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## **TECHNOLOGY AND INDUSTRIAL CHANGE: THE SHIFT FROM PRODUCTION TO KNOWLEDGE- BASED BUSINESS IN THE MAGAZINE PRINT PUBLISHING INDUSTRY**

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## **TECHNOLOGY AND INDUSTRIAL CHANGE: THE SHIFT FROM PRODUCTION TO KNOWLEDGE-BASED BUSINESS IN THE MAGAZINE PRINT PUBLISHING INDUSTRY**

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### ***Abstract***

*In attempting to explain the recent changes in the economic activity undertaken by firms, Alfred Chandler (2000) has embraced the concept of 'the Information Age', contrasting with his earlier periodisation of the 'Second Industrial Revolution'. The 'Information Age' is characterised as the contemporary period where the advent of information communications technologies (ICTs) has made possible changes in the organisation of economic activity undertaken by firms, such as the increasing use of networks rather than hierarchies as forms of co-ordination. Whereas integrated firms depended on ownership of mass-production technologies and managerial functions to be able to exploit both economies of scale and scope, network orientated firms are increasingly able to control and co-ordinate activity outside of their ownership boundaries, and are able to separate knowledge of the value-creation process from manufacturing. This papers constructs a detailed analysis of the change in technology and organisation in the UK magazine print publishing industry from 1970 to 2000, as an example of an industry which has undergone a transformation to an Information Age industry.*

*Magazine Print Publishers up until the 1960s and 1970s typically adopted integrated forms of organisation, producing standardised mass-production products, such as weekly general interest magazines. The paper charts the changes in production technologies that resulted in the fragmentation of the*

*industry, and the entry of new actors in the market. The change in the firms within the market (and the relationships between them) was mirrored in internal changes to the incumbent firms, as the new ICT technologies allowed different arrangements both with the firms employees, and increasingly with external actors. The paper examines the shift to higher value-added specialised monthly magazines, and the subsequent move to a more consumer-driven focus. With the recent commercialisation of the internet and digital technologies, the paper examines how the magazine industry has moved from a production-driven basis to knowledge-seeking firms providing services, driven by increasingly close links with consumers. The magazine print publishing industry is one which illustrates the ICT-driven organisational changes made possible in the information age, as magazine publishers have moved from being information providers to mass markets, to seeking detailed knowledge of narrow-interest markets for which they are then able to develop supporting products and services.*

## **Technology and Industrial Change: The Shift from Production to Knowledge-Based Business in the Magazine Print Publishing Industry**

### **I. Introduction**

The consumer magazine segment of the print publishing industry has undergone profound restructuring during the last thirty years. The driving force behind this process has been technological change, but the motivation for and implications of these changes have been both social and economic. The story is a complex one, and one that has been strangely neglected in academic research considering that the consumer print publishing industry is a major industrial sector, especially in the UK. Although most attention has been given to the study of changes in the newspaper and book publishing industries (Stanworth and Stanworth, 1986; Feather, 1988), the magazine sector highlights a number of important issues in the transformation of industries, the role of information and communications technologies and the shift to consumer-driven systems of innovation.

Despite the appearance of continuity in an industry dominated by large media groups, the relationships both between firms in the industry, and within firms internally, have changed fundamentally, as have the key technologies, drivers of innovation, and the nature of competition more generally. The transformation of the magazine print publishing sector from a highly regulated production-based industry to a network-driven service-based industry is a telling example of parallel developments within the general economy towards what is becoming increasingly termed the 'Information Age' (Chandler, 2000, Cox, Mowatt and Prevezer, 2002). Information and communications technologies (ICTs) are at the centre of this analysis, in which it is argued that the process of digital convergence (Yoffie, 1997), spanning the telecommunications and information

processing industries has created an information infrastructure which has changed the relationships within and between industries. Already industries such as automotive supplier and textiles and clothing have been significantly restructured as a direct outcome of the novel systems of information management provided by the new ICTs (Abernathy *et al*, 1999). Two effects of the changes wrought by ICT developments have been an increasing tendency towards more networked forms of organisation (Nolan, 2000), and, simultaneously, a shift in the relative bargaining power of firms moving to those closest to consumer information (Gereffi, 1994; Dicken, 1998; Dobson, Waterson and Chu, 1998).

This paper adopts a historical comparative perspective to examine the process of industrial transformation in one sector that has been subject to the introduction of ICTs. In identifying the salient features of this transition, our paper proceeds as follows: Section 2 firstly defines the consumer magazine sector, and introduces the data sources that have been used in this study. It then progresses to examine the technology and organisation of the industry in the period 1950-1980. This background context enables an understanding of how the technological changes made during the post-1980 period have changed organisational and industrial structure. Section 3 examines the dominant producer in the industry to highlight the shifts in technology and organisation in the magazine print publishing sector. The section then progresses to examine different strategies adopted by rival and entrant firms, and the different processes of innovation used. Section 4 analyses the industrial disintegration of the industry driven by new technologies and externalisation, and the growth of the network structures. This disintegration leads to the creation of an industrial supplier network, which allows new entrants into the industry who are able to use external services for production. The supplier network comprises journalistic and design services as well as printing capacity. Communications technologies increasingly began to enable these

network constituents to work together in new ways. The ability of these networks to be managed remotely was instrumental in allowing the internationalisation of the industry, which is examined in section 5. Section 6 revisits the expectations made on the impact of the changes in technology and structure within the industry, and finds that the industrial reconfiguration driven by ICTs is more complex than could be assumed from simple externalisation-based explanations, as the industry is driven by new forms of competition.

## **II. The Development of the UK Consumer Magazine Print Publishing Sector**

### *The Consumer Magazines Sector*

The print publishing periodicals industry is one which is very difficult to define, encompassing printed media from books to newspapers, magazines and advertising literature (including post-bills, flyers, in-house magazines and newspaper supplements). The periodicals industry is one that covers a variety of distinctive types of business. In general, the consumer and business-to-business markets have been considered separately, and the different firms involved have reflected this. For example, academic book publishers are likely to have an interest in academic journal publishing but limit their interest in periodicals to this activity<sup>1</sup>. Where a holding group has an interest in both consumer and business-to-business sectors, then they are usually represented by subsidiaries of the firm which are not linked to each other in operational terms. In the UK, the periodicals industry now also encompasses several other sub-sectors which are distinct from the traditional parts of the industry. These are specialist periodicals publishers, and they produce three main types of periodical: house magazines for third parties (such as Redwood Publishing who publish the magazine of the

Automobile Association, and, despite only printing four titles are the UK's second largest magazine producer by circulation), magazines for newspapers (such as the Sunday supplementary magazines given away with newspapers) and company magazines (such as Sainsburys Magazine printed by New Crane<sup>2</sup>, which is only available in J Sainsbury group outlets). The companies involved in these activities are mostly not involved in other printing activities, although there is some slight overlap in the house magazines market.

This paper focuses on one part of the periodicals industry, namely the consumer periodicals industry. Specifically we are interested in UK magazines, which Driver and Gillespie (1988) have termed the magazine print publishing industry. The consumer magazine print publishing industry is one in which the UK has a strong competitive advantage, with the most consumer titles *per capita* and more titles absolutely than the US. The recent proliferation of magazine titles in the last decade is an indication of the dynamic changes that have taken place due to technological and organisational transformation. The industry is now characterised by a high level of IT-based technological change, which has been driven by the ability to increasingly discriminate between narrow-based consumer markets, both creating and exploiting new market niches. These changes have broadly followed a shift from a production to a service-based industry, characterised by the increasing use of networks. In order to examine this transformation the study makes use of numerous data sources. The use of publicly available secondary sources have been used widely, principally UK governmental and Commission of the European Communities reports, British Rate and Data (BRAD), Willing's Press Guide, the archives of the Print

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<sup>1</sup> In the case where publishing groups and book publishers firms do have an interest in periodical or magazine publishing this is usually undertaken by wholly autonomous subsidiaries that seem to have no (or very few) linkages to the parent firm.

<sup>2</sup> Again, New Crane only publishes the Sainsburys Magazine.

Periodicals Association, Printing Training Council (PTC) and the International Association of Periodical Publishers (FIPP), the Printing Industries and Reprographics Association (PIRA) database, academic journals, marketing reports and surveys. Extensive use was made of the collections of the St. Brides Printing Library and the British Library.

### *Barriers to Change*

This section outlines the situation of the UK magazine print publishing industry from the 1950s – 1980s, in order to contextualise the organisational, technological and industrial changes which have taken place in the recent period. By the mid-1950s there were some 213 consumer periodicals on the market<sup>3</sup>, with highly concentrated ownership and distribution. A closer look at the industry reveals a single dominant firm, several large firms specialising in market areas, and many small independent single title publishers. Retail was highly fragmented, mainly to independent newsagents and cornershops. Excepting the general trend towards increasing concentration created by mergers and acquisitions, the industry and production technology had not changed significantly since the limited introduction of colour in the pre-war period. There were several significant barriers to change in the industry, which we shall examine. First, barriers for change were technological, second, markets were segmented by geography, language and culture, and third, problems of industrial relations.

The technological problems were essentially threefold. The production technologies in the industry were long established, and served to tie the production of magazines to physical locations near print-works. Printing was expensive, chiefly because it was highly labour intensive as type was set

manually, and the resulting publications were not only heavy and bulky but perishable creating significant distribution problems.

The market problems stemmed from the nature of magazines as information products. Magazines could be classified as multidomestic products, this being the class of good which need substantial culturally specific adaptation in different markets to take account of local differences in taste and consumer demand. The most obvious aspect of this is in language. The internationalisation of the magazine markets was therefore constrained not only by distribution problems, but by the difficulties inherent in local adaptation. Firms had to consider the relocation of production in order to produce local editions, which was expensive and raised problems of organisational control associated with market entry strategies. The few international titles in the market, such as *National Geographic*, were significant outliers not representative of the industry in general. In addition to these problems, there were numerous governmental restrictions as to foreign media ownership and penetration, which although designed to protect the political freedom of the newspaper and television media did act against the internationalisation of magazines companies and markets.

Change within the British magazine print publishing industry was highly constrained by the industrial relations framework and the position of the labour unions with regard to the adoption of new technologies. The industrial relations and labour framework circumscribed large company's autonomy and limited organisation's abilities to manage their business. Firms suffered from both internal and external rigidities. First, the external rigidities were a result of the development of the printing industry. Arising from a craft-basis, labour unions in

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<sup>3</sup> Data derived from BRAD (Volume 1:National Magazines and Newspapers) first quarter 1956. By their classification, there were 132 general consumer national magazines, 36 juvenile interest and 45 specialist

the printing industry were segregated into various disciplines related to the different stages of production. By the 1970s the main unions in the sector, the National Union of Journalists (NUJ), the National Graphical Union (NGA) and the Society of Graphical and Allied Trades (SOGAT) controlled the organisation of the production process in much of the industry. Tasks were subject to clear demarcation between unions, and union regulations stipulated what members may or may not be allowed to do. The resultant inefficiencies have been extensively researched in the newspaper printing industry, and in relation to printing industries in general. Unions regulated the industry labour market, the technology of production and the distribution of goods. Changes in production technologies had little organisational impact, as unions were able to retain control of the labour processes. For example, tasks that could be managed as a single activity (such as input through a word-processing system) were artificially separated by the unions by such processes as double-keying (the re-typing of information), and ensuring that tasks were undertaken by the correct union (often resulting in employees charging twice for one task as though two people had performed it). The introduction of photocomposition and direct entry single-keystroke systems to replace hand typesetting / manual linotype was resisted by unions keen to maintain demarcation, which was “certainly a deterrent to the introduction of new techniques and particularly to those which may cut across established spheres of influence” (Royal Commission on the Press, 1962: 42.). Despite gradual changes in production technologies, the activities were still undertaken by union members, who were considered “not employed for employers business but one publication.” (Royal Commission on the Press, *op. cit.*) Publishers who attempted to cut out union production found that unionised printing companies would only print work prepared by certified union members. Broadly, technological change did not result in corresponding organisational

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consumer magazines (which, for example, included gardening and motoring titles).

change. IPC, for example, was constrained by Union rules to use Odham's as its major print contractor, which employed 6000 unionised workers arranged into some 400 management grades, although it was technically possible to petition the union to use external contractors provided this was with unionised establishments or at closed shops. The Price Commission (1977a) found that the technologies used at Odham's were largely obsolete and very inefficient.

### *Technological Change: The Process of Digital Convergence*

Barriers to change in the magazine industry were modified first by the introduction of computer technologies, and then again by the integration of communications technologies in the 1990s. In this section we shall examine the process of technological innovation in order to then examine how the barriers to were confronted.

Contemporary reports into the state of the UK periodicals industry during the period prior to the 1980s make constant reference the antiquated production technologies (Royal Commission on the Press, 1949, 1961/2, 1974; Price Commission, 1978), which at the time were significantly more primitive than those used both in the United States and Europe (Winsbury, 1975). Although these reports generally focus on the newspaper industry, the position of magazine production is broadly similar during the 1950s and 1960s. Apart from the few truly international examples (*National Geographic* and *Time Life*), magazines were mainly black and white (sometimes excepting covers and lead features), and often produced by non-specialised printing machinery – in fact several magazine groups started producing magazines to use the excess capacity of their newspaper holdings. The Mirror Group both had an interest in newspapers and magazines, owning newspapers and periodical publishers such as the International Publishing Corporation (IPC). As an affiliate of the newspaper industry, the magazine publishing companies were subject to the same industrial

relations framework. The outcome of this was that UK magazine companies were often still using nineteenth century hot-metal production technologies long after these processes were obsolete. Whilst the resistance to new technology in the newspaper industry is well known<sup>4</sup> (see Fraser, 1999 and Littleton, 1992, for an introduction to this voluminous literature), the technological transformation of the magazine industry followed a similar but qualitatively different path. The difference in size between newspaper and magazine companies meant that where new technology was not introduced into newspapers primarily because of union resistance, in the case of magazines companies was more complex as there were other factors hindering their adoption. Capital constraints, for example, were more important for magazine publishers as they were often smaller firms than newspaper printer, and in cases this resulted in an inability to invest in new equipment. The issue highlights the increasing difference between newspaper and magazine production technologies as both became increasingly specialised – newspapers into high-volume low-cost media, and magazines to higher quality papers, the introduction of colour, and the adoption of photogravure (from the 1960s) and continuous web-offset printing which made smaller print runs and higher quality editions possible (late 1960s). During the 1970s, newspaper origination had increasingly become co-ordinated by ICT and computer technology, although the printing of newspapers was artificially anachronistic because of excessive regulation. Digital input was possible for the newspaper industry for several reasons. The majority of journalists in the newspaper industry were typically sedentary, working in the major company offices using terminals of the central ATEX mainframe computer system, which facilitated the co-ordinated origination of the newspaper. In addition to ATEX, newspaper

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<sup>4</sup> The introduction of new technology by News International at Wapping during the 1980s which broke the power of unionised labour in the UK newspaper industry was in fact 35 year old German machinery; itself obsolete. This emphasises the fact that the dispute was more about managerial power than the *nature* of the technology.

companies were more likely to have access to facsimile and early remote computer technology. In contrast, the initial wave of mainframe computerisation largely passed the magazine publishers by.

The mid-1980s witnessed a technological revolution that was to change the way in which magazine origination developed, and then to change the organisational structure of the magazine companies themselves. Significantly, the driver of change was not to be found within the printing and publishing industries themselves, but in the developing small computer industry. The initial revolution was the development of the so-called 'triple-A standard'. This standard was the simultaneous convergence of three computer technologies that would revolutionise the way in which magazines could be produced. However, the initial impetus for the development of the 'triple-A' technologies was the creation of suitable output media. "The single most important factor in the development of desk-top publishing (DTP)" was the development of low-cost laser printer engines by Canon in 1985. Before this the benefits of using computer systems were mitigated by the low print quality on offer by pin-based printing systems (bubblejet was yet to be invented, and is not suitable for commercial applications). Once the output technology was in place, other existing technologies could be made to exploit the capabilities of the printer. The three 'A's of the triple-A standard represent the three companies, Adobe Systems, Apple Computers and Aldus Software, who each supplied a vital part of the technology to enable viable DTP systems. First, Adobe Systems developed the PostScript (PS) language. This was vital to enable different computer systems to be able to exploit laser printers. Two ex-employees of Xerox's Poalo Alto R&D Centre (PARC), who had worked on the development of menu-driven and mouse controlled systems, saw the potential for DTP systems and formed Adobe in 1982. Initially concentrating on digitising fonts, thus enabling quality output to be

achieved by DTP systems, they soon realised that character-orientated printing systems would not be able to exploit this potential. In this period most computer systems were incompatible with each other, and in order to print simply dumped simple text to printers that used their own internal typewriter-like fonts to print. PostScript, however, was a dot-based system that allowed the generation of any images and text. The interface for the system was hard-built into the printers in the form of a Raster Image Processor (RIP), which recognised any PS instruction sent to it by a computer's software. Using PS, different computer systems could now at least use the same printers, and achieve high-quality output. Apple adapted PS into its printers in 1985, with Linotype and IBM following suit in 1987, making it the industry standard. The inclusion of Linotype was significant, as Linotype machines were also the principal layout machines, previously operated by union members and a discrete part of the production process. The implications of these converging technologies shall be addressed later, but before the potential of the PS system could be exploited both suitable DTP software and affordable computers were necessary.

Paul Brainerd founded Aldus software in 1984. Having worked for ATEX, he saw the need for professional page composition systems that were not mainframe-based and therefore affordable for small businesses. Coining the term DTP, the resultant Pagemaker programme became the industry standard until overtaken by a later rival, QuarkExpress (both programmes still dominate the industry today). All that was missing from the package was a suitable computer system, and Apple supplied that with the release of the Macintosh Microcomputer in 1984. Apple had worked with Cannon and Adobe on the development laser printing and PS. Adopting PageMaker as the most suitable software, Apple offered the whole package of computer, printer and software in 1985 as the Apple DTP System.

With the technologies emerging from the micro computing industry in the 1980s, magazine publishing houses could now afford to buy DTP systems. The adoption of DTP not only allowed magazine staff to work together in different ways than they had previously, but also more significantly have a profound impact on the production technologies used for printing. However, there were still barriers to overcome in this period before the potential of the new technology could be realised, and these were especially pronounced for the magazine industry. As stated earlier, unlike mainly centralised newspaper journalists, magazine journalists were typically field-based or were contract journalists external to the firm. The problem thus became how to get copy from remote contributors to the magazine house. First, magazines could provide journalists with portable machines. This was obviously expensive, and early machines were none too portable either. Second, journalists' own software was by-and-large not PageMaker but propriety or assorted third-party word-processing (WP) packages posing incompatibility problems. Suitable transfer mechanism needs to be found in order to make use of the journalist's copy. There were four solutions to this:

1. Multi-disk readers. These machines were able to read disks produced on different systems, but were very expensive.
2. Milking machines. These were portable data collection machines that acted as multi-disk readers.
3. Telecommunications. Early modems were slow (9kb/s) and expensive. In addition to this call charges were high.
4. Optical Character Recognition systems (OCR). These systems allowed journalists to send hard-copy to the magazine house, which were then scanned into digital format. Again, this was expensive and time-consuming.

Despite the emergence of viable DTP systems, technology's impact on magazine organisation was mitigated by data-transfer problems. These problems were overcome by the development of better ICTs, principally e-mail systems and the internet in the later 1990s. Essentially, it was the convergence of computer *and* communications technologies that allowed the exploitation of the new systems in the magazine print publishing industry. Likewise, the emergence of MicroSoft created a common software standard where journalists and external contract writers own machines would be compatible with the magazine houses DTP systems and allow a near-seamless integration of actors who were geographically dispersed.

#### *The International Potential of the Magazine Publishing Industry*

The technological changes outlined above had a significant impact on the barriers to change for the industry. First, the technological problems concerning the transfer of information were lessened. ICTs allowed remote printing, as information could be passed in digital form from the magazine firm to the printers. In the same way, organisations could communicate and control remote teams via telecommunications systems. ICTs enabled the possibility of international competition. In order for this to be possible, the governmental restrictions on foreign media ownership and penetration needed to be modified. The growing liberalisation of media ownership restrictions allowed magazine firms to consider foreign market entry. The major barrier to the distribution of heavy bulky products was overcome by the ability to send information electronically to local printers – and the emergence of contract printers from the 1980s removed the necessity of overseas subsidiaries for production. These possibilities also greatly change the way in which market-based problems affect the internationalisation of the magazine market. The provision of local content and language adaptation becomes more economic and possible with digital

technologies, as print is not set in costly metal as before. Finally, the ability to manage local journalists at different locations greatly enhances the potential for including local content and market information.

Production technology divorced from manual type-setting processes also greatly reduced the marginal cost of production, and this also allowed much smaller print runs to be produced efficiently.

The labour rigidities created by demarcation and the policies of the labour unions were undermined by the technological convergence between the production technologies. The ability of firms to use DTP systems and integrated intermediate process production technologies (such as the production of plates or film to print from) allowed firms to manage the high value-added tasks of layout and production previously controlled by the unions as separate activities. The craft-basis of the union structures and demarcation were therefore undermined by direct entry single-keystroke systems, which also did away with several intermediate steps of the production process. Computer systems could be operated by electrician's unions (as in the strikebreaking of the 1980s newspapers industrial actions) or by the computers front-end users – the journalists themselves. Although NUJ members were initially ill-equipped to manage computer layout systems, the requirements of the job eventually forced both individual journalists and the central union to adapt. The impact on the unions was significant, removing their basis for demarcation and the source of their authority. The changes in terms of the organisation of production were so far-reaching that the NUJ, NGA and SOGAT planned a merger to acknowledge the convergence between the tasks which they undertook (in fact, in 1990 the NGA and SOGAT merged to form the GPMU, the NUJ pulling out.) For magazine publishing houses, an internal team could take over layout and make-

up functions, whether through shifting the tasks to journalists or through a small editorial team to undertake the activities.

The ability of printing unions to control the adoption of not only technology but working practices was therefore destroyed, and this was signalled by the newspaper strikes in the early 1980s during which the main printing unions lost much political power. However, the process of change in the magazine industry was much more incremental and less confrontational than in the newspaper industry. The periodical press is comparatively small compared the publishing industry as a whole, and because of this and the precarious economics which affect the industry, historically there was much more realistic relationship between firms and unions. Partly this was made possible by the small size of many periodical publishers (Royal Commission on the Press, 1962: 42). The imperatives of technological change in the magazine industry were different to those of the newspaper industry: the spread of colour printing and possibility of using high quality paper drove the printing industry to develop new technologies, and to make existing technologies suitable for the mass-production of magazines. The changes were both in the preparation of material for printing, such as the spread of photogravure (developed in the 1940s and 50s for high-quality prints, but a complex technology for mass markets) and litho printing, and in printing technologies, such as web-offset printing (for colour print runs.) For example, litho processes became more important during the 1970s and 1980s. Table 1 shows the changing nature of NGA members activities between 1972 and 1980, revealing a shift away from traditional letterpress printing to litho. The use of web-offset printing resulted in the changes in the desired output to colour. Because these processes were new and supplemental to existing techniques, they were less resisted by unions. In the magazine print publishing industry new

technologies were creating change in the unions concerned as they embraced some elements of, rather than resisted, change.

NGA	1972	1989
Letterpress	77%	55%
Litho	17%	27%

Table 1: the shift away from letterpress to litho printing (source: Gennart, 1990)

### III. Market Strategies

In order to examine the development of competition in the magazine print publishing industry, it is instructive to examine the dominant firm in the UK market during the period in question. During the 1960s very few publishing firms which produced magazines could afford the cost of the new production technologies: in fact, with the first introduction of early computers into newspaper production and origination (the entire process of editorial input, composition, layout and make-up), only one magazine company was in a position to adopt the new ATEX layout computers. During the 1960s and 1970s IPC dominated the domestic magazine market, and it is still the largest firm in the industry in the UK market today. IPC came into being during the period 1958-1961 when the Mirror Group (newspapers) acquired three long-established consumer magazine publishing houses to form the International Publishing Corporation Ltd. The companies were the George Newnes Company, Odham's Press Ltd, and the Amalgamated Press<sup>5</sup>. The George Newnes Company was established in 1881 with the periodical *Tit-Bits*, which by 1883 had a circulation of 200,000. By 1932 the company had founded the weekly *Women's Own*, and included in its portfolio the *Review of Reviews*, the *Strand* and *Country Life*.

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<sup>5</sup> Which was later renamed Fleetway.

William Odham's Ltd was originally a newspaper group, publishing the Guardian newspaper in 1890. Merging with the eponymously named single title magazine printer John Bull (Magazine) Ltd in 1920, the company became Odham's Press Ltd. By 1937 the company had founded the first colour weekly, *Woman*, operating a dedicated high-speed print works for the purpose (Norton, 1993). The company owned *Ideal Home*, which it founded in 1920, and *Horse and Hound*, which it had acquired<sup>6</sup>. The Amalgamated Press owed its origin to Alfred Harmsworth, who started the magazine *Answers to Correspondents* in 1888. In 1911 it founded the first woman's weekly, appropriately enough named *Woman's Weekly*, and by the time of acquisition also published the *London Magazine* and *Woman and Home* (Low, 1992b). With the integration of these three groups, the Mirror Group became a company that operated 29 printing companies, published three London daily newspapers, numerous consumer magazines as well as business and technical journals. Within this operation, IPC inherited and created<sup>7</sup> consumer magazines across market segments, weekly and monthly, quality and popular, but with a particular strength in the woman's interest weekly market.

IPC was acquired by the Reed Group group in 1969. Reed created Reed International Plc (Reed) to control its UK subsidiaries. Under the Reed Publishing Holdings Ltd division IPC<sup>8</sup> controlled four subsidiary groups, the International Printers Ltd (printing services), IPC Magazines (IPC), IPC Business Press Ltd and Odhams (Watford) Ltd (printing services). IPC was effectively

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<sup>6</sup> *Horse and Hound* was originally founded in 1884.

<sup>7</sup> IPC created new magazine titles in different markets; the *New Musical Express* (NME) in 1952, the first 'popular' music paper seeking to capture the youth market and respond to the rock and roll revolution, the *New Scientist* in 1956 (a digest of scientific journals aimed at the interested layman) and another woman's weekly, *Woman's Realm*, in 1958.

<sup>8</sup> Excluding the Mirror Group (reorganised as the newspaper holding company), which was part of IPC until 1974 when Reed reorganised it into a separate subsidiary under the Reed Publishing Holdings Ltd. The groups still included the *Sun*, which led to a dramatic decline in Reed's market share when sold to News International, falling from 26.3% in 1968 – to 1975 18.9 (sale of *Sun* and decline of magazines) (Fishwick, 1977) – a move which was to see the *Sun* rise as a serious rival to the Mirror Group's own tabloid newspapers (Price Commission, 1978a)

maintained independently from Reed as an operating unit, and trading between parent and subsidiary were based almost exclusively on the purchase of paper and printing services (Price Commission, 1978a).

IPC dominated the consumer magazines market during the 1960s and 1970s, and was present in the majority of consumer markets. By 1977, for example, IPC published 70 titles, including 16 in the juvenile category (compared to 25 by all other publishers), and two in the gardening segment (other publishers: two). However, the magazines market as a whole was mainly undifferentiated and heavily biased towards a few sectors, the most significant of which was the women's interest sector, especially the weekly market. Table 2 illustrates the dominant position of IPC within the women's market, which accounted for more than 50% of the total magazine market. IPC owned 23 of the 44 titles within the women's interest market. IPC was also heavily reliant on the weekly market, which was the largest segment: listings magazines (*Radio Times* and *TV Times*)<sup>9</sup> for example, represented 17% of the market and the top 5 women's magazines took 19.6%. Of the top five women's magazines, four were IPC titles. In fact, taking the whole sector of 'women's interest' magazines, in 1977 IPC accounted for 52%. Other publishers tended to be only present in particular segments of the markets, such as DC Thomson interest in the teenage women's monthly market. Examining the weekly segment – the most significant in terms of potential profits – IPC published four of the seven titles, and although this was 57% of the number of publications, in terms of circulation their share was some 76%<sup>10</sup>. In 1961, 93.2% of magazines (by sales) were weeklies, and in 1977 this was still 89% (Harry, 1986).

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<sup>9</sup> Until 198x these two titles were given a government-backed monopoly on the listings market.

<sup>10</sup> Information derived both from BRAD and Price Commission Study (Price Commission 1978a: Appendix 3)

However, this dominance masked IPCs reliance on this core market for its profits. Table 3 indicates the reliance of IPC upon it's major four weekly titles. Overall, 78% of IPCs circulation plus advertising revenues were derived from these four titles alone.

<i>Title</i>	<i>Publisher</i>	<i>Circulation (000)</i>	<i>Market Share(%)</i>
Women	IPC	1,480	76
Women's Own	IPC	1,524	
Women's Weekly	IPC	1,414	
Women's Realm	IPC	752	
My Weekly	DC Thompson	856	23
The People's Friend	DC Thompson	697	
The Lady	The Lady	72	1

Table 2: Women's Weekly Magazines Market in 1977(source BRAD and the Price Commission 78a)

<i>Revenues</i>	<i>Women's Group (%)</i>	<i>IPC (%)</i>
Circulation	71	42
Advertising	86	66
Circulation plus Advertising	78	52

Table 3: Importance to IPC of Seven Major Titles\* (source Price Commission Study 78a)

\* 4 weeklies plus *Women and home, Ideal Home* and *Homes and Garden*

IPC also relied on the woman's weeklies to generate advertising revenue. In 1970 59% of the revenue in women's interest group was from advertising, whilst only 25% in general group<sup>11</sup>. The high circulation of the main weeklies allowed them to charge high advertising prices – and the ability to finance the titles on advertising income permitted them to be able to keep the cover price predatorily low, strategies which encouraged single firm market dominance (Price Commission, 1978.) This strategy was undermined when the market started to move away from undifferentiated weekly titles as other publishers exploited

smaller audiences through the expanding monthly magazines market – a strategy which is explored in the following section. Despite launching more monthly titles, the mass selling weeklies were IPC’s staple, and figure 1 reveals the dramatic fall in sales of weekly magazines illustrated by the flagship *Women’s Own* since the 1950s.

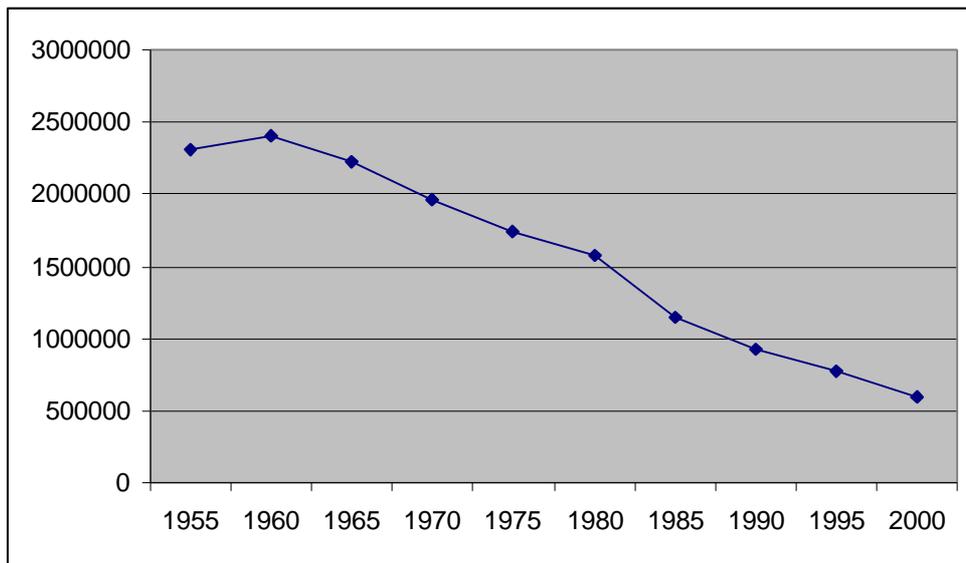


Figure 1: Decline in the sales of *Women’s Own*, 1955-2000 (source BRAD data)

In response to declining sales of its main titles, IPC’s marketing became both more sophisticated and aggressive. In 1977 the circulations department bought the first computer used in the industry to analyse sales data. The introduction of computers into the company also highlighted problems on the production side of the company, which was in need of attention. Odhams’s (Watford) Ltd, [an IPC subsidiary], undertook the majority of IPC’s printing (accounting for 88% of its sales in 1976-77), including the three top weeklies and some monthlies. No other plant in the country had either the capacity or the photogravure equipment to handle these print runs. Poor labour relations, antiquated technology, under-

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<sup>11</sup> Price Commission, 1978a

investment troubled the plant, which was chronically loss making<sup>12</sup> (Price Commission, 1978a). Contract printing was also undertaken by other subsidiaries of Reed's International Printers Ltd group, namely, R J Acford Ltd, Chapel Rover Press, Fleetway Printers and Wardland Ltd. The Price Commission (1978a) found that IPC was not benefiting from the economies of vertical integration as the printers were charging fair market prices in conjunction with sub-standard performance.

It became apparent at the end of the 1970s that these plants were all using obsolete, mainly second hand, equipment over 25 years old which would have to be upgraded. At the end of the 1970s, the future of these plants was in doubt. These problems coincided with the development of the new computer-based systems of origination which we have examined. In this way the problems of implementing new systems and procedures were facilitated somewhat by the need of new capital investment. Despite this, the role of the unions had to be addressed before full use could be made of the potential of these systems, and this was problematic for IPC which suffered from some of the classic problems associated with integrated firms – including the problems of organisational rigidity, lack of entrepreneurship, organisational ossification and over-centralisation and bureaucratisation. A large in-house journalistic staff was retained in order to produce copy for the weekly titles, and as they were little differentiated, these titles had a reluctance to innovate built into the organisation. Agency problems associated with salaried staff gave little incentive for journalists to innovate or embrace change. As long as the market was comprised mostly of weekly mass-appeal titles this was not to be a particular problem, but was especially pronounced with reference to smaller companies which were less

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<sup>12</sup> Odham's made losses for the entire 1970s excepting a small trading profit in 1974 (Price Commission, 1978a: 21)

constrained by problems of excessive union power. IPC and the other large publishers relied on large print runs to generate economies of scale and the marginal economies of production, but other firms were already focussing on other strategies.

### *EMAP: An Alternative Strategy*

In addition to IPC's strategy, there were a number of other firms in the market that followed different models of development. EMAP plc, founded in 1947, is a particularly apt example of a magazine company growing through concentrating on niche rather than mass markets. The East Midland Allied Press was a regional newspaper conglomerate which founded its first weekly consumer magazine title, *Angling Times*, to utilise spare printing capacity in 1953. By 1972 EMAP had some nine consumer titles. Although these were weekly magazines in a newspaper format (therefore newsprint rather than the glossy publication which we associate with the sector today) they are significant for several reasons as they were niche titles similar in kind to other small emerging independent magazine firms. Typically many of these small companies were single title operations, whose magazine was written and designed by enthusiasts and sold to a very specific audience. Titles were typified by *Gramophone*, owned by Gramophone Plc. What these companies and EMAP all had in common is that they were focussed on small specialist market niches. Relatively few in number, the cost of establishing new titles was high before the 1980s. EMAP titles were initially viable because of the link with the newspaper production technology upon which they were based, a link which other companies such as DC Thompson also benefited from. Although EMAP titles were essentially interest (rather than geographic region) based weekly specialist newspapers<sup>13</sup>, which

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<sup>13</sup> Using spare newspaper printing capacity allowed EMAP to produce essentially a weekly newspaper. In this way they avoided having to acquire new capital equipment or enter into new relationships with specialists. The

expanded to include similar niche titles such as *Trout and Salmon*, they revealed the existence of differentiated consumer markets in addition to those of the main weekly titles. These firms remain minor players in the consumer magazine print publishing industry during the 1970s, but continued to build up expertise in several consumer markets (such as fishing interest and automotive). These different areas of expertise were now not managed centrally as in the case of IPC, but managed by fairly autonomous subsidiaries, each of which had to be profitable but was allowed to take risks in setting up new titles and divisions.

The potential of this approach was to be revealed when the new production and communications technologies enabled these small firms to lower their costs and concentrate on exploiting their market-knowledge by proliferating new titles through their editorial networks. Between 1977-2000 IPC has increased its number of titles from 70 to 116, but EMAP had expanded from 11 to 136, concentrating on monthly specialist titles and with the majority of this growth occurring during the 1990s. Although not a major player in IPC's traditional women's weekly market, EMAP had even encroached here, by 2001 having 9% of this market compared to IPC's 31%. In 1977 IPC had 23 titles and 76% of the women's segment.

#### **IV. Industrial disintegration: the Creation of Supplier Networks**

The moves to smaller print production runs and the rise of narrow interest monthly magazines, coupled with new printing technologies drove the externalisation of printing during the late 1970s and 1980s. Integrated firms such as IPC externalised more production, selling off presses, and new firms with technologies such as DTP systems entered the market to cater both for trade from

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technology of magazine printing at the time was usually with quite different equipment, and EMAP would have to address the issue of how to manage the production of web-offset and lithographic printing with their

existing firms and new entrants. The separation of origination from printing allowed firms to externalise printing, whilst retaining control of the high-value activities of layout and make-up. The industry therefore witnessed the rise of external print services in order to undertake printing for publishing houses. It also allowed existing contract printers previously bound by only accepting union-produced work to print for any market actors. The resultant disintegration of printing within the industry also allowed new market entrants to contract printing services for themselves. This was paralleled by a move to more contract-journalism. This process leads to the creation of an external supplier network comprising of printing capacity (including design tasks) and journalist freelancers.

The supplier network and DTP systems also allowed a wide range of people to produce magazines – at least on their own computers. The dissemination of professional quality DTP systems led to the proliferation of new market entrants who were able to take advantage of the opportunities afforded by new technology. The printing services industry allowed these new entrants to be able to produce magazines without owning any printing technology of their own. This change in the industrial structure – the entry of small DTP-based publishers and the growth of printing services – was a result of the technology-driven changes of the computer age. Magazines such as *The Face* were brought to market not by the large magazine companies, or even the existing niche publishers, but by independent firms revolving around a few committed individuals with expert market knowledge. The availability of desktop computing and printing systems, linked by remote access systems and telecommunications, enables small group of people access to the technology to create magazine titles. Baxter (1990) identifies the plethora of small presses which were then able to develop and

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move to conventional magazines in the late 1980s.

satisfy very small and specialist print editions. In fact, although we have derived the number of 'significant' periodicals from BRAD as 2,200 consumer titles in 2000, the total number is nearer 10,000. The majority of these titles are printed in to few numbers, too irregularly and distributed too unconventionally to assess. Fanzine-type publications are the true ephemera of the DTP-age: they are not collected, stored or described by the British Library and other records of 'complete' publications. Several large magazine houses, such as Future and Dennis started from this route, exploiting specialist market knowledge to innovate niche titles. IPC therefore found itself subject to competition from companies focussing on niche titles.

## **V. Internationalisation and Transformation in the Magazine Industry**

In addition to competition from smaller niche companies, IPC has found itself subject to foreign competition. The internationalisation of the magazine industry is essentially a late 1990s phenomenon, despite there being the existence of several earlier stages of international case titles (the 1950s-60s for example saw the various international Photo magazines which were novel colour glossy publications which TV saw off as escapist / news items, and the odd digest such as *Reader's Digest*). The current internationalisation of the industry is occurring at two distinct levels: first, at the level of large international multimedia conglomerates seeking to achieve market maximisation and economies of scale. Second, a distinct development undertaken by different firms often at the level of the magazine title, centring around the creation and exploitation of niche markets in other countries.

The first form of internationalisation began with the encroachment of foreign publishing groups in the 1980s into the British market, initially into the volume market by the German group Gruhner & Jahr (*Prima*, 1986, *Best*, 1987, *Bella*,

1987), able to sustain the 7 year payback period in a crowded low-end market. In the 1990s the Franco-Dutch group VNU made significant investment in capturing certain segments of the monthly computing and specialist consumer press.

The second form of internationalisation has been made by UK companies in highly differentiated lifestyle magazines. It is informative to focus on the details of EMAP's expansion into foreign markets with its specialist magazines. First, EMAP targeted the French market via a joint venture acquisition, eventually leading to the establishment of a direct subsidiary. Likewise entry into Australia and the US was by acquisition, but into South Africa and the Far East by licensing arrangements with local publishing firms. The full gamut of exploratory internationalisation modes is undertaken before the establishment of new local content, and the roll-out of locally adapted titles: *FHM* being the most prominent example of these.

The internationalisation of the magazine print publishing industry reveals that there are two market-based approaches being undertaken simultaneously – both made possible by the new use of ICTs. As Clodt and Hagedoorn (2000) conclude in their study of Dutch publishing companies, in both cases the companies involved are increasingly becoming cross-media digital-based groups. However, we would emphasise the differences between the niche and mass-market approach.

### *From Production to Services*

The magazine print publishing industry has been transformed by a shift from a production to service-based industry. Although integrated companies exist in order to exploit international economies of scale, there is also a general shift from high-circulation titles and revenue from advertising to high cover prices and

consumer focus in niche markets. EMAP's strategy uses ICT to exploit narrow-interest titles, and to internationalise these titles is indicative of this process. In conjunction with this firms are moving towards associated services in these market areas, embracing diversification into other media areas such as TV, Radio and the internet to exploit their expert market knowledge. This is exemplified by the management of exhibitions, trade fairs, and direct involvement in consumer activities. This activity is increasingly competition with other media areas as digital-based industries converge.

## **VI. New Forms of Competition**

Competition within the magazine industry has increased, both at the international and niche market level, as expected by the reduction in barriers to entry and change in the industry, However, a survey of the industry reveals there are other competitive processes at work which were not anticipated. With the ability to use the network of services resultant from externalisation, new market entrants have not only been 'traditional' magazine publishing firms in the manner of IPC or EMAP but firms from other industrial sectors. Indeed, some of the most significant magazine print publishing firms by circulation in 2001 are consumer contract publishers owned by marketing firms or working for retailers. This sector has grown very rapidly, from £50m in 1990 to £100m by turnover in 1996 (Market Assessment Publications, 1996) and six of the top 25 magazine companies are now contract printers. This sector arose in response to the reconfiguration of the magazine printing industry, specifically the move to outsourcing, which we have described in this paper. Originating in the mid-1980s, these contract printing firms were based on the latest digital technologies, and free from restrictive Union regulations and histories. Companies in the established sector still had, to some degree, to cope with the legacy of demarcation and the introduction on new technologies. These new firms sought

corporate clients, and were able to use networks of contract journalists and services to pull titles together for clients who may or may not be interested in managing the editorial content of the magazines themselves. The first of these new commissioned magazines was *High Life*, the British Airways in-flight magazine, introduced in the 1980s. “House magazines” of this nature were a separate market to consumer magazines, but the boundaries between the different parts of the industry began to blur in 1993 with the introduction of Sainsbury’s *Sainsburys The Magazine* printed by New Crane. This title, for sale only in Sainsburys stores, is a direct competitor to other magazines. Because of the relationship between the contract printer and their clients, the costs in the customer courtesy and loyalty segment are much lower than traditional magazine companies, giving Sainsburys magazine a cost advantage over competitors even before subsidy by the retailer. Distribution costs for the *Sainsburys The Magazine* are only 1% of total costs, compared with 8% for a typical consumer magazine. Also because of their close relationship with their clients for editorial information and the use of the supplier network, use of IT-based origination and distribution arrangements, the firms in this sector have small low cost structures. New Crane has only 25 employees, whilst Redwood, the industry leader and the largest magazine firm save IPC (with 64% of the market, 21 titles and circulation of 64 million copies per month) has only 75.

Drawing on the ability to innovate and market titles through network structures, firms from other media industries are beginning to compete with traditional firms. Retailers such as Sainsburys and marketing companies which initially provided corporate clients with house magazines are becoming direct competitors to the traditional magazines sector. Some retailer-originated magazines are now being sold in other retail outlets. This sector both highlights the shifts in innovation made possible by ICT-based systems and reveals one of the several new sub-

sectors that have been bought into existence by the reconfiguration of the sectors industrial structure. Of particular interest for the UK is that these sectors are currently specific to it, and are increasingly seen as the appropriate model for other countries where the introduction of various new periodicals could be driven by firms outside of the publishing sector. Competition in markets through network arrangements between firms in different industrial areas has implication for competition policy and the most appropriate tools of analysis, which we will address in the conclusion.

## **VII. Conclusions: The Firm in the Information Age**

The development of the network forms which we have described in this paper allow firms to exploit their resources in innovative ways. The dissociation from the restrictions of production technologies and management have shifted the focus of the magazine print publishing industry from the manufacture of products to the provision of consumer-driven services. The broad shift in industrial structure driven by technological change, principally digitalisation, is the change in ownership of media groups. Increasingly, media groups are becoming marketing organisations rather than firms specialising in the production of magazines. The erosion of boundaries between industries previously separated by distinct production technologies (newspapers, magazines, film and television) has driven the mergers between different groups into media groups and coalitions. These media groups are increasingly restructuring their components around markets rather than industries. This can be seen in the both the restructure of the UK's principal consumer title publishing firms, IPC and EMAP, both moving to market orientations in 2000 and changing their names to IPC Media (rather than IPC Magazines) and EMAP media. These media groups refer to themselves as

‘media neutral platforms’ to emphasise that they are not constrained to production technologies and are ‘content providers’.

The analytical approaches adopted by earlier surveyors of competition in the publishing industry (Price Commission) are essentially those based on the theories of oligopolistic competition. This is also the most appropriate tool for analysing horizontal competition between integrated firms in the established Chandlerian tradition of *The Visible Hand* and *Scale and Scope* (1977; 1990). However, sectors that have been subject to the network-orientated IT-based transformations present this approach with difficulties. Competition within the example of the magazine print publishing industry is undertaken both vertically and horizontally, severely limiting the utility of using the concept of oligopoly for examining the competitive process within the sector. The utility of the production-based industrial classification system is also undermined to some degree by the changing nature of technology and competition through network structures. This paper adds to the literature which accounts for more networked orientated firms and puts information flows through their vertical relationships at the centre of analysis. In addition to this the magazine industry illustrates in a historical comparative perspective the changing nature of the innovation process as it becomes more consumer driven: both in terms of finding new markets and through information

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