Introduction

Since the late 1980s, when authors began to deliver typescripts to their publishers on disk, the process of editing and publishing books has been in an almost constant state of change. Not only has digital technology enabled a conflation of book production processes, but books themselves are increasingly available in a wider choice of delivery modes. From traditional hard cover and paperback books, to digital files formatted for printing on desktop printers, to files specifically prepared for delivery via hand-held electronic book-reading devices, to text designed to be read on screen (incorporating hyperlinks that facilitate the reader’s ability to navigate around the text and between texts), the consumer now has potential myriad choices for delivery of their chosen content. And the publisher, it seems, has myriad ways to deliver content and to seek and satisfy new markets. As well as opportunities, these changes have caused disruption to the traditional supply chain. This paper focuses on changes to the role of the editor caused by the digitisation of the publishing industry.

Blurring the Lines of Book Production

For the past 15–20 years technologies of digitisation and the Internet have progressively changed the book production processes, enabling text and images to be created, stored, edited and formatted (typeset) in digital form. Distinctions between what were discrete, specialised functions performed upon text and image by particular specialists have become blurred. What was once a task for a specialist (e.g. typesetting) has become one of many multitasks for a different operator (e.g. author and editor).

The author’s ability to capture digital images of their work, combined with the development and popularity of desktop publishing software, has meant that the editor has been enabled, and is often required, to take over the role of the traditional typesetter. In the past, an editor annotated changes in pencil or red pen on double-spaced, typed, A4 pages and coded headings and text for meaning that allowed the designer to specify the look of each feature of the book and the typesetter to style (layout) pages according to these instructions. Now, there is increasing pressure for editors to work from the original digital file, making changes to the author’s text using tools-tracking devices. While this process change undoubtedly saves double handling (and thus cost), allowing some works that would otherwise not be commercially viable to be produced, it also creates
what many publishing professionals consider a more difficult-to-read edited copy for the author to review. The use of Word templates (reducing the need for individual text design) and ‘multi-channel’ publishing (where a single source file can be used simultaneously to produce, for example, a traditional student textbook, an accompanying teacher resource in CD-ROM and a regularly up-datable supporting web page) are also of concern to editors used to working with the linear production process of the traditional book.

Technology enabled changes have created some angst within the editorial profession. Editors have expressed concerns about holding their place in the supply chain that appears generally accepting of the cost-saving benefits of the production process conflation that is enabled by new technologies. Their issues include the possible disintegration of the editor–author relationship, and the possible loss of integrity of an author’s work when un-negotiated changes can easily be made to digital text (Freeman 2001). They see problems with version control, where several operatives (author, peer reviewer, editor) may work simultaneously from a single source file. Though overall project cost benefits may be achieved through conflation of processes, editors fear job losses and the loss of trade skills and standards.

Editors are also concerned about the need for retraining and the fate of their special role as interpreter of the book to the reader. How will they maintain quality control when several products can be produced simultaneously using a single source file? Where are the intersection points that facilitate editorial interventions and control in non-linear and continual processes? Issues of demarcation arise. For example, is the job of updating websites one for an editor or a web designer? Should editors learn to use Hypertext Markup Language (HTML), the language used by programmers and web designers, in order to ensure successful rendering of electronic documents for web display?

What was in the past a linear process, where editors learned the appropriate interventions—editing and marking up text for the designer, proofreading and correcting first pages via a careful line-for-line reading against the original (hardcopy) edited typescript, checking final artwork and dyelines—has become at once more streamlined and more complex. Today’s editor may be asked to provide quality interventions on content that is simultaneously required for traditional text production and presentation in fragmentary form as part of another product. Specifications for this second product may include delivery via an electronic medium that incorporates the ability for regular updating.

In particular, changes enabled by digital technology have facilitated the creation of new book-type products, CD-ROMs, websites, ebooks, as well as the different instructional languages involved in this creation. As the editor codes hard copy text in the traditional way, enabling designer and typesetter to differentiate each textual and illustrative feature of a manuscript, so Standard General Markup Language (SGML) and its developments Hypertext Markup Language (HTML) and the more recent Extensible Markup Language (XML), which has become the language ‘separating information architecture from rendering’, are used to code electronic text (Cope & Kalantzis 2003).

As well as having concerns about keeping up with the new technical skills required in a digital environment, editors question the ability, particularly of freelance staff, to keep their own hardware and software updated to current industry requirements (Otmar 2003). This problem can be partially alleviated by
the use of open source developmental software and the acceptance of industry standards for hardware and software that will be supported over time.

Many experienced editors view technological change with trepidation, hoping that resistance to change by some publishers, particularly in the area of author–editor relations, will enable them to see out their careers without having to do more than use their computers as a communication tool. And that may be so, particularly if they work for larger general trade publishers (Freeman 2001). However, for those of us who see a longer-term future in the editorial and publishing professions, I have some good news. It is my contention that regardless of what technology is capable of achieving in the area, particular technological changes will not be accepted unless they prove themselves capable of enabling improved access to and enhancement of the reading experience in its different guises and for its different purposes. Technologies that do not facilitate this basic function are being discarded in favour of more amenable technologies. Increasingly, the technologies that must be understood and used by an editor will standardise and stabilise, assisting editors to do their jobs better, more confidently, and to produce quality texts, giving editors important and continued relevance in an industry which might at first glance appear to be squeezing them out.

Technologies are being developed that will require editorial interpretations and controls, and editors can and should put some effort into the study of new technologies in order to provide within the digital environment what they have always provided in the analogue: a comprehensive, knowledgeable service to the publishing industry.

What a Digital Age Editor Needs to Know

In order to feel confident in a digital environment and to convince her employers—often large organisations and multinational publishing companies but increasingly becoming small publishers and individual authors (Epstein 2001; Sullivan 2002)—of the imperatives of such a service, there are some basic features of digitisation that an editor must understand, and particular endeavours that she must keep up with in the field. Things are changing, but for the majority of the industry, those changes are incremental. Editors have time to familiarise themselves with new technologies, more gradually becoming conversant with their newfound knowledge, before stretching their abilities to understand the next phases required for full editorial competence in the digital facets of the industry. The following is a suggested list of understandings that will inform basic technological competence for editors.

On-screen editing. It is becoming increasingly important to be able to edit on screen, to understand the functions of on-screen editing tools, and to be able to navigate around a document using ‘find and replace’ functions and ‘changes tracking’ devices.

Content management systems. Editors need to become conversant with content management systems—because increasingly they incorporate tools to deal with problems associated with digital rights management. Managing digital rights is

---

1 ‘... the typical Australian editor is ... a forty-ish, highly qualified, highly experienced woman with her own business’ (Otmar 2003).
like any other creative media rights management—copyright owners must be identified, use of their material attributed and, if required, paid for. However the fact that a digital environment makes it ‘so much easier to copy and circulate text, audio, images and video’ (Cope 2001, p. 3) means digital rights cause publishers and authors considerable concern about unauthorised use and distribution.

File formats for printing. Editors increasingly become involved in producing, or at least supervising, the production of files for the printer. So it is important to understand the differences in preferred file formats between offset (long run) printing and digital (short run) printing (Lane 2002). An understanding of Adobe Acrobat (PDF), Quark, Adobe InDesign and PageMaker software is also desirable, as well as the importance of attaching fonts to files and knowledge about copyright on fonts and who is licensed to use them.

Importance of international standards. International standards govern the processes of discoverability, commerce, rendering and use of digital content. Thus it is important for an editor to become familiar with international standards such as the Dublin Core Metadata Initiative for library cataloguing, the Online Information Exchange standard (ONIX) for e-commerce, SGML and its derivations for rendering, and the Digital Object Identifier (DOI) for digital rights management.

Traditional Skills for a Digital Age

In this forum it is understood that a professional book editor is proficient in the basic editorial skills of structural and copy editing, of polishing grammar, spelling and punctuation, of dealing with issues of inclusive language, of basic legal assessment and copyright matters as well as typesetting mark-up and briefing for design. But the editor has other specialist skills that make her a valuable contributor to the digital age.

The editor is a skilled practitioner at the interpretation of meanings; at selection of the essential from the peripheral; at differentiating the story from the sidebar. Editors assess each new work undertaken, overlaying their own internal template constructed from training and experience that allows them to determine: What is this material? How might it look and function as a finished piece? Will it suit its intended audience? To what uses might this material be put as a finished product?

Extra Skills for the Digital Age

In considering the skills that an editor might need to graft on to her traditional skills, I had intended describing these as new skills. But even cursory thought confirms that these skills are not new at all. They are simply an adaptation of traditional book-editing skills to a digital environment. Editors are by nature problem solvers—as well as skilled professionals. So adapting problem-solving skills to the new media is not as overwhelming a task as might at first be considered.

On-screen Editing

During the 1990s at least one multinational publishing house experimented with the development of its own proprietary mark-up system (Freeman 2001). Now
publishers and writers (particularly in the realm of academe) use the Microsoft Word mark-up devices that enable a visual representation of all changes to an author’s original text, as well as coding for design and typesetting. Editorial changes can be highlighted using <tools> <track changes> <highlight changes> from the toolbar menu of Word versions of both PC and Apple software. The ‘track changes’ tool also allows the author to accept or reject suggested changes and to reciprocate with their own suggestions for the manuscript. Notes can be referenced to passages of the text and comments and author queries can conveniently be collected and, as necessary, transferred (cut and pasted) into a conventional letter to the author, or listed at the conclusion of the text for the author’s attention. The appeal to the publisher is obvious. With the author and editor able to negotiate changes to the document via email or through the auspices of an online content management system (discussed more fully below), face-to-face discussion and telephone conversations can be minimised, and the typesetting limited to layout of the manuscript.

Increasingly, typesetting (styling of pages) can be attributed to the text using MS Word style sheets and even by attaching pre-styled templates to Word documents, removing the typesetting cost from the production process altogether.

Content, Delivery Modes and Context

An experienced editor understands the differences between materials produced as traditional volumes and materials intended for electronic delivery. The configuration of words on the page is different depending on the delivery mechanism. A Word document saved as a PDF (a ‘portable document format’ which is an exact replica of the original but in a secure format) might be quite suited for a short, text-only electronic book (ebook) delivered via email to a personal computer intended to be printed out on A4 stock using an individual desktop printer. However, the material would require quite different organisation if intended for reading on a website or as an ebook downloaded to a palm-held reading device. An editor plays an important role in accommodating the publisher’s or author’s brief about the ultimate use of the content, considering issues such as: Who will be the ultimate reader? How many formats will the content be required to accommodate? How should text designed for granularisation be organised in order to ensure that the context travels with the text. For example, when constructing a student course pack a lecturer may decide to include several chapters from individual textbooks as well as their own bridging notes. The editor may be the first independent person to read such material as a complete document and will thus be required to think about the validity of each extracted chapter as part of a new whole. Does the content contained in this new presentation make sense to the students without, for instance, some introductory material from one of the original texts, or an illustration placed elsewhere in an original work but referred to in the reproduced chapter, or a relevant appendix? Decisions such as the placement of endnotes (at end of chapter or end of the book) become significant as this can affect the ease with which an original text may be

---

2 ‘Granularisation describes the capacity of digital technologies to deliver smaller “chunks” of more targeted information to the end user (sometimes another machine) and the likelihood that users will selectively consume smaller pieces of work in an era where there is an information glut rather than a scarcity ... online digital technologies make the dynamic pooling and blending of “granules” of information not only viable through automation, but also potentially commercially valuable’ (Laidler 2001, p. 37).
granularised (sliced and diced; chunked) to allow it to be incorporated within new material and thus sold in another format. The editor’s knowledge of the construction of a book (and book-like products) gives her insight into its deconstruction.

Keeping track of copyright material owned by an organisation (such as a university) and copyright material imported for its use (in course packs for example) can be greatly assisted through the use of content management systems that identify and track the copyright of digital material back to its creator.

An Understanding of Content Management Systems

Online content management systems provide a way for organisations to keep track of their digital content. At its simplest a content management system can provide an effective workflow management tool, tracking and scheduling work in both the digital and physical environments. But because it automates and thus speeds up many of the administrative processes associated with publishing as well as keeping track of the content and its copyright owner, such systems can provide many more valuable functions to an organisation than workflow management alone.

Typically, a content management system designed to assist the content creation and publishing industry may contain the following features:

*An online portal for the receipt of manuscripts.* This portal is accessed by writers wishing to provide their manuscript to an online publisher for processes that might include production of traditional volumes or electronic products with their different delivery systems.

*Facilitation of online negotiation of standard contract.* Writers can negotiate a standard online contract through the use of opt-in/opt-out options.

*A device for tracking production processes.* The editor enters data relating to prepress work required on the manuscript as well as print, publication and release dates. As the work progresses the schedules can be revised, omissions noted, lapses highlighted and new deadlines arranged via automatically generated emails to the nominated project coordinator. Status reports can be generated and appropriate personnel can automatically be notified about changes to the schedule of any projects. From a trade publishing perspective this might mean that the publisher, marketing manager, accountant, publicist and sales manager could simultaneously be advised of slippages or about new entrants to the catalogue.

*Facilitation of online production interactions.* Writers, editors and peer referees, designers and typesetters (as appropriate) can interact with the text via an online environment that provides security, protects the integrity of the text and facilitates version control through a password-enabled permission system that allows limited and specific rights of access to different parties. On-screen editing is enabled by simply downloading the document to desktop, and can be coordinated via a totally digital environment.

*Allocation of identifiers for book products.* An online content management system can provide links to the ISBN (International Standard Book Number) agency, to bibliographic database agencies as well as to the appropriate Cataloguing-in-Publication agent in any territory worldwide.
Facilitation of sales. The Internet provides the medium for purchase of traditional books and other book products through e-commerce enabled online bookshops. Online orders can be placed on behalf of organisations and by individuals using credit cards. Book products in volume form can be delivered physically through the postal system or by courier. Electronic versions can be automatically downloaded to desktop or individual electronic book reader or emailed to the purchaser. Online facilities can provide for automatic clearance of credit details, and debiting functions, as well as generating instructions for the picking and packing functions. Such systems already exist. Amazon.com provides an example of the sales–fulfilment end of the supply chain. Future developments will see the generation of the much desired one order = one printed book, print-on-demand (POD), demonstrated by Jason Epstein during the Future of the Book Conference 2003 (Wilkins 2003).

Collection of sales data. Online content management systems facilitate the efficient collection of sales data by type of product and type of distribution system into different market sectors. They collect management information to inform marketing and inventory control and for the generation of royalty payments to individual creators.

Manage digital rights. Another advantage provided to publishers, and other managers of creative content, by online management systems is the ability to record and manage transactions in the area of digital rights.\(^3\) Content, whether text, illustration, photograph, video or music clip, can be identified and linked with metadata (data about data) that defines what a particular piece of content is, who owns it, what uses the owner will agree a third party may put the content to, what each kind of usage may cost, the form of attribution, and how to arrange payment for usage. To the busy editor, used to much slower and cumbersome methods of securing rights and permissions for third party publication (as well as ensuring an ongoing system that enables permanent identification of third party material within a particular publication and thus ongoing compliance with copyright law) electronic management of digital rights is indeed a welcome development.

A particular, current need for such a system can be seen in the university, where the imperative to better manage their own intellectual property (IP) as well as intellectual property imported for their use (for example, copying of material for student use as prescribed by the Copyright Agency Limited licence)\(^4\) demands software and systems that automatically manage content use and enshrine rewards to all participants. As well, the university seeks new ways of providing for the institutional exploitation of its own IP which, having been created by researchers and staff, is effectively locked up for lack of a cost-effective method of publication and distribution, or given away to international journal publishers and bought back at exorbitant price (Cope & Freeman 2001, pp. 4, 133–4).

Keeping up with Technology Standards

There are many projects underway worldwide researching the design and implementation of systems and standards that enable the management of rights and

---

\(^3\) Digital Rights Management (DRM). (n.) The definition, protection, or enforcement of rights pertaining to content produced, delivered or accessed electronically (Open eBook Forum, 2000)\(^5\) in Laidler 2001, p. 31.

\(^4\) Details of CAL licencing schemes for educational and other institutional copying can be accessed at www.copyright.com.au.

---

293
transactions surrounding the use of digital content. There are numerous bodies working on establishing industry standards for rendering text, for resource discovery, for library cataloguing, for e-commerce and for digital rights management. Currently, few standards have been universally adopted. However, several standards are gaining traction towards universality. I believe it is important for today’s editor to gain some basic knowledge about what is happening in the area of standards, to keep abreast of developments in the field and to understand who the major players are in order to provide a thorough professional service to her clients. The acceptance of single or interoperable\(^5\) standards throughout the world will increasingly let one part of digital technology talk to the others, thus facilitating the identification and discoverability of content, the rights associated with its use and the context to which it must be attached in order to make sense to an audience. Standards facilitate transactions in digital media and the sourcing of wider markets for digital and digitally transmitted content.

A short selection of organisational committees working on standards along with details of where to seek further information follows. Such committees, comprised of stakeholders in the digital technology industries (users and developers) are looking at the problems of digitisation—interoperability, scalability,\(^6\) digital rights management—and are actively engaged in solving them. I urge fellow editors to keep in touch with the listed websites, and to familiarise themselves with developments. Here I provide examples of three organisations that I think are of particular relevance to editors, but a review of their websites will lead to other related standards, organisations and committees.

**Open eBook Forum**

The Open eBook Forum describes itself as:

... an association of hardware and software companies, publishers, authors and users of electronic books and related organizations whose goals are to establish common specifications for electronic book systems, applications and products that will benefit creators of content, makers of reading systems and, most importantly, consumers, helping to catalyze the adoption of electronic books ... (Cope & Freeman 2001, p. 33).

This forum promotes electronic book publishing by developing and lobbying for the acceptance of standard technologies, encourages development of interoperable ebook related systems and organises demonstrations of new technologies. As well, it fosters equity of access regardless of language, culture, reading and learning styles or individual ability. Further information can be obtained from: www.openebook.org.

**Open Digital Rights Language Initiative**

The Open Digital Rights Language Initiative was established to provide the semantics for digital rights management. ‘ODRL is a vocabulary for the expression of terms and conditions over digital content including permissions, constraints, obligations and agreements with rights holders’ (Cope & Freeman 2001, p. 44). It

---

\(^5\) Interoperability—"the consumer should be able to access content from different sources and in different formats without needing different hardware or software to do so" (Bolick 2001) in Laidler 2001, p. 52.

\(^6\) Scalability—a term with credence in the industry but infrequently defined. If a technology is ‘scalable’ it has been developed with an inbuilt ability that enables it to move from a small scale to large scale. For example, a content management system built to service the needs of one organisation is scalable if it can also service the needs of multiple organisations.
is intended that the language (ODRL) will be made available through an appropriate, open standards organisation, allowing a public process for the maintenance of this specification. For further information see: www.odrl.net.

**Digital Object Identification**

One of the most exciting developments in standards and their implementation over the past few years has been that of digital object identifiers (DOIs). One such project has been undertaken by the International DOI Foundation, a not-for-profit organisation, which has attempted to solve the problems of digital rights management through the use of registered, individual object identifiers (alpha numeric strings) that permanently identify, locate and contextualise entities (or chunks of content). Implementation is currently underway with the establishment of a series of DOI agencies worldwide through which entities can be registered and permanently identified. This allows the user to locate and retrieve content along with the metadata that uniquely identifies all rights and context pertaining to it. Initial uptake has been for journal articles, with over three million DOIs having been created by 200 international scientific journal publishers (Sidman 2003), but other digital publications are also beginning to be identified by their unique DOI.

The US DOI Agency, Content Directions Inc., has announced that McGraw-Hill has recently registered DOIs for many of their publications and are ‘placing DOIs into all their major press releases’ (Sidman 2003). In Australia, Copyright Agency Limited have added to their charter in the area of rights protection and collection agency the responsibilities of a DOI agency, and are currently in the process of rolling out the DOI. Further information is available at www.doi.org (I thoroughly recommend downloading the regularly updated DOI Handbook from this site) and www.copyright.com.au.

**Editors of the 21st Century**

During research carried out over the past twelve months under the C-2-C Research Module looking at industry education and training, it was concluded that most people employed in the traditional supply chain lack business skills (Ziguras et al. 2002). Printers, for example, have learned their skills via trade schools and apprenticeships, becoming crafts people, but without specific training focussed on the skills required to run their own business. We know that editors, traditionally trained in-house via a mentoring system, have been in a similar position. Having typically found their workplace in the world of the contract freelancer, they have often felt poorly equipped to protect themselves from the ravages of ongoing business costs. Increasingly though, editors are learning to manage their businesses as freelancers (Ottmar 2003). There is a need also for those working within publishing houses to become acquainted with the business management skills required to publish commercially successful books. Despite the apparent dominance of the book publishing industry by multi-national, US and European owned conglomerates (Wilding 2000), increasingly, small and self-publishers are entering the market. The Internet is assisting them to gain exposure, and editors who have experience and who keep up with industry changes are ideally placed to support publishers and authors in understanding the possibilities that new technologies might generate for them. As predicted by Jason Epstein:
In the technological future, readership of such books will expand as authors, with the help of editors and publicists, and no longer constrained by the turnover requirements of a physical marketplace, present their work directly to readers over the World Wide Web, where word of mouth is instantaneous, credible, and widespread … (Epstein 2001, p. 108, my emphasis).

The 21st century editor brings to the publishing supply chain traditional editorial skills, electronic editorial skills and her small-business experience. Add to this an ability to negotiate technological change and provide advice to clients, whether publishing houses or self-publishing authors, and I predict a rosy and increasingly important and visible future for editors.

References


Lane, Simon 2002. ‘A Digital Printer’s Perspective’ in Cope & Mason (eds), New Markets for Printed Books, Common Ground, Altona.


Sidman, David 2003. ‘Recent Acceleration of DOI Adoption’, Information Release emailed 13 May by Content Directions Inc.


Bionote

Robin Freeman has fifteen years experience editing and publishing general trade and educational titles. For the past three years she has developed a list of trade and academic titles at Common Ground as well as being practically involved in the groundbreaking research into the Australian book production industry as a researcher, writer and editor with the C-2-C Project. She is currently completing a research MA with the School of Communication and Creative Arts at Deakin University.