

# Building Scholarly Infrastructure through Partnership

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# The scholarly information infrastructure

- Knowledge communities – the “invisible college”
- Traditional printed library resources, archives etc
- Journals and ejournals
- Databases - indexes and abstracts
- Information literacy
- Broadband networks
- Middleware – enablers
- Repositories

# eResearch

- 'Big science' now extended beyond synchrotrons and other large scale equipment
- Supercomputers and parallel processing
- Applying advanced information technologies to research eg
  - Sharing of primary datasets (NIH >USD500K, UKMRC)
  - Large datasets and data arrays
  - Data mining tools
- Rendering results and visualisation

# Australian e-Research Infrastructure Strategy

- Robust high bandwidth advanced networks
  - eg AREN, CeNTIE, GrangeNet
- Distributed high performance computing and data storage
  - eg Australian Partnership for Advanced Computing
- Accessible data & information repositories
  - eg ARROW, ADT
- Accessible research instruments & facilities
- Agreed standards & coordinated middleware development
  - eg MAMS

# National priority

- e-Research Coordinating Committee est. May 2005
- Capability scoping document for *Strategic Roadmap of Australia's research infrastructure needs* including:
  - Repositories eg environmental, biodiversity, geodiversity data
  - Library access & charging
  - Agreed ICT standards & middleware development
  - Health research information networks
  - National Compound Library & Screening Network

# Disruptive technologies

- WELL ASSIMILATED:
  - Internet, email, web
- COMING IN:
  - Smart phones
  - Personal digital assistants (PDAs)
  - iPod & multimedia devices
    - Multimedia
    - Microcontent & micropayment
  - Wikis & blogs
    - New publishing paradigms

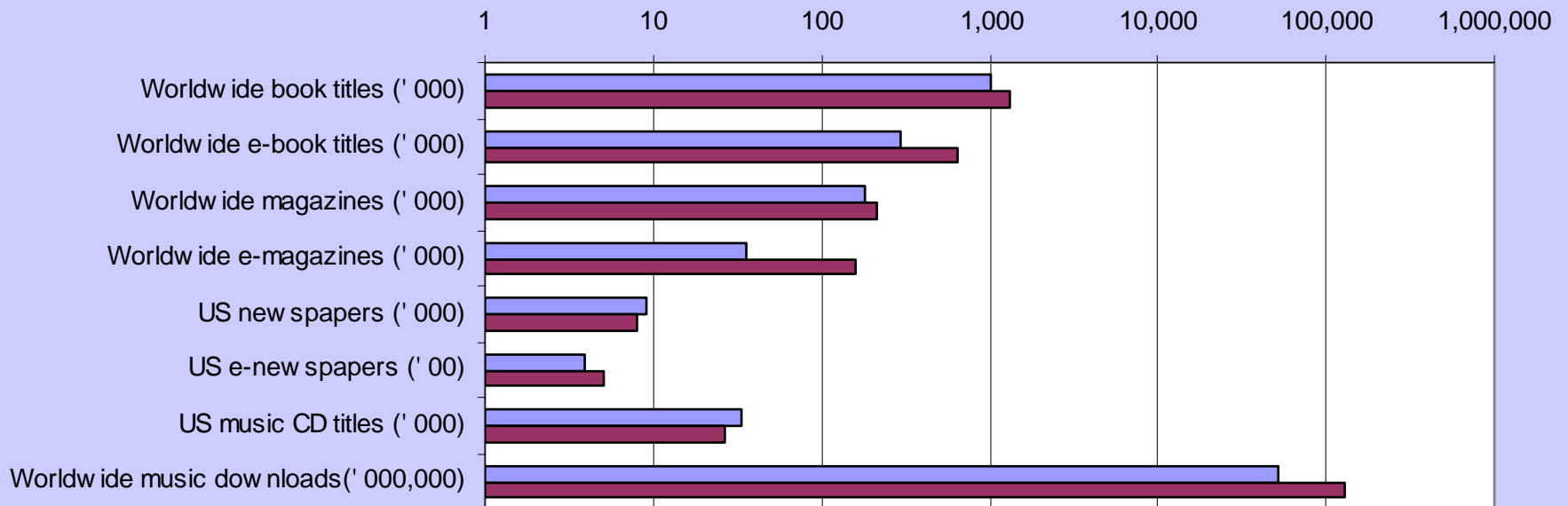
# Behavioural consequences

- New content behaviours
- Internet based communities
- eResearch support
- Public interest in research findings
- ‘Drowning in information’
  - ‘Google & grab’
  - Selective browsing

# Trends in information dissemination

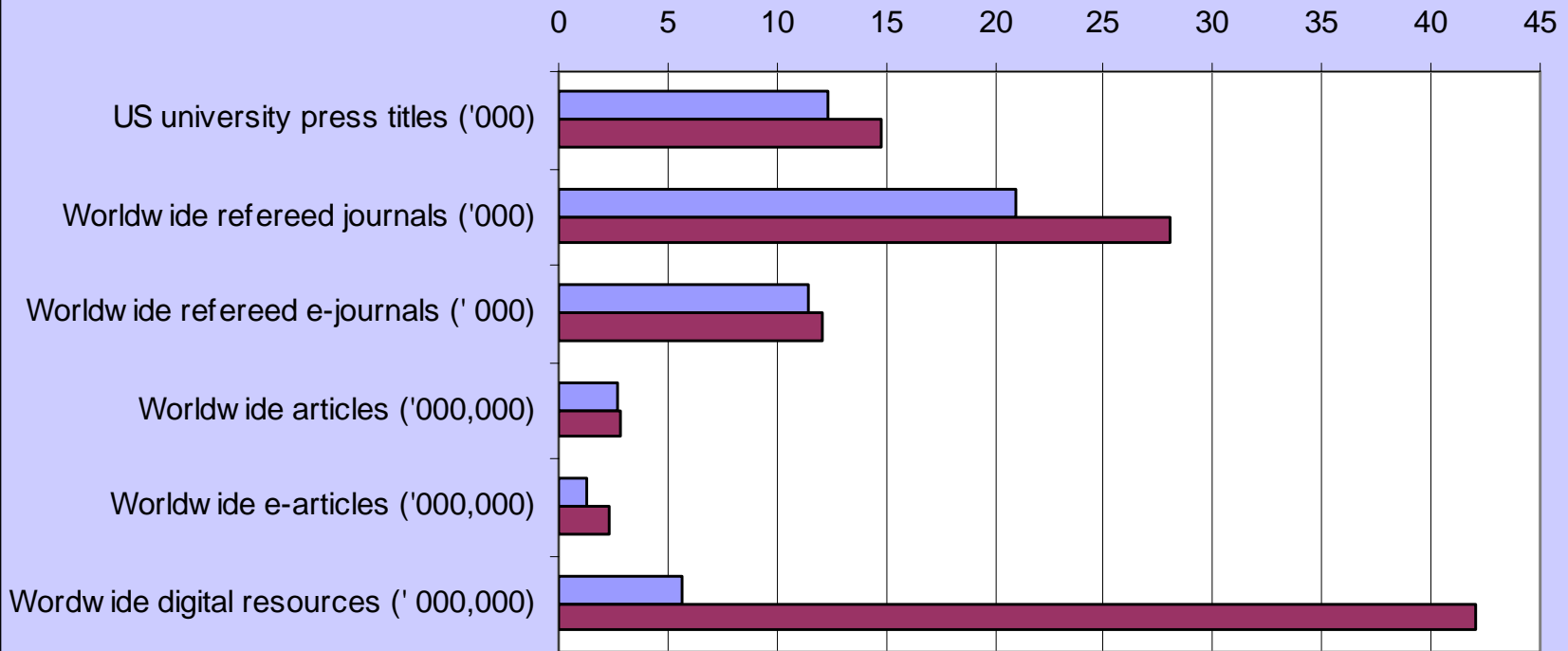
- Print publishing slowing
- eJournals and eBooks being adopted
  - Digital libraries
- Multimedia growing
- Self publishing
  - Personal & institutional websites
  - Institutional & disciplinary repositories
- Open access initiatives

## Annual production volume of popular materials (OCLC)



	Worldw id e music dow nload	US music CD titles (' 000)	US e- new spap ers (' 00)	US new spap ers ('	Worldw id e e- magazine	Worldw id e magazine	Worldw id e e-book titles ('	Worldw id e book titles ('
□ 2004	52,000	33	4	9	36	183	300	1,000
■ 2009	129,300	27	5	8	159	212	650	1,337

### Annual production of scholarly materials



	Worldwide digital resources	Worldwide e-articles ('000,000)	Worldwide articles ('000,000)	Worldwide refereed e-journals ('000)	Worldwide refereed journals	US university press titles
□ 2004	5.6	1.3	2.7	11.4	21	12.4
■ 2009	42.1	2.3	2.8	12.1	28	14.8

# Implications for libraries

- Deliver desired content anytime, anywhere in desired form
- 24x7, multi format, multi technology
- Provide multilevel assistance
- Develop contextualised information literacy
- Continue to be **trusted** source

# Implications for libraries

- Foster communities built on shared knowledge
- Help reclaim scholarly information system
- Move beyond text
- Deliver microcontent in context

# Information inequality

- The “Digital Divide” recognised by governments, WSIS
- Multi factored issue
  - Infrastructure & bandwidth
  - Hardware & software
  - Skills
  - Cost of content
  - Structure of scholarly publishing system

# Free/low cost access to scientific publications

## – HINARI

- Health Inter-Network Access to Research Initiative
  - Blackwell, Elsevier Science, Kluwer, Springer, Wiley, etc
  - 2000 journals: free to GNP <USD1000, low cost to GNP USD1000-3000

## – AGORA

- Access to Global Online Research in Agriculture
  - FAO – 400 journals

## – INASP

- International Network for the Availability of Scientific Publications
  - Programme for the Enhancement of Research Information (PERI) provides >5000 STM, humanities & social science journals

# From cooperation to partnership

- Cooperation

- Collaboration

- Partnership

# Partnership beyond the library

- With faculty
- With ICT experts & corporations
- With other memory institutions
- With search engines, portals

# Global challenges

- Intellectual property
  - WIPO
    - Public domain – “standing on the shoulders of giants”
    - Information flows and wealth flows
    - Special needs eg indigenous peoples
- Trade policy
  - WTO
    - Multilateral vs bilateral agreements

# Global challenges

- The importance of trust
  - Trusted sources – authenticity & provenance
  - Trusted advisors
  - Trusted repositories
- One world
  - Addressing the digital divide and information inequality
  - Tackling global problems globally

# IFLA's role in promoting partnership

- Creating a forum & mechanisms for fostering transnational partnerships
  - Interlibrary loans
  - Standards and protocols
  - Preservation and conservation
  - ALP (Action for Development through Libraries Program) to build strength in developing countries
  - Information technology & information literacy
  - Advocacy – WIPO, WSIS, UNESCO, etc

# World Summit on the Information Society (WSIS)

11 key principles “for building an inclusive Information Society” including:

2. Information and communication infrastructure: an essential foundation for an inclusive information society
3. Access to information and knowledge
4. Capacity building
11. International and regional cooperation

# IFLA response to WSIS

- Promoting the global information commons: A commentary on the library and information implications of the WSIS Declaration of Principles <http://www.ifla.org>
- Promoting the global information commons: a response to the WSIS Declaration of Principles from the library and information sector, <http://www.ifla.org>

# A case study – Open Access

- How partnership is changing scholarly publishing
- Scholarly publishing– a self reinforcing system:
  - Research
  - Peer review
  - Journals
  - Databases (especially ISI)
  - Research money
  - Scholarship
  - Research

# High impact scholarly literature

- Historically has mostly been published in northern Europe and the United States
- Others benefit because of affinities of language or history (Australia, Canada) or efforts to participate (Japan)
- Many virtually excluded

# Exacerbated through commodification

- Control of high impact journals by major commercial publishing houses
- Surrender of control and intellectual property by scholars
- High costs and continuing price increases for libraries

# Consequences

- Frustration
- “Brain drain”
- Revenue flows to ‘North’
  - Research funding immeasurably better in ‘North’
- Research from ‘South’ only validated if published in ‘North’ and usually peer reviewed in ‘North’
- Capture of knowledge from ‘South’ by ‘North’

# The criterion

- If scholarly publishing is to work it must work for scholars and researchers – and peoples – across the world

# Current scholarly publication system - advantages

- Significant levels of expertise and investment
- High levels of quality assurance despite some concerns about peer review system
- Advanced services such as Web of Knowledge, SciFinder
- Secure systems

# Scholarly publication - broader issues

- Surrender of intellectual property by researchers and scholars
- Weakening of public domain under current trends in IP law
- Exacerbated in the digital environment through licensing

# Scholarly publication – broader issues

- Archiving & preservation have not been solved
  - Cannot rely on publishers – preservation is our responsibility
- Many integration issues not resolved – interfaces, standards, etc
- Standards (eg Z39.50, HTML, XML, OpenURL) not fully observed
  - Difficulty in using portals
- Instability in both content and presentation

# What is to be done?

- How can we ensure that our faculty and students will have the access they need to the world's scientific, technological and other literature?
- How can we work together to create the conditions for successful implementation of digital libraries and the preservation of scholarly literature and research documentation?

# The open access movement

- Enabling the academy to reclaim its scholarly literature and challenge the commercialised publishing paradigms that have arisen over the last thirty years.
- Gained force due to advocates:
  - Stevan Harnad  
<http://www.ecs.soton.ac.uk/~harnad/intpub.html>
- *Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities* 2003,  
<http://www.zim.mpg.de/openaccess-berlin/berlindeclaration.html>
- IFLA 2003, *IFLA Statement on Open Access to Scholarly Literature and Research Documentation*, The Hague, IFLA,  
<http://www.ifla.org/V/cdoc/open-access04.html>

# Open access publishing

Definition of an open access publication:

1. permission by the authors or copyright holders to enable universal personal use; and,
2. lodgement of the works in a freely accessible online repository to guarantee unrestricted access, interoperability, and long-term archiving.

– from *A position statement by the Wellcome Trust in support of open access publishing* (<http://www.wellcome.ac.uk/en/1/awtvispolpub.html>)

# Repositories vs OA journals

- Repositories are a disruptive idea which propose a quick (& dirty) fix
  - Many repositories established
  - Few have achieved critical mass
  - Academy sceptical
  - Major issues about discovery, sustainability, preservation

# Repositories vs OA journals

- Open Access journals offer the hope of long term reform of the system
  - Perhaps 5% of journal publishing already
  - Some ‘high toll’ journals challenged
  - Some OA titles gaining high regard
  - Higher impact factors
  - Redefining the ‘mainstream’
  - Major issues about sustainability, preservation

# Open Access Journals

- DOAJ listed 1529 journals in April 2005 - 46 added in March, including:
  - *Body, Space and Technology* - Brunel University, Department of Performing Arts - 2000+
  - *Computational and Applied Mathematics* - Sociedade Brasileira de Matemática Aplicada e Computacional - 2003+
  - *Foucault Studies* - Queensland University of Technology - 2004+
  - *Frankfurter Zeitschrift für Musikwissenschaft* - Universität Bern, Institut für Musikwissenschaft - 1998+

# Open Access Journals

- and:
  - *Indian Journal of Medical Research* - Indian Council of Medical Research - 2003+
  - *Journal of Plasma and Fusion* - Japan Society of Plasma Science and Nuclear Fusion Research - 1984+
  - *Molecular Systems Biology* - European Molecular Biology Organization, Nature Publishing Group - 2005+
  - *NZ Journal of Teachers' Work* - Massey University, New Zealand -2004+
  - *Revista de Ciencia Política* - Pontificia Universidad Católica de Chile, Instituto de Ciencia Política - 2004+

# Time of flux

- Academy hesitant but showing signs of being open to persuasion
- Financing uncertain – toying with author pays and other models
- Discovery & access inefficient - need OA aggregators (eg DOAJ article level access)
- Commercial publishers continue to strengthen their positions

# Illustrative titles added by Blackwell Publishing during 2004

- *Agricultural Economics*\* - Elsevier\*
- *Biotropica* - Allen Press
- *Family Court Review*\* - Sage
- *Fiscal Studies* - Self Published
- *Geographical Analysis: An International Journal of Theoretical Geography* - Ohio State University Press
- *Grassland Science* - Self Published
- *Insect Science* (previously *Entomologia Sinica*) - Chinese Academy of Sciences/Science Press

# Continuing challenges

- Access for those in developing countries
  - Cost issues
  - Infrastructure issues
- Developing sustainable business models
- Replacing the value added services offered by the commercial publishers but at low cost
- Preservation: perpetual accessibility AND useability
- Convincing the academy

# IFLA Statement on Open Access to Scholarly Literature and Research Documentation

- Acknowledgement and defence of moral rights of authors
- Adoption of effective peer review processes
- Opposition to governmental, commercial or institutional censorship
- Protection of to the public domain
- Implementation of measures to overcome information inequality
- Support for open access publishing
- Implementation of mechanisms to ensure preservation and perpetual availability

# Developing strong partnerships

- Trust
- Basis in agreed goals, clear milestones, acceptable measures
- Accepted frameworks, standards and protocols

# Fostering partnerships

- Exploring new 'disruptive' technologies
- Going beyond text – large datasets, visualisation, etc
- New mediums for scholarly discourse
- With the clients – the communities of researchers & scholars
- New areas for standardisation & measurement
- Influencing the decision makers

# Partnership goals

- Changing the dynamics of scholarly practice and communication
  - Promoting open access - affordable, accessible, quality assured scholarly information
- Creating new relationships with researchers and scholars – delivering the infrastructure they need
  - Large datasets and data arrays
  - Supercomputers and parallel processing
  - Rendering results and visualisation

If you wish to do something for the  
community, build a road

If you wish to do something better  
for the community, build a bridge

– Chinese Proverb

We build roads to information  
and bridges to knowledge

Thank you

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