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E-book Adoption in Academic & Research Libraries

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Pervaiz Ahmad is an Assistant Professor in Library and Information Science from Allama Iqbal Open University. In 2010, Pervaiz won an Australian Government competitive scholarship to pursue PhD studies in Australia. Pervaiz's topic area is *E*-book adoption in Academic & Research Libraries.

In this seminar, Pervaiz introduces the methods of data mining and deep log analysis that he is using to investigate and understand patterns of E-book user behavior and acceptance in academic libraries. Pervaiz will present analysis outcomes from investigation of one year's worth of EBL transaction log data. The presentation also explores the concept of the 'power' E-book user, i.e. the user with a pattern of use that describes intensity very different from the average or median user.

The seminar will be of interest to LIS practitioners interested in E-book adoption and the use of data mining techniques with transaction logs.

This Presentation is posted at Research Online.

http://ro.ecu.edu.au/cinfosci/3

E-book Adoption in Academic & Research Libraries
(InfoSci@ECU Seminar Series
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E-book Adoption in Academic and Research Libraries

➢ PhD Topic
  – What patterns of E-book use exist in academic and research libraries?
  – How can these patterns of E-books used be understood?
  – Are use and behaviour consistent with the major models of technology adoption?
  – What intervening and control variables significantly affect use and behaviour?

Methodology & Tools

➢ Data : raw transactional log spreadsheets recorded/generated by computer system.

➢ Deep log analysis (DLA) and evidence-based methodology (CIBER, 2009).

➢ Excel, Access, SPSS/PASW.

➢ Weka to be used in future.

Significance

> Major trajectory in the sector
> – Complicated pricing models and licences, and
> – High prices/cost (Armstrong & Lonsdale, 2009).

> Substantial investments, e.g., QUT – 20% in 2008 (Stokker & Hallam, 2009) and 50% in 2010 (Huthwaite et al., 2011).

> Multisector study (Library Use of E-books)
> – Mean of $118,453 on e-books in 2011 and anticipate spending a mean of $128,712 in 2012 (Primary Research Group, 2011).

Significance   cont...

> Studies so far show limited user acceptance
> (Ashcroft, 2011; Al, Soydal, & Tonta, 2010; CIBER, 2009; Shelburne, 2009; Abdullah & Gibb, 2008)
> – Transaction logs describe many first page views and abandonments
>   • Mode viewing time is 0 mins
> – Small proportions of users and titles account for most usage
> – Acceptance confused with the success of platforms (e.g. iPad)

> Asset utilization may be a problem in justifying budgets going forward.
> – What can we learn from user behaviour about acceptance?

Acquisition Models
(Armstrong & Lonsdale, 2009)

> Purchase
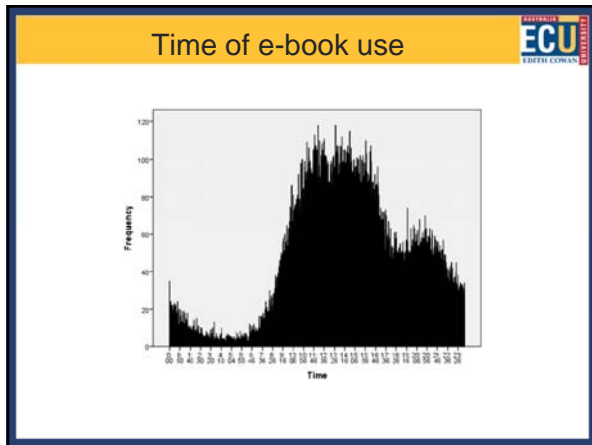> Subscription
> Pay per use/view.

E-Book Supplier Features
(Schell, 2011, p. 77)

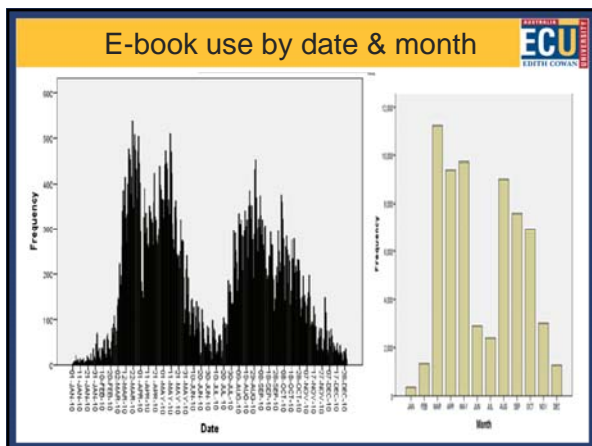|	EBL	Ebrary	MyiLibrary	NetLibrary	Safari
Title by title (purchase)	✓	✓	✓	✓	
Subject packages (subscription)		✓	✓		✓
Pay-per-view/use	✓			✓	
Simultaneous users	✓	✓	✓		✓
Download files	✓				✓

Preliminary Study of ECU Data 2010

➤ What follows is a summary of work done on log files for EBL transactions at ECU in 2010
➤ 65,190 records were reviewed
➤ Summary statistics
➤ Analysis of 'power user' behaviour

Descriptive Statistics

Variables					
	Date	Month	Item Type	Use	Minutes
Mean	*	*	*	*	20.93
Median	*	*	*	*	2.00
Mode	21/3/2010	March	Un-owned	Browsing	0
Std. Dev.	*	*	*	*	102.361
Skewness	*	*	*	*	9.150
Kurtosis	*	*	*	*	97.699
Maximum	*	*	*	*	1,439
Sum	*	*	*	*	1,364,275

ECU Academic Population in 2010 (total = 26,494) (ECU, 2011)

Teachers		Students	
2,253		24,241	
Full-time	512	Master's & above	3,847
Part-time	124	Other	20,394
Casual	1,617	Male	9,565
		Female	14,676
		Domestic	18,638
		International	5,603
		Onshore	21,739
		Offshore	2,502

Time of e-book use

E-book use by date & month

Reading vs Browsing

N = 65,190

Mode = 0 mins
Median = 2 mins

18,984
(29.12%)
Reading

46,206
(70.88%)
Browsing
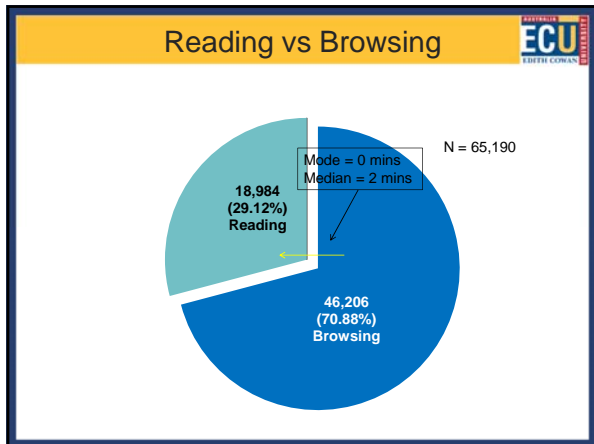
Frequency/Views by Minutes
(N = 65,190)

Minutes	Frequency/Views	Percentage
0 minute	21,363	32.77
1-9 minutes	34,772	53.34
10 minutes and above	9,055	13.89
Total	65,190	100.00

E-book Views by Minutes

Breakdown of Minutes

N = 65,190

56,135
(86.11%)

9,055 (13.89%)

Frequency

0-9 minutes   Minutes   10 minutes and above
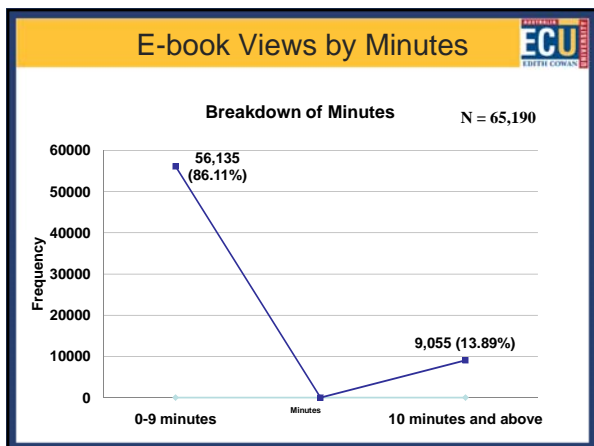
Summary Statistics 2010

ECU

Category	Statistics	Percentage	Difference %
ECU academic population (general staff 1,733 excluded)	26,494		
Unique titles in EBL collection (Lily, 2010)	145,000		
Searches run	6,241		2 : 1

E-book Users and Minutes

ECU

# Users (N=8,482)	Minutes consumed (N=1,364,275)
1,314 (15.50%)	1,178,130 (86.35%)
7,168 (84.50%)	186,145 (13.65%)

Most Frequent Five Publishers

ECU

➢ John Wiley & Sons,

➢ Taylor & Francis,

➢ Elsevier,

➢ Springer, and

➢ Cambridge University Press.

E-book Use by Titles

# titles (N = 13,796)	Usage by minutes (N = 1,364,275)	Usage by frequency/views/ accesses (N = 65,190)
1,379 (10%)	1,169,050 (85.69%)	
2,759 (20%)		42,813 (65.67%)

Item Type (browsed and read)
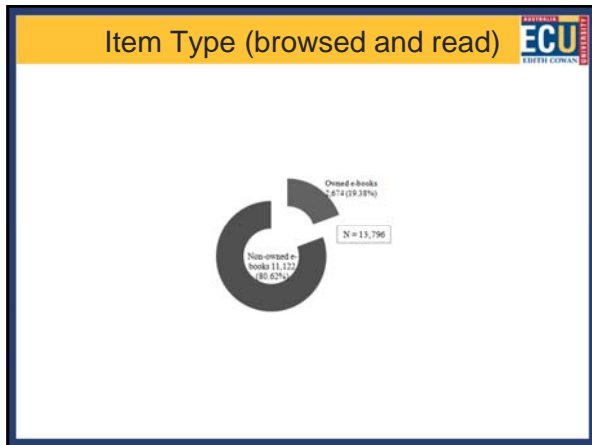
Most frequently used 5 EBL Titles

Title	Minutes	Views (B+R)	Users	Publisher
Australian essential tort law	16,230	140+104 = 244	69	Routledge Cavendish Australia
Stadia : a design and development guide	14,202	166+117 = 283	44	Elsevier
Psychology of food choice	13,352	146+105 = 251	50	CAB International
Strategic human resource management : a guide to action	12,945	126+83 = 209	69	Kogan Page
Sublime communication technologies	12,649	115+89 = 204	22	Palgrave Macmillan

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(P. Ahmad)

Research Directions: Power Users

➢ The user with a pattern of use that describes intensity very different from the average or median user –

  – Heuristic: the user who has adapted to E-books, prefers them as an information source, manifests exploratory behaviour and converts titles browsed to titles read (Brogan, 2012).

    – What can we learn about engaged users that helps us to improve overall user engagement?

➢ Mean + 2SD of Minutes' Total = 1,312 minutes (Brogan, 2012).

➢ 258 Power Users (3% of total users).

Examples of ECU Power Users

Minutes total	Minutes min	Minutes max	Sessions	Total views (tb+tr)	Unique titles	Titles browsed	Titles read	Dominant discipline
28,112	0	1,437	107	651	198	455	196	Mechanical Engineering
8,143	0	1,343	52	233	111	145	88	Management Sciences
7,838	0	1,351	23	65	21	40	25	English Literature
7,289	0	1,381	21	55	30	37	18	Political Science
7,220	0	1,381	26	81	31	46	35	Computer Science

Evolved Model of Successful E-Book Adoption (Ahmad & Brogan, 2011)
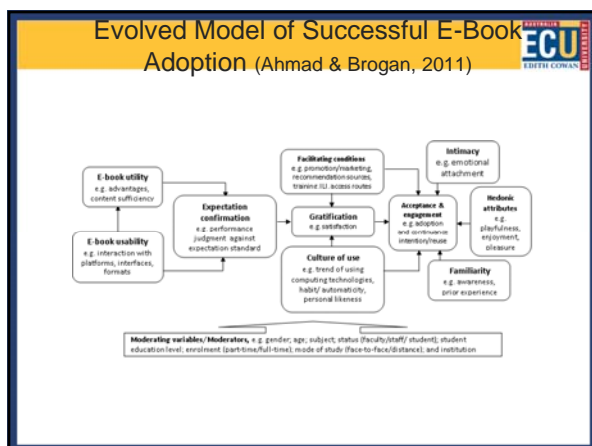
Thanks

Questions and feedback