

JISC EI-ASPM Report Addendum

We are releasing this addendum in response to comments received since the publication of the JISC EI-ASPM Report in late January 2009.¹ Its purpose is to further clarify the results of the modelling undertaken, particularly in respect to the impacts for the UK nationally and for UK higher education of: (i) Unilateral national versus worldwide adoption of alternative open access models; and (ii) ‘Green OA’ self-archiving in parallel with subscription publishing versus the ‘deconstructed or overlay journals model’ of self-archiving with overlay production and review services.²

The impacts of alternative publishing models

In a highly simplified form, the following figures summarise the estimated impacts for the UK nationally and for UK higher education of unilateral national and worldwide adoption of alternative open access publishing models, including (i) ‘Green OA’ self-archiving, (ii) ‘Gold OA’ or author-pays journal publishing, and (iii) self-archiving with overlay services (*i.e.* the deconstructed or overlay journals model). Increased returns are from public sector and higher education R&D spending expressed as annual increases in current values.³ As many of the potential cost savings cannot be fully realised unless there is worldwide adoption of open access, in the unilateral national open access scenarios funder, research, library handling and subscription cost savings are scaled to UK article output (*i.e.* are in proportion to the share of worldwide journal literature that is open access as a result of unilateral adoption of alternative open access models in the UK). In the ‘Green OA’ model self-archiving operates in parallel with subscription publishing, so there are no publisher, library handling or subscription cost savings.

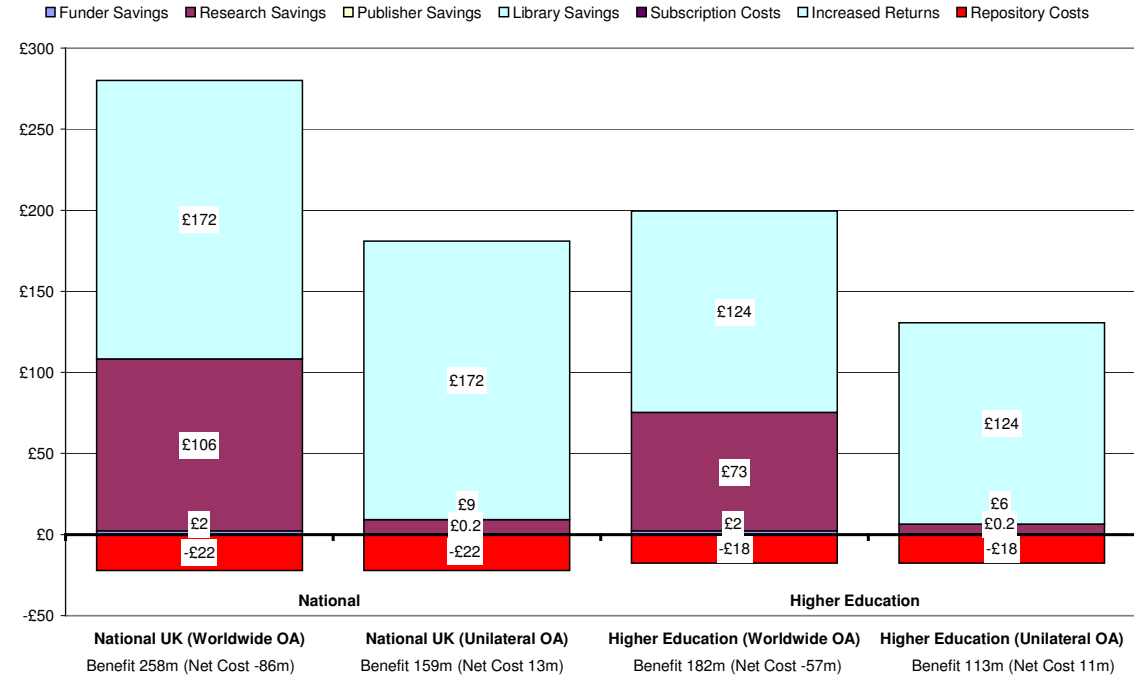
Separating modelled increases in returns to R&D resulting from enhanced access from the cost impacts, the following figures also present the net cost impacts of the alternative publishing models. Where net cost is negative it represents a saving, and where positive it represents a cost (*i.e.* effectively the investment required to obtain the increased returns). For example, at 2007 prices and levels of publishing activity, it is estimated that unilateral ‘Green OA’ in the UK would have brought net benefits of £113 million per annum from higher education, but would have required an additional cash spend of £11 million; whereas with worldwide ‘Green OA’ the net benefits would have been £182 million, as a part of which there would have been a cost saving in higher education of £57 million (Figure 1).

¹ Release <http://www.jisc.ac.uk/publications/publications/economicpublishingmodelsfinalreport> Project website <http://www.cfses.com/EI-ASPM/>

² To ensure that cost-benefit comparisons could be made, analysis focused on self-archiving models that include the certification and quality control functions necessary for formal scholarly publishing.

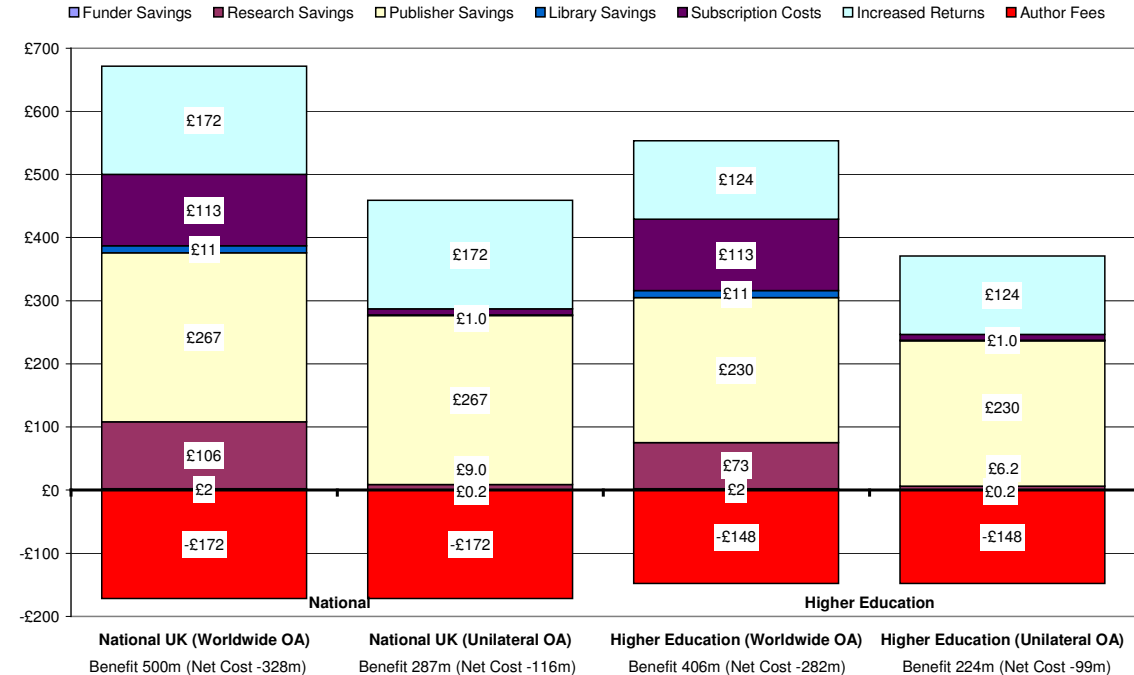
³ Increased returns are recurring gains from one year’s R&D expenditure. Such returns can be expressed in Net Present Value (NPV), lagged and recurring over the useful life of the knowledge. For the sake of simplicity and transparency in these charts we have simply taken the original value of annual returns as indicative. In the cost-benefit comparisons below, returns are presented in Net Present Value and lagged.

Figure 1: Estimated impact of “Green OA” self-archiving (GBP millions per annum, circa 2007)



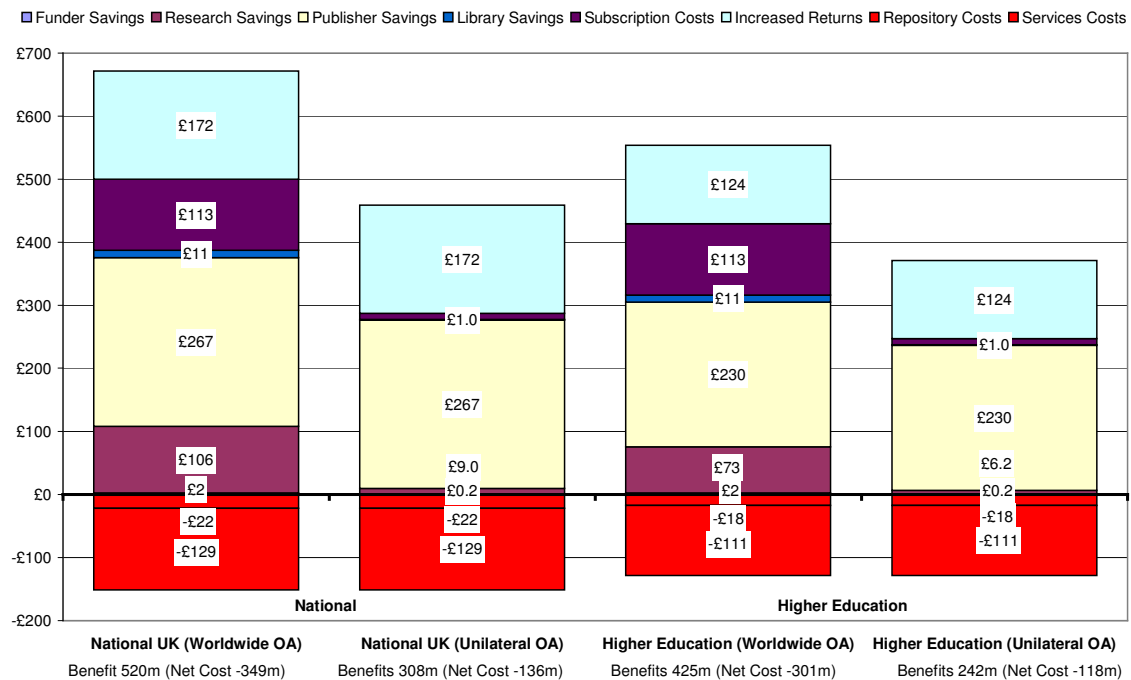
Source: EI-ASPM Model. Authors' Analysis.

Figure 2: Estimated impact of “Gold OA” publishing (GBP millions per annum, circa 2007)



Source: EI-ASPM Model. Authors' Analysis.

Figure 3: Estimated impact of OA self-archiving with overlay production and peer review services (GBP millions per annum, circa 2007)



Source: EI-ASPM Model. Authors' Analysis.

Benefit/Cost comparisons

The cost-benefit comparisons suggest that the additional returns to R&D resulting from enhanced accessibility and efficiency alone would be sufficient to cover the costs of parallel open access self-archiving without subscription cancellations (*i.e.* Green OA). When estimated savings are added to generate net costs there is a substantial increase in the benefit/cost ratios, and for both open access publishing and self-archiving models the benefits exceed the costs, even in transition. Indicative modelling of post-transition 'steady-state' alternative systems (See Section 6 of the report for details) suggests that, once established, alternative open access publishing and/or self-archiving models would produce substantially greater net benefits.

For example, during a transitional period we estimate that, in an open access world: the benefits from cost savings and increased returns to R&D resulting from open access publishing all journal articles produced in UK higher education would be around 3.3 times the costs; the benefits of 'Green OA' self-archiving would be 7.4 times the costs; and the benefits from open access self-archiving with overlay editorial and peer review services would be 3.7 times the costs.

Indicative modelling of post-transition 'steady-state' alternative systems returns benefits of around 7 to 8 times costs for open access publishing and self-archiving with overlay services, and around 40 times the costs for 'Green OA' self-archiving (Table 1).

Table 1: Summary of benefit/cost comparisons (GBP millions over 20 years and benefit/cost ratio, circa 2007)

<i>Net Cost Scenarios</i>	<i>Costs</i>		<i>Benefits</i>		<i>Benefit/Cost Ratio</i>
	<i>Costs</i>	<i>Savings</i>	<i>Increased returns</i>	<i>Increased returns</i>	
Ceteris Paribus Scenarios					
Transitional Model:					
OA Publishing in HE (unrealistic)	1,787	..	615		0.3
OA Publishing Nationally (unrealistic)	2,079	..	850		0.4
OA Repositories in HE	189	..	615		3.2
OA Repositories Nationally	237	..	850		3.6
Simulated Steady State Model:					
OA Publishing in HE (unrealistic)	1,787	..	6,876		3.8
OA Publishing Nationally (unrealistic)	2,079	..	9,505		4.6
OA Repositories in HE	189	..	6,876		36.3
OA Repositories Nationally	237	..	9,505		40.0
Net Cost Scenarios					
Scenario (Unilateral UK Open Access)					
Transitional Model:					
OA Publishing in HE	1,787	2,990	615		2.0
OA Repositories in HE (Green OA)	189	67	615		3.6
OA Repositories in HE (Overlay Services)	1,558	2,990	615		2.3
OA Publishing Nationally	2,079	3,479	850		2.1
OA Repositories Nationally (Green OA)	237	96	850		4.0
OA Repositories Nationally (Overlay Services)	1,831	3,479	850		2.4
Simulated Steady State Model:					
OA Publishing in HE	1,787	2,990	6,876		5.5
OA Repositories in HE (Green OA)	189	67	6,876		36.7
OA Repositories in HE (Overlay Services)	1,558	2,990	6,876		6.3
OA Publishing Nationally	2,079	3,479	9,505		6.2
OA Repositories Nationally (Green OA)	237	96	9,505		40.4
OA Repositories Nationally (Overlay Services)	1,831	3,479	9,505		7.1
Scenario (Worldwide Open Access)					
Transitional Model:					
OA Publishing in HE	1,787	5,198	615		3.3
OA Repositories in HE (Green OA)	189	786	615		7.4
OA Repositories in HE (Overlay Services)	1,558	5,198	615		3.7
OA Publishing Nationally	2,079	6,054	850		3.3
OA Repositories Nationally (Green OA)	237	1,132	850		8.3
OA Repositories Nationally (Overlay Services)	1,831	6,054	850		3.8
Simulated Steady State Model:					
OA Publishing in HE	1,787	5,198	6,876		6.8
OA Repositories in HE (Green OA)	189	786	6,876		40.5
OA Repositories in HE (Overlay Services)	1,558	5,198	6,876		7.8
OA Publishing Nationally	2,079	6,054	9,505		7.5
OA Repositories Nationally (Green OA)	237	1,132	9,505		44.8
OA Repositories Nationally (Overlay Services)	1,831	6,054	9,505		8.5

Note: Compares open access alternatives against subscription or toll access, with costs, savings and benefits expressed in Net Present Value over 20 years (GBP millions). Increased returns to R&D relate to higher education R&D expenditure (HERD) and national public expenditure on R&D (PUBRD).

Source: EI-ASPM Model. Authors' Analysis.