



Scholarly communication costs and benefits: the role of repositories

John Houghton

Centre for Strategic Economic Studies
Victoria University, Melbourne

John.Houghton@vu.edu.au

Recent research project

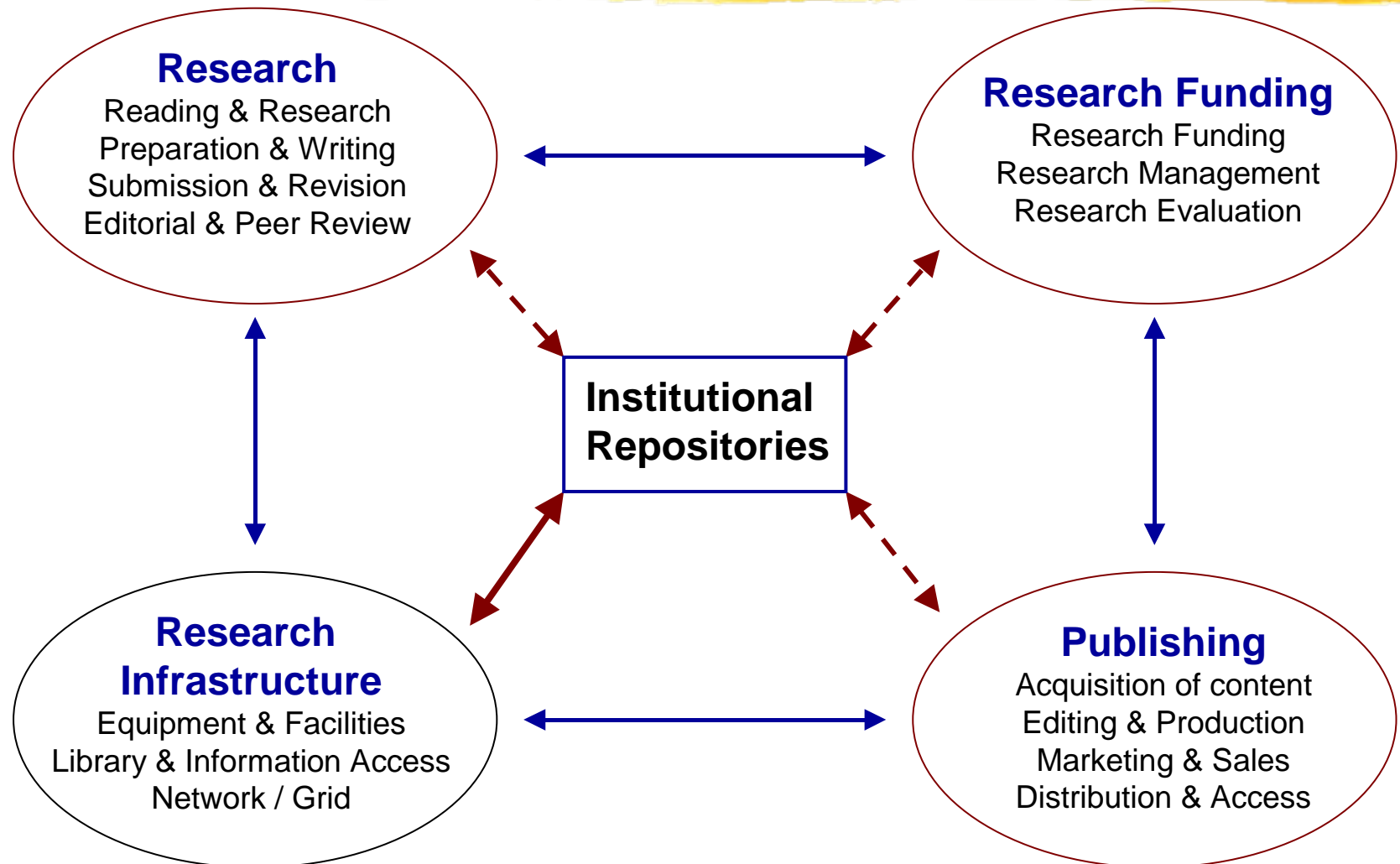


Research Communication Costs in Australia, Emerging Opportunities and Benefits

(John Houghton, Colin Steele & Peter Sheehan)

The study seeks to identify and quantify all the costs associated with scholarly communication in Australia, and explore the potential benefits of enhanced access to research findings

Scholarly communication costs



AVCC cost model (full cost recovery)

- Full cost recovery for non-laboratory contract research = Salary + 52% of salary for oncosts + 92% of salary & oncosts for overheads
- For example, someone earning \$75,000 a year costs \$75,000 + \$39,000 for oncosts + \$104,880 for overheads = \$218,880 a year
- At 7½ hours a day for 230 working days a year, that is around \$127 an hour

Advantages and disadvantages

- AVCC model is 'generous' – especially in terms of overheads
- Some research offices have more detailed models & 2½ times salary is a rule of thumb
- But overheads are high – 55% of FTE staff neither teach nor research
- And it is full cost recovery in the university context
- Beware of double counting – *e.g.* university IT infrastructure is already in the overheads

Institutional repository costs



- Review of the international literature on repository costs
- Local consultations and costings – based on institutional budgets *and* our costings
- Examined all major cost elements – during installation & operation
- Institutional Repositories were not a major focus

Literature on repository costs

- *Swan & Brown*: the average research university can set up a functional archive for USD 10,000
- *Kemp*: ten cases in US, UK, Canada and Ireland had annual costs ranging from USD 7,000 to USD 1 million
- *Swan & Needham*: establishment costs from GBP 3,900 to 1.3 million, annual operating costs from GBP 22,250 to 160,000
- *Rankin*: 1 to 3 people for a year during set-up, with ongoing support thereafter requiring less than one person. Server might cost NZD 5,000 to NZD 15,000.
- Services: CILEA EUR 7,200 for first year, EUR 2,400 a year thereafter; and ProQuest USD 25,000-35,000 pa

Two conclusions on costs

There is much more to the setting up of an institutional repository than choosing some repository software, implementing it, and requesting staff to contribute content... Each institution needs to have a common understanding of the purpose of the repository as well as a set of policies that define its intended scope, together with information on issues like deposit, access, and sustainability (Hunter, P. & Day, M. 2005, *Institutional repositories, aggregator services and collection development*, ePrints UK supporting study, January 2005.)

Irrespective of scope, all the institutional repository projects so far have observed that the effort and organizational costs required to address repository policy, content management, and faculty marketing issues dwarf the technical implementation effort (Crow, R. 2002, *The case of Institutional Repositories: A SPARC Position Paper*, SPARC, Washington D.C.)

An impacts framework

Additionality:

Access for all, research participation based on merit, not means.

Potential benefits:

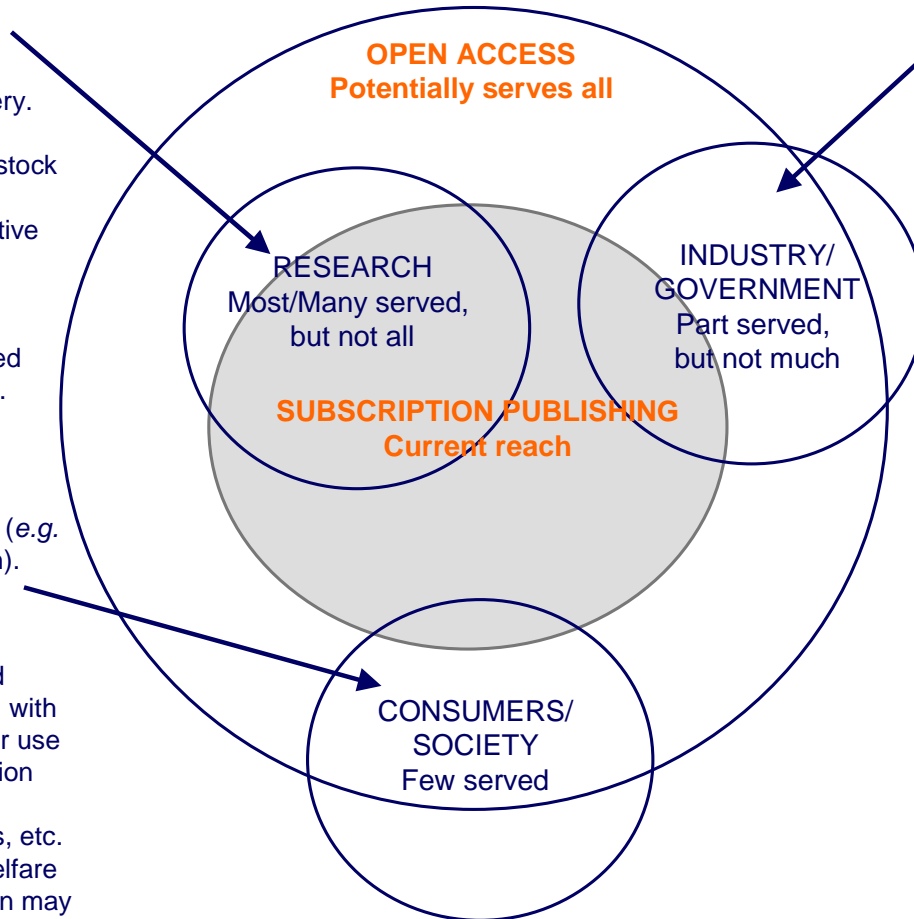
Speeding up discovery.
Increasing rate of accumulation of the stock of knowledge.
Reduction of duplicative R&D.
Fewer blind alleys.
Better educational outcomes & enhanced research capabilities.

Additionality:

Access as needed, informed consumers (e.g. health and education).

Potential benefits:

Contribution to the 'informed citizen' and 'informed consumer', with implications for better use of health and education services, better consumption choices, etc. leading to greater welfare benefits, which in turn may lead to productivity improvements.



Additionality:

(1) Access as needed, more informed producers.

(2) New businesses add value to content (e.g. Weather Derivatives).

Potential benefits:

Accelerate and widen opportunities for adoption and commercialisation. The potential for much wider access for GPs/nurses, teachers/students, and small firms in consulting, engineering, biotechnology, nanotechnology, etc. The potential for the emergence of new industries based upon the open access content.

A modified growth model



- Based on a review of the literature, we assume a 50% return on gross expenditure on R&D, and a 25% return on public sector R&D
- The standard approach assumes all R&D generates useful knowledge, and all knowledge is equally accessible
- We introduce 'access' and 'efficiency' into a standard growth model as negative 'friction' variables, and look at the impact of reducing the friction by increasing access and efficiency

Calculating potential impacts

- **Beware – Work in Progress!**
- With gross expenditure on R&D at \$12 billion a year & a 50% return to R&D, a 5% increase in access & efficiency would be worth \$628 million a year
- With higher education R&D expenditure at \$3.4 billion & a 25% return to R&D, a 5% increase in access & efficiency would be worth \$88 million
- With ARC administered competitive grants funding at \$480 million & a 25% return to R&D, a 5% increase in access & efficiency would be worth \$12 million

Calculating possible cost-benefits

- We compare the estimated additional incremental cost of institutional repositories in higher education, with the potential additional incremental benefits from enhanced access to higher education research
- Over 20 years, a national system of institutional repositories costing \$10 million a year would cost around \$130 million (NPV)
- Enhanced access to higher education research, with impacts at \$88 million a year, would realise benefits of around \$4 billion (a benefit/cost ratio of 30)
- Enhanced access to ARC competitive grants funded research, with impacts at \$12 million a year, would realise benefits of around \$530 million (a benefit/cost ratio of 4.1)

Conclusions ?



- If you focus on providing as much access to as much material as possible, and ensuring that the material is discoverable & accessible to all sorts of potential users in research, industry, government and the wider community, it is probably well worth doing
- And its probably worth doing well – even using conservative assumptions, our preliminary work suggests that the benefits may be substantial:
 - Spending on getting the design & policy right, advocacy & support is probably well worthwhile
 - Extending the scope across a range of objects & functions, and integrating with teaching & learning, research management & evaluation is also likely to pay dividends



Scholarly communication costs and benefits: the role of repositories

John Houghton

Centre for Strategic Economic Studies
Victoria University, Melbourne

John.Houghton@vu.edu.au