

The Scaling Argument

From “The scaling argument,” SPARC Open Access Newsletter, March 2, 2004.

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Open-access literature has four key properties: it’s digital, it’s online, it’s free of charge, and it’s free of most copyright and licensing restrictions. There are many arguments for OA, but these four properties support an important argument that’s seldom heard: open access scales better than toll access.

The background here is the continuing explosion of knowledge. We suffered from information overload even in the age of print. It has accelerated since the birth of the internet, but it would have accelerated anyway. It seems to be accelerating now at an accelerating rate.

Will our methods of disseminating knowledge keep pace with the rate of discovery and publication? Or will they function as an artificial brake on the growth of knowledge itself and our ability to find and assimilate it?

Print literature is expensive to purchase, store, and search. All three problems are aggravated as the volume of literature grows. When the literature is digital but not online, then purchase, storage, and searching all become easier, and they become easier again when the digital literature moves online. Then we can store it in multiple sites around the world, distribute the costs and labor of maintenance, reach the distributed sites as if they were sectors of our own hard drives, and search across them as if they were one. When the literature is digital and online but priced, then it’s locked away behind passwords, which excludes non-paying users and most search engines. Even when it’s searchable, it’s no longer affordable. However, when it’s digital, online, and free of price and permission barriers, then finally it scales. We can search it, store it, and afford it, and growth in its volume no longer raises insuperable financial or ergonomic hurdles.

Most universities already have trouble storing their print literature. But all have trouble paying for journals, whether print or electronic. None can buy access to all the

priced journals their faculty need to keep up in their fields. If affluent universities like the University of California, the University of Connecticut, Cornell, Duke, Harvard, MIT, the University of Maryland, the University of North Carolina at Chapel Hill, and Stanford cannot afford the current array of journals, then the current system does not scale. It would not scale even if knowledge grew at a slower rate. But knowledge will continue to grow, probably at an exponential rate. If we do not find a dissemination and access paradigm that scales up more efficiently, and soon, then researchers will be publishing more and more for fewer and fewer.

But we have such a paradigm. OA scales. It greatly reduces the costs of production, distribution, and storage, and of course access and usage are free of charge. OA accommodates growth on a gigantic scale and, best of all, supports more effective tools for searching, sorting, indexing, filtering, mining, and alerting—the tools for coping with information overload.

Using these tools to find what we need when we need it is the only solution to information overload compatible with the growth of knowledge. In a toll-access future, we'll have to cope by doing without access to a growing percentage of the published literature, curtailing the publication of otherwise worthy research, or simply shutting our eyes.

One lesson: don't ask merely how bad the serials crisis is or how bad information overload is. Ask how bad both will become, as knowledge continues its explosive growth, if we don't fundamentally change our methods of funding, distribution, and access. There will be scaling problems even with OA, but there's no doubt that OA scales better, on every parameter, than the current toll-access system. [...]

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Knowledge Unbound

Selected Writings on Open Access, 2002–2011

By: Peter Suber

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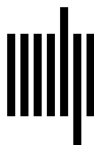
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