Why Elsevier's Outrageous Profit Margins Could Turn Out to Be a Good Thing*

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June 2017

It is routinely report that Elsevier's profit margins approach 40%. Here are just a few examples.

> Last year [2014] the company achieved revenues of £2bn and an operating profit of 34 per cent — almost four times the average profit margin of groups in the FTSE 100. That makes Elsevier the biggest and most profitable divisions of RELX, the London-listed Anglo-Dutch information group that has a market value of £25bn.[1]
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> In 2016, Elsevier accounted for 34% of the revenues of RELX group (£2.320 billion of £6.895 billion). In operating profits, it represented 40% (£853 million of £2,114 million). Adjusted operating profits (with constant currency) rose by 2% from 2015 to 2016.[2]
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> As one might expect, the consolidation of the publishing industry led to an increase of the profits of publishers. Fig 7 presents, as an example, the evolution of Reed-Elsevier's profits over the 1991–2013 period, for the firm taken as a whole as well as for its Scientific, Technical & Medical division. One can clearly see in Fig 7A that, between 1991 and 1997, both the profits and the profit margin increased steadily for the company as a whole. While profits more than doubled over that period—from 665M USD to 1,451M USD—profit margin also rose from 17% to 26%. Profit margins decreased, however, between 1998 and 2003, although profits remained relatively stable. Absolute profits as well as the profit margin then rose again, with the exception of the 2008–2009 period of economic crisis, resulting in profits reaching an all-time high of more than 2 billion USD in 2012 and 2013. The profit margin of the company's Scientific, Technical & Medical division is even higher (Fig 7B). Moreover, its profits increased by a factor of almost 6 throughout the period, and never dropped below 30% from one year to another. The profit margin of this division never decreased below 30% during the period observed, and steadily increased from 30.6% to 38.9% between 2006 and 2013.[3]

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* This paper extends the arguments of an earlier work, David W. Lewis, "The Scholarly Article is Rebar," May 2016 https://scholarworks.iupui.edu/handle/1805/9637

These profit margins are generally considered outrageous, and they are. There could though, be a silver lining.

Elsevier is big — *Wikipedia* says that in 2016 they employed 7,200 people in 70 offices in 24 countries. That year they published 420,000 articles in 2,500 journals.[4] Increasingly they provide what Elsevier refers to as "digital solutions" that complement and enhance this content. These include clinical decision support systems, Scopus, SciVal, Mendeley, Pure, and many more. Many of Elsevier's products are monopoly goods and this gives them the ability to extract excessive amounts of money from universities and anyone else who needs the content they control. They take no prisoners in dealing with anyone who gets in their way, including their customers, as their behavior in the recent Louisiana State University suit demonstrates.[5] As noted above, they make a ton of money. A key component of Elsevier's money-making strategy — its business model — is their ability to generate high margins.

In most circumstances, the capacity to generate high margins would be an asset, and up to now for Elsevier this has certainly been the case. I want to argue that while the capacity to generate high margins has allowed Elsevier to make a lot of money, going forward it will make it increasingly difficult to compete in the scholarly journal market. I base this argument on the work of Clayton Christensen. Christensen argues that organizations inevitably develop business models and that the business model, once established, is difficult, if not impossible, to change. It is useful to quote him at length:

> Business models are comprised of four interdependent elements.... They start with a value proposition: a product or service that helps customers do a job that they have been trying to do more effectively, conveniently, and affordably. The organization must assemble the set of resources to deliver that value proposition—such as people, products, technologies, equipment, and facilities. As the organization repeatedly uses its resources to deliver its value proposition, processes—habitual ways of getting recurrent things done—coalesce. Soon a profit formula emerges as the company follows these processes to use its resources to deliver the value proposition. The profit formula defines how large the company must become to break even, what kind of gross and net margins it must achieve to cover the cost of its resources, and how rapidly it needs to turn its assets over to achieve an adequate return on investment. The profit formula in turn determines the kinds of value propositions that the business model can and cannot offer. These four elements of a business model become interdependently locked very quickly. Innovations that conform to the business model are readily funded. Organizations sometimes reject an innovation that emerges to address a new need in the market, but doesn't t these four elements of the business model. But the organization more frequently co-opts such innovations by forcing them to conform to the business model in order to get funded. When this

> happens—funding only flows to innovations that sustain or fit the business model—the organization loses its ability to respond to fundamental changes in the markets that it serves.[6]

Christensen argues that in stable times the business model is key to success. However, in unstable times or when confronting a disruptive innovation, the business model limits what an organization can do and how it can respond. The available responses are only those that can be accommodated within the business model, including profit formula.

I have previously argued that Gold Open Access is a disruptive innovation.[7] I predict that it will disrupt subscription based journal publishers and become the dominant model for the scholarly journal literature. While the evidence is far from complete, I believe there are many indications that I am correct.[8]

If I am correct that scholarly journal publishing is being disrupted, and if Christensen is correct in what he says about business models and how they limit organizational response, we would expect to see predictable responses from Elsevier and the other large subscription-based scholarly journal publishers. Elsevier has a profit formula which generates profit margins approaching 40%. Margins of at this level will become impossible in more and more of the scholarly journal market. In many parts of the market — the humanities, for example — margins at this level were never possible. Elsevier never enter this part of the market. As open access becomes a competitive alternative to the established subscription model, there are several ways the established firms, including Elsevier can respond. Christensen would predict that they will first try to cram the innovation into their established business model. We have seen this happen with hybrid open access and in the creation of open access journals by the established publishers. These efforts might have some success in the short term, but they are unlikely to be able to sustain the high profit margins that Elsevier's business model requires. It is rarely the case that the legacy firm can compete in a disruptive environment for just this reason. The next response of the established firm is to move up market. Christensen uses the example of the steel industry's response to the disruptive innovation of the minimill to explain how this works.[9] Facing a disruptive innovation attacking the low end of a product line managers face Christensen's famous "innovator's dilemma". As Christensen puts it the question the manager asks is, "Should we invest to protect the least profitable end of our business, so that we can retain our least loyal, most price-sensitive customers? Or should we invest to strengthen our position in the most profitable tiers of our business, with customers who reward us with premium prices for better products?"[10] This leads the firm to drop products at the low end of the product line and to develop them at the high end.

We can see this upmarket movement happening. On its website Elsevier proclaims its mission: "Elsevier provides information and analytics that help institutions and professionals progress science, advance healthcare and improve performance…

Discover our digital solutions combining content with technology to turn information into actionable knowledge."[11] Elsevier is no longer simply a journal publisher. Its digital solutions are built on journal and similar content, but in most cases, they add very expensive systems and are sold to universities or similar organizations. It is hard to know for certain, but it is likely that these products fit into the established Elsevier business model with its 40% profit margin. Elsevier will willingly make the large investments developing these systems requires because they fit the established business model. It is easy to see Elsevier developing more products at the high end. It is not clear if they at the same time dropping products at the low end. This would be smaller niche journals with limited circulation. The Big Deal strategy might provide Elsevier some protection from disruption for this part of the market, but if libraries abandon the Big Deal, we can expect this to happen. It is only anecdotal, but recently my library was approached by a small scholarly society about hosting their journal on our open journal platform. They did so because their previous publisher could no longer make a profit on the journal. I would expect that we will see this happen more frequently as open access erodes the profitability of the scholarly journal market. The dynamic, I will predict, will follow the pattern Christensen documents with the steel industry.

I would conclude that open access is disrupting scholarly publishing and that the established commercial providers can only respond with products that fit in their business model. For Elsevier, this business model includes their outrageous 40% profit margin. This means Elsevier's responses are limited. They cannot, over the long haul, compete against a provider that has a different business model, open access in this case, and is happy with lower margins. Elsevier has a lot of money and they can put up a good fight if they choose. But at the end of the day why would they compete against open access at the bottom end of the scholarly journal market where margins are low and funders mandates and Sci-Hub make it an unprofitable market when they can sell Pure or SciVal to universities and custom clinical decision support systems to hospitals where there is a good fit to the established business model and that profit margins are 40%.

After all, the scholarly article is rebar, and Elsevier won't want to be in the rebar business.

Notes

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[1] Robert Cookson, "Elsevier leads the business the internet could not kill," *Financial Times* November 15, 2015 https://www.ft.com/content/93138f3e-87d6-11e5-90de-f44762bf9896?mhq5j=e2

[2] "Elsvier," *Wikepedia* https://en.wikipedia.org/wiki/Elsevier [accessed June 6, 2017].

[3] Vincent Larivière, Stefanie Haustein, and Philippe Mongeon, "The Oligopoly of Academic Publishers in the Digital Era'" *PLoS ONE* 10(6): e0127502 June 10, 2015 https://doi.org/10.1371/journal.pone.0127502

[4] "Elsvier," *Wikepedia* https://en.wikipedia.org/wiki/Elsevier [accessed June 6, 2017].

[5] See for example: Carl Straumsheim, "LSU Sues Elsevier," *Inside Higher Ed* May 3, 2017 https://www.insidehighered.com/news/2017/05/03/louisiana-state-takes-disagreement-elsevier-court or Krista L. Cox, "Louisiana State University Sues Elsevier for Breach of Contract," Washington, DC: Association of Research Libraries, May 2, 2017 http://www.arl.org/news/community-updates/4264-louisiana-state-university-sues-elsevier-for-breach-of-contract#.WTlm08aZNVp

[6] Clayton M. Christensen, Michael B. Horn, Louis Caldera, and Louis Soares, *Disrupting College: How Disruptive Innovation Can Deliver Quality and Affordability to Postsecondary Education*, Washington, DC: Center for American Progress, February 2011, page 32. https://www.americanprogress.org/issues/economy/reports/2011/02/08/9034/disrupting-college/

[7] David W. Lewis. "The Inevitability of Open Access." *College & Research Libraries* 73(5):493-506 September 2012. doi:10.5860/crl-299 http://crl.acrl.org/index.php/crl/article/view/16255

[8] David W. Lewis, "The Inevitability of Open Access: Update One," August 2013 https://scholarworks.iupui.edu/handle/1805/3471 and David W. Lewis, "The Scholarly Article is Rebar," May 2016 https://scholarworks.iupui.edu/handle/1805/9637

[9] Clayton M. Christensen, et. al., Disrupting *College,* pages 16-18.

[10] Ibid., page 18.

[11] Elsvier, https://www.elsevier.com [accessed June 8, 2017].