

The publisher's online platform: hosting the present and the future

Over the past two decades the academic publisher has had to respond to the digital revolution, that of the ever increasing growth of the Internet in terms of societal importance and technical complexity. Journal publishers began their move into this digital realm by making their content, the journal article, available electronically in parallel with the printed publication and over the years, these publishers have developed or acquired their own online platforms on which to host the electronic versions of their content.

These online platforms, their similarities and capabilities, are considered here in order to establish the current 'technological baseline' and to identify features and functionalities that may comprise a future technological baseline.



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The publishers

In order to establish the technological baseline in the broadest sense, I focused on the experience of the majority of users accessing online journal content and therefore investigated the publishers with the largest collective market share. The technological baseline described here is thus based on the four large commercial publishers Elsevier, Springer, Taylor & Francis and Wiley-Blackwell¹ and their respective online platforms as they stood in October 2007, those being ScienceDirect², SpringerLink³, Informaworld⁴ and Blackwell Synergy⁵.

All the features and functions present on the different platforms were noted and the baseline established based on those results. This table of results comprises Appendix A.

In addition to the four publishers mentioned, the academic publisher SAGE was considered and their online platform, SAGE Journals Online⁶, studied for the purpose of seeing how accurate the technological baseline established appeared to be.

The technological baseline⁷

Across all five online platforms, the individual journal articles were available to view and download in PDF format, replicating their appearance in

the printed form. All publishers also provided articles in HTML. However, on all the platforms there were far fewer articles available in HTML, probably due to the increased cost and complexity involved in creating HTML text compared to a PDF⁸.

All the publishers' online platforms allow subscribers to view an article's abstract and references without opening the article in full. This allows users to more quickly identify, from either a browse or search, articles of potential interest and discard those that do not appear relevant.

Aside from some variation in presentation, the means by which users gain access to content from a single journal is the same. When browsing a journal there is an initial hierarchical display that presents the journal content according to volume and/or year. Once a year/volume is selected, the issues published in that year are displayed. An issue can then be selected and a table of contents displayed, often mirroring the content of the printed version, although it may contain more detail.

A subscriber's means of browsing is also consistent in that content can be browsed by subject and by title so as to allow more than one route into the content. This not only applies to all the publisher's content hosted on the online

platform but also to the content to which the user is subscribed, therefore allowing the researcher to view only the material to which they have full text access. At the time of this research, SpringerLink had yet to implement the function to browse only subscribed content, but this was actively under development and so can be considered to be part of the technological baseline.

Whilst there is some variation between the platforms, results lists are consistent in that users are able to mark specific records to create custom lists around topics or for the purpose of quick retrieval at a later time. However, the user must be personally registered, rather than gain access anonymously through an institutional subscription. A user's access rights to a particular journal or article, as determined by their subscription, are also present across the online platforms.

All online platforms contain two levels of searching the content: a quick search and more detailed advanced search. Whilst there was found to be a lot of variation between the features present in the various online platforms, the advanced search consistently contains: multiple fields to allow users to run complex queries, the function to specify a publication date range, as well as Boolean AND, OR, NOT operators. Across all the online platforms, advanced searches (whether the search criteria or search results) can be saved for either the quick retrieval of results at a later date or to see whether any new articles that match the search criteria have been published.

Content alerting is another area where there is a great deal of variation between the various online platforms, although they all employ RSS and e-mail alerts to notify users to new journal issues (e-tables of contents: eTOCS) as well as to new content that meets a user's saved search criteria.

All the online platforms allow the user to download citation details for single or multiple articles in more than one format.

Article-specific features that are standard across all the online platforms include the option to recommend the article, which allows the user to send an autogenerated e-mail containing a link to the article as well as any comments they wish to add. Requests for permissions are also available as well as the option to purchase articles (pay-per-view articles) that are not covered in a user's subscription.

Journal-specific features include submitting a request for a free sample issue, accessing journal

details, such as the editorial board and aims and scope, and subscribing to the journal.

Technological variations

The features and functions mentioned previously can be found in the online platforms of all five publishers and are considered to constitute the technological baseline. There are, however, a number of features that, whilst not present across the board, are present in two or three of the publishers' online platforms and will most likely constitute part of the technological baseline in the very near future. These can all be found in Appendix A, and a few features of note are mentioned here; however, it should be noted that simply because a feature is being utilized by only one or two publishers and not by their competitors does not equate to that innovation being valuable in and of itself or that a particular publisher's platform delivers a better service than that of another publisher. This would require a more in-depth analysis including a usability study of the publishers' platforms to determine the real value to their users.

In addition to hosting journal content that has been assigned to an issue, all but one of the publishers are providing subscribers with access to articles currently in press, that is, papers that have completed the peer-review process and have been accepted for publication, but that have either not been assigned to an issue or that have not yet completed the production process. This is beneficial to authors and readers as it allows research to be read, discussed and cited earlier. For journals with a long delay between acceptance and publication this can be a useful value added feature. Interestingly, however, Taylor & Francis is the only publisher to have an alert setup to notify users when this new content becomes available.

On the issue of alerts, SpringerLink is the only online platform not to offer users the functionality to set up citation alerts for a given article. To compensate for this, when viewing an individual article in SpringerLink, a list is displayed of all articles and publications in which it is cited, and this feature is not provided by any of the other big four publishers. This could therefore also be considered as a feature of technological innovation. However, in order for a user to be aware of a new citation to a given article, they would have to be aware of all the sources where it was already cited

in order to identify which citation was the new one, which is perhaps less user friendly.

With the exception of SpringerLink, all the publishers' online platforms allow users to view related papers. ScienceDirect, SAGE Journals Online and Blackwell Synergy also have the functionality to view the most read articles in a particular journal.

Technological innovation?

There are a few features that are used by only one or two publishers, and whether they are truly useful innovations or not is still up for debate. Two features of note are mentioned below; these and the other innovative features can also be found in Appendix A.

ScienceDirect is alone in providing users with analytical information regarding the top most read articles in a given subject. However, Blackwell Synergy and SAGE Journals Online have the functionality to view the most cited articles within a particular journal. In this endeavour, Taylor & Francis, as well as the three other publishers mentioned here, provides users with the function to view papers related to any article, thereby analyzing their existing content and making suggestions for the benefit of the user.

Two platforms feature links to social bookmarking sites, a characteristic of 'Web 2.0'. ScienceDirect has a link to 2Collab, an Elsevier social bookmarking application that allows users to tag content, whereas Sage Online Journals provides links to CiteULike, Connotea, del.icio.us, Digg, Reddit and Technorati.

Tomorrow's platform

The technological baseline does not include any features that are particularly innovative, suggesting that it is the features that are easier to implement that have been adopted and that there is still room for publishers to improve their online delivery platforms as described in the variation and innovation sections.

Using this and additional research as the basis for speculation, it seems plausible that other features, not presently employed by any of the publishers considered, could one day find themselves assimilated into a future technological

baseline. Whilst social bookmarking features and links to external resources like Google Scholar or Thomson Scientific's ISI are on the periphery of innovation, the next big innovation would appear to be in the form of analytics. Whilst these are already in use to a limited extent, there are many more ways in which they could be applied. Presently where they are employed by the publishers studied, they are only used to inform users as to how many times an item of content has been viewed, downloaded or cited, or more precisely, the analytics provided relate solely to *usage*. Not one publisher platform provides *search* analytics to assist the user with their research. These fall along the lines of 'people who similarly searched for X also searched for Y', or 'people who recently accessed document A went on to access documents B and C'. This level of functionality, which is already present on commercial websites such as Amazon (where it is proving to be highly successful) could prove to be of great benefit to the user community in that the platforms themselves could actively assist in the research being undertaken by providing links to relevant and related content by seeing where other users have gone. As an assisted research tool they effectively bounce users directly from one document to another rather than forcing them to think of a different search query to enter in order to access more suitable results, thus creating an impression for the user that the platform is designed around them. In so doing, a feature like search analytics would increase the stickiness of the publisher's platform and encourage users to return to the site because it adheres closely to Jacob Neilson's tenet of good design and web usability in that it doesn't make the user think. If that can be provided for the user in an effective manner, the value added by the publisher's platform could be significant and would conceivably act to discourage users from accessing that content from anywhere else but that said publisher's platform.

Conclusion

If the situation for publishers is to become increasingly competitive, evaluated and pressurized, whereby an institution's subscription decisions are based on usage as suggested¹⁰, then publishers will have to avail themselves of appropriate technologies that increase traffic to their site and journal content, as well as adding value to the

method of delivery¹¹. At present, the publishers that successfully deliver on innovation will gain a (perhaps marginal) competitive advantage, at least in the short term. In the longer term, however, it is likely that the above features will become part of a future technological baseline as an expected feature in the same way that it is now a requirement that the large commercial publishers provide electronic versions of journals in addition to their printed counterparts. The scenario will not then be one of 'publisher A is great as it is the only one offering feature X' but 'publisher A is behind the times as it is the only one not offering feature X'. There is greater harm in being the last organization to adopt a practice than there is benefit in being the first and, as publishers, we cannot afford to ignore what our users want as it is our users who edit our journals, submit research, use and subscribe to them. User-centric features and design work for a very obvious reason.

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**Appendix A
7 October 2007**

| | Taylor & Francis: Informaworld | Elsevier: ScienceDirect | Blackwell Synergy | Springer: SpringerLink | SAGE Journals Online |
|-------------------------------|-----------------------------------|----------------------------|----------------------|---------------------------|----------------------------|
| Journal article format | | | | | |
| HTML | Y | Y | Y | Y | Y |
| PDF | Y | Y | Y | Y | Y |

| | | | | | |
|---|---|---|---|---|----|
| Without opening full article | | | | | |
| View abstract | Y | Y | Y | Y | Y |
| View references | Y | Y | Y | Y | Y |
| View list of publications referencing article | N | N | N | Y | N* |

*similar function available through Citation map. However, not available for all articles

| | | | | | |
|----------------------------------|---|---|---|---|---|
| Display format | | | | | |
| Hierarchical display: vol, issue | Y | Y | Y | Y | Y |
| Issue: Table of contents | Y | Y | Y | Y | Y |
| First/in press content | Y | Y | N | Y | Y |

| | | | | | |
|-------------------|---|---|---|----|-----------------|
| Browse | | | | | |
| By subject | Y | Y | Y | Y | Y articles by |
| Title A-Z | Y | Y | Y | Y | Y jnls by title |
| Author | Y | N | N | N | N |
| Browse subscribed | Y | Y | Y | N* | Y |

*under development

| | | | | | |
|---|---|---|----|---|---|
| Results list | | | | | |
| Mark records to create custom list(s) - | Y | Y | Y | Y | Y |
| View abstracts in list | Y | Y | Y* | N | N |
| Access indicator: Full/partial/no | Y | Y | Y | Y | Y |
| Pay-per-view articles | Y | Y | Y | Y | Y |

*articles must be selected first

| | | | | | |
|---|---|---|---|---|---|
| Mark lists | | | | | |
| Create list of favourite publications/add | Y | Y | Y | Y | Y |
| Create list(s) of articles/add to quick | Y | Y | Y | Y | Y |
| Subject homepages | Y | N | N | N | N |

| | | | | | |
|--|---|---|---|----|---|
| Alerts – email & RSS (subscriber) | | | | | |
| New issue (etoc) | Y | Y | Y | Y | Y |
| Citation (when paper is cited) | Y | Y | Y | N* | Y |
| Preview/in press | Y | N | N | N | N |
| Search alerts | Y | Y | Y | Y | Y |
| Topic alerts | Y | Y | N | N | N |

*no alert function but does show all papers citing it

| | | | | | |
|------------------------------------|---|---|---|---|----|
| Citations | | | | | |
| Download citation | Y | Y | Y | Y | Y |
| Multiple formats? | Y | Y | Y | Y | Y |
| E-mail citation | Y | Y | N | N | Y |
| Search for/show papers citing this | Y | Y | N | Y | Y* |

*not available for all articles

| | | | | | |
|---|---|---|---|---|---|
| Advanced Search | | | | | |
| Highlight terms within search results | Y | Y | N | Y | N |
| Save Searches | Y | Y | Y | Y | Y |
| User selectable search fields | Y | Y | Y | N | Y |
| Multiple search fields | Y | Y | Y | Y | Y |
| Boolean (and, or, not operators) | Y | Y | Y | Y | Y |
| Stemming | Y | N | Y | N | N |
| Search ALL/ANY terms | Y | N | N | N | N |
| Date range | Y | Y | Y | Y | Y |
| Restrict search to subscribed content | N | Y | Y | N | Y |
| Restrict search to favourite content | N | Y | N | N | Y |
| Citation search: Journal Vol, issue, page | Y | Y | Y | N | N |
| CrossRef search | Y | N | Y | N | Y |

Article functions

| | | | | | |
|----------------------------------|---|----|---|---|----|
| Recommend articles (e-mail link) | Y | Y | Y | Y | Y |
| Order reprints | Y | N | Y | Y | Y |
| Request permissions | Y | Y | Y | Y | Y |
| Contact author | N | Y | N | Y | Y |
| Social Bookmarking | N | Y* | N | N | Y+ |

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+CiteULike,
Connotea,
del.icio.us, Digg,
Reddit, Technorati

Analytics

| | | | | | |
|----------------------------------|---|---|---|---|---|
| View related papers | Y | Y | Y | N | Y |
| View top X articles in subject Y | N | Y | N | N | N |
| View most read in jnl X | N | Y | Y | N | Y |

Journal

| | | | | | |
|---------------------------|---|---|---|---|---|
| Request FREE sample issue | Y | Y | Y | Y | Y |
| Subscribe now | Y | Y | Y | Y | Y |
| Editorial board | Y | Y | Y | Y | Y |
| Aims & Scope | Y | Y | Y | Y | Y |

Technological baseline
Technological variation
Technological innovation?



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