

Recent Trends in Conglomeration and Consolidation of Dutch Publishing Companies in the Multimedia and Information Industries

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INTRODUCTION

In today's information market the speed of growth is, according to many observers, the key to success in the new economy. Originally, the information market consisted of publishing and broadcasting companies, but, the introduction of new information technologies, such as internet, forces traditional companies to reconsider their strategy and product portfolio in the line of these developments. Mergers, acquisitions and joint ventures have become an integral part of strategic initiatives of many multimedia companies. To survive, companies have to capitalize on the trend of globalization of businesses, industrial consolidation, and rapid integration of different communication segments by capturing a developed consumer base and accelerating the implementation of new technologies with combined resources. Multinational media conglomerates have expanded horizontally, vertically, and globally to maximize their competitive advantages and strengthen their product portfolio. The existing companies are moving from their established traditional markets into new product areas of the new economy.

In the traditional publishing industries a few companies dominated the market due to superior product technology and productivity. Mergers, acquisitions and joint ventures allow them to incorporate new innovations without running the risk involved in the initial development and introduction of these innovations. Overall, a multimedia company's ability to change its organizational structure and existing activities and businesses along the evolution of technology in the industry can be seen as a major source of failure or success.

This paper investigates the recent trends of conglomeration and consolidation of Dutch publishing companies in the information industry, what we consider as the core business of the new economy. Multinational publishing conglomerates such as Reed Elsevier, Wolters Kluwer, and VNU have expanded in all directions to maximize their growth potential. In the last three years these three multimedia companies, which are established in The Netherlands, were involved in more than 100 mergers and acquisitions.

Drawing upon the existing literature, we develop four hypotheses regarding the investment decisions, strategy, and location advantages to catch up the new technological developments and trends. The empirical testing is based on investment events of the three, previously mentioned, Dutch multinational publishing companies for the period 1997-2000. The present paper attempts to discover whether there is a clear trend towards acquisitions and joint ventures by publishing companies to capture the new innovations in the information and communication industries.

THEORETICAL FRAMEWORK AND HYPOTHESES

Media conglomerates must adapt to the technological development and internationalization of markets if they want to survive in the long run. Consolidation has become an integral part of the strategy of many companies that face both internationalization and technological developments. Companies use consolidation investments to strengthen their competitiveness. Indeed, expansion investments may give companies access to new and superior technologies and activities. In particular, mergers and acquisitions are useful tools to catch up to new developments and allow companies to capture the benefits of new technologies and businesses. In the meantime, companies have to evaluate and reconsider their existing businesses.

In the management of innovation literature mergers and acquisitions are discussed as major mechanisms to improve the long-term performance of companies through increased innovative capabilities, additional R&D efforts and improved rates of product introduction (Chakrabarti, Hauschildt and Sueverkruep, 1994; Hitt, Hoskisson, Johnson and Moesel, 1996; Oster, 1994). Empirical studies by Grandstrand, Bohlin, Oskarsson and Sjoberg (1992) and Link (1988) demonstrate that, if mergers and acquisitions are properly managed, they can be

an important element in the technology acquisition strategy of companies, in particular in innovative industries.

Companies, however, not only use mergers and acquisitions to improve their performance, they also have to evaluate and reconsider their existing businesses. Thus, the strategy of companies in a rapid changing environment can encompass several actions, such as divestment, joint venture, merger and acquisition involving diversification - either into related or unrelated activities - and internationalization. The following sections discuss these consolidation options.

Divestment

If companies are operating in industries which are subject to substantial change due to e.g. technological development, new entries, or changes in consumer preferences, some of their 'older' product-market combinations might no longer generate the 'normal' and necessary returns on investment. In order to maintain a combination of rent generating, but high-risk, new activities and less risky and 'normal' returns through 'run-of-the-mill' operations companies will sometimes have to divest some of their older businesses. In addition to this 'balanced portfolio' line of argument, divestments are also undertaken to finance some of the new activities that a company intends to invest in. Based on the well-known BCG matrix and the product life cycle understanding of business opportunities, the management literature suggests that companies should divest those activities that are characterized by a low attractiveness of their existing product-market combinations and a weak competitive position of the company (Besanko, Dranove and Shankley, 1996). In other words, we can expect that divestments will be found primarily in the existing, older activities of companies and not so much in the new activities and new businesses in which companies are engaged. These arguments lead to our first hypothesis:

Hypothesis 1: Divestment activities of companies occur in existing (older) activities and not in new activities and businesses.

Acquisitions and joint ventures

A number of seminal contributions to the literature on majority acquisitions, minority acquisitions, and joint ventures express that these different options are to be seen as important elements in the strategy of companies to respond to uncertainty (Pfeffer, 1972; Sutton, 1980; Williamson, 1996). Companies particularly face uncertainty when it comes to adjusting to changes in their existing environment or to external changes that might create new competitive conditions. The absorption of at least parts of their environment (i.e. other companies) by means of acquisitions and joint ventures is one of the alternatives that companies have if they attempt to reduce uncertainty, increase control over environmental changes or reduce their dependency on an existing environment. Pfeffer (1972) already noted that this absorption of other companies or parts of other companies by means of acquisitions or joint ventures, in order to respond to uncertainty, can take place through either the integration of companies in sector(s) in which a company is already operating, or a diversification into another sector because the company has become too dependent on its existing environment. In the following we will take a slightly different perspective as we consider in particular the behaviour of companies with regard to their choice for a mix of existing activities with new businesses or a completely new set of activities. In other words, we consider whether companies diversify into related businesses (a combination of existing and new activities) or whether they diversify into businesses with which they had little or no previous experience.

Diversification into related and unrelated activities

A substantial part of the current literature seems to suggest that in general the search for new activities through unrelated diversification by means of acquisitions has been less successful for most companies than the search for new activities through related acquisitions (Datta, 1991; Kusewitt, 1985; Oster, 1994; Porter, 1987; Singh and Montgomery, 1987). As shown by Datta (1991) there are also studies that find little or no evidence of such a relationship. On theoretical grounds, however, the relevance of the idea that companies should attempt to enter into new activities through related businesses remains appealing. Obviously, related acquisitions (both full and partial acquisitions) are expected to profit from economies of scale and scope that should generate more synergetic benefits than in the case of unrelated acquisitions that have no relationship other than becoming part of one overarching system of corporate control.

Research on joint ventures and other forms of alliances generates somewhat similar insights. Hagedoorn (1993 and 1995), Harrigan (1985) and Mowery (1988) found that joint ventures and alliances with complementary (i.e. related) partners were beneficial for most companies. This line of research suggests that complementarity is a major driver of partnering behaviour. Therefore, a strategy aimed at creating joint ventures that are complementary to endogenous capabilities could have a more positive effect on company performance than the formation of joint ventures that either parallel existing capabilities or that is unrelated to existing activities.

Therefore, the current understanding of both acquisitions and joint ventures suggests, amongst other things, that a rational strategy for companies would be to use both 'vehicles' to diversify into related activities that are a mix of existing and new activities. In short, we are faced with two related hypotheses:

Hypothesis 2a: Companies prefer diversification into related activities that are a mixture of existing and new activities to diversifying into unrelated activities.

Hypothesis 2b: Companies use both acquisitions and joint ventures to diversify into a mix of existing activities with new businesses.

International diversification

Given the degree of international activities of most companies, both in sales and production, many of them are also confronted with the choice for international or domestic diversification. This choice implies not only that companies have to decide whether they intend to acquire other businesses domestically or internationally, it also means that, once a choice for international diversification is made, companies still have to consider a certain concentration on particular countries or international regions. Obviously, these questions are not only relevant for acquisitions they also apply when companies consider international joint ventures.

Previous research on the effect of the internationalisation of new and innovative activities through acquisitions and joint ventures suggests positive effects of this international diversification on the performance of companies (Freeman and Hagedoorn, 1995; Hitt et al, 1997; and Hoskisson and Hitt, 1994). These positive effects are largely due to different local advantages generated by international sourcing through acquired companies and partner companies. Of particular importance in this context is the so-called agglomeration effect. This implies that companies make use of the network externalities created by a large number of companies in a particular region or a country that has a particular advantage. Clear examples of this phenomenon are found in the electronics and pharmaceutical industries in particular

regions in the USA where local companies have created such a comparative advantage that non-US companies enter into new activities and new businesses through US acquisitions and joint ventures with US companies. This leads us directly to our next hypothesis.

Hypothesis 3: Investment strategies for incumbent companies concentrate on new activities in a particular region or a country that has a comparative advantage created by a large number of established companies.

THE PUBLISHING INDUSTRY IN THE NETHERLANDS

The Netherlands has a long and distinguished publishing tradition. Building on this tradition and the continuing world dependence on information, Dutch publishers have become prominent publishing – and information providers in the world. The publishing industry in the Netherlands as we know it today was formed, in particular, over the last decades. After World War II a number of new technological inventions, such as electronic printing mechanisms and communication systems, and faster adoption changed the structure of the Dutch publishing industry dramatically. Due to these innovations specialization and integration increased in diverse directions within the different product lines. Consequently, the Dutch publishing companies started to merge or to co-operate closely with each other to survive in the increasing competitive industry (Ridder, 1984). Almost all large mergers in the Dutch publishing industry after 1964 were horizontal mergers. It started with the merger by ‘*De Spaarnestad*’ and ‘*Teulingsconcern*’ in 1964, which became VNU. The merger wave in the publishing industry between 1967 and 1972 was mainly based on creating a stronger position or developing a new position for a certain medium. All this was still focused on the Dutch domestic market. After this period a clear concentration of publishers was visible. A new merger wave started in 1979 with the merger between Elsevier and NDU. In this case the

reason for the merger was not only to obtain a better position in the domestic market but it also was a way of raising capital for further penetration into foreign markets. This was the beginning of a new trend. Since 1979, the strategy of many Dutch publishing companies has been focused on growth in foreign markets (Brink, 1987).

A very important element of the publishers' diversification strategy is the location of acquired companies. Dutch publishers are becoming more focussed on acquiring specialized media companies in North America. It is a fact that most electronic publishing media are developed in the United States (Lichtenberg, 1999). In recent years Dutch publishers seem to have increased their presence in the American market, mainly by acquisition of state-of-the-art electronic publishing and/or multi-media companies (Bennett, 1999).

The use of information and communication technologies can be seen as just a new phase in the evolution of the publishing industry. Publishing companies are entering new product life cycles (Vernon, 1966; Klepper, 1997) for instance through internet businesses that have been operating for less than a few years. It is expected that the critical masses for the general acceptance of these new activities will be probably reached within a decade (Lichtenberg, 1999). Technologies such as the internet, online subscription services, and E-books make it possible to combine old and new media into one product with an additional element that was missing in the earlier markets: interactivity. Publishing is now part of the global information and communication industries and interacts with many different fields within this group of industries and technologies. Because of this diversification publishing companies have to redefine their 'core business'. However to use these technologies in a competitive way, substantial investments in capital and expertise is required. Often the required publishing companies' technology base is lacking or limited in nature. For companies lacking such competencies several options are open to acquire the essential technological knowledge. The question that arises, is: how do traditional publishing

companies benefit from the new developments and strengthen their competitive advantages?

To provide insights in the strategic reactions of Dutch publishing companies on the recent technological developments in the publishing industry, we selected the three leading publishing companies in the Netherlands: Reed Elsevier, Wolters Kluwer and VNU.

Table 1: Key figures of the top three publishing firms in the Netherlands in million € (Euro)

	Reed Elsevier		VNU		Wolters Kluwer	
	Net	Balance of	Net	Balance of	Net	Balance of
	Revenue	acquisitions	Revenue	acquisitions	Revenue	acquisitions
		minus		minus		minus
		divestments		divestments		divestments
1997	4324	1002	1779	320	2364	425
1998	4708	538	2427	2080	2739	1058
1999	5153	510	2809	2312	3018	414

These numbers are by approximation and it should be mentioned that the accounting methods of the three publishers differ slightly.

Source: Annual reports of Reed Elsevier, Wolters Kluwer and VNU.

Table 1 shows the key figures of these leading publishing companies in the Netherlands. Based on the net revenue figures, Reed Elsevier is the largest, followed by Wolters Kluwer, and VNU is number three in the ranking. However, looking at strategic strength and growth prospects, the picture is less clear. With respect to acquisitions and divestments VNU shows the most aggressive diversification strategy. It spent a total net amount of € 4712 mln. on acquisitions within three years, while Reed Elsevier and Wolters

Kluwer spent a total net amount of 2050, and 1897 (in € mln.) on acquisitions respectively. If we compare the annual net spending on acquisitions of each company, then we see that the figures differ significantly. This implies that the strategic reactions needed to deal with new technologies differ substantially between the three publishing companies. In the following we will discuss the different strategies followed by Reed Elsevier, Wolters Kluwer, and VNU in dealing with new activities and new businesses that come with the new information and communication technologies.

Reed Elsevier

Elsevier was founded in 1880 and it merged with Reed in 1992, after which the company came to be known as Reed Elsevier. Through the merger it became strongly represented in North America, Europe, and the Asia Pacific. Reed Elsevier is a world leading publisher and information provider with a focus on three key market areas: science, legal and business. Its businesses in the scientific segment publish more than 1,200 journals worldwide in the physical, life, social, and medical sciences and they operate an international network of medical communications services. Reed Elsevier's legal segment serves, through a variety of publishing formats, important legal, tax, reference and educational markets around the world. The activities within the business segment are leading business magazine and information companies, and a worldwide exhibitions business. Each of these markets is large and grows at 4-7% annually. Its two parent companies - Reed International P.L.C. and Elsevier NV – are listed on the Amsterdam, London and New York Stock Exchanges. Reed Elsevier employs over 26,000 people.

Reed Elsevier's product-markets are undergoing rapid and accelerating changes. This means that Reed Elsevier will be confronted with the migration of information from print to electronic format and the additional interactivity that electronic services offer.

Based on this change, the principal objective for Reed Elsevier is to be an indispensable partner to their target consumers for information-driven services, providing solutions across their three core areas of focus (science, legal, and business). Capitalizing on the potential of the internet will be a key driver of Reed Elsevier's strategy. In the near future acquisitions and alliances, particularly in the context of internet development will be used to reinforce Reed Elsevier's strategy. At this moment, the three core businesses are all transitioning into electronic markets. All of them are becoming more global and the internet is rapidly becoming the preferred customer access system for all three.

In the past Reed Elsevier already introduced numerous innovative services and products. Examples include the launch of ScienceDirect, the fully searchable online database comprising content from over 1,000 of their scientific journals. In legal publishing, Butterworths launched its Butterworths Direct product, the most comprehensive online legal service for English law. Furthermore, LEXIS-NEXIS introduced its universe current awareness web browser product for the business market.

However, it appears as if, to some degree, Reed Elsevier has also under-invested in new product development, marketing, and sales. This is a key factor behind the lack of growth in both particular traditional markets and new internet businesses. Reed Elsevier therefore budgets an investment of € 420 mln. in 2000 on new development initiatives compared to an average € 80 – 120 mln. in previous years. This level of investment will be followed by a total three years investment package reaching in excess of € 1,200 mln. Around 90% of these investments will be internet related, including new product and technology development, marketing, and sales. Reed Elsevier expects that in the year 2002, a quarter of the revenues, one and a half million euro, is coming from the internet.

To change Reed Elsevier from a traditional 'paper' company into an electronic publisher that can survive in a rapid changing industry demands a huge reorganization. The internet

activities of the company will be organized separately, with distinct management responsibilities and accountabilities. Although the electronic media group will work closely with the printing brands and marketing, they will also independently pursue growth opportunities in existing and carefully defined new market segments. Additionally the company established a venture fund of initially up to €100 mln. to make early stage investments in internet related businesses, to provide insight and involvement in these new markets and new technology initiatives as well as to generate adequate financial returns.

Wolters Kluwer

Wolters Kluwer is a leading provider of information and workflow tools for professionals throughout Europe, North America and Asia Pacific, and it is listed at the Amsterdam stock exchange. Its strategy is to provide comprehensive, authoritative, and reliable print and electronic information products and services to help professionals reduce costs, boost productivity, and increase the efficiency and effectiveness of their work processes. To execute this strategy Wolters Kluwer will focus on three different markets, namely legal, tax & business; international health & science; and educational publishing. The strategy of these core activities is to deliver superior products and services in any media and on any platform customers choose. Besides the traditional print products, efforts have been made to develop strategies for new media and platform. Wolters Kluwer employs almost 18,000 people.

An increasing number of Wolters Kluwer's customers started to use the internet, which implies that in recent years Wolters Kluwer had to make very significant efforts and investments to respond to the migration from print to electronic format. Electronic publishing revenues in 1999 were over € 550 mln. and very profitable. The company extends these efforts by investing an additional € 250 mln. to accelerate migration to the internet, to build new products and to attract new customers over the course of the years 2000-2002.

Furthermore, the company will realign its businesses in five operational clusters to focus attention on specific customer groups and execute its internet strategies. Each of these five organizational clusters (legal, tax & business Asia Pacific; legal, tax & business North America; legal, tax & business Europe; international health and science; and Educational publishing), has unique internet challenges and opportunities. This will lead to the creation of individual cluster-specific online strategies. These strategies provide quick offering of all existing content, services, and software on the internet platform. Besides that they move beyond the extension of their existing business to create new internet-specific products, services and productivity tools. Recently, Wolters Kluwer established a Corporate Technology Organization headed by a chief technology officer. The role of this technology organization is to assist the cluster organizations in implementing their internet strategies. Standardized platforms in North America and Europe will provide the essential hardware and software infrastructure and development services necessary to host and support the internet activities of the five clusters. By establishing this organizational structure, Wolters Kluwer tries to combine the advantages of a decentralized internet strategy with a better coordination of their investments across their businesses.

VNU

VNU is active on the market for consumer – and professional information. More specifically its core activities are consumer magazines, telephone directories & information services, business information and educational publishing. Its strategy is to grow further in professional publishing and to expand its businesses in the USA. Currently approximately half of its revenues come from professional publishing and about 40 percent of its revenues are generated in the USA. VNU is active in eighteen European countries, the USA, Canada, Puerto Rico, India, and South Africa. It is listed on the Amsterdam, Brussels, and Luxemburg stock exchanges and it employs about 16,000 employees.

VNU's strategy is directed towards growth and further expansion in key areas like marketing, information services, new clusters of business information in the USA and Europe, consumer magazines, directories and other information services. For instance, in 1999, VNU made a huge move in fulfilling its intentions by acquiring Nielsen Media Research, the market leader in internet audience monitoring in the USA. Furthermore, VNU recognizes that, although paper is still an important source of information, electronic information services are already heavily used in the world of professional information processing. In consumer information markets, the penetration of new media is expected to have a more gradual character. VNU's strategic intention is to play a leading role in the expansion of new electronic product offerings and for that reason it invests large amounts of capital in new technologies. Development costs relating to its internet operations were approximately € 30 mln. in 1999. The total number of employees who were involved in the internet operations in mid 1999, amounted to approximately 200. In the USA, VNU already operates websites that are profitable (for example Billboard online and Adweek online). This is rather unique as normally internet activities demand high investments, while they hardly generate any income. With the acquisition of World Directories, VNU strengthened its long-term position to become an active player in the new interactive media.

VNU has streamlined the organization of some of its internet operations in Europe by forming a central internet business unit, VNU Internet Publishing. This business unit sets up new internet projects involving several divisions and provides support for existing internet activities within VNU.

We can conclude that there exists considerable overlap between the publishing companies with respect to their market segments. For example, Wolters Kluwer and Reed Elsevier both focus on the legal and science segments and VNU and Wolters Kluwer aim at the educational publishing segment. From an organizational viewpoint the publishers differ

substantially. VNU centralizes (some of) its internet operations in Europe meaning that an internet project can involve several core activities. Wolters Kluwer on the other hand chooses for a decentralized approach whereby each core activity can develop its own specific internet strategy. Finally, the internet activities of Reed Elsevier will be organized separately from the printing and marketing activities leading to a more functional division. Strategically speaking, all three publishing companies substantially increase their investments in new electronic and on-line businesses to become an active player in the market of the new economy.

DATA AND VARIABLES FOR THE STATISTICAL ANALYSIS

This paper is part of a larger exploratory research project examining new strategies and changes in the product portfolio of traditional companies that attempt to capitalize on both the trend of globalisation of businesses and the rapid integration of new information technologies in our economy. In order to test the hypotheses that we developed in the above, we constructed a data set on the investment activities of the three Dutch multinational publishing companies that have recently consolidated in the information and communication industries. As mentioned before, we selected these publishing companies because they are conglomerates, which are world leading publishers and information providers operating principally in North America and Europe. The period under investigation starts in January of 1997 and ends in April 2000. The data set is mainly compiled from information published by the three publishing companies Reed Elsevier, VNU, and Wolters Kluwer themselves and some additional sources¹. For this additional information we consulted Dunn and Bradstreet data, Reach, WorldScope, newspapers, and specialized journals which report on business events. Despite the high quality of the data that became available, the nature of the effort unavoidably must have resulted in some inaccuracies. These probably involved the omission of some small acquisitions and minor divestments. In total we monitored 175 investment

events for the publishing companies for the period 1997-2000. Table 2a shows that Reed Elsevier was involved in 61 (or 35%) of the total number of investment events, VNU in 72 (or 41%) and Wolters Kluwer in 42 (or 24%) investment events. We were also able to obtain some information about the nature of these investment activities. The most common investment strategy for these publishing companies is to make a majority stake acquisition. In 115 cases a share of more than 50% in another company was acquired, while in only 12 cases these companies acquired a minority stake (less than 50%). Twenty-eight cases refer to the divestment of a business unit. There were 16 cases where these publishers entered into joint ventures with other companies in the information and entertainment businesses. Only in four cases a subsidiary of a publisher merged with another venture. It should be noted that one publisher apparently did not apply all investment strategies, Wolters Kluwer did not use a merger or joint venture to consolidate during the period of our investigation.

Table 2a Frequencies of consolidation strategies for each publishing company for the period 1997-2000

	Mergers	Majority Stake	Minority Stake	Joint Ventures	Divestments	Total
Reed Elsevier	1	40	3	5	12	61 (35%)
VNU	3	41	7	11	10	72 (41%)
WoltersKluwer	-	34	2	-	6	42 (24%)
Total	4	115	12	16	28	173

Table 2b Distribution of publishing company investment activities in parts of the world in percentage (%) for the period 1997-2000

	Africa	Australia	Asia	Eastern Europe	EU & EFTA	Latin America	North America
Reed Elsevier	0	2	0	0	26	3	69
VNU	1	0	1	9	59	0	30
Wolters Kluwer	0	0	0	0	56	0	44

Table 2b shows the distribution of the location of investment activities of the sample firms. Although the distribution is not uniform among the companies, the data shows that the majority of investment activities of the publishers have taken place in North America (USA and Canada) and Western Europe (EU and EFTA). The investment strategy of Reed Elsevier is mainly focussed on North America, since 69% of its consolidation activities were located in this part of the world. On the other hand, Wolters Kluwer and VNU invested more in Europe (including Eastern Europe) 68% and 56%, respectively.

In order to test the hypotheses on the investment strategies of companies related to their existing activities and new activities, the unit of analysis is the investment choice. However, we also investigate the differences in strategy between the publishing companies, especially the differences in their individual location decisions and the form of consolidation. Therefore, the relevant unit of analysis for testing these firm specific characteristics is the firm itself. We aggregated all kind of acquisitions by the companies to one variable. We defined a merger as an acquisition because subsidiaries of the publishing companies merged but not their parent companies. The merged subsidiary is still owned by the publisher.

Definitions of the variables

The *dependent variable* in the first part of the following statistical analysis is the investment mode. The investment mode is categorized as traditional diversification (a company only diversifies into existing activities and businesses), unrelated diversification (diversification into new activities and businesses with which the company had little or no previous experience), or related diversification (the company diversifies into a mix of existing activities with new businesses). See appendix for a precise description of the investment modes for the publishing industry.

The following independent variables are included.

Investment strategy

Divestment – Dummy variable, that takes the value 1 if the investment was a divestment, 0 if the investment was a positive consolidation event.

Acquisition – Dummy variable, that takes the value 1 if the investment was an acquisition, 0 otherwise.

Joint Venture – Dummy variable, that takes the value 1 if the entry in a business -was a joint venture, 0 otherwise.

North America – Dummy variable, that takes the value 1 if the investment took place in USA or Canada, 0 if the investment activity was located in Europe or in the other parts of the world.

Firm specific variables

Reed Elsevier - Dummy variable, that takes the value 1 if Reed Elsevier invested in the investment mode, 0 otherwise.

VNU – Dummy variable, that takes the value 1 if VNU invested in the investment mode, 0 otherwise.

Wolters Kluwer – Dummy variable, that takes the value 1 if Wolters Kluwer invested in the investment mode, 0 otherwise.

Control variables

1997 – Dummy variable, that takes the value 1 if the investment took place in the year 1997, 0 otherwise.

1998 – Dummy variable, that takes the value 1 if the investment took place in the year 1998, 0 otherwise.

1999 – Dummy variable, that takes the value 1 if the investment took place in the year 1999, 0 otherwise.

2000 – Dummy variable, that takes the value 1 if the investment took place in the year 2000, 0 otherwise.

Table 3 provides descriptive statistics and correlation coefficients for all variables, N is the number of observations and s.d. is the standard deviation.

Table 3 Number of observations, means, standard deviations (s.d.), and correlations of all variables

Variable	N	Mean	s.d.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1 traditional diversification	169	0.43	0.50	1													
2 unrelated diversification	169	0.22	0.41	-0.462	1												
3 related diversification	169	0.35	0.48	-0.639	-0.388	1											
4 Reed Elsevier	175	0.35	0.48	-0.073	0.062	0.053	1										
5 VNU	175	0.41	0.49	0.001	-0.020	0.015	-0.612	1									
6Wolters Kluwer	175	0.24	0.43	0.079	-0.06	-0.076	-0.411	-0.470	1								
7 Divestment	175	0.16	0.37	0.158	0.072	-0.226	0.073	-0.048	-0.026	1							
8 Acquisition	175	0.75	0.44	-0.082	-0.142	0.208	0.046	-0.078	0.141	-0.753	1						
9 Joint Venture	175	0.09	0.29	-0.078	0.122	-0.025	-0.024	0.178	-0.178	-0.138	-0.547	1					
10 North America	167	0.47	0.50	-0.299	0.214	0.122	0.325	-0.287	-0.032	-0.035	0.057	-0.042	1				
11 1997	175	0.23	0.42	0.061	-0.052	-0.018	-0.065	-0.024	0.100	-0.057	0.103	-0.082	-0.193	1			
12 1998	175	0.28	0.45	0.034	-0.080	0.034	-0.056	0.022	0.037	0.110	-0.079	-0.021	0.188	-0.345	1		
13 1999	175	0.37	0.48	0.055	0.013	-0.068	0.058	0.054	-0.127	-0.077	-0.018	0.125	-0.037	-0.425	-0.479	1	
14 2000	175	0.11	0.32	-0.209	0.160	0.078	0.076	-0.081	0.008	0.039	0.001	-0.052	0.043	-0.199	-0.224	-0.276	1

METHODS AND SPECIFICATION OF ANALYSIS

Statistical models of discrete choice can be applied when, as is the case in our contribution, the dependent variable represents discrete events. In the context of this paper there are three states in which an investment choice can be categorized as: (1) diversification into only (traditional) existing activities and businesses, (2) diversification into unrelated new activities and businesses, or (3) diversification into a combination of existing and new activities and businesses. The simplest models of this type involve only a set of three alternatives with no particular ordering represented by ternary, 0-1-2, dependent variable Y_i . Therefore our analysis begins with a three-state discrete choice model because in this situation companies choose among three investment options based on the product categories that specify either existing activities, new activities or a mixed investment in these businesses. A multinomial logit model is employed in order to relate the investment intentions of companies (as measured by one of the three investment modes) to strategic objectives and time effects. The multinomial logit model has been developed from a theory of probabilistic choices in economics (see e.g. Maddala, 1983; Schmidt and Strauss, 1975). It is a widely used analytic method to test the significance of independent variables leading to investment choices.

Let the variable $Y_{ij} = j$ if the i th observation chooses alternative $j, j = 0, 1, 2$. In our situation of interest i represents investments in an activity or business and j represents the kind of diversification where $Y_{ij} = 0$ denote traditional diversification, $Y_{ij} = 1$ indicate unrelated diversification, and $Y_{ij} = 2$ represent related diversification. The multinomial logit model for the probability that $Y_{ij} = j, P(Y_{ij} = j), j = 0, 1, 2$ can be formulated as:

$$P(Y_{ij} = j) = \exp(\forall_j + \exists_j X_i) / [\sum_{j=0}^2 \exp(\forall_j + \exists_j X_i)],$$

where X_i represents the vector of characteristics of i th observation.

The usual benchmark for comparison is the traditional diversification (state zero) and therefore we set $\forall_0 = \exists_0 = 0$ (Theil, 1969). This normalization permits us to calculate the

probability of diversification investment in existing businesses, new businesses and a combination of existing and new businesses as:

$$P(Y_{ij} = 0) = 1 / [1 + \exp (\forall_1 + \exists_1 X_i) + \exp (\forall_2 + \exists_2 X_i)]$$

$$P(Y_{ij} = 1) = \exp (\forall_1 + \exists_1 X_i) / [1 + \exp (\forall_1 + \exists_1 X_i) + \exp (\forall_2 + \exists_2 X_i)]$$

$$P(Y_{ij} = 2) = \exp (\forall_2 + \exists_2 X_i) / [1 + \exp (\forall_1 + \exists_1 X_i) + \exp (\forall_2 + \exists_2 X_i)]$$

The parameters of the three-state multinomial logit model are estimated by maximizing the likelihood function. We used the statistical software programs LIMDEP 7.0 and SAS to compute the maximum likelihood estimates of the model.

A method to analyse categorical data applies to the situation to test the differences between the three publishers. The Chi-square test is the most appropriate method because we have nominal (frequency) data, where subjects are assigned to categories. The test is concerned with answering the question: does a relationship exist between the variables of interest? This method compares the observed frequencies with the expected frequencies if there were no statistical relationships between the relevant variables.

RESULTS

Parameter estimates of the multinomial logit model are presented in Table 4 for the independent variables with acquisition and joint ventures, and divestment as benchmarks. Estimates for only two investment choices, unrelated diversification or related diversification, are provided because the normalization $\forall_0 = \exists_0 = 0$ implies that the coefficients for the investment choice of diversification into only (traditional) existing activities and existing businesses are all zero. Since the model for unrelated and related diversification investment estimates the coefficients of covariates, while constraining the coefficients of existing diversification option to zero, we have to interpret coefficients as the marginal impact that these variables have on the probability of diversification investment in unrelated new or a

Table 4 Results for the three-stage multinomial logit model for investment options				
	Unrelated diversification	Related diversification	Unrelated diversification	Related diversification
Variable	Benchmark Acquisition and Joint Ventures		Benchmark Divestment	
Constant	-1.7303 ** (0.6066)	-1.1607 * (0.5319)	-1.7814 * (0.7722)	-3.0163 ** (0.8580)
Divestment	-0.1215 (0.5566)	-1.8891 ** (0.6859)		
Acquisition			-0.0815 (0.5708)	1.8547 ** (0.6889)
Joint Venture			1.4426 (0.8779)	2.1750 * (0.9610)
North America	1.9339 ** 0.5172	1.1555 ** (0.4361)	2.0051 ** (0.5276)	1.1622 ** (0.4383)
Reed Elsevier	-0.0560 (0.5982)	0.5115 (0.5292)	-0.2018 (0.6051)	0.4756 (0.5315)
VNU	0.4234 (0.5705)	0.5887 (0.5002)	0.1278 (0.5990)	0.5602 (0.5088)
1997	0.1005 (0.5996)	0.4215 (0.5145)	0.2320 (0.6106)	0.4127 (0.5151)
1998	-0.6805 (0.5731)	0.2011 (0.4851)	-0.6427 (0.5824)	0.1884 (0.4863)
2000	1.8368 * (0.8050)	1.6862 * (0.8030)	1.9497 * (0.8129)	1.6784 * (0.8030)
N	163		163	
Log likelihood	-174.0700		-174.0700	
χ^2 (df)	39.63 **		43.84 **	

Notes: Figures in parentheses are standard errors.

** : significant at $p < 0.01$; * : significant at $p < 0.05$.

combination of existing and new activities and businesses. The results indicate that the model is highly significant for testing the null hypotheses that all coefficients are zero, except for the intercept. We separately estimated the regressions by changing the strategy variables in order to observe the importance of these variables related to the prediction of the investment choices. The models are significant. The Chi-square tests, χ^2 (df), for covariates are significant at p-value of 0.01. In terms of overall fit of the models, the multinomial logit models correctly predict about 53 percent of events of diversification investment into only traditional, unrelated, and related activities and businesses.

Our first hypothesis suggested that firms would be more likely to divest in their existing activities, than in their new activities and new businesses. In our benchmark acquisition and joint ventures model the divestment estimate is insignificantly associated with the unrelated diversification but there is a significant effect for related diversification. These results indicate that the divestment of firms' is less likely to occur in a combination of existing and new activities and businesses than in the traditional activities or in unrelated new activities.

Hypothesis 2a explores whether companies prefer to diversify into related activities that are a mixture of existing and new activities. In addition, we also hypothesized (2b) that firms use both acquisitions and joint ventures to diversify into a mix of new businesses and existing activities. The estimation results in the benchmark divestment model show that both consolidation strategies positively affect the likelihood to invest in related activities. This implies that investments in unrelated diversification by means of acquisitions or joint ventures are less preferred by for most companies than investments in activities through related businesses. The coefficient associated with joint ventures in the benchmark divestment model, however, is greater than the one associated with acquisitions. This suggests that the

probability of related diversification investment is higher for a joint venture than for an acquisition, but the difference is not statistically significant.

Table 4 also shows the results for the analysis testing hypothesis 3. As predicted, the region estimates show that these publishing companies favour North America to other regions. This result reflects the fact that local companies in North America have created such a comparative advantage in the new information and communication businesses that European companies must probably internationalise through North American investments to survive in this rapidly changing world.

Our results for the differences in firm specific characteristics do not discriminate between these companies and their preferences for certain investment modes. A direct interpretation of our findings is that all three companies have changed their traditional strategy and product portfolio. Apparently, these firms have the same investment strategy related to existing and new activities and businesses. However, some possible differences between these firms may need some further discussion. As mentioned before, Table 2a presents the frequencies for each publishing company with regard to the kind of strategy they followed. The calculated Pearson Chi-Square is 6.381 and the associated degree of freedom is 4ⁱⁱ. The outcome also indicates that there exists no relationship between the three companies and the strategies they have used. Again this demonstrates that all three publishers have followed more or less the same mix of diversification strategies.

Another interesting finding is the link between location and the firm's investment decision. The calculated Pearson Chi-square test for Table 2b is 22.546, and it is statistically significantⁱⁱⁱ. This result indicates that there exists a relationship between the three publishing companies and the location they are investing in. Investments of Reed Elsevier and VNU differ substantially between North America and Europe, while investments of Wolters Kluwer are almost equally divided between both regions.

With respect to the control variables, the overall impression is that firms are becoming more focussed to acquire new activities. The year 2000 is positive and significant in all our models, while the other years are not significant in comparison to 1999. The coefficient associated with 1998 in the unrelated diversification equation is, however, negative. This might suggest that these firms have recently reconsidered their investment strategy in favour of the new electronic and e-business activities.

CONCLUSIONS

In our contribution we have applied both a qualitative approach, with a case study-based analysis of investment strategies of companies, and a quantitative approach, with a statistical analysis of the different characteristics of the investment preferences of companies. Not only do these different methods and analyses indicate similar developments in the three leading Dutch publishing companies, both approaches also complement each other in terms of the specific information that is being generated. In that sense this paper appears to provide a rather comprehensive picture of recent developments in the industry and its main players from the Netherlands.

What we have learned through this exercise is that these leading companies do indeed diversify into a number of new activities that are centred around the internet, e-business and other electronic products and services. It are particular those activities that form the core of the new economy. However, we also noticed that these companies follow a strategy of gradual and related diversification into these new activities. In that sense their strategy could be seen as rational in the sense that they appear to largely avoid ‘risky’ diversification into unknown, new businesses that are completely unrelated to their current portfolio of businesses. This diversification into new multimedia and communications and information technology gains importance for our understanding of how these companies are changing if

we realize that they almost simultaneously divest a number of their existing businesses in the traditional publishing sector. Both, the divestment of some traditional activities and the investment in new but related businesses, indicate that these companies are going through a rather rapid transition from traditional, single industry, publishing companies to companies that are operating in their traditional industry as well as in some important new and upcoming activities that are related to the internet and a wide range of new multimedia services.

As expected the current dominance of North America in these new businesses, in terms of new markets and the supply of new companies and new technologies, has a major impact on the investment strategies of these companies. Although there are some differences among these companies, a substantial share of their current product-market diversification into new activities is paralleled by a preference for new investments made outside Europe, in particular in the USA.

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APPENDIX: DEFINITION OF INVESTMENT MODES

With respect to the investment mode, three categories were defined. Using the data on consolidations available in the specific reports of the companies, we were able to identify how the companies' investments are related to the activities and businesses from the old and new economy. If the company acquired only activities from the so-called new economy then its investment is characterized as unrelated diversification. If the consolidation was listed as investment in only activities and businesses from the old economy, then the investment mode is defined as traditional diversification. In all other cases, the company acquired activities from the old economy and the new economy at the same time. This investment mode is categorized as related diversification.

Table A1 shows the overview of activities and businesses related to the diversification investment modes of the publishing industry.

Table A1: Definition of the investment modes of diversification

Traditional diversification

<i>Industries</i>	<i>Examples of Products</i>
hard-copy publishing activities	books, newspapers, journals, magazines
professional services	shows, conferences, and fairs
entertainment	radio, television and movies

Unrelated diversification

electronic services & electronic products	online information services, e-commerce, software systems, databases, CD-roms, web-sites, internet provider
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Related diversification

combination of traditional publishing activities and electronic services & electronic products.	journals & online information services, books & CD-roms, newspapers & online information services, yellow pages
combination of professional services and electronic services & electronic products	conferences & online information services, shows & web-sites
combination of entertainment and electronic services & electronic products	movies & DVD
marketing and information services	(online) business-to-business marketing research & consulting services

Notes

ⁱ This information was to a large extent also used to describe the companies strategy and markets in the previous section.

ⁱⁱ The Chi-square test is only valid if three conditions are met. First, the data must be independent. No subject can appear in more than one cell of the table. Secondly, no more than 20% of the calculated expected frequencies in the table can be less than five. Thirdly, no cell should have an expected frequency value of less than one. To meet these conditions, we aggregated minority stake, majority stake and mergers to one variable Acquisition.

ⁱⁱⁱ To meet the conditions we have merged some groups together, and ended up with three different locations: EU&EFTA, North America, and the rest of the world.