
The Predictive Value of Disruptive Technology Theory for Digital Publishing in the Traditional Publishing Environment: A South African Case Study

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Digital technologies such as e-books are predicted to have a profound effect on publishing, but they are yet to have a serious impact on the industry. This paper considers the implications of digitization and digital publishing for the trade book publishing industry in South Africa. Through surveys and interviews with South African trade publishers, a picture was developed of the current state of digital publishing. This state is evaluated using the context and predictive value of disruptive technology theory. In this case, digital technology is seen as a disruptive technology in the traditional print publishing environment. As the paper shows, the problems that publishers are experiencing are characteristic of industries faced with disruptive technology. The principles of disruptive technology can therefore be applied to develop recommendations and suggest strategies for publishers planning to venture into digital publishing. Although the focus of the research was on South African trade publishers, the results and recommendations that emerged from the research can be applied to different sectors of publishing as well as to the wider international publishing industry.

Keywords: digital publishing, disruptive technology, digitization, e-books, South Africa

INTRODUCTION

Digital technologies such as e-books are predicted to have a profound effect on publishing, but they are yet to have a serious impact on the industry. The hype surrounding e-books and digital publishing has come, gone, and returned with renewed vigour since the first e-book

was published in 1971 by Project Gutenberg. The initial hype that surrounded digital publishing peaked during the late 1990s, a time when venture capital was readily available and hopes for Internet-based business taking off were very high. Equally high expectations for e-books prevailed for a few years, accentuated by success stories that spawned predictions about the impending boom of e-books and the accompanying death of print books. For instance, PricewaterhouseCoopers predicted that by 2004, one-sixth of the publishing industry would consist of e-books while Arthur Andersen predicted a market share about half that size.¹ It soon became apparent that these speculations were grossly optimistic, and in 2008 Gordon, Kung, and Dyck came to the more realistic conclusion that e-books would not exceed 10 to 30 per cent of the total publishing market over the next decade.²

Compared to the optimism of the late 1990s, the early 2000s brought an emerging conservatism, concern, and cynicism. With the burst of the dot-com bubble came the realization that the e-book market had failed to grow as expected. By 2003, many publishers had abandoned their short-lived digital imprints. By 2004, total e-book revenue was less than a tenth of what had been predicted three years earlier.³

Fast-forward a few years, and we are today again faced with a high level of e-book optimism. In July 2010, Amazon revealed that the company was selling 180 e-books for every printed book.⁴ Not long after that, the publishing industry was shocked at the news that the e-book market had exceeded expectations and had reached one billion US dollars.⁵ Even before these figures were released, publishers like Simon & Schuster and Penguin Books USA and the bookseller Waterstones had reported significant growth in their e-book sales.⁶

Despite these promising reports, the future of digital publishing is still highly speculative: It is not clear when and to what extent publishers will move into digital publishing or if and when the market will truly embrace e-books. But whether or not e-books will eventually usurp printed books in the marketplace, publishers cannot afford to ignore the vast opportunities created by digital technology. Guenette, Tripp, and Golden believe that for publishers and their technology and service partners, the challenge of the next few years will be to invest wisely in technology and process improvement while simultaneously being aggressive about pursuing new business models.⁷ In such a speculative environment, research is needed to provide direction in the transitional phase between traditional

and digital publishing. Tian comments of the Australian book publishing industry: ‘There is no dominant trend in digital publishing nor any detailed analysis of its limitations and challenges for the Australian book publishing industry.’⁸ There are thus no clear guidelines for the selection or implementation of the significant new technologies that are available to publishers. Moreover, although business models will need to be revised to encompass new value-adding processes as supply chains and value chains undergo change, there is still no consensus on the most suitable business model or framework for publishers.

This is even more true of the publishing industries in small countries. In South Africa, for instance, there has been next to no research in the field of digital publishing, and no standards for implementation exist. To fill this gap, research into this field was undertaken during the course of 2010 and 2011.⁹ The main objective of the research was to investigate the current state of digital publishing in the South African trade publishing industry. The focus was on the digital publishing strategies of South African trade publishers as well as the ways in which publishers are using Internet communications channels such as social networks in their businesses. The empirical research, conducted in 2011, employed a mixed-methodology approach that included an online survey of trade book publishers, which was reinforced by follow-up interviews with selected participants. The principles of disruptive technology theory served as a theoretical framework for the study.

DISRUPTIVE TECHNOLOGY

When one considers the changes necessitated by the digital developments in the publishing industry, it is instructive to consider digital publishing as a potential disruptive technology. Harvard Business School professor Clayton Christensen first coined the term ‘disruptive technology’ in his book *The Innovator’s Dilemma: When New Technologies Cause Great Firms to Fail*.¹⁰ Since publication, his book has sold over 200,000 copies and has become a favourite source for scholars researching a variety of diverse fields, including new product development, marketing, strategic planning, technology management, and any area of industry affected by changes in technology.¹¹

A disruptive technology is a technology that initially serves only a niche market but eventually displaces the current technology in the mainstream market.¹² Disruptive technologies initially underperform established ones

in serving the mainstream market, as they do not satisfy the minimum requirements that are most valued by mainstream customers.¹³ Over time, as research and development investments are made and technology matures, the performance of the disruptive technology improves to the point where it also can satisfy the requirements of the mainstream market. During this process, those firms that supported the disruptive technology—often new entrants—tend to displace incumbent firms that only supported the traditional technology. Therefore, disruptive technology often goes hand in hand with the displacement of established firms by new entrants. If we follow the logic of disruptive technology, we can theorize that digital publishing could prove so successful that traditional publishing houses lose their market dominance and even disappear.¹⁴ Mierzejewska proposes that disruptive technology theory can provide a valuable tool to evaluate the potential threat of new technologies to the publishing industry.¹⁵

Two factors that have been identified as pivotal to a company's ability to survive disruptive technology are the resource allocation process and the 'RPV' framework—organizational resources, processes, and values.¹⁶ Using these parameters as a basis, this research sought to reconcile publishers' digital publishing approaches with the predictions found in disruptive technology theory.

THE STATE OF DIGITAL PUBLISHING IN SOUTH AFRICA

The lack of useful and reliable statistical data on the South African book publishing industry has been noted by various academics and other commentators.¹⁷ Due to a lack of standardized data, digital publishing activities in South Africa are proving difficult to track. E-book markets are in a very early stage of development, making it difficult to compare this emerging segment with the overall publishing industry. A quick glance at the main local publishers' Web sites reveals just a few e-book initiatives, although greater strides have been made in the sectors of scholarly and reference publishing.

The Publishers' Association of South Africa (PASA), in their annual statistical survey of the publishing industry, included for the first time in 2011 data on the sales of electronic books (in terms of the number of titles made available, the number of paid downloads, and the revenue generated by these sales).¹⁸ According to this data, which was probably under-reported, the total net turnover of the general trade e-book industry in

South Africa was only R 102,000 in 2011. In 2012, the figure grew to R 1,036,000.¹⁹ To place these very small figures in perspective, the total net turnover for general print books in 2011 was more than R 400 million and in 2012 nearly R 480 million (comprising all local trade titles including religious titles). The report also showed that only 111 locally produced e-books were available for downloading and that 896 paid downloads had been recorded for 2011, which suggests an average of eight downloads per title.²⁰

As these figures show, compared to the international e-book market, the South African e-book market is in an embryonic stage. At this stage, the US market is unequivocally dominant, with an e-book market worth \$6 billion. But a high rate of growth is expected in the EMEA areas (Europe, the Middle East, and Africa): Forecasts of 51 per cent compound annual growth have been made.²¹ South Africa's tiered economy and adolescent infrastructure add more levels of complication to the mix than are faced in First World countries. There are very low Internet access rates among the majority of the population, and where it is accessible, broadband Internet is very expensive and slow.²² Considering these substantial barriers to market penetration, it is hardly surprising that local publishers have been more hesitant than their international counterparts to jump on the digital bandwagon.

Empirical research confirmed that digital publishing in the South African trade publishing industry is in its infancy. A survey was conducted among trade publishers to establish the status of the industry at that time (2011). The survey respondents consisted of a sample of thirteen trade publishers that were already engaged in, or planning to venture into, digital publishing soon after 2010. The sample included incumbent firms (well-established, traditional print publishers) and new firms (recent small publishing start-ups), and represents at least two-thirds of the trade publishing industry in South Africa.

The data revealed that 62 per cent of respondents were small- to medium-sized publishers with between one and twenty full-time employees. The average number of e-books published annually by publishers was thirty-nine; however, this figure is disproportionately influenced by three large, established publishers that each publish close to one hundred electronic titles annually. Disregarding these large publishers' electronic lists leaves an average of fifteen e-books annually for each of the seven remaining publishers. This comes to 105 titles—a figure that correlates

closely with the PASA reporting figures of 111 local e-books available for download. The PASA's 2011 report found that this number had grown exponentially, to 860 titles available for download, and the report speculated that the conversion of backlist titles to electronic form accounted for this increase.²³ Improved awareness and reporting may also have accounted for some of the increase.

The fact that the majority of publishers that currently publish e-books are small- to medium-sized companies confirms the finding in the general literature that the size of a company may be negatively related to disruptive innovation.²⁴ This is only to be expected, as the size of a publisher is inherently linked to the company's processes, resources, and strategies. Larger companies are hampered by their more conservative and less flexible operating procedures, as well as the expectations of their stakeholders and existing customers. Their resource flow is in a sense controlled by current customers and investors.²⁵ To adopt a new technology or to venture into a new market, they first have to navigate a complex corporate structure and hierarchy in order to even start the process of publishing for a new market. Small- to medium-sized publishers are not faced with these problems, as they have the flexibility to act more intuitively in making business decisions, unhampered by organizational inertia or bureaucracy.

Another key finding was that the majority of South African publishers tend to outsource e-book-specific processes such as production (e.g., converting files to EPUB or other formats) and electronic distribution. This shows that although smaller publishers have started publishing digitally, they are still not investing in establishing in-house resources to perform the new processes required. There is a clear lack of knowledge and skills available at present.

In terms of publishing categories, 80 per cent of the publishers surveyed published e-books exclusively for the trade market, while the other 20 per cent published for the educational, tertiary, and, especially, the professional market. However, as only trade publishers were included in the survey, this is not necessarily an accurate representation of what is published in the industry as a whole and can only represent the trade publishing sector. A cursory search on Amazon.com confirms the prevalence of e-books in the trade sector, including fiction categories of mystery, thrillers, romance, science fiction, literary fiction, and fantasy, and non-fiction categories such as science, travel, sports, self-help, history, and

reference. This is interesting to note, as it appears to contradict Overdorf and Barragree's hypothesis that professional and 'extractive' digital texts would be far more likely to have success in the e-book sector than the immersive texts of the trade market.²⁶ The reason for this discrepancy may lie in the specific nature of the economy and the dominance of educational (i.e., school book) publishing in South Africa. While the e-book market in South Africa remains a niche category, it will be mostly the affluent who form the market. A lack of resources and limited government investment in the educational sector at this time precludes mainstream implementation or adoption of the e-book medium. There are some private initiatives that are trying to make school books available in electronic formats, but until the reading devices (tablets and e-readers) can be affordably and reliably provided for learners, this format cannot be adopted in the mainstream educational market. Until widespread broadband Internet, e-books, and the necessary reading devices are available cheaply, it will not be wise of publishers to invest extensively in the educational and tertiary markets. In addition, educational publishers are more focused on implementing curriculum changes as the government runs through changes in pedagogical policies and philosophies.

Despite the tentative and experimental nature of current digital publishing initiatives, 50 per cent of publishers that had ventured into the digital realm were planning on publishing dual (print and digital) editions for all frontlist titles in the future. The remaining 50 per cent revealed that, on average, two-thirds of new titles would be considered for digital publication (some titles were considered unsuitable for publication in digital format). This should have a significant impact on digital publishing growth.

OPPORTUNITIES CREATED BY DIGITAL PUBLISHING

In light of the transition from traditional to digital-based processes, traditional publishing business models need to be revised to encompass new value-adding processes as supply chains and value chains undergo change.²⁷ The transition to a digital publishing business model can potentially disrupt marketing, production, and distribution processes—in both a positive and negative sense. Since there is a limited amount of information currently available on trends and digital implementation strategies in the publishing industry, there are no clear guidelines for publishers to follow in adapting their businesses to digital processes. It

is vital that publishers have a clear understanding of the opportunities and threats inherent in such a transition before attempting a digital publishing strategy.

The digitization of content across all levels of the publishing value chain can significantly streamline the publishing process. Today, content is often digitized from the very start of the editorial process right through to publication of the finished product. This shorter, simpler supply chain translates into lower costs across the board, and when printing costs are also eliminated, this can mean cost savings or potentially greater profits for publishers generally. Other costs tied to the physical product, such as warehousing and physical distribution, may also be reduced. And the damage to and depreciation of printed books is no longer an issue if e-books can be sold instead.

In terms of content, e-books do not have to be simple copies of print books, as the potential exists for greater flexibility and interactivity of content. If used to their full potential, such 'enhanced' e-books open up new levels of creativity and could lead to the production of new and interesting products and features, such as interactive children's books and maps. Even without such enhancements, e-books can easily be searched, annotated, and bookmarked, allowing for easy navigation.

Digital publishing also opens up a whole new world of marketing and distribution opportunities and the potential to reach new markets. The plethora of social networks and communication media available online provide a direct channel to target markets that were previously difficult to access. The habits and buying patterns of online users are easier to track, monitor, and predict, thus rendering markets much more accessible and sales forecasts more accurate.

BARRIERS TO DIGITAL PUBLISHING

The transition to a digital publishing model necessitates drastic changes to business strategies and operational models, which can be costly. Most significantly, new systems for e-book production, archiving, and distribution will need to be developed. E-book conversion will, at least in part, replace the printing process, and this is uncharted territory for most publishers. Extensive consultation and experimentation will be necessary to ensure success on this front. Although physical warehousing and distribution could become obsolete, electronic archiving is an enormous task that requires an excellent system in place to regulate and distribute

products efficiently and accurately. Preservation is also a concern, especially given the myriad formats available.

As a natural result of implementing new business processes, new resources will need to be acquired to enable the development and implementation of new systems that fit in with the new digital processes and business models. Existing staff might not have the necessary skill sets to operate in the new model and will need either intensive training or replacement.

Other factors that restrict the e-book market in South Africa, as elsewhere, and ensure that it remains a niche market at this time include the following:

- the problematic alignment of digital and traditional intellectual property rights, and the accompanying digital rights management (DRM) restrictions and expenses;
- the plethora of different e-book formats and reading devices, and confusion about which one to choose;
- the confusion around pricing models, as there is a lack of standards in pricing, and the complication of users expecting e-books to be cheap or even free; and
- readers' reluctance to move away from the printed book.

Until these issues are resolved, the market will remain too small to be truly mainstream or as lucrative as its current print counterpart, and this makes investing in digital publishing an uncertain venture with unpredictable returns. Publishers need to take note of these issues and do what they can to alleviate their possible effects on the market.

MAKING NECESSARY CHANGES

The survey of South African trade publishers tested to what extent respondents are experiencing and reacting to the opportunities and barriers to digital publishing, and how their processes are changing throughout the publishing process. It became apparent that South African publishers have not made significant adjustments to their business models to accommodate the changes necessitated by digital processes. Although publishers have digitized many of their processes, they have invested very little in e-books and have not taken advantage of opportunities to make changes to each step in the publishing value chain.

Research and development

Publishers identified market research and new product development as one of the publishing processes that is undergoing the most change with digital publishing and the opportunities afforded by Internet communication channels. Social media has enabled publishers to reach a wider audience and allows them to access and investigate niche markets directly. Through Web sites and applications like Twitter and Facebook, publishers now have the ability to access, monitor, and predict markets much more accurately than before. This opens up opportunities for new sales channels, intermediaries, and requests from customers.²⁸

Research and development (R&D) is naturally also pivotal in the creation and technical development of e-books. The potential for creative content, flexibility, and interactivity of e-books is vast.²⁹ The majority of publishers surveyed simply convert existing text to e-books in either PDF or EPUB format—basically a print book in a digital wrapping that takes no advantage of animation, sound, or interactivity. Only two companies of those surveyed indicated that they use other formats, such as the Kindle format. Publishers need to engage in further R&D to find out what level of enhanced e-books the market is ready for—for example, interactive books that let children colour in story characters or swipe words to hear them said aloud.³⁰ Since the conclusion of the survey, only two of the trade publishers surveyed have released e-book apps for the iPad with enhancements and interactive features.

Commissioning

The empirical research found that publishers experienced the fewest changes in the commissioning phase of the publishing process. Survey respondents and interviewees felt that content creation and creative input remain largely unaltered by digital technology. In fact, more than half—that is, seven of the thirteen publishers surveyed—indicated that the commissioning process had not been changed by digital technology at all. Commissioning is, however, undeniably tied in with R&D activities, which, according to the same respondents, have changed significantly: Ten of thirteen publishers identified R&D as the stage of the publishing process that has undergone the most change in the shift to digital publishing processes.

Moreover, commissioning authors who have an established presence on the Internet are guaranteed several channels of communication

(through Twitter and Facebook followers, for example) and publicity that will enhance the book-marketing process. The Internet has become a platform not just for the marketing and distribution of content but also for readers to communicate and interact with publishers, other trade stakeholders, and each other, and, critically, to wield an ever-increasing influence.³¹ Authors also have the power to cultivate a fan base online even before publishing anything. One publisher elaborated on this potential and explained that the Internet now plays a great role in discovering and selecting authors. Publishers can gain a great deal by headhunting for such authors before they decide to self-publish.

A positive attitude toward e-books emerged from the empirical research in the sense that the majority of publishers consider publishing their titles in digital form during the very earliest stages of the publishing process. This is important to note as it illustrates an innovative attitude on the publishers' part toward books: They are treated as content first and as form second. Publishers should strive to create unique, quality content for the electronic format; once the readers are open to content, the format and other barriers associated with e-reading should take a back seat. Purcell believes that focusing relentlessly on e-book formats will cripple strategic thinking in the publishing industry and publishers might lose sight of the essence of the book: content.³² The research showed that only 20 per cent of South African e-book publishers develop print books first and then consider converting the printed product to digital format too.

Editorial

Five of thirteen publishers felt that the editorial process was one of the processes that has undergone the least change in the move to digital publishing and digitization. A further six indicated that this stage remains completely unaltered by digitization. However, during follow-up interviews, publishers indicated that editors have gradually started working more and more on screen as technology has improved over the years. This has been an ongoing process, as computer software improves all the time. Publishers are now digitizing content as early as possible in the process. This change has been incremental rather than disruptive.

Managerial aspects of the commissioning and editorial processes have been digitized for many years—for example, freelancer and supplier communication, payments and invoicing, and budget control. In terms

of communication between authors, editors, and other role players involved in the editorial process, Internet communication channels provide a whole new range of methods for communication, uninhibited by physical location.

Marketing

The marketing process of publishing is where publishers are making the most changes to move toward a digital publishing business model. Although new systems are not in full swing yet, publishers are experimenting with innovative new ways to market books through Internet communication channels and Web tools. Eight of the publishers surveyed indicated that the marketing process was the stage that had undergone the most change in the move to digitization. Similarly, more than half of the publishers used their Web sites as well as social-networking sites Facebook and Twitter in their marketing strategies. All of the publishers surveyed had active Web sites. However, the reported lack of impact these social media activities have had on their sales suggests that publishers are not making the most of them. Only three of the publishers indicated that the use of Internet communication channels in their marketing strategies had significantly improved sales. The remaining publishers felt that it was too soon to tell, that they did not know, or that they found these methods made no difference to sales at all. This might be due to a lack of technical or e-marketing skills. Publishers also tend to view e-marketing simply as a supplement to traditional print marketing and the work done by distributors and reps, instead of embracing it as an entirely new method requiring new approaches and skills.

The literature emphasizes the potential of changing marketing activities and techniques with Internet communication channels. Publishers can become their own booksellers via the Web, while authors can aid publishers in marketing their titles online, for instance by blogging, tweeting, or advertising on Facebook.³³ If used strategically, this blurring of boundaries can help identify and access new markets directly.

Production

The production process is the stage of the publishing process that would naturally undergo the most obvious changes in a switch to digital publishing. Ten of thirteen publishers surveyed confirmed that the production process has undergone significant change in the move to digital

publishing. The remaining three publishers in the sample are those publishers that had at the time not yet ventured into digital publishing.

Production is one of the publishing stages where publishers can save the most money, as digital publishing eliminates printing, which is usually the most expensive part of the publishing process.³⁴ Instead of sending print-ready files to printers, book content is now only—or also, in the case of dual publishing—converted to an e-book format.

The research showed that most publishers use a combination of external and internal resources to convert files to e-books. Four of the ten publishers actively producing e-books indicated that they used external publishing consultants or specialists to handle e-book conversion, whereas three others had their own in-house designers and typesetters for this task. The remaining publishers in the sample indicated that they used a combination of both methods. In cases of simple conversions (e.g., PDF e-books), publishers are comfortable converting files in-house. But with more complicated formats like EPUB, the technical conversion work is often outsourced. It emerged that the decision to outsource these functions is mainly due to a lack of in-house resources and the associated digital investment that would come with acquiring such resources. This means that in most cases publishers will be completely dependent on external parties to convert content into an e-book format. At the moment, very few South African publishers understand the value of developing e-books in XML as a base format. Only two of the thirteen publishers surveyed indicated that they were exploring the benefits of XML and were attempting to bring the format into the process as early on as possible.

Having XML e-book archives and processes would allow for multi-channel publishing and would afford the publisher more platform options as e-reading devices and software change over time. Instead of just sending off files for electronic conversion, exactly as one would send a book to print, publishers should introduce XML into the process as early as possible to allow themselves more production flexibility, as XML enables the sharing of documents in different formats across information systems and the Internet.

The publishers' survey revealed that most publishers still prefer to keep the digital conversion process external to the company, preferring to leave the technical aspects of e-book production to digital-publishing specialists. Six of the ten e-book publishers indicated that they prefer to keep the technical aspects of e-book conversion external.

Naturally, the skill level and technical know-how of staff play a pivotal role in a publisher's decision to outsource production processes. This, again, is inextricably linked to the size of the publisher. A small publisher is less likely to have a dedicated technical design and production department than a large, resource-rich publisher. Only two of the ten e-book publishers have such a dedicated department responsible for converting digital books, and only one publisher in the sample indicated that they were considering training current staff to take on technical roles in future.

Distribution

Tian is of the opinion that publishers have accepted that digital publishing distribution channels are changing drastically and are making use of these new channels to reduce distribution costs.³⁵ Similarly, Carreiro argues that Internet communication channels have freed the publishing distribution model from the 'shackles' of print and paper.³⁶ The publishing industry's traditional supply chain can now be faster and shorter, resulting in decreased costs and greater returns for publishers and authors. However, the publisher survey revealed that very few South African trade publishers have made full use of the distribution opportunities inherent in digital publishing and the Internet.³⁷

In terms of resources, the survey revealed that South African publishers use a combination of external distributors and internal methods to circulate their digital books. At the time of the survey (2011), very few publishers had e-books available for sale on their Web sites, and this is still the case. One of the greatest advantages of Internet communication channels is the opportunity to access clients directly, cutting out the middle man and the associated discounts that physical retailers demand.³⁸

Arthur Attwell, a South African entrepreneur developing innovative DRM solutions, sees the fragmented e-book distribution platform in South Africa as a barrier to market growth.³⁹ At the time of the survey, very few South African e-book distribution channels existed. Since then the situation has improved greatly as domestic sites such as Little White Bakkie, Loot, and kalahari.com increased and improved their local digital lists, and the largest local trade bookseller, Exclusive Books, has launched an e-book store. Even though these are steps in the right direction, there is still no one-stop shop that could serve as the South African equivalent of Amazon.com. Although Kalahari does come close, Amazon's reach and its Kindle hardware and format is still unparalleled.

Mussinelli points out the value of national distribution platforms through which publishers can combine their strengths to distribute e-books.⁴⁰ In some countries with small e-book markets similar to South Africa, such as Spain and Italy, the e-book market is being driven by a few small and medium sized publishers who have taken this approach and are pooling their digital distribution efforts on a national platform that attracts readers to one centralized location to buy books. This has not yet been attempted in South Africa.

MANAGING DISRUPTIVE TECHNOLOGY IN THE PUBLISHING INDUSTRY

The literature review and empirical research confirmed that digitization and digital publishing can be considered a disruptive technology in the context of the publishing industry. The recommendations and lessons learned from disruptive technology theory were used to develop a set of objectives to serve as guidelines for publishers venturing into digital publishing.

The literature provides recommendations and guidance for companies implementing disruptive technology in their businesses. Christensen, for instance, identifies two factors that play vital roles in a company's ability to implement and survive technology disruption: the resource allocation process, and the 'RPV' framework (organizational resources, processes, and values). He further highlights the importance of 'customer competence'—knowing the market intimately and being proactive enough to sense when the needs of the market are changing as a result of a new technology.⁴¹

Other authors agree with these factors, and all recommendations and suggestions found in the literature may be connected to resource allocation, business processes and values, and market competence. Dan and Chieh explore the related critical success factors of implementing disruptive technology from a company's internal perspective: the business model and organizational challenges.⁴² They identify the following aspects and organizational challenges that are particularly relevant within the context of the publishing industry: leadership, organizational structure and culture, the new product development process, employees, and spin-off or ambidextrous organizations. These aspects can be combined to form a model of recommendations and suggestions for South African publishers going forward with digital publishing.

The opportunities and advantages inherent in a move to a digital publishing process relate mainly to the shortened supply chain that would result from digitization. In the literature, the following areas of business are identified as likely to be the most affected by the move to a digital publishing value chain:

- Production and distribution processes are potentially much cheaper, as digital publishing eliminates warehousing and shipping, resulting in a shortened supply chain. These changes will necessitate major changes to production and distribution processes and workflows, and will require investment and resources.
- Marketing, R&D, and commissioning processes will see significant changes as new opportunities for sales channels, intermediaries, and direct contact with customers abound. Investment and resources are essential to developing new systems in these areas.⁴³

It emerged from the survey that publishers have not invested in restructuring production and distribution processes. They have not yet made significant adjustments to their business models to accommodate the changes necessitated by the digital process. Although publishers have digitized many of their processes—booking freelancers, making royalty payments, capturing orders, budget control, and so forth—they have invested very little in e-books and have not taken advantage of opportunities to make changes to each step in the publishing value chain. They have started experimenting with digitization in the marketing, R&D, and commissioning phases but have not made significant changes to their business processes in the two stages that need to undergo the most structural change in the move to digital publishing: production and distribution. In terms of human resources, they have neither upgraded the skills of current staff nor acquired specialists to deal with digital aspects in-house. Dhillon, Coss, and Hackney state that success in the face of disruptive technology will be defined by the ability of a company to allocate and manage resources successfully.⁴⁴ In order to successfully implement digital publishing processes, publishers have to understand what resources they need (and lack) and how to allocate them efficiently.

In addition to RPV, Christensen also highlights ‘customer competence’.⁴⁵ This refers to a company’s ability to successfully address the market for which the new technology is intended, and its importance is echoed throughout the literature. In the publishing industry, this entails

innovative e-marketing strategies, which once again brings us back to human resources. Traditional marketing experts in publishing houses are probably not schooled in e-marketing to the degree necessary to remain competitive in the digital marketplace. In the case of e-books, the scenario is yet more complicated, as market uptake is still small. Christensen advises companies to engage in 'agnostic marketing': 'Market under the explicit assumption that no one can know whether, how, or in what quantities a disruptive product can or will be used before they have experienced using it.'⁴⁶ Thus, in order to foster a digital reading culture, publishers should actively promote the use of e-books in addition to specific titles.

The fact that publishers have not allocated resources where they are needed and have not restructured business processes reflects their values and organizational culture. Survey respondents were tested on their attitudes and perceptions about current digital publishing activities and the future of the industry. This was done under the assumption that respondents' attitudes and values would invariably trickle down to the rest of their organizations and ultimately determine organizational culture. The results revealed great uncertainty on matters of e-book sales performance and future market share.

Autonomous spin-offs or divisions

It is recommended that publishers create new organizational structures within corporate boundaries in which new processes can be developed.⁴⁷ Creating a separate, autonomous division responsible for digital activities in traditional publishing companies is an excellent approach to managing digital publishing. Such a division should be small enough so that smaller revenues and profits are acceptable, and so that it remains unhindered by the demands of existing customers and investors. It is important for publishers to consider their internal structure while moving toward a digital publishing environment. Increasingly this has led to the creation of digital divisions within companies, frequently under the control of digital directors.⁴⁸

This approach has already been taken by one of the participant publishers, which launched an experimental digital imprint in 2012. An autonomous imprint that specializes in digital publications is a safe—or safer—way to experiment with digital markets while not interfering

with the larger goals and financial expectations of a publisher's mainstream print publications.

Create a core team to collect disruptive ideas and mould them into propositions

Many established employees and middle management are usually resistant to change, as it potentially endangers their positions and undermines their skill sets.⁴⁹ They are trained to serve established markets and might not understand the value of new technology. This is why it is imperative to appoint a fresh team to collect digital publishing ideas and to draw up proposals and implementation plans. Team members should be innovative risk-takers with digital publishing expertise and optimistic attitudes to the e-book industry.

One option is to appoint new staff members with specific skill sets suitable for the job at hand. Alternatively, innovative team members already in the company could be trained to take on new responsibilities. Both approaches have their advantages. Using existing employees would be advantageous since they would already be familiar with the company's processes, vision, and culture, and would only require technical training on digital aspects. However, this familiarity with organizational culture could turn out to be a double-edged sword, as these employees might be resistant to change regardless of new skill sets attained through training. Unless these employees can be trusted to be flexible, free thinkers willing to change their mindsets and set free their approaches from the traditional organizational culture, this approach should be avoided. It is more advantageous to recruit new employees with no ties to the organization, who would be free to work at implementing digital publishing. While some South African publishing companies have opted to bring in experts, to date most appear to be adding digital publishing to the workload and skills set of existing employees. Unfortunately, this is taking place in a context where there is little specialized training available, so employees are being expected to learn on the job.

Employ an informal management style

Publishers should allow managers in charge of digital publishing teams to proceed intuitively rather than having to be backed up by careful research and analysis. Digital publishing is in its infancy, and—especially

in South Africa—there is no definitive market research to rely on when making decisions at this stage.

Digital publishing teams need the freedom to make decisions based on instinct and conjecture in an experimental fashion. Christensen calls this ‘discovery-driven planning,’ and says it is a vital prerequisite for the creative, successful implementation of a disruptive technology.⁵⁰ Publishing is, as most industries are, traditionally an economy-driven industry. Organizational strategies are based on careful forecasts and hard, factual data on return on investment. This naturally results in rigid organizational processes and management styles. If digital publishing teams are expected to flourish, they need to be free of micromanagement and should be allowed to explore their creativity. In publishing houses that are tied to the concept of making a certain gross profit margin, this ‘discovery-driven’ management approach would be very difficult to implement.

Design long-term plans

The research shows that a disruptive technology does not disrupt a market overnight. For example, video cassette recorders took twenty-one years to achieve a high level of market penetration.⁵¹ The rate of change we can expect in the publishing industry over the next few years depends on a variety of factors. This might take a very long time. Publishers should be patient and expect the e-book market to produce a return on investment only after a significant amount of time.

Publishers should thus develop long-term digital strategies that are not dependent on immediate or short-term returns on investment. Strategies should not be formulaic but rather experimental and daring. Publishers should strive to reach new markets and to investigate several different avenues of digital publishing to find what works best for the company. Most South African publishers have started experimenting with digital marketing to some extent through social media. Some are using trailers to market forthcoming titles, and others have brought out enhanced e-books that benefit from the unique possibilities inherent in the e-book medium.

Publishers will also need to ensure that the company and its employees understand that digital publishing is a real part of their business in the long term and not just a sideline project. This will incentivize employees to change their attitudes, to learn new skills to keep up with technology, and to make a success of digital publishing activities.

Keep resources in reserve

Inherent in the assumption that publishers will develop long-term strategies is the idea that they will also need to make sure that they have enough resources in reserve to facilitate their strategies over the long term. Publishers need to invest enough time, money, and resources in digital publishing to sustain their digital publishing activities until the market breaks even, when e-books meet the requirements of the mainstream market and become a lucrative source of revenue.

Prepare for organizational change

The organizational structure of a company determines if and how disruptive technology is implemented. The number and size of business units needed to facilitate development of disruptive technology is an important strategic consideration.⁵²

Organizational inertia is usually problematic when a disruptive technology is introduced in a company. Deeply entrenched values and habits need to be unlearned; out with the old, in with the new. Of course some integral parts of the culture should be preserved and valued, such as entrepreneurship, risk taking, flexibility, and creativity.

It is incumbent on senior management to initiate a transformation of culture within the book publishing industry, as there are many instances where traditional culture is firmly entrenched to the detriment of progress. Organizational culture is critical to the process of change.

Cater to existing and new customers equally

The literature advises that businesses should not ignore customers, current or potential, and should identify the drivers of the future that emerge when the customers' environment changes. This sensitivity to the needs of customers is what Christensen calls 'customer competence,' and it needs to underpin everything that a publisher does.⁵³

A mainstream customer orientation and an emerging customer orientation can co-exist. Publishers should develop techniques to understand new customers' needs. A 'new' customer in this sense is any reader who buys an e-book. Such a customer will have different expectations and needs than a reader engaged in the traditional print reading experience. These needs and expectations will usually relate to technical issues such as the hardware and software used, but they could also relate to the content that readers prefer to read in a digital format.

Dan and Chieh argue that gathering information on only mainstream customers' needs and responding only to such needs is detrimental to implementing disruptive technology, whereas an orientation toward small but emerging customer segments might aid in the development of such technologies.⁵⁴ With Internet communication channels, publishers have the opportunity to access new niche markets that they were unable to monitor before. Publishers need to engage in extensive R&D, making full use of social media and other communication channels that now enable them to monitor and understand the needs of customers, both existing and emerging.

Analyse trends in customer behaviour

Publishers need to take heed of the challenges and issues facing market acceptance of e-books, which will ultimately determine when e-books are accepted in the mainstream market. Publishers should keep a close eye on the progress of e-reading devices, formats, DRM issues, and pricing issues to judge accurately when the outstanding requirements have been met. Once functional requirements have been met with dedicated e-reading devices, it will be time to look progressively to reliability, convenience, and price. The key advice is to start simply and with a low price point—then look for a migration path to the mainstream market.⁵⁵

Exploit the technology's unique attributes

The temptation exists for publishers to take the quickest route to digitization. Many publishers create digital versions of print books that are exactly the same as the print book, usually in PDF format. In so doing, they are not exploiting the interactive, innovative possibilities that the digital medium offers but are simply producing e-books only to meet the product and service requirements of the mainstream print market. E-books have the potential to include features such as search and cross-reference functions, hypertext links, bookmarks, annotations, highlights, multimedia objects, and interactive tools.⁵⁶ Publishers should strive to come up with creative new ways to use the capabilities of e-books in order to enhance content.

One publisher that took part in the survey has started publishing highly illustrated art e-books for the iPad since the conclusion of the survey. Others could follow this example and experiment with the different formats in the marketplace. Good practice would be to develop and

archive e-books in XML format to allow publishers more production flexibility, as XML enables the sharing of documents in different formats across information systems and the Internet.

Engage in open innovation

Publishers should explore shared-stake ventures, joint ventures, and joint acquisitions of resources that would be well-placed and suited to enrich them in the face of digital publishing.

Christensen and Raynor identify acquiring a new organization whose processes and values match the 'required' task as one of the most efficient ways to implement a disruptive technology in existing businesses.⁵⁷ In the case of digital publishing, a traditional publisher would benefit from acquiring a partner with a strong foothold in the digital market. For example, a joint venture with a company that has experience distributing products through various digital distribution channels would bring valuable knowledge, contacts, and experience to a publisher's digital publishing process. And the company that specializes in online content delivery has just as much to gain—in terms of new customers and sources of revenue—from partnering with a traditional publishing company.

Assume an international perspective

Creating disruptive innovations nearly always requires an international perspective.⁵⁸ One of the most significant advantages of digital publishing and e-books is the portability, ease of access, and boundless distribution possibilities that naturally follow when a product exists in cyberspace. Publishers no longer need be dependent on their distribution agents for retail, as the Internet offers an international ocean of e-book vendors that have no restrictions on shelf space. The Internet also allows access to an endless pool of consumers in the international sphere that can be directly accessed through e-marketing and distribution strategies.

These recommendations are all brought together in the diagram in Figure 1. All recommendations and actions should take place against the backdrop of publishers' resources, values, and processes.

CONCLUSION

Implementing digital publishing and digitizing processes could result in a shorter publishing value chain. This would afford publishers tighter control over projects and budgets. Adjusting their business models to

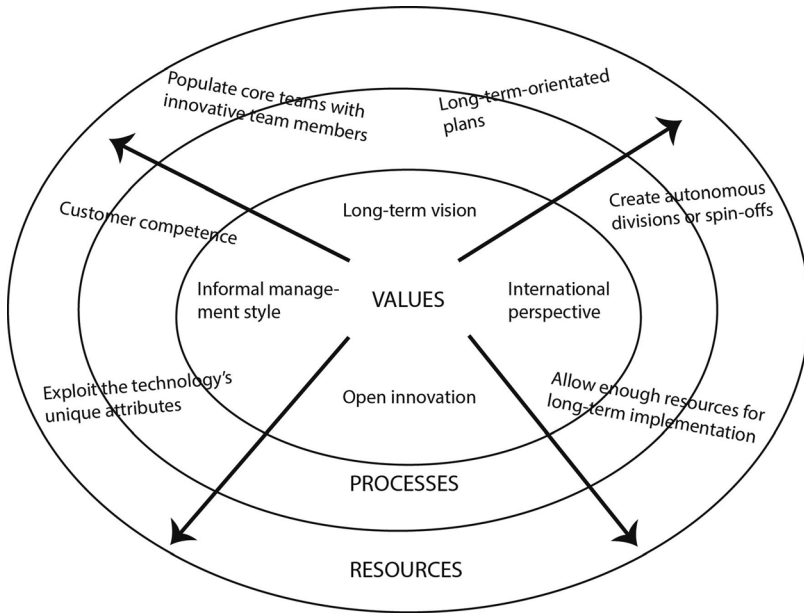


FIGURE 1. Recommendations for publishers' digital publishing strategies

keep these processes in house would be highly advantageous to publishers if the e-book market grows significantly, as most publishers believe it will. Not only would they save on production, distribution, and technical costs, but being involved in the entire digital publishing process would enable publishers to know their products and the market on a much more intimate level than at present—leading to Christensen's 'customer competence.'

The research revealed that most South African e-book publishers are not yet reaping the benefits of a shorter publishing value chain. The initial cost of acquiring new resources to shorten the supply chain would be very high as it would entail much training, new staff, and implementing a new business model. Understandably, most publishers are hesitant to do this until the future market share of e-books becomes less of a gamble. The survey and interviews revealed that the majority of South African e-book publishers continue, and prefer, to outsource most production and distribution processes, and are not profiting from the marketing opportunities as they could be.

Fifty per cent of publishers intend to dual publish all titles in future—that is publish new titles in both print and electronic format. The remaining publishers only publish a selection of their frontlists digitally, and they take a number of factors into consideration when deciding which titles to publish in digital form. The genre and market of the book is the most important of these considerations, while shelf life, printing costs, and DRM issues are considered unimportant in comparison. These criteria reinforce the belief that digital publishing decisions are economy driven. Publishers make decisions based on costs versus revenues.⁵⁹ Whether there is a significant market—which goes hand in hand with genre—is the most important factor in a publisher's decision to publish an e-book. DRM issues, printing costs, and shelf life are secondary considerations to the main question: Will the book sell, regardless of format?

Due to the current lack of a defined market, not to mention budgetary restrictions as book sales in general are down, publishers are clearly hesitant to invest heavily in digital publishing. As Attwell points out, the technical costs of setting up a digital publishing system might currently outweigh the potential sales of e-books.⁶⁰ Similarly, Gordon, Kung, and Dyck note that a traditional publishing company's change into an electronic publisher demands a huge reorganization effort and much investment.⁶¹ As long as digital publishing remains a niche market, the costs involved do not justify overturning publishers' existing business models entirely. Publishers are likely to invest enthusiastically in e-books only once the market grows to a significant size and scope.

However, disruptive technology theory provides us with many cautionary tales of businesses that did not invest in new technology for these very reasons. When the tipping point is reached and the digital publishing market becomes profitable, traditional publishers that did not invest in digital technologies will face the risk of being left behind. The recommendations formulated from disruptive technology theory can provide a useful how-to guide for publishers implementing and managing digital publishing in their business processes.

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NOTES

1. A. Humphreys, 'The Past, Present and Future of Immersive and Extractive Ebooks' (working paper, 2 December 2004), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1300567
2. L. C. Gordon, D. S. Kung, and H. Dyck, 'Strategic Use of E-Commerce in the Transformation of the Publishing Industry', *Communications of the IIMA* 8, 4 (2008): 65–78
3. Humphreys, 'The Past, Present and Future,' 5; N. Herther, 'The E-Book Industry Today: A Bumpy Road Becomes an Evolutionary Path to Market Maturity,' *The Electronic Library* 23, 1 (2005): 45–53
4. D. Teather, 'Amazon's Ebook Milestone: Digital Sales Outstrip Hardbacks for First Time in US,' *Guardian* (20 July 2010), available at: <http://www.theguardian.com/books/2010/jul/20/amazon-ebook-digital-sales-hardbacks-us>
5. P. Gobry, 'Who Says Folks Don't Read Anymore? Ebook Market Reaches \$1 Billion,' *Business Insider* (9 November 2010), available at <http://www.businessinsider.com/who-says-folks-dont-read-anymore-ebook-market-reaches-1-billion-2010-11>
6. E. Wyatt, 'Electronic Device Stirs Unease at Book Fair,' *New York Times* (2 June 2008), available at http://www.nytimes.com/glogin?URI=http://www.nytimes.com/2008/06/02/books/02bea.html&OQ=_rQ3Do&OP=9e6bfcdQ2FQ2B03VQ2BQ3FQ23VQ2BQ7CQ7CQ2B_VjhQ2BZo.beo0VQ2FQ2BQ2FAA@Q2BAEQ2BAQ2FQ2BQ3EoofbQ2BAQ2FQ3EnN4_Vjh
7. D. R. Guenette, B. Tripp, and K. Golden, *A Blueprint for Book Publishing Transformation: Seven Essential Processes to Re-Invent Publishing* (Outsell's Gilbane Group 2010), available at <http://www.aptaracorp.com/assets/resources/Outsell-Gilbane-BlueprintForPublishingReport-Oct2010.pdf>
8. X. Tian, 'Book Publishing in Australia: The Potential Impact of Digital Technologies on Business Models' (PhD thesis, RMIT University, Melbourne, Australia, 2008)

9. The full study may be found in S. Gaigher, 'Digital Publishing in the South African Trade Sub-sector: Lessons to Learn from Disruptive Technology' (unpublished MIS dissertation, University of Pretoria, 2013).
10. C. M. Christensen, *The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail* (Boston: Harvard Business School Press 1997)
11. E. Danneels, 'Disruptive Technology Reconsidered: A Critique and Research Agenda,' *Journal of Product Innovation Management* 21, 4 (2004): 246–58
12. Christensen, *The Innovator's Dilemma*
13. Danneels, 'Disruptive Technology Reconsidered'
14. R. Burk, 'E-Book Devices and the Marketplace: In Search of Customers,' *Library Hi-Tech* 19, 4 (2001): 325–31
15. B. Mierzejewska, *Barbarians at the Gate: Disruptive Innovation in Book Publishing* (Bern: Haupt Verlag 2008)
16. Danneels, 'Disruptive Technology Reconsidered'
17. F. Galloway and R. Venter, 'Innovative Tools for a Competitive Advantage in Publishing,' *Innovate* 3 (2009), available at <http://web.up.ac.za/sitefiles/file/44/2163/8121/Innovate%203/Inn%20obl34-36.pdf>
18. PASA, *Annual Book Publishing Industry Survey Report 2010* (Cape Town: Publishers' Association of South Africa 2011), available at: http://www.publishsa.co.za/downloads/industry-statistics/Survey_2010_Report.pdf
19. PASA, *Annual Book Publishing Industry Survey Report 2011* (Cape Town: Publishers' Association of South Africa 2012)
20. PASA, *Annual Book Publishing Industry Survey Report 2010*
21. Guenette, Tripp, and Golden, *A Blueprint for Book Publishing Transformation*
22. F. Rasool, 'E-Books Hit SA,' *IT Web* (12 March 2010), available at http://www.itweb.co.za/index.php?option=com_content&view=article&id=31258:ebooks-hit-sa&catid=147
23. PASA, *Annual Book Publishing Industry Survey Report 2011*
24. Christensen, *The Innovator's Dilemma*; Y. Dan and H. C. Chieh, *A Reflective Review of Disruptive Innovation Theory* (unpublished PICMET Proceedings, Cape Town, 27–31 July 2008); D. R. DeTienne and C. S. Koberg, 'The Impact of Environmental and Organizational Factors on Discontinuous Innovation within High-Technology Industries,' *Transactions on Engineering Management* 49, 4 (2002): 352–64
25. G. Dhillon, D. Coss, and R. Hackney, 'Interpreting the Role of Disruptive Technologies in E-Businesses,' *Logistics Information Management* 14, 1/2 (2001): 163–70
26. M. Overdorf and A. Barragree, 'The Impending Disruption of the Publishing Industry,' *Publishing Research Quarterly* 17, 3 (Fall 2001): 3–18
27. Tian, 'Book Publishing in Australia'
28. Tian, 'Book Publishing in Australia'

29. M. Du Sautoy, 'Future Books: The Sum of Their Parts and Much More,' *Mail and Guardian* (9 July 2010), available at <http://mg.co.za/article/2010-07-09-future-books-the-sum-of-their-parts-and-much-more>
30. P. Brieger, 'Soaring Ebook Sales Speak Volumes,' *Mail and Guardian* (1 August 2010), available at <http://mg.co.za/article/2010-08-01-soaring-ebook-sales-speak-volumes>
31. X. Tian and B. Martin, 'Implications of Digital Technologies for Book Publishing' (Unpublished conference paper from the Fourth International Conference on Cooperation and Promotion of Information Resources in Science and Technology, Beijing, 21–23 November 2009)
32. E. Purcell, 'Ebooks Are a Cul de Sac—Why Publishing Needs to Rethink Its Digital Strategy,' *Publishing Perspectives* (30 March 2010), available at <http://publishingperspectives.com/2010/03/e-books-are-a-cul-de-sac-why-publishing-needs-to-rethink-its-digital-strategy/>
33. S. Hyatt, 'Judging a Book by Its Cover: E-Books, Digitization and Print on Demand,' *IYLM* (2002/2003): 112–32
34. L. Engelbrecht, 'Wherefore Art Thou, E-Book?' *IT Web* (17 January 2011), available at http://www.itweb.co.za/index.php?option=com_content&view=article&id=40192:wherefore-art-thou-ebook&catid=49
35. Tian, 'Book Publishing in Australia'
36. E. Carreiro, 'Electronic Books: How Digital Devices and Supplementary New Technologies Are Changing the Face of the Publishing Industry,' *Publishing Research Quarterly* 26, (2010): 219–35
37. See also E. le Roux and F. Galloway, 'Assessing the Demand for Scholarly Publishing in South Africa,' *Journal of Scholarly Publishing* 39, 2 (January 2008): 109–26.
38. Carreiro, 'Electronic Books'
39. A. Attwell, 'How to Stay in Publishing in a Digital World,' *Tech Leader* (blog), *Mail and Guardian* (6 February 2009), available at <http://www.techleader.co.za/arthurattwell/2009/02/06/how-to-stay-in-publishing-in-a-digital-world/>
40. C. Mussinelli, 'Digital Publishing in Europe: A Focus on France, Germany, Italy and Spain,' *Publishing Research Quarterly* 26 (2010): 168–75
41. Christensen, *The Innovator's Dilemma*
42. Dan and Chieh, *A Reflective Review of Disruptive Innovation Theory*
43. Carreiro, 'Electronic Books'; Du Sautoy, 'Future Books'; Hyatt, 'Judging a Book by Its Cover'; Tian, 'Book Publishing in Australia'
44. Dhillon, Coss, and Hackney, 'Interpreting the Role of Disruptive Technologies'
45. Christensen, *The Innovator's Dilemma*
46. Ibid.

47. C. M. Christensen and M. Raynor, *The Innovator's Solution: Creating and Sustaining Successful Growth* (Boston: Harvard Business School Press 2003)
48. Tian, 'Book Publishing in Australia'
49. Dan and Chieh, *A Reflective Review of Disruptive Innovation Theory*
50. Christensen, *The Innovator's Dilemma*
51. Tian, 'Book Publishing in Australia'
52. Dan and Chieh, *A Reflective Review of Disruptive Innovation Theory*
53. Christensen, *The Innovator's Dilemma*
54. Dan and Chieh, *A Reflective Review of Disruptive Innovation Theory*
55. Overdorf and Baragree, 'Impending Disruption'
56. M. Vasileiou and J. Rowley, 'Progressing the Definition of 'E-Book',' *Library Hi Tech* 26, 3 (2008): 355–68
57. Christensen and Raynor, *The Innovator's Solution*
58. Dan and Chieh, *A Reflective Review of Disruptive Innovation Theory*
59. C. Meadows, 'Digital Publishing about Economics, Forrester Analyst James McQuivey Says,' *Teleread* (17 November 2010), available at <http://www.teleread.com/ebooks/digital-publishing-about-economics-forrester-analyst-james-mcquivey-says/>
60. Attwell, 'How to Stay in Publishing in a Digital World'
61. Gordon, Kung, and Dyck, 'Strategic Use of E-Commerce'

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