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Enterprise Directorate-General

## **Publishing Market Watch**

### **Special issues paper 3: Innovation**

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## **1 Overview of the project**

Publishing Market Watch was a 12 month project, for the most part completed during 2004, analysing the competitiveness of the European publishing industry. It was undertaken on behalf of the European Commission's Directorate General for Enterprise and Industry by a team led by Rightscom, a specialist consultancy based in London ([www.rightscom.com](http://www.rightscom.com)), with a substantial contribution from the Turku School of Economics and Business Administration (Media Group) in Finland ([www.tukkk.fi](http://www.tukkk.fi)). The project was designed to help the European Commission understand the challenges faced by the publishing industry in Europe in the future, and to provide publishers with valuable statistical data to help them focus their efforts to maintain or improve their competitiveness.

The project was given the following objectives:

- Increasing the knowledge and understanding of the European Commission about the publishing industry
- Informing future policy formation within the European Commission with respect to publishing
- Improving knowledge and understanding of competitiveness issues in European publishing among a wider constituency, particularly within the publishing industry itself.

The project covered the industry in four sectors: newspapers; magazines and journals; books; and directories and databases. There is also a final report which draws together the major themes from the sectoral reports. For the first time, in this report, data from the new Member States are presented which allow a first analysis of the situation in these countries. The final report includes a summary of the key issues affecting the competitiveness of each individual sector as well as the industry as a whole.

The project combined rigorous quantitative and qualitative analysis of the trends in publishing, building up an overview from reports on each of the main sectors of publishing and drilling down into sub-sectors to gain a surer perspective on the issues involved. An important part of this process has been the involvement of the industry itself, either directly or through its trade associations, both in helping to define the key issues and in providing input.

The quantitative analysis is based on a very wide range of specialist data resources; these have been identified by a team which has considerable experience of the publishing industries and knowledge of which measures most clearly show the competitive position of the publishing industry.

A workshop was held on 17 September 2004 in Brussels to test and validate the projects' findings at that stage with a substantial turnout of experts from across Europe, including from the new Accession States. This

group confirmed the cross-sectoral nature of many of the themes which have been identified in the report.

The primary outputs of the project are detailed analyses of the issues facing publishers in the area of competitiveness and a series of related recommendations. These recommendations are based on the identification of the main issues affecting the publishing industries' competitiveness and the ability to modernise and innovate at a time of enormous change in the technical, commercial and social environments within which publishing operates.

As well as the four sectoral reports, the project also created two special issues papers, looking in more depth at specific topics related to regulation and competitiveness, as these apply to publishing. These reports covered *Corporate Social Responsibility* and *Innovation*.

Although the publishing industry is susceptible to the same types of competitiveness analysis as any other industry, it has certain unique qualities, in particular in the impact of digital technology (both in production processes and in the distribution channel). The scale of this impact may be very difficult to identify from economic analysis of historical data alone. The capacity for, and effect of, successful innovation to meet the challenges of the digital revolution are also particularly difficult to measure: this is the topic of this issues paper.

A website for the project has been established ([www.publishing-watch.org](http://www.publishing-watch.org)), giving more details about the project and team, and providing access to the project deliverables.

## **2 Introduction**

The importance of innovation to the continued competitiveness and sustainability in the publishing industries in the EU has been described in the sectoral and final reports for the Publishing Watch study.<sup>1</sup>

The purposes of this paper are threefold:

First, it aims at identifying ways in which innovation, defined as *the successful development and exploitation of new ideas*,<sup>2</sup> within the publishing industries of the EU Member States could be analysed; it is not intended to be a critique of the industry's innovation performance or potential. Secondly, it proposes a framework which is hoped will prove helpful for a better understanding of the relationship between innovation, competitiveness and sustainability. The undertaking of this analysis is beyond the scope of this brief issues paper.

Innovation is difficult to measure accurately and objectively. The most-used key measures for competitiveness are financial or market-related. Data is available from a range of sources, including the Eurostat industry statistics (used throughout the sectoral reports for Publishing Watch), as well as information compiled by a range of private and public sector organisations and by the industries themselves through their industry associations.

There are few such defined indicators for innovation: nor is there a clearly-articulated model of the data that *might* be used if was available. Identifying such a model of how innovation might be assessed and analysed within the publishing industry is therefore the third purpose of this issues paper.

The first stage is to offer a working definition of innovation within the publishing industries and to examine some of the special characteristics of innovation in publishing.<sup>3</sup> Next, innovation trends in the publishing industry are described to provide more detail on the elements that could usefully be analysed. This leads to a description of key measures that could be used to assess innovation in publishing, and lastly a practical approach using those measures is outlined and conclusion drawn.

A selective list of innovations in publishing is given in the Appendices.

### **2.1 Why focus on innovation?**

Innovation is a motor for continuing improved competitiveness for the publishing industry, just as for other industries.. Faced with competitive pressures arising from technological and social changes, the change in

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<sup>1</sup> Reports from the study can be found at <http://www.publishing-watch.org>

<sup>2</sup> A more detailed description of innovation can be found in Section 2.3

<sup>3</sup> This is not to say that the nature of innovation in publishing is unique, but to consider the aspects of innovation that are most relevant to publishing

reading habits, decline in circulation and competition for readers' attention and competition for advertising revenue with other media, innovation plays a crucial role in safeguarding or improving the competitive position of publishing in the future. For the industry an analysis of innovation based on measurable evidence would be a very valuable contribution towards industry strategy and policy-making.

A strong industry "view" of the impact of innovation within a sector was often apparent during the research for Publishing Watch reports, widely shared by firms and industry associations and likely to be accurate, but not testable or provable. The topic is clearly very important in the publishing industry, but there is no reference-point for detailed discussion that would allow the impact to be understood and reproduced elsewhere.

## **2.2 Innovation: working definition**

It is not within the scope of this issues paper to present numerous definitions of innovation that have been proposed, as for the analysis of the publishing industry a fairly wide-ranging definition seems to be appropriate: the definition we have adopted is *the successful development and exploitation of new ideas*. In this case, it is taken to include any idea that is new to a particular firm rather than being restricted to things that are "completely new" or even new to an industry or sector of an industry.<sup>4</sup>

This definition focuses attention on the importance of the ability to identify new ideas and manage their introduction in a commercially successful way, rather than the less common ability to invent new ideas. The creation of entirely new ideas can give a firm an important competitive advantage, but many firms innovate by adopting new ideas from elsewhere. This diffusion of new ideas is essential if innovation is to have a significant impact on the competitiveness of publishing *as a whole* rather than just a few publishing firms.

## **2.3 Types of innovation**

A key distinction when discussing innovation is that between incremental and radical innovation.

Incremental innovation is typified by steady improvement in a product, service, or process; radical innovation is often disruptive in nature and unrelated to what has gone before. It has the ability to disrupt firms or industries, and indeed is sometimes also known as "disruptive innovation". Radical innovations often attract more attention, but the cumulative

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<sup>4</sup> "The minimum entry is that the product or process should be new (or significantly improved) to the firm (it does not have to be new to the world)". *The measurement of scientific and technological activities: proposed guidelines for collecting and interpreting technological innovation data* ("Oslo Manual"); OECD, 1997.  
[http://www1.oecd.org/dsti/sti/stat-ana/prod/eas\\_oslo.htm](http://www1.oecd.org/dsti/sti/stat-ana/prod/eas_oslo.htm)

effect of incremental innovation is very important in an industry such as publishing.

Examples of incremental and radical innovation in publishing are given in Section 3, on innovation trends in publishing.

The main risk to an industry that relies mainly on incremental innovation is that its competitiveness can be hit hard by a radical innovation coming from outside the “core” of the industry – either from small firms or by firms from other industries. The wave of disruptive innovation created by the mass adoption of the internet in the mid to late 1990s caught many publishing firms ill-prepared: it can be argued that they could not have anticipated the speed and form that the internet explosion would take, but what is material to innovation is less concerned with the specifics of response to a particular set of circumstances than with the capability to respond rapidly to any challenge to competitiveness. This has been the experience of other industries besides publishing.

In considering the impact of radical innovation in particular on competitiveness, its nature presents a particular problem. It often involves activities for which there is no conventional data-collection structure that can be used to identify causal relationships between the take-up of an innovation and its impact on existing business. A good example is the growth of various forms of pay-by-results advertising on the web: it is often said that this has had an impact on traditional display advertising, but there is no causal chain to show that money has flowed to results-based advertising from traditional formats. Many other changes were happening at the same time. It is likely that there has been such an effect, but there is no data to prove or disprove the argument

Joseph Schumpeter, one of the earliest economists to consider and analyse the role of innovation, identified five types of innovation: any of these types can contain both radical and incremental innovations. These remain very relevant to developing a framework for analysis of the contribution of innovation to competitiveness of the publishing industry:

- Introduction of a new product or significant change in an existing product
- Process innovation (new to an industry)
- Opening of a new market (mainly in the geographic sense)
- Development of new sources of supply for raw materials or components
- Changes in the way an industry or companies are organised

The boundaries between these are not rigid, and any innovation may have elements of all these.

The practical value of this categorisation of different types of innovation is that it helps identify the factors that can be used to analyse the impact of innovation in ways that can be measured. Relevant publishing examples from each category illustrate the range of innovation within publishing

that any approach to assessing its contribution to competitiveness has to take into account. Each type of innovation will need appropriate metrics, and as is made clear by the examples, the data to support those metrics is very diverse.

*Introduction of a new product or significant change in an existing product*

- Web-based consumer directories
- Cheap paperback editions of literary classics
- Free daily commuter newspapers

Data for assessing the impact of these will be financial information detailed enough to allow identification of the impact of the innovation. This immediately illustrates some of the issues: for example, many publishers do not have separate accounting for costs from their print and online products, and in some cases do not even have separate revenue accounting. On the other hand, the launch of a free daily newspaper is likely to have a full range of financial and market information available. The major issue for sector-level analysis would be the comparability of data from different firms and other sources.

*Process innovation (new to an industry)*

- Content management systems
- Digital workflow using XML and digital printing

Innovations of this type are often hard to quantify, and need to be analysed in not only terms of costs savings and improvements in productivity set against investment cost, but also their potential for facilitating competitive advantages such as reduced time to market or even making new types of product possible. Advance projections of both costs and benefits of process change projects are notoriously prone to variation.

*Opening of a new market (mainly in the geographic sense)*

- Spanish language books for the Hispanic community in the US

A sales-oriented innovation such as opening a new market is simpler to quantify in terms of potential revenue, but analysing the risks is more complex.

*Development of new sources of supply for raw materials or components*

- Printing in China
- Use of recycled paper for some magazines

Generally, the impact of this type of innovation is easier to analyse if the data is available. Again, the risk analysis may be complex.

*Changes in the way an industry or a firm is organised*

- New intermediary services reselling e-content
- Outsourcing all production operations

The impact of a major change in the way the industry operates can be very hard to analyse, as it creates many “what-ifs” and can involve many different measures. For both these examples, increased risk is an important factor: both create new interfaces between organisations, and in the case of the first, between the publisher and customer. These all need to be modelled in order to identify their contribution towards competitiveness.

These groupings cover much of the innovation in publishing, but there are other types not considered in Schumpeter’s original breakdown. An important type is innovation in business models: the dramatic changes brought about by the improvement in communications technology in the last quarter of the 20<sup>th</sup> century that have created the opportunity for radical new business models in publishing and other media businesses could not have been foreseen at the time Schumpeter was developing his theories in the 1920s. Business model innovation has become significant in the digital era in particular. Examples include:

- Click-through payment for online advertising
- Pay-per-view payment for journal or magazine articles
- Revenue-sharing models between publishers and advertisers based on sales generated by online advertising
- Sales of information about users in the form of mailing lists
- “Open access” to academic research journals
- Leasing electronic textbooks to students

Innovations in business models might be considered as a type of organisational innovation, but as they profoundly affect the relationship between the customer and the publisher, and others in the value chain, they seem to be a distinct type of their own. The innovation is often radical (the widespread availability of free content on the World Wide Web, for example). Their impact on competitiveness can be considerable.

It is also not clear where innovations in marketing would fit in Schumpeter’s model. Marketing innovations include:

- Covermounts on magazines
- Party-plan book sales

Again, because these are essentially customer-facing they may fall outside organisational innovation. The potential impact in both cases is considerable. Both business model and marketing innovation are very important to the publishing industry and have driven significant revenues for publishing companies, as well as created challenges for them when implemented by firms outside the industry (as, for example, when web

sites started charging for click-through for internet advertising: this focused attention not just on the internet, but on advertising models in traditional publications, with advertisers beginning to consider issues of accountability in their conventional media expenditure leading to payments by effectiveness).

## **2.4 Innovation at firm and industry level**

All types of innovation can be seen at both industry and firm level. An innovation can affect an entire sector of an industry immediately on its introduction (such as the introduction of free newspapers), or may be limited to changing the competitive position of individual firms through the introduction of a new or improved product, or a new process that increases efficiency.

Even innovations that begin on a small scale at the level of the firm tend to spread across the industry if they are successful: the take-up of desktop publishing by many small publishers is a good example. There are few barriers to diffusion: publishing innovations are usually not patentable, and the industry is therefore open to "fast follower" activity.

Any framework for analysing innovation should ideally work at both the firm level and the industry level. In other words, it should help to understand the overall impact of innovation across the sector and the factors that influence its success, and also act as a guide for firms seeking to assess and enhance their own performance in comparison either with industry norms or with competitors.

However, both types require that at least some firms in the sector have the capability and competencies to innovate or to adopt the innovations of others, and the extent to which these capabilities are spread through the industry is an important factor in determining how successfully an innovation will spread.

Any industry sector will contain firms with a wide range of innovation history and potential. In some sectors, innovation is an essential component of success, but that is not always the case in publishing: firms that have focused on their traditional activities and continued to execute their strategy very well can be very successful, and yet have little interest in innovation. It may be that this position is not helpful to competitiveness or sustainability of the industry in the long term, but it is seen to work for the time being. Many firms in the sector introduce incremental innovations across all their activities and therefore have a history of continuous development; a smaller number have introduced one or more radical innovations.

### **3 Innovation trends in the publishing industry**

To analyse the innovation potential of the publishing industry, it is instructive to look at the way it has innovated in the recent past. It is generally accepted that innovation in the publishing industry has tended to be incremental rather than radical, although in recent years Information and Communications Technology (ICT) and new online and interactive services have speeded up the pace of innovation considerably and enabled the introduction of new products, services and operational processes. These, in turn, have improved the innovation skills of firms as they have learned how to manage the new opportunities.

Some examples of radical innovation in publishing are

- The development of free daily newspapers, which is fundamentally changing the newspaper industry in some Member States,
- The audiobook was an innovation that created an entire new market; and print on demand has the potential to change the structure of parts of the book publishing sector.
- The introduction of XML into the digital workflow, in the journals publishing sector in particular.
- Perhaps the clearest recent example is the development of many kinds of content services on the World Wide Web: this is a case where the publishing industry innovated through its adoption of new ideas generated outside the industry. A case where the industry is also responding to external pressure to innovate is the interest in open access publishing for academic journals: this is one of the most obvious recent examples of innovation with the potential to disrupt an entire sector of the publishing industry.

Such large-scale shifts are not, though, typical of publishing or of many other industries: incremental innovation is far more prevalent. Examples of incremental innovation in publishing include:

- Small-format magazines;
- Combined internet and print advertising package sales with a single price;
- Low-cost high-quality colour printing for books.

Steady improvement through this type of consistent incremental innovation is very important to maintaining profitability and productivity in a mature industry such as publishing, and therefore is essential to competitiveness and sustainability. It is much less likely to help the industry break into large new market sectors that would put it on a path to much higher growth.

Cumulative incremental innovation can also have a major effect on an industry. In book publishing, for example, the overall effect of incremental developments in the production process has led to significantly increased productivity and much shorter timescales for publishing, and this has led to changes in the organisation of publishing companies; it has also led to changes in the way the role of suppliers, some of whom have become much more tightly integrated with their publishing clients.

It should also be noted that even within a mature market there is an important role for radical innovation: at the level of competitiveness of individual firms, radical innovation can be used to gain market share at the expense of competitors. Examples include sharp reductions in price in the newspaper sector or payment for internet advertising based on click-through.

### **3.1 Supplier-led innovation in publishing**

In the only recent report we have identified that includes the publishing industry alongside other industries and has a European perspective, *EU productivity and competitiveness: an industry perspective*,<sup>5</sup> O'Mahony and van Bark use a taxonomy of innovation in industry sectors based on that of Keith Pavitt, and extended to cover service industries. Publishing (unfortunately combined with printing) is identified in this study as an industry where innovation is supplier-led. Here, suppliers are the major source of innovations, with sector firms having limited R&D capability but often needing to change their own operations or organisations in order to adopt innovations from suppliers. The firms themselves focus on professional skills, marketing and brands.

Many innovations that have affected publishing are supplier-led, as publishing still relies heavily on external suppliers for much of its operations. Printers and suppliers of printing equipment have enabled publishers to achieve new cost-savings or improved quality that has helped to enable new products or improved profits. However, the relationship is in many cases a symbiotic one: suppliers often act in response to market demand from publishers and others as well as to their own innovation processes.

For publishers, adopting innovations from suppliers can in itself be innovative, and disseminating it successfully throughout their organisations will require similar implementation skills to adopting a home-grown innovation.

Being supplier-led has one especially important implication both for individual firms competing with one another, and for the industry as a whole: innovations from suppliers can often be diffused through the industry rapidly by the suppliers themselves and replicated by other firms. This means that the advantage they give in the first place must be

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<sup>5</sup> *EU productivity and competitiveness: an industry perspective*: O'Mahony, M & van Ark, B. European Communities, 2003. ISBN 92-894-6303-1.

capitalised on rapidly to ensure it makes a long-term contribution to competitiveness rather than just providing a temporary sales advantage between firms. At the industry level, this should lead to an overall improvement in competitiveness of the sector as a whole.

A further implication of the important role that suppliers play in innovation in the publishing industry is that their revenues from the publishing industry are one important partial measure of how much the industry is spending on innovation.

### **3.2 Paradigmatic and other types of innovation**

Innovation in publishing should not be seen as exclusively supplier-led, especially in the field of digital delivery of content. Among other forms of innovation, O'Mahony and van Ark also identify a class of complex innovations that can affect any industry sector and can change many things in a particular value chain. They call these "Paradigmatic innovations" and they can arise from technological innovations or from economic forces such as deregulation. Examples are the World Wide Web and telephone service deregulation, both of which have had an impact on publishing. Paradigmatic innovation as a concept is very similar to radical or disruptive innovation. In some cases, innovation in publishing clearly falls into this "paradigmatic" category: the move to the web for academic journals, for example, is a paradigmatic shift, as was the introduction of the paperback. Although paradigmatic innovation does not occur as frequently as supplier-led incremental innovation, it can have greater potential to affect the industry. Examples of paradigmatic innovations with this potential in publishing include:

- eBooks
- Print-on-demand
- Digital editions of newspapers and magazines
- Open-access publishing for academic research

Although the study places publishing as "supplier-led", a more contemporary analysis that did not link it to printing would see innovations that fitted into some of the other categories: some publishers are becoming organisation service innovators (another of O'Mahony and van Ark's categories), for example, through introducing new ways for their advertisers to reach customers and through collaborating to create industry platforms or industry audits. This category is likely to become increasingly important as networked digital publishing continues to expand its reach and importance.

Some parts of publishing may also move towards "client-led innovation" as they become more able to generate customised products for individual customers. Some publishers are already offering services such as bundles of articles chosen by the customer, and as in sectors such as business information publishing the more innovative firms are already working

closely with their corporate customers to tailor solutions exactly to the needs of a particular client.

The importance of both client-led innovation and organisation service innovation is twofold:

- They require very different skills from traditional publishing – especially the ability to work as part of a complex network of interacting partners rather than a traditional linear value chain
- Because content is not the dominating factor for success, this type of activity is open to players from outside publishing (e.g. telecommunications) who may be more experienced in innovation processes than publishing companies

### **3.3 Information and Communications Technology innovation in publishing**

The increasing digitisation of all content has increased the importance of ICT innovation in publishing and is therefore especially important to any framework for more detailed analysis of innovation. It is transforming the relationship with the reader, both through its role in delivering content and as an enabler of new communication channels with readers.

Some of the most significant challenges identified during the Publishing Watch study (discussed at length in each of the sectoral reports on Newspapers, Magazines, Books and Directories and summarised in the Final Report, Section 8.6)<sup>6</sup> as important to future competitiveness arise from ICT innovations, and the internet in particular. Publishers in all sectors have responded through developing and launching online products and services, although the cost of doing so has not always been repaid.

The use of new technology in production and back-office operations, as well as in facilitating changing relationships in the value chain, has been an important driver of change throughout the industry. Indeed, it could be said to have changed publishing from an industry with a fairly low intensity of innovation into one that is adapting to many new developments within a short space of time. Many of these developments pre-date the internet, and although the internet has assisted their development, they could continue without it.

The internet is integral to the development of customer-facing innovations in publishing. No ICT-based publishing medium (e.g. early pre-internet online services or CD-ROM) had developed a mass market before the internet, and therefore had not provided most publishers with the justification for spending time and money on innovation. Even given the problems publishers have had in monetising internet services, there can be little doubt that the internet is now hugely influential on innovation in publishing.

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<sup>6</sup> All the sectoral reports and the Final Report are available at <http://publishing-watch.org>

However, the internet has also enabled the creation of many new direct competitors to conventional publishing firms and has taken advertising revenue from traditional publications.

Increased network-based publishing may shift innovation in the industry into forms of innovation that emphasise services rather than products. The development of online recruitment advertising services, for example, positions online publishers as organisational service innovators, as does the organisational innovation shown by co-operative classified advertising services such as Fish4. Those publishing firms that introduce interactive services that include a significant role for content created by users may also find some of their activities located in this category.

Sectoral or industry paradigmatic innovations arising from ICT include services developed for the World Wide Web and radical changes in business model, such as charging by small units (such as individual articles), or the possible move to open access for academic journals. The impact of digitisation has been paradigmatic for publishers, despite the fact that, in this field, publishers have generally adopted innovations originally made elsewhere rather than generated them.

### **3.3.1 ICT and supplier-led innovation**

The publishing industry has responded to ICT innovations introduced by specialist suppliers and by other technology developers (back-office systems tend to come from specialist suppliers; customer-facing ICT systems in recent years have largely been originated by general ICT developers such as Netscape, Microsoft or Macromedia). The publishing industry itself has innovated through its application of generic ICT in new products and services, but has not directly originated many new applications. Developments such as "blogging"<sup>7</sup>, search engine advertising, content management systems, digital rights management and interactive forums have all been adopted by publishing firms, but originated elsewhere.

Where publishers have been active in the ICT innovation process is working closely with suppliers to introduce new production and back-office systems, often tailored to the needs of their particular firm. These developments have in some cases (for example, the newspaper industry) been very influential in transforming the way the industry works, providing for considerable improvements in efficiency and shortening time-cycles. ICT development has also allowed smaller firms to push into territories that would previously have been the preserve of much larger organisations.

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<sup>7</sup> Short for "web-logging": personal logs of ideas and information published on the web. Blogs are now a part of many newspaper sites, where established writers use them to create a more informal and interactive channel of communication with readers

### **3.3.2 ICT in innovative products and services**

Some publishing sectors, for example academic journal publishing and business and professional information, are using ICT innovation to focus increasingly on products tailored to the needs of a particular customer, and, in responding to the needs of each customer, are increasing becoming client-led rather than supplier-led. This leads them to push suppliers for appropriate solutions, feeding a cycle of innovation.

The need to innovate in response to changes brought about through the internet will intensify as new, related platforms such as interactive television and mobile devices become more significant and absorb more of the market's discretionary expenditure. An important aspect of the challenge that they present is that they are communications technologies as much as information or content technologies, and communications applications such as messaging have consistently proved more significant than content applications – the publishing industries are already integrating this into their own offerings, but the process is not intuitive to publishers and innovating in this area may offer significant advantages to those firms whose innovation processes are able to identify and sustain closer and more symmetrical forms of communication with the audience.

### **3.4 Relationships between innovation and performance in publishing**

There are examples where firms owe their existence to radical innovation: the development of citation indexing in science by Eugene Garfield, led to the creation of a substantial publishing business (ISI) that is still very important in its sector nearly fifty years after the original concept was developed.

Many firms never enjoy such a radical innovation and yet continue to be highly successful on the basis of incremental innovation. Many of these firms focus on diffusing their innovation efforts throughout the firm to ensure that developments are picked up wherever they originate, and that their benefits find their way into all areas of the firm, thus maximising the total benefit of incremental innovation. The risk to this strategy is that such firms may not be well-prepared to respond to more radical innovations when these are beginning to affect the business sector in which they operate.

In common with many other industries, it remains at present very difficult to demonstrate the relationship between innovation and competitive sustainability in a quantifiable way for the publishing industry. Other industries can point to the benefits of specific innovations, or the creation of intellectual property in the form of patents. Input measures such as research and development expenditure can also be tracked. These do not have direct (or even indirect) equivalents in most areas of publishing, so without such data points for a formal ranking scheme the benefits claimed for innovation are usually anecdotal. However, those firms that fail to

innovate even incrementally often observably struggle to regain former strength and position in the face of external change.

Research that would help determine the impact of innovation on either short-term performance or longer-term sustainability in the publishing sector would be helpful in developing a better understanding of this issue. An approach is suggested in Section 5. The purpose of developing such a methodology would be to identify those firms regarded as innovative, or as having high capacity to adopt innovations from outside, and determining if there were any correlations between their innovative ranking and their strategy and performance compared with others in the same sector. This would also help to guide other firms in the sector as to best practice.

## **4 Measurements of innovation**

Standards measures of innovation in the competitiveness literature have tended to concentrate on process and product innovation, including:

- Output-based measures of innovation, such as patent registration
- Input-based measures of innovation, such as R&D spend
- Measures of innovation capability, such as workforce educational levels
- Direct measures of adoption of new technology, in particular, ICT

Available data from Eurostat and other sources provides partial information for these indicators, but data is often aggregated for the publishing and printing sectors, which makes it difficult to draw any meaningful conclusions specific to publishing. Furthermore, publishing is an industry where suppliers are an important source of innovations and R&D activities often take place outside the firms' boundaries, and so are not integrated into the data. Industries such as pharmaceuticals and electronics can use measures such as patents to compare intensity of innovation, but this is cannot be done in publishing (or in many other industries).

The lack of data available to determine the level of innovation in the publishing industry on a quantitative basis makes reliable and objective analysis difficult. Some data could be collected (for example, surveying firms to determine their investment in new systems or the amount of revenues derived from new products or services), but it cannot be obtained through an analysis of existing statistics. This type of analysis could be useful at the industry level, but would not necessarily help to determine which firms were innovators.

### **4.1 Measures for innovation**

Review of the current situation and of previous research suggests that it is possible to develop some measures if at least a sample of firms could be surveyed.

Input and output measures can be used to measure innovation performance and capability.<sup>8</sup> Input measures tend to refer to capability, and output measures to performance. However, the measures themselves may not be very useful unless they can be used for comparisons between firms and correlated with other rankings for innovation to determine which measures are the most likely to predict successful performance. Therefore, some primary research is needed to collect data.

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<sup>8</sup> This follows the approach recommended in *The measurement of scientific and technological activities: proposed guidelines for collecting and interpreting technological innovation data* ("Oslo Manual"); OECD, 1997. [http://www1.oecd.org/dsti/sti/stat-ana/prod/eas\\_oslo.htm](http://www1.oecd.org/dsti/sti/stat-ana/prod/eas_oslo.htm)

A practical, multi-faceted, method for this is suggested in Section 5. In outline, this consists of using an industry survey to identify a sample of firms that regard themselves, and are regarded by their peers, as innovative, and correlate this ranking with a range of input and output measures (described in the next sections) to seek to identify relevant correlations and relationships.

## **4.2 Input measures**

Input measures identify the characteristics that are likely to make a firm a successful innovator. They need to be tested against actual innovation performance to determine how relevant they are in the real world. Replicated across many firms, they determine whether a sector is well-positioned to innovate. Input measures are useful, but high scores are not infallible predictors of successful innovation: organisational issues can mean that the value of inputs is dissipated.

### **4.2.1 Research and development expenditure**

The Publishing Industry often has only very low levels of reported R&D expenditure and for the most part any R&D in the conventional sense is undertaken by suppliers (or even suppliers to suppliers). Analysing the R&D expenditure of suppliers might prove useful, but not all of that R&D may be used on projects that specifically benefit the publishing industry. It is nevertheless possible that the intensity of R&D among suppliers bears a strong relationship to innovation in publishing. Only suppliers of products or services used directly in the publishing operation should be considered.

*Proposed measures for evaluation:* R&D expenditure for the industry; R&D expenditure by suppliers

### **4.2.2 Other expenditure on innovation**

The ability (and willingness) to invest in the development and commercialisation of new ideas is essential for successful innovation. The level of this investment will vary according to industry and establishing its range for the publishing industry should give useful guidance as to the proportion of resources being directed towards innovation.

A key measure of success in innovation is whether investment pays off; data on capital expenditure can be correlated with the output measures discussed in the next section.

Sufficiently detailed data can only be provided by firms themselves. Relevant values for this measure need to be separated out from general capital or project expenditure. Ideally, the costs of staff time associated with innovation projects should be included: in publishing, these may well form the largest part of the investment.

*Proposed measures for evaluation:* capital expenditure on new projects (including investment in new products and services and in new processes); staff costs allocated to new products and services; external development expenditure.

#### **4.2.3 Personnel, skills and culture**

The level of education among staff of a business may be related to innovation. The major sources of this information unfortunately combine data for both printing and publishing, leading to a view of the industry that downplays the skills level: in the report *EU productivity and competitiveness: an industry perspective*,<sup>9</sup> O'Mahony and van Bark state that printing and publishing are, on average, "medium skilled", meaning that employees have received an upper secondary education, but not a tertiary level education. This finding does not reflect other publishing-industry-specific studies, which emphasise the number of graduates in most sectors of publishing.<sup>10</sup> It is likely that the incorporation of the printing industry into these statistics has produced an unrepresentative picture.

Most commentators on innovation identify the culture of both individual firms and industry sectors as critical factors in successful innovation, and both creative and implementation stages. No external measures are available, but some firms conduct surveys into their own staff attitudes and culture that would identify barriers or facilitators for innovation. Such surveys are only released outside the company very infrequently, and so are not available as a consistent source of information.

Other factors that may serve as indicators include training expenditure, willingness to take risks (or risk aversion) and management attitudes towards innovation (is innovation rewarded?).

*Proposed measures for evaluation:* level of education among staff; training expenditure; staff attitudes survey.

#### **4.2.4 Internal technology development**

As noted throughout this report, much innovation in publishing is either being driven by ICT or relies on ICT. Investment in ICT infrastructure and back-office systems complements ICT expenditure specifically directed at new products or services, and although not immediately visible to customers can often be essential for the success of innovations within the firm or industry.

*Proposed measure for evaluation:* time and money spent on internal development projects (other than maintenance projects).

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<sup>9</sup> *EU productivity and competitiveness: an industry perspective*: O'Mahony, M & van Ark, B. European Communities, 2003. ISBN 92-894-6303-1.

<sup>10</sup> In the UK, for example, the National Training Organisation for the publishing sector reported that over 60% of staff in editorial, management and production roles were graduates.

#### **4.2.5 Purchase of external technology**

This can take the form of either purchase of user licenses, or licensing technology to be incorporated into the publisher's own products or services. Measurement will rely mainly on information from firms themselves, and some separation between purchases for new developments and purchases to support routine operations should be made.

*Proposed measures for evaluation:* non-replacement technology purchases.

#### **4.2.6 Marketing new products**

An innovation is more likely to be successful if it is supported by strong marketing. However, much marketing expenditure is directed at existing products, so care needs to be taken: few companies are likely to have a standard breakdown of marketing expenditure on new versus existing products easily available, and it is not a standard reporting measure.

In the case of book publishers, for example, marketing new books in an existing genre will account for almost all expenditure but would not be likely to be considered as an "innovation activity".

Of course, marketing expenditure itself can be used in an innovative way, even in support of traditional products. A recent example is the promotion of newspapers in some member states through offers of low-cost books.

*Proposed measures for evaluation:* marketing expenditure allocated to new products or services.

### **4.3 Output measures**

If innovation is important to competitiveness, its effects will be seen in the output of an industry or a firm. Successful innovation should result in observable changes that gradually differentiate the firm from its competitors or which spread across the sector as a whole. Measures for evaluation are proposed.

#### **4.3.1 Results from new or improved products and services**

Classic financial performance measures are important, as ultimately the value of innovation is in the performance of the firm.

*Proposed measures for evaluation* include:

- Revenues and profits from new products and innovations
- Growth in sales and profits
- Cost savings from process innovations
- Return on capital employed or other asset utilisation measures

- Value-added and productivity
- Employment

#### **4.3.2 Market development**

A new product or service will also have an impact that in due course will lead to financial impact, but in the short term has more immediate results.

*Proposed measures for evaluation* include:

- Market share growth
- New customers (including those attracted away from competitors)
- Increased reputation of brand
- Increased demographic or geographic market penetration

#### **4.3.3 Frequency and speed of deployment of innovations**

The actual level of output of new products and services arising from an innovation should not be overlooked. It is possible that firms that are able to move numbers of new products or services through the development pipeline quickly may have greater innovation capability and be more likely to succeed at innovation.

*Proposed measures for evaluation:* speed to market (or full internal adoption in the case of new processes) for innovations; number of innovations introduced.

#### **4.3.4 Market valuation**

Market valuation is in effect a ranking provided by the market *perceptions* of how well a firm is performing and will perform in the future. It is only applicable to publicly-quoted companies, but for those companies maintaining market valuation is a very important part of their strategy. It is not known at present whether there is relationship between innovation and market valuation in the publishing sector. Such a correlation might be either positive or negative.

*Proposed measures for evaluation:* changes in market valuation.

#### **4.3.5 Intellectual property**

Few publishing companies have generated patents, although some internet companies have done so. The intellectual property (IP) deployed by publishing companies may not be owned by them (but by authors and other creators). It may also be of transitory value. The IP created by publishing firms (even though each piece is itself unique) is very largely variants on existing forms (e.g. biographies, newspaper articles, directories), rather than radically different from what has gone before.

The creation of intellectual property is not relevant to marketing or business model innovation. It may not, therefore, be a reliable indicator of innovation in the publishing industry.

*Proposed measures for evaluation:* patents awarded to industry companies and relevant suppliers; contributions to conferences or journals.

## 5 Measuring the impact of innovation: a multi-faceted approach

The lack of secondary or aggregated data specific to the publishing industry is inhibiting good analysis of the importance of innovation to competitiveness.

Developing a methodology for assessing the relationship between innovation and competitiveness presents both practical and theoretical challenges. The practical challenges are concerned with gathering the data; the theoretical challenges with determining what developments count as “innovations” within each sector, and how they can be related to the real-world performance of firms and publishing industry sectors.

A multi-faceted approach that combines qualitative and quantitative approaches is outlined: in combining the two, it would lead to a rounded analysis of the relationship between innovation and performance. The qualitative approach is intended to overcome the gaps in identifiable innovation data. It will result in a ranking that is rather more subjective than one based purely on quantitative information, but if a good sample is used strong bias should be ruled out. Asking respondents to support their ranking with some evidence will also help them to consider *why* they are making their decisions.

The results would allow assessment of the overall capability of each sector to generate and adopt innovations successfully.

The key disadvantage of the approach is that it is focused on analysing just the publishing industry, and does not provide a reliable basis for comparison with other industries: so, for example, it would not help anyone seeking to compare the innovation performance of publishing with that of broadcasting. However, it still represents a considerable step forward in terms of understanding how innovation might be assessed within the publishing industry itself.

This approach does not seem to have been used elsewhere: it is outlined here in the light of the experience gained during the development of the Publishing Watch study: the lack of quantitative information on many of the factors that would have defined innovation performance and capability as well as the lack of a formal method for doing so was apparent from research into the issues surrounding the impact on publishing of ICT innovations in particular. A strong industry “view” was often apparent, widely shared by informed people within firms and industry associations and therefore likely to be accurate, but not testable or provable. Although the process outlined here is by no means intended to be a complete solution to the problem of assessing the level of innovation and its impact within the publishing industry, it may be a useful step forward in bringing some measure of consistency and objectivity to the analysis of the role of innovation in the publishing industry.

It must be emphasised that this is a proposed methodology, and has not been tested or subject to detailed scrutiny. The approach needs to be tested to determine its advantages and disadvantages, and where further development or modification is required.

### **5.1.1 Qualitative**

The qualitative component for measuring the impact of innovation on overall performance of both the sector itself and firms within the sector might consist of the following steps:

*Survey of sample of firms (questionnaires and interviews)*

- Ask firms to rank their own innovation capabilities and performance and that of their competitors under a range of headings (Section 3 provides some starting-points). This would enable ranking of the most innovative firms in a sector. Many firms are well aware which of their competitors are the most innovative, and can rank this against their own performance. A survey would also need the respondents to justify their choice by providing an indication of *why* they rank a particular competitor as innovative.
- Ask firms to identify the key innovations that either they or their competitors have adopted over the past two years: this should provide a good overview of the key factors in the industry and whether it is focused on incremental or radical innovation. It will also provide a cross-check on the rankings of firms, as the two should be closely related.
- Ask firms to rank the importance of innovation in different aspects of their businesses (e.g. new products, improved processes) among a number of other factors in remaining competitive, in the short term and for long-term sustainability

*Analysis*

- Identify correlations with general performance data such as turnover, margin, productivity, value-added, productivity, return on capital employed and market valuation, staff education level.

Industry peers are often very good at identifying the strengths and weaknesses of their competitors, and a methodical approach to eliciting a ranked view from a valid group whereby they were guided into identifying the qualities of the firms they ranked as innovative in their sector and the reasons for ranking them as they did would provide an assessment that would be hard to reach through quantitative routes.

### **5.1.2 Quantitative**

The quantitative component might consist of the following steps:

- Finalise a list of quantifiable measures of innovation inputs and outputs (building on the factors identified in Section 3) and innovation-specific performance data such as number of innovations, revenues attributable to new products or services, R&D, new product investment and technology acquisition

- Data collection through questionnaires and interviews direct from firms and relevant national and international statistical sources
- Identify correlations with performance data and with innovation rankings as above

Although the qualitative approach may yield useful data faster, it would be equally necessary to carry out a range of standard quantitative analyses so that the industry could be compared with other industries.

The quantitative measures should be in the form of time-series if possible, so that changing performance can be correlated with the introduction of particular innovations by a firm or across the industry.

### **5.1.3 Correlation and analysis**

Once both sets of information have been collected for a sample of companies in the sector, relevant correlations between firms ranked as innovative, the factors leading to that ranking, and quantitative data would be identified.

## **6 Conclusions**

- It is generally agreed that the publishing industry needs to innovate to remain competitive and sustainable in the long term, but the actual or potential impact of innovation on competitiveness has not been analysed.
- It is generally accepted that innovation in publishing has been incremental rather than radical or disruptive, and tends to be supplier-led.
- More recently, the impact of digitisation and ICT has changed the nature of innovation in publishing: there are more innovations with the potential both to have a powerfully disruptive effect on publishing and to provide considerable opportunities to stimulate its growth and development.
- Many of these innovations have come from outside publishing, and the industry has to adapt to them – sometimes very quickly.
- Innovations in business models also have the potential to change the industry.
- There are few structural barriers to the diffusion of innovations within the publishing industry, and “fast following” is recognised as a mainstream approach to innovating in publishing – innovations can therefore spread from individual firms to the sector rapidly.
- Some radical innovations have had a profound effect on competitiveness of individual sectors. Others have affected individual firms rather than the entire industry.
- The cumulative effect of incremental innovation can be equally profound, but is easier to manage. However, its impact on the industry is still not fully understood.
- The industry’s ability to take advantage of these innovations have not been assessed, but appropriate skills are essential if new ideas are to be developed and commercialised successfully.
- The increasing impact that innovation will have on the publishing industry in the future makes it highly desirable to analyse the industry’s performance in innovating objectively and thoroughly in order to develop strategies that leverage the publishing industry’s strengths in innovation and address its weaknesses
- At present, it is impossible to identify data that reliably describes either the scale of innovation within the publishing industry or its impact on the performance of the sector as a whole or of individual firms. The situation is complicated by the inclusion of data for the printing industry in some sources of information.
- In many cases, people in individual publishing sectors have developed a consensus view of the situation, but lack hard evidence for this view, or the data to identify causal links between innovation and performance. This makes it hard to distinguish “successful” from “unsuccessful” innovation in an objective way.

- The lack of data means that some primary research work will be essential if a more reliable analysis is to be developed.
- Although it does not appear to be possible to produce a completely objective assessment, the process can be made more formal and testable through combining quantitative data with qualitative research within the industry to rank innovation performance and potential
- A range of indicators based on input and output measures can be developed to provide the quantitative basis of such an analysis
- A survey of the industry to identify firms with high innovation performance or potential can provide the qualitative component
- This paper outlines a possible framework for analysis implementing this approach: its application might provide valuable understanding of innovation processes in the publishing industry

## **Appendix 1: A selected list of examples of innovation in publishing**

This list is intended to demonstrate the range of innovation in publishing and how it might be categorised. It is not intended to be in any sense comprehensive.

<b>Innovation</b>	<b>Sector</b>	<b>Product, process, organisational, business model etc</b>	<b>Radical or incremental</b>	<b>Impact: market expansion or increased share (expansion can include share, but not VV); increased efficiencies</b>	<b>Measurable impact (output)</b>
XML workflow	Books, journals	Process	Incremental	Efficiency	ROI for increased profits from efficiency
Direct-to-plate prepress	All	Process	Incremental	Efficiency	ROI for increased profits from efficiency
Offshore printing	Books	Process	Incremental	Efficiency	Increased profits
Digital editions of magazines & newspapers	Magazines & newspapers	Product	Incremental	Expansion	Increased sales & profits
Mobile information services	Magazines, newspapers	Product	Incremental (to existing online developments)	Expansion	Increased sales & profits
CD-ROM multimedia	Books, directories	Product, business model	Radical	Expansion	Increased sales & profits

**Publishing Market Watch  
Special issues paper 3: Innovation**

<b>Innovation</b>	<b>Sector</b>	<b>Product, process, organisational, business model etc</b>	<b>Radical or incremental</b>	<b>Impact: market expansion or increased share (expansion can include share, but not VV); increased efficiencies</b>	<b>Measurable impact (output)</b>
E-books	Book	Product	Radical	Expansion	Increased sales & profits
Free daily newspapers	Newspapers	Product, business model	Radical	Expansion	Sales & profits
Paperback books	Books	Product	Radical	Expansion	Sales & profits
Open access scientific journals	Journals	Business model	Radical	Expansion	Increased readership (potential reduction in financial benefit)
Audiobooks	Books	Product	Radical	Expansion	Increased sales & profits
Professional information services embedded in workflow tools	Professional publishers	Product	Radical	Share	Increased sales & profits
Colour newspapers	Newspapers	Product	Incremental	Share	Increased sales & profits

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<b>Innovation</b>	<b>Sector</b>	<b>Product, process, organisational, business model etc</b>	<b>Radical or incremental</b>	<b>Impact: market expansion or increased share (expansion can include share, but not VV); increased efficiencies</b>	<b>Measurable impact (output)</b>
Combined print/online advertising sales	Newspapers, magazines, directories	Product, process, business model	Incremental	Share	Increased sales & profits
Short run digital printing	Books, journals	Process	Incremental	Share	Increased sales & profits
Covermount gifts	Magazines	Product	Incremental	Share	Increased sales & profits
Pay-for-position search advertising	Directories	Business model	Incremental	Share	Increased sales & profits
Single copy print on demand	Book	Product	Radical	Share	Increased sales & profits
Upmarket tabloid newspapers	Newspapers	Product	Radical	Share	Increased sales & profits
Low-price classics in paperback	Books	Product	Radical	Share	Increased sales & profits
Small-format women's magazines	Magazines	Product	Radical	Share	Increased sales & profits

<b>Innovation</b>	<b>Sector</b>	<b>Product, process, organisational, business model etc</b>	<b>Radical or incremental</b>	<b>Impact: market expansion or increased share (expansion can include share, but not VV); increased efficiencies</b>	<b>Measurable impact (output)</b>
Community-based travel information websites	Books	Product, marketing	Radical	Share	Increased sales & profits

## Appendix 2: O'Mahony & van Ark's innovation taxonomy

For reference, here are the main classes in the taxonomy with examples.

- Supplier-dominated goods

Examples: Construction, publishing and printing

- Scale-intensive industry

Traditional large-scale manufacturing. Innovation is often focussed on processed improvement and comes from internal R&D.

Examples: electricity supply, motor vehicles

- Specialist goods suppliers

Small and specialised firms with strong innovation potential focused on product innovation.

Examples: mechanical engineering, telecoms equipment, ICT suppliers

- Science-based innovator

Industries where R&D carried out by the firms themselves and resulting in new products is a key driver.

Examples: pharmaceuticals, electronics

- Supplier-dominated services

Firms in the sector depend largely on suppliers, who develop equipment based on their own R&D.

Examples: retailing, repairs

- Specialist service suppliers

Knowledge-based firms that can influence innovation in other firms as well as innovating in their own operations.

Examples: legal services, advertising

- Organisational services innovators

Advantage comes primarily from organisational innovation rather than application of technology.

Examples: air transport, financial services

- Client-led services

Usually innovate in response to needs expressed by customers or clients.

Examples: hotels and catering, wholesaling

- Non-market services

Public sector organisations can fall into several of the other categories as many have their own R&D capability, but often adopt innovation from suppliers as well.

Examples: education, health services