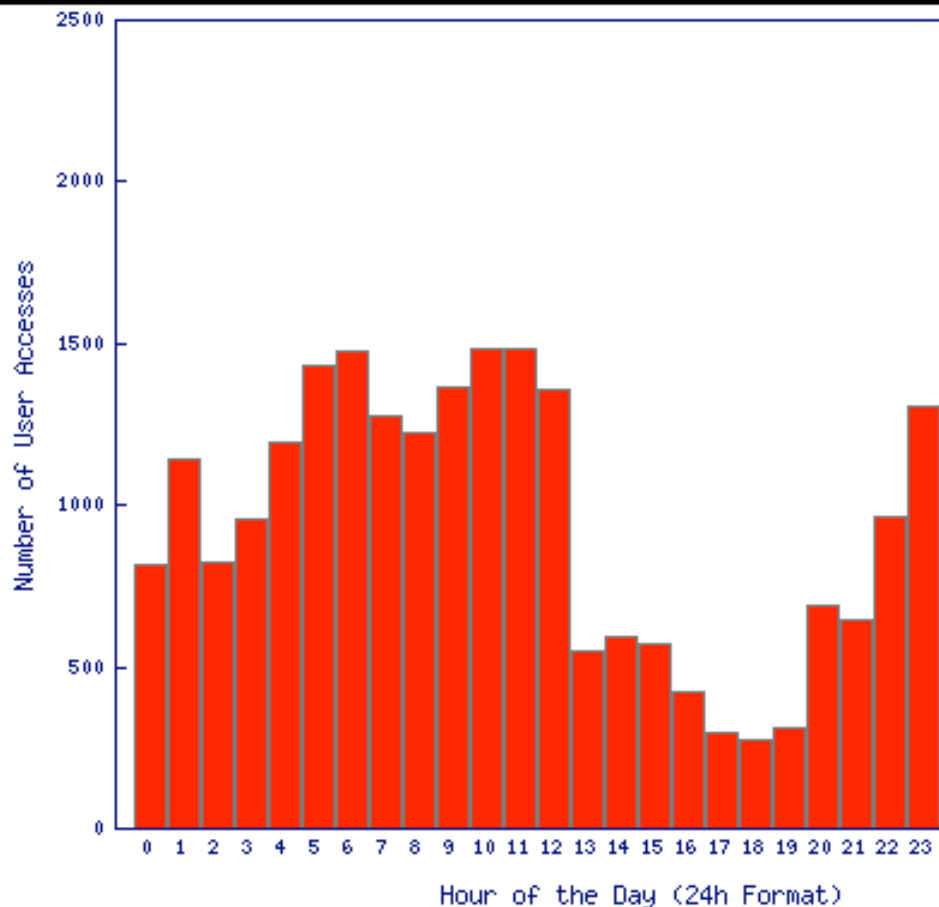
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User Accesses by Hour of the Day

▲ Top

Hour of The Day	Hits	Percent
0	819	3.61 %
1	1145	5.05 %
2	827	3.65 %
3	955	4.21 %
4	1195	5.27 %
5	1431	6.31 %
6	1475	6.51 %
7	1277	5.63 %
8	1226	5.41 %
9	1367	6.03 %
10	1482	6.54 %
11	1484	6.55 %
12	1356	5.98 %
13	546	2.40 %
14	593	2.61 %
15	569	2.51 %
16	425	1.87 %
17	300	1.32 %
18	274	1.20 %
19	309	1.36 %
20	687	3.03 %
21	642	2.83 %
22	965	4.25 %
23	1307	5.76 %
Total	22656	100 %



File Edit View Favorites Tools Help

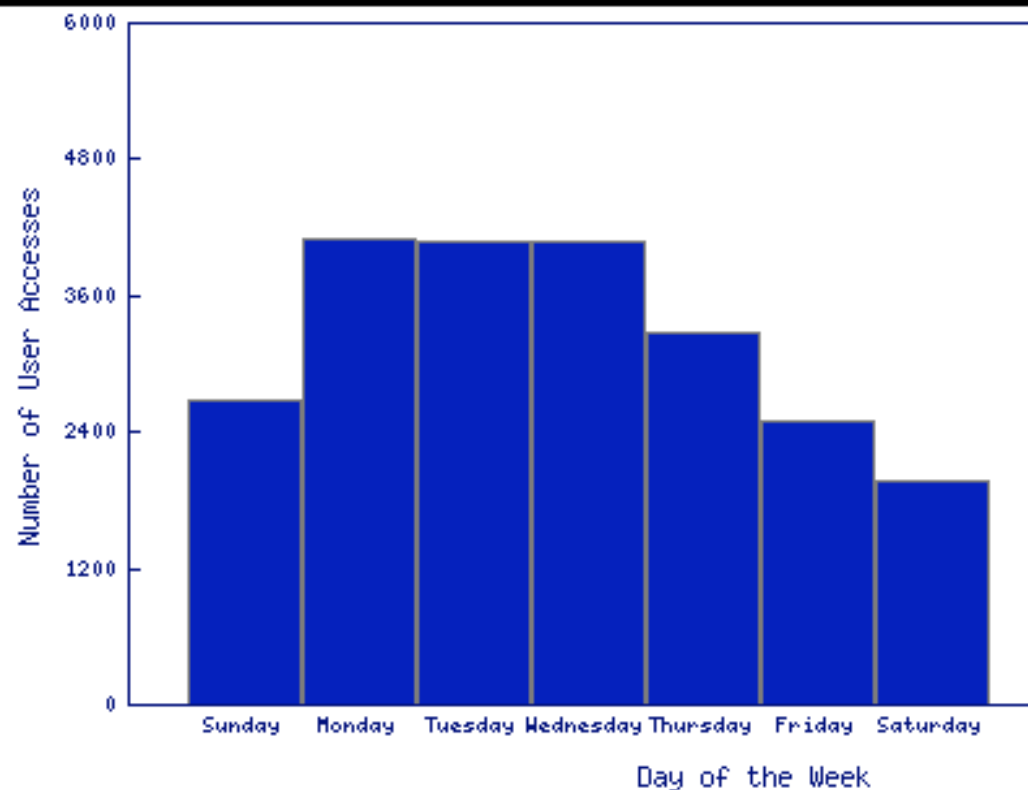
Back Forward Stop Home Search Favorites History Print Copy Paste

Address https://www.usqonline.com.au/bin/common/access_statistics.pl Go

User Accesses by Day of the Week

[▲ Top](#)

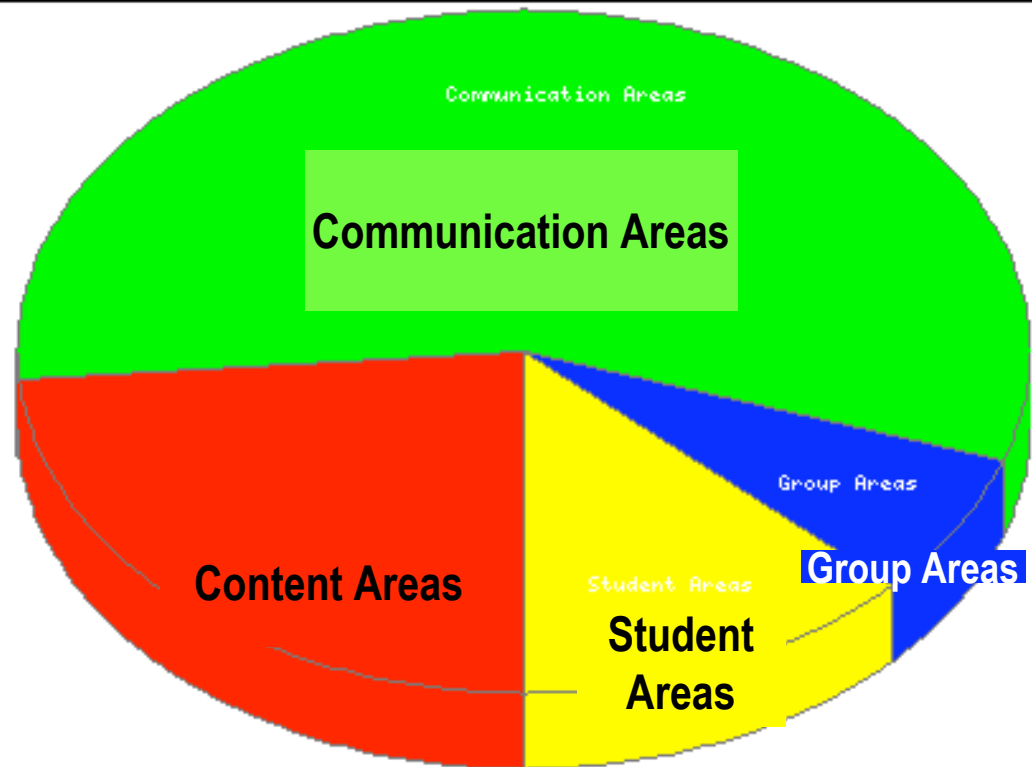
Day of The Week	Hits	Percent
Sunday	2680	11.8 %
Monday	4090	18.0 %
Tuesday	4076	17.9 %
Wednesday	4066	17.9 %
Thursday	3279	14.4 %
Friday	2504	11.0 %
Saturday	1961	8.65 %
Total	22656	100 %



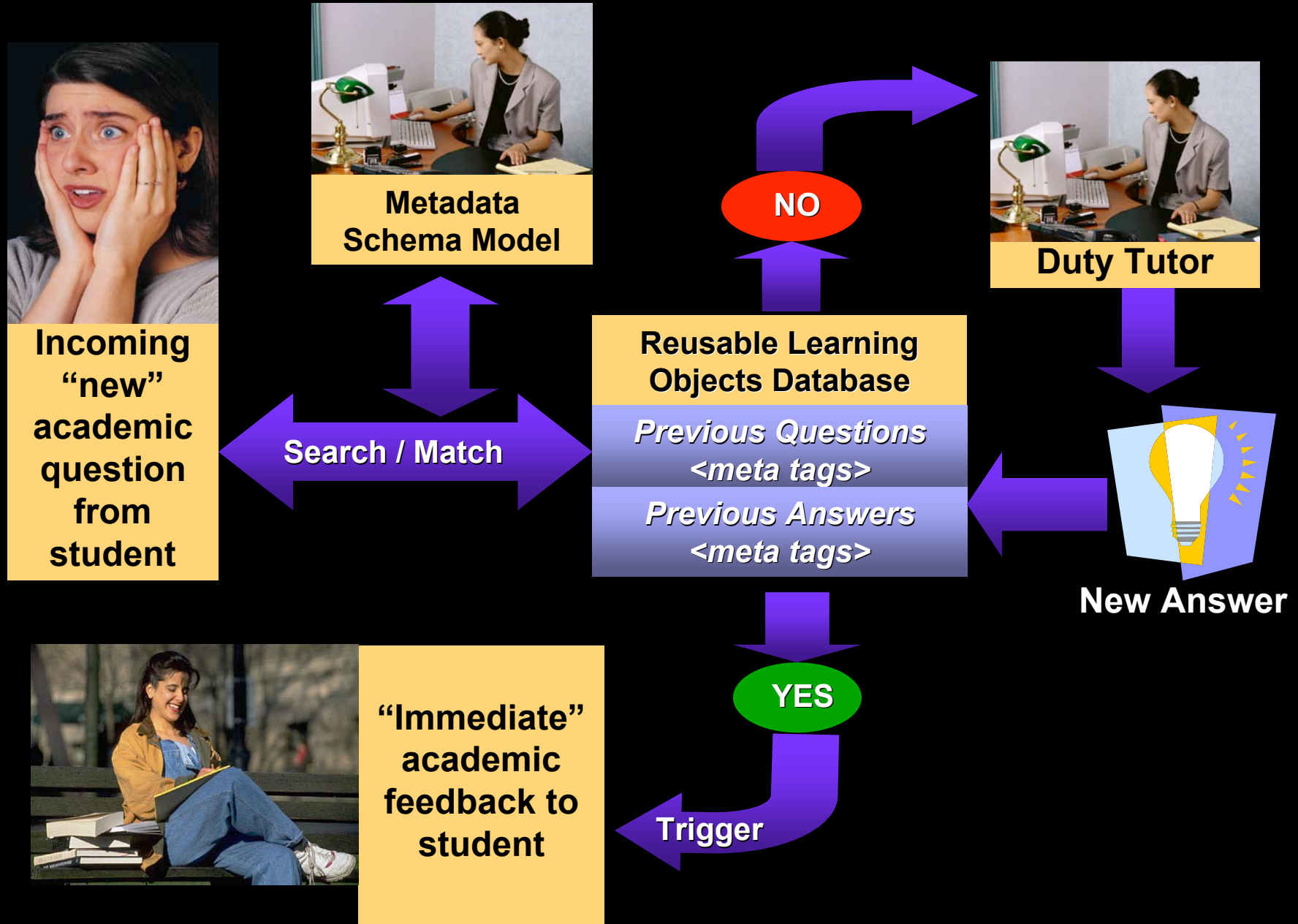
Total Number of Accesses per Area

▲ Top

Area Name	Hits	Percent
Content Areas	5357	23.6 %
Communication Areas	12808	56.5 %
Group Areas	1551	6.84 %
Student Areas	2940	12.9 %
Total	22656	100 %



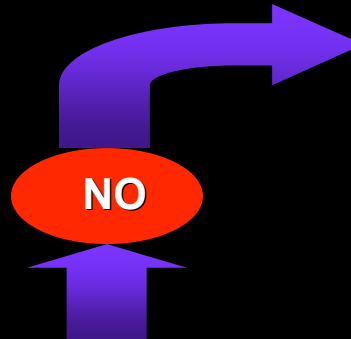
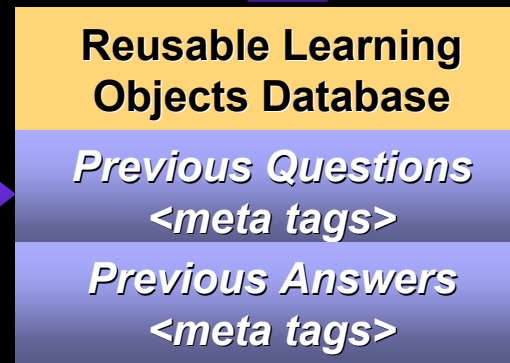
Managing the Variable Costs of Academic Support



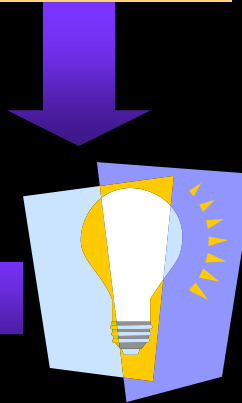
Managing the Variable Costs of Academic Support



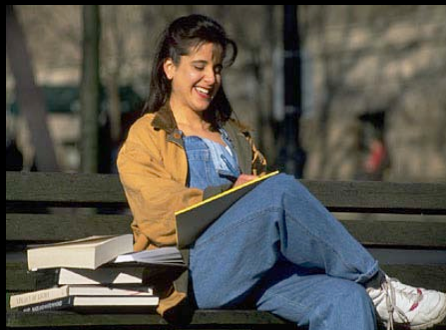
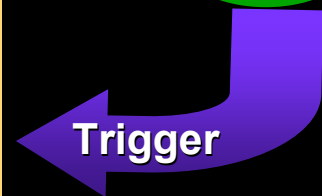
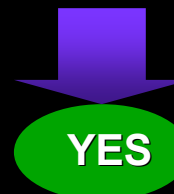
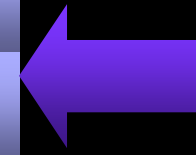
Incoming
“new”
academic
question
from
student



Duty Tutor



New Answer



“Immediate”
academic
feedback to
student

Trigger

5th Generation

As the intelligent databases become more comprehensive, the **institutional variable costs** for the provision of effective student support **will tend towards zero.**

5th Generation

In effect, fifth generation distance provides students with **quality** tuition and effective pedagogical and administrative support services at **lower cost.**

e-University

USQ
AUSTRALIA

USQAssist

e-Library

e-Publishing

e-Learning

e-Enrolment


e-Administration


e-Commerce

USQ Content Management Systems

USQ Corporate Information Systems

Legend:  e-Content/Data Repositories

 e-Applications

 e-Interface

Managing the Variable Costs of Student Administrative Support



Incoming
"new"
admin
question
from
student

Search / Match

**USQAssist:
Self-service
Knowledge Base**
Previous Questions
Previous Answers

Ask a
question/
send an
email

NO



USQ staff
member –
"New
Answer"

YES



"Immediate"
admin
feedback to
student

Trigger



Web Self-Service Knowledge Base

- **2002: 48,983 student visits**
- **2003: 209,926 student visits**
- **2004: 299,900 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.



USQAssist

- During 2004, USQAssist processed 299,900 student visits at an approx. cost of **\$75,000**, compared to an estimated equivalent phone enquiry cost of approx. **\$1.5 million**.

GOOD UNIVERSITIES GUIDES
Australia's
University of the Year
2000 - 2001
DEVELOPING THE e-UNIVERSITY



ICDE
Institutional Prize
of Excellence



Legend:  e-Content/Data Repositories  e-Applications  e-Interface

The PC-ePhone





The e-Revolution

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

Marshall McLuhan



Leadership Challenge

**“The greatest danger in times of
turbulence, is not the turbulence.....**

it is to act with yesterday’s logic”

Peter Drucker (1991)