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Professional Publishing: Choosing Delivery Media and Formats

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Abstract
The publishing industry is among the sectors that have been and are still being affected by technological advances. These changes affected not only the production and distribution methods but also the publishers' approaches to marketing their products. Professional publishing, which resulted from the segmentation of society, has the peculiarity of targeting a small and easily identifiable audience. This makes it easier for the publishers to closely watch customers' needs and reading habits and meet them by delivering professional publications in formats and media that take into account those needs and habits as well as their own profits.

The aim of this article is to study and attempt to understand how professional publishers deal with the newly-born issue of delivery media and formats. Why should one medium or format or a combination be chosen for a particular type of publication? What criteria are being taken into account before deciding which medium or format is the most appropriate? What implication does such a decision have? These are the main questions I will try to answer with illustrative examples mainly from Kluwer Law International.

Introduction
The publishing industry in general and its professional subdivision in particular have been undergoing considerable changes since the early 1990s as a result of the invention of the World Wide Web (www). This latest newcomer transformed the communications arena prompting publishers to start envisaging a future where paper would play a different and less important role.

Publishers who first saw in the www a dangerous and unbeatable rival and challenger managed to take advantage of it and readjusted their business to comfortably accommodate it without abandoning the old medium-paper. The transformation of this tool initially conceived as a communication medium into a publishing tool did not go without tremendous changes both in the production and delivery of publications, the main victim being paper-based products. Together with previous technologies such as the CD-ROM, the www meant the end of the reign of print as they transformed the latter into an option among others, with the reader deciding which medium and format he/she wants.

This article aims thus to understand and analyse to which extent the choice of delivery media and formats has become an issue in professional publishing and how the choice of one format/medium or a combination of two or three of them affects the market. Illustrations and examples will most of the time refer to Kluwer Law International (KLI), a subdivision of Wolter Kluwer based in Alphen aan de Rijn in the Netherlands.

Medium, Format Become an Issue

*'As we head into the next millennium, publishers continue to ask, but now with
greater urgency, a familiar litany of questions:-How will people be
informed …? ...What forms will information products and services take, and how will
they be used?...'[1]* (Douglas M. Eisenhart)

During the 500 years of the reign of print, it was pointless to wonder whether paper was the best way of transmitting knowledge because there was no other option as paper had no rival or challenger. Its predecessor- the parchment- did not show strong resistance as it was far more expensive and not easy to handle compared to paper. With new developments in media technologies, including the CD-ROM that marvelled publishers since the 1980s and the www that totally forced a redefinition of publishing, considering the choice of media and formats according to the market's needs has become crucial.

Although the most spectacular changes took place since the 1990s, it should be remembered that the way had long been paved by a number of thinkers and scholars. Vannevar Bush was the first to advocate a clear change in knowledge management and transmission in the mid 1940s, when he was proposing a way a machine –the Memex- and a medium-microfiches- could be used to facilitate access to information.[2] Two decades later, J.C.R. Licklider was to advocate a 'symbiotic relation between a man and a fast information-retrieval and data-processing machine' that would improve the thinking process.[3]

Here we already see machines –the Memex and the computer- and another medium-microfiches- attempting to enter the scene but these were primarily intended to supplement print, not to replace it. Watching these developments, Marshall McLuhan, a contemporary of Licklider, started prophetically philosophising about the future of communications media. He saw in them an 'electr[on]ic revolution', the beginning of a 'global village' where 'time has ceased, space has vanished'.[4]

Present times' scholars, among whom Douglas M. Eisenhart, the Electronic Publishing Product Manager in the Software Division of Houghton Mifflin Company, consider the post World War II drive to put the war-effort scientific achievements at scholarship's disposal to be the beginning of the Information Age, the latest development of which is the current Digital/Electronic Age. The following Eisenhart's definition of the Information Age shows how media diversity and multiplicity are becoming more important. He wrote:

> *The Information Age, then, is nothing less than a new socio-economic-technological paradigm that says not only how the economy is structured but tells us how we work, how we play, and how we communicate. We are witnessing not only the convergence of existing communications technologies but the proliferation of new media for the processing, storage, transmission, retrieval, and display of information in all forms-textual,*

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[1] Douglas M. Eisenhart, *Publishing in the Information Age. A New Management Framework for the Digital* Era (Westport, 1994), p.1

[2] Vannevar Bush, *As We May Think in The Atlantic Monthly*, July 1945, http://www.theatlantic.com/doc/194507/bush

[3] J.C.R. Licklider, *Man-Computer Symbiosis* in *IRE Transactions on Human Factors in Electronics*, volume HFE-1, pages 4-11, March 1960 http://groups.csail.mit.edu/medg/people/psz/Licklider.html

[4] Marshall McLuhan, *The Medium is the Message* (Corte Madera, 2001), p. 63

> *visual, and aural- and in all markets- consumer, business and professional,*
> *and educational.[5]*

In professional publishing where the audience is a professional community sharing the same interests, values and habits, the publishers cannot skip the medium/format choice stage. At KLI for instance, a market assessment is carried out by the London-based European Marketing Systems, the sales reps and through customers' feed backs to determine which formats and media suit the best the clients. This is an unavoidable step since the customer has become an actor, a player in the publishing process and not a spectator-consumer he/she was during the print age. The change from the spectator status to the referee position in the publishing 'game' was stressed by Eisenhart when he wrote:

> *To market products in this changing environment, publishers must be aware*
> *of the different media uses and customer needs. New media make possible*
> *different products and services, but in the end the market and user*
> *preferences are the final arbiter.[6]*

KLI, where content can be delivered in at least three media (print, www, and CD-ROM) and in at least two digital formats (PDF and XML/ [X]HTML), the choice of one medium/format or a combination of two or three of them, will immediately have repercussions both on the targeted audience-the legal professionals- and on the company's sales. It is thus in the interest of the firm to know and meet the needs and preferences of legal professionals, whose habits may defer from one another depending on their age, personal preferences, and financial constraints, among other factors.

Reader Becomes Cornerstone.

'All parts of the publishing business will be changed by the digital revolution, which
is giving the reader-the consumer- the power to decide where and how they want to
read a publication.' [7] (Gareth Ward)

As observed above, the reader, especially the professional one, is now an actor, one of the most important players whose opinion and preferences have to be taken into account. Each profession has its constraints and a set of habits that may even be different among the members of the same professional community.

For instance, Vallenduuk Advocaten B.V., a Haarlem-headquartered firm of five lawyers specialising in Road Transport Law, has decided to receive their legal journals on CD-ROM. Han Vallenduuk, the owner, says that journals relating to transport, penal and labour laws are all read from CD-ROMs while jurisprudence-related documents and articles are read from Open Access journals.[8] Vallenduuk adds that the fact that print comes out weeks after the electronic version could have consequences on the firm as 'an interesting article could come in long after a verdict has been rendered'. This confirms McLuhan's prophecy that the electr[on]ic age would put information consumers in a situation where information is very rapidly replaced by still newer information as soon as it is acquired.[9]

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[5] Douglas M. Eisenhart, *Publishing in the Information Age*, p.24
[6] Douglas M. Eisenhart, *Publishing in the Information Age*, p.159
[7] Gareth Ward, *Publishing In The Digital Age* (London:1998),p. 18
[8] Interview with Han Vallenduuk, lawyer and owner of Vallenduuk Advocaten B.V. in Haarlem (17 March 2006)
[9] Marshall McLuhan, *The Medium is the Message*, p. 63

The preferences of this firm of lawyers, which has strong reasons of choosing one medium rather than another are to be taken into account as the cabinet is certainly not an isolated case. Otherwise, the journal providers could not keep hold on that market. Thus, knowing the customer's needs, his/her working and reading habits and conditions would give an idea to the publisher about the best medium that could be compatible with his/her job. Of course, conclusions are not drawn on individual basis but on general tendencies. Christine L. Borgman, Professor of Information Studies at the University of California, stresses the need to know readers' habits saying:

> *We need to know what people do with documents once they have them,*
> *so that we can build tools for reading, browsing, annotating,*
> *manipulating, and otherwise using documents. Hence, we need to*
> *study and test implicit assumptions about information-related*
> *behaviour if we are to design better systems to support that*
> *behaviour.*[10]

At KLI, a focus group of around 10 experts representing the core market is invited to visit the website twice or three times during the development phase of a journal to be launched. It is from their feedbacks that KLI identifies what misses, what needs to be removed or changed and what formats would best meet users' expectations.

Refusing or neglecting to consider these new developments, especially the role of the reader, could be fatal as subscribers would shift to other more customer-friendly journals, where their needs would be met.

Professional Publishing is Different

'The world of academic and professional books is the publishing sector perhaps
the most vulnerable to changes in the digital era…These publications are
vulnerable to the impact of the digital revolution for a number of reasons: the
titles have a high value, often determined by timeliness; they have limited
circulation which can spread across the country or the world;..'[11] (Gareth Ward)

Until the nineteenth century, the terms 'scholar' and 'philosopher' referred to a person having unequalled knowledge in many disciplines (sciences, literature, law, medicine,…) at the same time. René Descartes (mathematics, physics, philosophy), Christiaan Huygens (mathematics, physics, astronomy, philosophy), Herman Boerhaave (botany, chemistry, medicine) are good examples. With the Information Age, society started breaking itself into small segments to the extent that no scholar can now wholly embrace even one single discipline. Lawyers will specialise not in Law, not even in its branch called International Law, but in the smallest sub-discipline called Air and Space Law and will only have the basics in Maritime or Road Transport Law, not to talk of Criminal or Constitutional Law.

The above was not the case for Elie Luzac junior, an eighteenth century Leiden enlightened scholar (philosopher, lawyer, writer, and printer) who had a doctorate in Law from Leiden University (1759). As a legal professional, Luzac acted as a defence lawyer, prosecutor, legal advisor, among other functions,[12] which suggests that he embraced Law as a discipline, not as a combination of sub-disciplines.

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[10] Christine L. Borgman, *From Gutenberg to the Global Information Infrastructure. Access to Information in the Networked World*, (Cambridge, 2000)p.94

[11] Gareth Ward, *Publishing In The Digital Age* ,p. 60

[12] Rietje van Vliet, *Elie Luzac (1721-1796): Boekverkoper van de Verlichting*, (Nijmegen, 2005), p. 36

The publishing industry, which follows and contributes at the same time to the fragmentation of knowledge and society, has undergone the same phenomenon. These developments explain the move from comprehensive journals like *Le Journal des Sçavans,* (which could be translated as *The Journal of Scholars-* those with multiple and unequalled knowledge) where Huygens reported his physics achievements [pendulum clock] in the 25 February 1675 issue beside the editor's review of a geographic and travel book by Sieur de la Guilletière,[13] into discipline or profession-oriented journals like KLI's Air and Space Law, where a very well defined editorial line has been drawn.

What is then different in comparison with general, educational, cultural or reference publishing? A very specifically targeted audience, timely information, a specific style and high rigour, expert articles, are some of the distinctive features of professional publishing. These features play a role in determining which medium and format are the best suited. A timely research work will most likely and preferably require a quicker medium that will allow users to consume the information before it is replaced by a newer one, to use McLuhan's words, while an educational publication will take all its time to come out most likely sometime in August for the September class resumption. In an article on the European policy for electronic publishing, Giuseppe Vitiello, director of the Electronic Publishing, Books and Archives Project of the Council of Europe, notes that educational and cultural publishers went on with traditional formats and media because the electronic ones did not conquer the market. He goes on to wonder:

> *Why do so many firms operating in the new economy manage to double*
> *and triple their turnover, whereas cultural and educational electronic*
> *publishing does not seem to have taken off?* [14]

The above brings me to the question to know the function of professional journals which serve as illustration for this article. Their main function, as Eisenhart noted, is to avoid reinventing the wheel and enable professionals and scholars to remain plugged in to their respective practitioner communities.[15] This means that a professional community is like a body and the journals like the veins and arteries dispatching the necessary nutrients in the different parts of the body. These nutrients are needed on a regular basis without delay, with each part sucking not all the nutrients, but only those interesting and necessary for their functioning.

Is There an Ideal Medium, Format?

'But if there isn't a format war raging, there is at least some confusion over the best
way to present information on the Web…. Even when the information is nothing
more than text and graphics, it's not always an easy call to decide the best format for
it.'[16] (Thom Lieb)

As media technologies evolve new formats emerge but among the plethora of them, only a few are said to be serious tools for the publishing industry, whether professional or not.

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[13] *Le Journal des Sçavans* of 25 February 1675 in *Le Journal des Sçavans* , Tome Quatrième, 1665-1676 (Amsterdam, 1677), pp.68-9 and pp. 60-67.

[14] Giuseppe Vitiello, *A European Policy for Electronic Publishing* in *The Journal of Electronic Publishing*, March, 2001.

[15] Douglas M. Eisenhart, *Publishing in the Information Age*, p.179

[16] Thom Lieb, *HTML, PDF and TXT: The Format Wars,* in *The Journal of Electronic Publishing*, Sept. 1999. http://www.press.umich.edu/jep/05-01/lieb0501.html

However, none of these few formats can fulfil all the functionalities at the same time. One is either a derivative, a supplement or a complement of the other. Each of them has a strong and a weak side, which means that each journal will go along a chain of at least two formats before coming out in the print or electronic form.

While XML, the eXtensible Mark up Language, is proving to be the best beginning point from which materials can take any direction, PDF, Adobe Corporation's Portable Document Format, has established itself as a perfect integrity-guaranteeing and compact format. This combination, or let's say, this succession of formats, was emphasized by Kasdorf with SGML/XML being the beginning and other formats deriving from it:

> *It's becoming clearer every day that the ideal workflow for book and journal publishers starts with SGML, which can then be used to generate HTML (or, soon, XML) for Web publishing and PDF for electronic versions of pages to be printed (whether they're printed in bulk or on demand).* [17]

This is to say that XML is the only format that has and promises to have no serious challenger in the near future as it was conceived to solve a number of problems posed by its predecessors. In short, there is an ideal format for each functionality but this may change at any time as technology evolves at its own incredible pace.

XML: Mother Format

'Publishers also discover that they need some way to protect their electronic archives from becoming obsolete as technology evolves…XML will soon become integrated into popular browsers, forcing many publishers to go back and re-code or restructure electronic files that seem up-to-date today.' [18]
(Bill Kasdorf)

The fast evolving technology has pushed publishers to think about their archives and how they could make money out of them. Until recently, archives were commonly said to be the libraries' business, not the publishers'. With technologies offering the opportunities to re-purpose and re-use materials, archiving has become a major long-term investment area. To be able to re-use archives in the future, publishers need to be assured that their archives will be compatible with the next generation devices. This is to say that once a material is published, it is carefully stored pending further re-use or re-purposing, which was not the case during the print age as Chris Kartchner, Professor of publishing studies at Dowling University, explains:

> *Until a few years ago, the printed page was the sole destination of published content. The remnants of that portion of the publishing process -- tear sheets, galleys, and electronic typesetting files -- are of no further use.* [19]

The only way to avoid obsolescence is to mark up all the materials in XML, which, unlike the Hypertext Mark up Language (HTML), focuses on the structure of the material rather than its

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[17] Bill Kasdorf, *SGML and PDF--Why We Need Both*, in *The Journal of Electronic Publishing,* June, 1998. http://www.press.umich.edu/jep/03-04/kasdorf.html
[18] Bill Kasdorf, *SGML and PDF--Why We Need Both*, in *The Journal of Electronic Publishing,* June, 1998. http://www.press.umich.edu/jep/03-04/kasdorf.html
[19] Chris Kartchner, *Getting from Concept to Reality* in *The Journal of Electronic Publishing*, June 1998. http://www.press.umich.edu/jep/03-04/kartchner.html

appearance. In the legal professional publishing industry, where jurisprudence plays a central role for any legal practitioner, there is no possible debate about the choice between XML and HTML. Even if there should be, I should argue that an XHTML (HTML generated from XML) would be generated from the XML mother file.

At KLI the same principle is applied. They even go further to post all their archives and current journals in the online library, where they can be retrieved either in PDF or in XHTML. The XHTML version in the online library, which is a separate product requiring a separate subscription, facilitates more interaction, including the copy-and-paste function that saves the time for those seeking citations from a material in the library.

Thus, to KLI XML offers a secure archiving and display tool (XHTML) and an opportunity to generate extra profit (through the online library), and to the end-user the possibility of interacting with the resource more efficiently and more easily than with a PDF file. Therefore, using XML is a long-term investment as future technologies will be compatible with archived materials, thereby putting the publishers in a comfortable position where they can grasp any profit-generating opportunity at no cost. However, PDF has its own advantages that XML can not offer, at least at this moment.

PDF: Kill Four Birds with One Stone.

'..pdf is a true 'what-you-see-is-what-you-get' format. There are no different ways of reading a pdf page. Once the page is correct and in the pdf format, the publisher can be confident that anyone looking at that page on any computer screen anywhere in the world, will be looking at identical pages.'[20] (Gareth Ward)

Though a de-facto standard format, PDF is at this moment a very powerful format facilitating compression, transmission, display and printing of materials without affecting their appearance. PDF is a solution to a number of problems like integrity, interoperability, bulk, security and others.

Taking advantage of it, KLI moves materials from XML directly into PDF before redirecting the files in four directions: online posting; printing; online library's database for many of the publications; and copying back issues CD-ROM on termination of subscription. As Kasdorf noted, PDF is unequalled in keeping the integrity of the material and allowing readers to have the same version and layout regardless of the media they choose to read from. Kasdorf wrote:

> *It will be the best file to furnish to the printer of your books and journals; it's a convenient way to deliver proofs electronically; it's the best way to deliver those typeset pages over the Internet for users to view or print out locally; and it's even a surprisingly effective and economical way to produce a simple CD-ROM. It requires so little extra work and cost…[21]*

In addition to the integrity-keeping functionality, PDF is known for rendering files more compact, thereby making them easily downloadable and exchangeable. This plays both in the favour of customers and the publishers, as the former save their time and the latter their storage space. This feature, combined with the integrity-keeping one, facilitates the transfer of files from the publisher to the printer and ensures that the online version will be exactly the same as the paper or CD-ROM-based one.

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[20] Gareth Ward, *Publishing In The Digital Age*,pp.27-8
[21] Bill Kasdorf, *SGML and PDF--Why We Need Both*, in *The Journal of Electronic Publishing*, June, 1998

Furthermore, PDF offers a security system that prevents illegal re-distribution and fraud. For instance, as Ward indicates, PDF allows having a watermark in it which appears when printed.[22]

Nonetheless, as already pointed out, no single format can bring all solutions at the same time. For instance, PDF files cannot be reformatted or reedited. Also, they cannot be accessed on the web without the help of [X]HTML, which provides a hyperlink to the PDF file. For PDF files of KLI to be accessed, the surfer first goes to the journals homepage (http://www.kluwerlawonline.com/index.php?area=Journals&PHPSESSID=6f6617bbe52f92b9baf6cbbf576aecf3) where links to the different journals are presented. At the end, a journal issue is displayed with links to each individual article in PDF.

Besides, PDF as used by KLI is like a wall beyond which nobody can go as it offers no active hyperlinks to related or quoted resources. Only some KLI's journals and loose leaves offer intra-document links allowing easy navigation between the table of contents and the different sections, but none offers inter or extra-document ones. For a reader to have this possibility, he/she has to subscribe to the online library, where the same journals are accessible in XHTML. Also, KLI offers a possibility to customers, especially companies or institutions, to negotiate an arrangement wherein their Intranet system could be provided with [X]HTML versions of journals.

The above drawback is not wholly attributable to Adobe Corporation and its software because it is primarily a strategic decision by the publisher who, by offering inter and extra-document hyperlinks, would spoil the market for the online library. I say this because not-for-profit publishers do offer hyperlinks within their PDF files as substantiated by *Living Reviews in Relativity* (http://relativity.livingreviews.org/Articles/lrr-2006-3/download/lrr-2006-3BW.pdf)[23] an Open Access journal of the Albert Einstein Institute in Golm, Germany. For instance, the above URL allows not only to jump from the PDF version to the HTML one, but also to quoted and related resources on other websites.

Finally and perhaps more importantly, PDF remains a property of Adobe Corporation, a company that developed it from PostScript and runs it now. Being tied to a firm means that its fate too is tied to the firm's fate. The collapse of the firm would most likely result into a halt to most of online publishing- that has relied on the current PDF power- and the inaccessibility of the b/millions of articles in that format.

Print Becomes an Option
'But the idea and the ideal of the book will change: print will no longer define the organization and presentation of knowledge, as it has for the past five centuries.'[24]
(Jay David Bolter)

At this stage, it is not yet clear whether print will indeed disappear from the publishing world. However, there is no doubt that its place has shifted from the primary to the secondary position as more powerful challengers have conquered much of its territory. Writing in the early 1990s, Jay David Bolter put his statement in the future – …will change…- but we can

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[22]Gareth Ward, *Publishing in the Digital Age*, p. 28

[23] *Living Reviews in Relativity,* http://relativity.livingreviews.org/Articles/lrr-2006-3/download/lrr-2006-3BW.pdf , accessed on 8 April 2006.

[24] Jay David Bolter, *Writing Space: The Computer, Hypertext, and the History of Writing* (Hillsdale,1991) p.2

put it now in the present to say that 'the ideal of the book has changed', or 'is changing' to be more prudent.

In principle, all the titles issued by KLI have a print version and an online one. Both versions are identical thanks to PDF, but the print version appears three weeks after the online one. Subscribers are not offered both versions automatically. A client can choose the more expeditious but expensive online version (as the customer pays for technology), the cheaper wait-three-weeks print version, or a combination. On termination of subscription, the online subscriber receives a CD-ROM free of charge with all back issues subscribed for.

KLI is not the only publisher to issue all the titles in both print and electronic media. Referring to a survey he carried out in 2005 on scholarly publishing, a sister industry to professional publishing, Mark Ware, a British publishing expert and member of the Association of Learned and Professional Society Publishers, wrote that publishers had experimented with e-only journals but never went a long way. He observed that 'some e-only journals had failed while others had added print editions or been combined with existing print journals.'[25] Ware concluded his survey noting:

> *None of the publishers we consulted had current plans to drop print editions from existing journals: most saw this as being at least 3-5 years in the future.*[26]

KLI's subscription statistics being not disclosed, we might assume that they are not far from the ones Ware suggested indicating that e-only subscriptions are probably less than 10 percent of total subscriptions for most disciplines.[27]

It is worth wondering why paper is still persisting despite the powerful challengers, old age, and the pessimistic predictions of scholars like Sven Birkerts (*The Gutenberg Elegies. The Fate of Reading in an Electronic Age,* New York, 1996) and Robert Coover (*The End of Books, 1992).*[28] It is true that paper takes time to come out, that it is not easily searchable and interactive, that it implies shipping costs, but it is also undeniable that it offers many advantages that none of its challengers could ever offer.

The first merit of print is that it is user-friendly. Reading requires no technology, no device, no power, no special skills. Print can be annotated, passages can be underlined or otherwise highlighted, which is impossible online or on CD-ROM. Print also guarantees integrity and a certain level of immortality because once a version is issued, it will remain so forever, while a PDF file (another integrity keeper) could be replaced by an updated version from the XML mother file or simply removed from the database. Thus, citations with print references are far preferable than those with URLs (Universal Resource Locator) references which are always accompanied by the date of accession and whose permanent presence on the web is never guaranteed. In addition, forgetting or adding just one letter in the URL renders the resource inaccessible, which is not the case for print.

Responding to my query about why he never used his online versions of the legal journals he subscribed to, A.Q.C Tak, Professor of Public Law at the University of Maastricht and

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[25] Mark Ware, *E-only journals: is it time to drop print?* In *Learned Publishing* Vol 18, No 3, July 2005, p. 194
[26] Mark Ware, ibidem, p. 194
[27] Mark Ware, ibidem, p. 194
[28] Robert Coover, *The End of Books, The New York Times Book Review*, June, 21, 1992, pp.1, 23-4

director of Tak &Teunissen B.J.A legal firm, in Meerssen, the Netherlands, said that the electronic versions were not reliable as they could be modified any time and any how. 'A reliable piece of information is one you can crosscheck and find unchanged when you come back to it', he said.[29] Ward goes in the same direction as Professor Tak when he writes:

> *Printing will be an option. The information could remain on screen only, but for many publications, legal titles included, the integrity of the content is crucial, so a hard copy of some sort is needed to help prevent any editing by the recipient.[30]*

Professor Tak's fears, which are perceived by many other scholars as a rather positive innovation brought by the www, are highlighted by Ware when he cites the example of a physics journal, *Living Reviews in Relativity.* He wrote:

> *Published articles are revised at least annually. Another example is the ability of publishers retrospectively to add live reference links to published articles as they become available.[31]*

In this respect, KLI does not update its published articles by adding newer information in the old articles but by issuing newer articles that would follow the same procedure ending with a journal both in print and online.

Concerning the delay in production which renders print vulnerable and exposes it to marginalisation and demise, Professor Tak said that his and his cabinet's preoccupation was first the integrity and reliability of information rather than timeliness. 'The suppression of the print version would mean the end of common sense of all human kind', Professor Tak concluded. 'Hard liners' like Professor Tak are numerous and still represent a non-negligible market for publishers. To borrow Ward's words, it will require a cultural revolution as well as a technological revolution to remove the book from its place on the shelf.[32]

Nevertheless, the issue will be differently looked at in the coming decades when a new generation of professionals emerge to take over the current paper-biased one. The children of today who have little to do with print and much with computers will not suddenly change their information acquisition and consumption habits when they become university students and then professionals. Eisenhart confirms this assumption when he states that 'consumers of the next generation will not have to be educated in information machine use, for they are growing up with such machines as everyday items in their environment.'[33] Basing her prediction on a similar argument, Robin P. Peek, Professor of Social Informatics and Digital Publishing at Simmons Graduate School of Library and Information Science, suggests that the current hybrid model will last until the time when the electronic journal is wholeheartedly accepted by everybody. She wrote:

> *The publishers can ease the way by publishing titles concurrently in print and electronic form. Once the electronic version is acceptable and users are at ease with it, publishers can drop the print version entirely….This*

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[29] Interview with Prof. A.Q.C. Tak, director of Tak & Teunissen B.J.A. legal firm, Meerssen, 17 March 2006.
[30] Gareth Ward, *Publishing in the Digital Age,* p. 74
[31] Mark Ware, *E-only journals: is it time to drop print?* In *Learned Publishing* Vol 18, No 3, July 2005, p. 198
[32] Gareth Ward, idem, p.17
[33] Douglas M. Eisenhart, *Publishing in the Information Age,* p.160

> *may be the best avenue, but other options should be seriously explored*
> *first.* [34]

Unlike Birkerts who fixed the remaining time for print to the incunabulum-inspired period of fifty years,[35] neither Eisenhart nor Peek puts forward any apocalyptic date or timeframe for the demise of that 500-year old medium.

To come back to Peek's argument, I should counter-argue that it is not only a matter of acceptability. It is also and above all a matter of various needs and functionalities that one medium could not meet or fulfil. I wonder how the palpability, browsability, tangibility, portability, high visual quality, user-friendliness, archivability, permanent accessibility, etc. of print will be achieved by electronic versions, which, until now and yet for some years to come, are mostly read on print-outs rather than onscreen.[36]

I would rather suggest that the market for print will indeed become smaller and smaller but to say that print will disappear in the coming years would be a fortuitous assertion as print remains the only medium that can survive a global virus attack on networked computers or phenomena similar to the 2000 Y2K Bug. It is thus wise and recommendable to have the journals in both their electronic and print media to avoid any disagreeable surprise in the future.

To close this section dedicated to print, I would like to mention a study carried out in 2004 by Kent R. Anderson, the executive director of international business and product development for *The New England Journal of Medicine*. His aim was to compare print and online readership for the aforementioned journal. Among others, the study came to the following conclusions:

> *Print dominates online for readership, with the statistical possibility of*
> *online beating print only existing for very few article types…browsing in*
> *print is a very different behaviour, and increases the likelihood of*
> *encountering unexpected editorial material by serendipity…*[37]

The foregoing does not deny that print has become an option. It rather argues that print is a strong and non-negligible option. As such, it would be a miscalculation on the part of professional publishers to decree its demise as it still keeps hold on a large portion of the market.

Exit CD-ROM
'I am in no doubt that it was the advent of the CD-ROM which brought about the
major change in publishers' organization and working practices.' [38]
(Duncan Christelow)

After over two decades of loyal services, the CD-ROM is currently said to be on its way out. At KLI, no single journal appears in that medium. CD-ROMs are only used to provide all

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[34] Robin P. Peek in *Scholarly Publishing: the Electronic Frontier* (Cambridge, 1996), p. 12.

[35] Sven Birkerts, *The Gutenberg Elegies. The Fate of Reading in an Electronic Age* (New York, 1994), p.121

[36] Mark Ware, *E-only journals: is it time to drop print*? In *Learned Publishing* Vol 18, No 3, July 2005, p.194

[37] Kent R. Anderson, *Comparing print and online readership: matching perception to reality across media*, in Learned Publishing Vol. 17, No 4, October 2004, p. 315

[38] Duncan Christelow in Richard Biddiscombe (ed), *The End-user Revolution. CD-ROM, Internet and the changing role of the information professional* (London, 1996), p.17

back issues to online customers terminating their subscription. It is also used for a few journals to provide indices on a yearly or decennially basis. The firm is even envisaging to drop this medium entirely as it considers its market to be insignificant.

This insignificance of the market can be explained by the progress made by the www. The Dutch Central Bureau for Statistics (CBS) reported that 83 percent of Dutch people, without any distinction of age, profession or other consideration, had access to internet in 2005.[39] From this, we can deduce that the percentage of professionals having access to the www is not far from 100 percent. This is to say that publishers may be considering that delivering the same version both online and on CD-ROM is a duplication of work as the end-user could him/herself manually burn the article(s) or journal(s) onto CD-ROM. The CD-ROM was a powerful medium in the early 1990s, because the www was still making its first steps and was still more a communication medium than a publishing tool. Czeslaw Jan Grycz and his colleagues at the Association of American Publishers shed more light on the strengths of the CD-ROM during that period:

> *The CD-ROM caused considerable erosion of print subscriptions. No wonder. The CD-ROM combined the advantages of print with those of online: Like print, it was self-contained, freeing users from the need to connectivity; and like print, it was priced by subscription, without usage charges. At the same time it was fully searchable, just as online but with an easier interface designed for end-users.[40]*

Since the www has become ubiquitous, the market for the CD-ROM has actually become very small in journal publishing. However, it is worth wondering how small a market has to be before it is neglected or ignored. As substantiated by the case of Vallenduuk Advocaten B.V 'the current market for CD-ROM versions of journals is primarily the individual subscribers, who choose the CD-ROM to reduce office or home storage space for journals.'[41] This is already a good reason for keeping CD-ROMs in circulation, not as a systematic medium like the www or print in which each journal should be delivered, but as an on-demand delivery medium.

Though it is true that a user could manually burn articles and entire issues onto CD-ROM him/herself, it gives more guarantees to deliver journals on CD-ROMs for those demanding it. That way, journals could be accessed offline and in case of technical or maintenance-related problems. With the proliferation of smarter, more sophisticated and extremely destructive viruses, computer users are not always sure of their internet connection, especially as subscription is granted to individual computers (IP addresses).

Moreover, there are no guarantees that the publisher will not go bankrupt or inadvertently remove articles from the database, rendering materials inaccessible. In addition, power outages or the frustrating 'this page cannot be displayed' messages may occur at the exact time when for instance a defence lawyer needs to retrieve an article that is crucial to his/her plea of the following day.

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[39] http://statline.nl/StatWeb/table.asp?PA=71098ned&D1=33-133&D2=0&DM=SLNL&LA=nl&TT=2 , accessed on 02 March 2006.
[40] Czeslaw Jan Grycz (ed), *Professional and Scholarly Publishing in the Digital Age* (New York, 1997),p. 103
[41] Czeslaw Jan Grycz (ed), idem, p. 105

Finally, the www is not immune to the reoccurrence of phenomena like the 2000 Y2K Bug which had caused panic in all networked-computer-depending businesses and industries. Here are excerpts from the Y2K Information Center that shed light on the dangers the electronic world is permanently exposed to:

> *In general this bug threatened all the major industries including utilities, banking, manufacturing, telecom, airlines…Y2K bug was a clicking time bomb for all major computer applications…IT companies around the world spent billions of dollars to go through their entire application source code to look for the Y2K bug and fix it. Almost everybody raced around to make themselves Y2K compliant before the fast approaching deadline. Finally when the big day came, many utilities and other companies switched off their main computers and put the backup computers on work. When the clock ticked Jan 1, 2000, no major problems were reported. Almost every bank worked fine, no major power outages were reported, airplanes still flew and the whole world went on with its normal life.[42]*

 From these excerpts we can imagine in which situation online subscribers would have found themselves in if the worst scenarios had happened compelling publishers to keep their computers off for days, weeks, or months.

Media/formats Combination

*'No one technology has ever proven adequate for all needs. The economy of writing is always diversified, as secondary technologies occupy places around the dominant one. These secondary technologies may even survive by meeting some need better than the dominant technology'.[43] (*Jay David Bolter)

The foregoing paragraphs attempted to show that no single medium or format can address all the readers', archiving, and profit-related needs. I kept suggesting that no single medium or format can be self-sufficient. The question is then to know which combination would be the best for a professional publisher.

There is no magic formula that can be put forward as the best medium/format combination. Professional communities have proliferated creating new habits, principles and interests in the process. For instance, the open access *Journal of Chemical Education* (JCE) of the University of Wisconsin has 'imperatively' integrated multimedia in its production and delivery policy to remain attractive and meet the expectations of its readership made of chemistry professionals, scientists and students.

On the JCE's home page one can see 3-dimensional images and read the following: 'Chemistry truly does come to life through this collection of pictures, animations, and movies depicting chemistry demonstrations and experiments.'[44] This type of journals will be online to ensure their universal accessibility and most likely on DVD (which is the case for the JCE). As it can be guessed, the print version –which also exists for JCE- would be less attractive as laboratory demonstrations and experiments could only textually be described. Concerning online display formats, HTML and PDF are presented side by side to give the reader the opportunity to choose him/herself according to his/her interests.

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[42] Y2K Information Center, http://www.y2ktimebomb.com/ accessed on 19 March 2006.
[43] Jay David Bolter, *Writing Space*, p. 39.
[44] *The Journal of Chemical Education*, http://jchemed.chem.wisc.edu/JCESoft/CCA/CCA7/ accessed on 18 March 2006

The above scenario cannot work for KLI's legal journals. While print and online can justify themselves as delivery media, the DVD would be a useless extra medium. As for formats, PDF suits best KLI's interests and less the ones of the readers, as it allows no other operations than onscreen reading and printing. Presenting an [X]HTML version beside the PDF, would mean erosion of subscriptions from the online library, which has constituted an important factor of growth in the last two years.[45]

These two examples show how impossible it is to draw a general conclusion as to the best media/formats combination. However, it appears that the www imposes itself as an unquestionable delivery medium because, as Ward noted, it is the most powerful communications medium the world has yet known, with the same revolutionary power that the first printing presses had.[46] As such, no professional publisher will allow him/herself the luxury of ignoring it without exposing his/her business to bankruptcy and disappearance. It is somehow the base, the foundation, the central pillar of the whole professional publishing business.

First and foremost, the www enables the publishers not only to reach their targeted readership worldwide and at very low costs as shipment and other related costs (customs for instance) are skipped, but also to price their products at will depending on customers, their needs and their finances. Andrew Odlyzko of the Digital Technology Center at the University of Minnesota goes even further to qualify the publishers' pricing methods arbitrary as they are not uniform to all subscribers:

> *Many of the prices and policies will seem arbitrary. That is because they will be largely arbitrary, designed to make customers pay according to their willingness and ability to pay…Pricing according to value means different prices for different institutions.[47]*

Odlyzko leads us to understand that a subscription for a large multinational corporation will be different from the one for a small two-lawyer legal cabinet. Though no hard figures can be provided, each title issued by KLI has 'institutional', 'private', and 'academic' prices, to which we should add other negotiable arrangements like the aforementioned [X]HTML one.

Besides, the www enables publishers to fragment their journals to the smallest unit possible and sell them individually. Although not practiced by KLI, this practice is common and somehow logical in professional publishing where, within the Road Transport Law for instance, a legal practitioner may only be interested in insurance-related issues. He/she might wish not to order the whole issue, but to purchase the only article(s) that is/are relevant to his/her job or research. He/she can even ask to be alerted as soon as an article about his/her area of interest comes out. This would hardly be feasible in print.

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[45] Wolter Kluwer Third-Quarter 2005 Report, http://www.wolterskluwer.com/NR/rdonlyres/ECD77D16-B4D4-4C02-92E2-085899262B4F/0/ThirdQuarter2005results.pdf , p. 7 : results of the Tax, Accounting & Legal Division under which Kluwer Law International is: 'Tax, Accounting & Legal reported revenue growth at constant currencies of 4% for the third quarter…Performance was attributable to the success of new and enhanced products, including Account Research Manager, ProSystem fx Tax and Engagement and online Integrated Libraries'

[46] Gareth Ward, *Publishing In The Digital Age* (London:1998),p. 23

[47] Andrew Odlyzko, *Competition and Cooperation: Libraries and Publishers in the Transition to Electronic Scholarly Journals,* in *The Journal of Electronic Publishing*, June 1999. http://www.press.umich.edu/jep/04-04/odlyzko0404.html

More importantly, the publisher can control and monitor the access to his database and limit abuse, which would be very hard with other media. At the same time, publishers are given the possibility to carry out online reader surveys, which, combined with online feed backs and sales reps market assessments give him/her a global idea of how satisfied or dissatisfied the customers feel.

To be short, the ideal combination of media and formats for professional journals would be the one involving a global and universal access with the www, the one taking into account the specific needs of its targeted audience. Therefore, the different formulae would be www+print, www+CD-ROM/DVD, www+print+CD-ROM/DVD. As for formats, for-profit publishers like KLI see in PDF a good ally as it enables them to decide how far the customer can go in interacting with and manipulating articles, giving them the opportunity to sell a more interactive and manipulable [X]HTML version as a different product. Thus, as Jan Grycz and his colleagues suggest, 'making a decision about medium involves analyzing market needs as well as the publisher's capacity to fill those needs profitably.'[48]Therefore, the golden rule would be the one answering two questions, the first being: 'What do customers need and in which form –medium and format- do they need it?' and the second: 'Which medium, format or combination could best generate profit without (much) frustrating customers?' It is by frequently asking these questions and carefully finding appropriate answers to them that publishers could prosper and take advantage of the ever-evolving technologies.

Conclusion: Publisher's Ears and Eyes
As a result of the segmentation of society, professional publishing has distinguished itself from the other publishing sectors by its attentiveness to customers. The latter are spared the 'take-it-or-leave-it' situation as they play a central role in deciding how the information will be packaged and delivered. On the other hand, while the ears of the publishers will be tended to the customers, their eyes will constantly be looking at technological developments. The job of their mind- market analysts- will then be to come out with a business model determining the best combination of formats and media that would generate profit and satisfy the customers.

In that vein, professional publishing will keep evolving, with some formats or media being dropped or less used, all depending on what the publishers' ears and eyes will be reporting to them. However, a medium like the www, which has conquered the world in less than two decades of existence, is not expected to lose ground soon. Unlike it, older media like print and CD-ROM are expected to play a smaller and smaller role.

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[48] Czeslaw Jan Grycz (ed), *Professional and Scholarly Publishing*, p. 13

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