8-4-2008

Evaluating the Effect of the Market Environment on the Business Success of Online Newspapers

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芽|Sprouts Working Papers on Information Systems ISSN 1535-6078

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Abstract
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Keywords: Online Newspaper, Business Success, Demand Turbulence, Competition, Market Environment

Permanent URL: http://sprouts.aisnet.org/4-25

Reference: Santonen, T. (2004). "Evaluating the Effect of the Market Environment on the Business Success of Online Newspapers," Helsinki School of Economics, Finland . *Sprouts: Working Papers on Information Systems*, 4(25). http://sprouts.aisnet.org/4-25

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Information Systems Science

August
2004

HELSINGIN KAUPPAKORKEAKOULU
HELSINKI SCHOOL OF ECONOMICS
WORKING PAPERS
W-375

HELSINGIN KAUPPAKORKEAKOULU
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PL 1210
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ISSN 1795-1828
ISBN 951-791-873-9 (Electronic working paper)

Helsinki School of Economics -
HeSE print 2004

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ABSTRACT

In the management literature it has been argued that the market environment conditions should have a substantial effect on business success. However, the present literature regarding online newspapers has more or less neglected this viewpoint and investigated the effects of only some aspects of the market environment like the structure of the online newspaper market and the role of geography. Therefore, in this research our focus was on analyzing empirically how the market environment factors influenced the business success of online newspaper. As the outcome of our statistical analysis based on data from 42 online newspapers, we suggest that a high level of perceived demand turbulence (basically as a result of unstable user needs) was related to difficulties in generating revenue. Also the perceived level of competition seemed to be connected to revenue accumulation. The harder the perceived competition was, the greater the effect of demand turbulence appeared to be. The enhanced success model, including the company's experience in online publishing, the perceived level of demand turbulence and the intensity of competition as predictors of annual revenue, achieved a considerably high explanatory power. The management implications of these findings are discussed.

KEYWORDS

Online newspaper, business success, demand turbulence, competition, market environment

1. INTRODUCTION

The first generation of online newspapers was born in the mid 1970s when videotex systems were developed in Europe for consumer applications (Cats-Baril et. al. 1994). The rapid growth of the World Wide Web (later web) starting in the early 1990s enabled a more commercially promising platform for electronic publishing. The birth of the web posed the greatest threat that traditional publishing companies had yet encountered, and for a while it even seemed possible that this digital revolution would bring the print newspaper industry to an end. Print newspapers have tried various ways to develop viable business models and revenue streams for their online services including advertising, subscription fees, archival access charges, related Internet services, customization, online ordering of information and syndication or revenue sharing with partners, but in general these efforts have not yet been very successful (Gallaugher et al. 2001, Peng et al. 1999, Rayport and Sviokla 1994, Shapiro and Varian 1998, Ilhström and Palmer 2002, Palmer and Eriksen 1999a, b, Picard 2000, Steinbock 2000, Kalakota and Whinston 1996, Sääksjärvi and Santonen 2002, Chyi and Lasorsa 1999, Harper 1997). Even though it is not yet fully clear what kind of a role online newspapers will have in the future, the current belief is that there is only a slight chance that print newspapers will be replaced by the online versions (Harper 1996, Peng et al. 1999, Chyi and Lasorsa 1999, Mueller and Kamerer 1995). The phenomenon that in the beginning appeared as a revolution, had turned into a slow incremental evolution, and the over-optimistic economic expectations about the digital revolution have been washed away.

1.1 Objectives of this paper

Sääksjärvi and Santonen (2002 and 2003), among others, have empirically explored how various factors like experience, the geographical focus of the parent print newspaper, the amount of online personnel, the size of the customer base and the applied customization or revenue logic affect the ability of online newspapers to generate revenue and achieve their generic business goals. However, these studies and practically the whole online newspaper literature have paid less attention to the suggested effect of the market environment on business success (eg. Afuah and Tucci, 2001). Prior studies by Chyi and Sylvie have investigated the effects of only some aspects of the market environment, such as the structure of the online newspaper market (1998) and the role of geography (2001), while Santonen (2003) has only tested how perceived demand turbulence is affected by experience and the customization strategy applied. For this reason, it seemed to be useful and valuable to empirically test the suggested effect of the market environment on the online newspapers' success.

This paper is structured as follows. In chapter 2 we briefly discuss how to measure the environmental effect on the online newspaper market. In chapter 3 we will report our research framework and methodology. Chapter 4 presents the results of our analyses, and finally, in chapter 5 and 6 we draw conclusions from our observations and present the most important limitations of this study.

2. MEASURING THE ENVIRONMENTAL EFFECT ON BUSINESS SUCCESS

Online newspapers, like the majority of advertiser-supported media, operate in a dual product market (Picard, 1989). The first market, the information market, is a market in which online newspapers try to attract as many web users as possible with interesting content and services, usually partially or totally free of charge (McMillan, 1998). The second market, the advertising market, is based on the users collected in the information market. Actually, it has been suggested that the advertising – mainly banner – incomes are by far the most common primary source of income for online newspapers (eg. Palmer and Eriksen 1999, Sääksjärvi and Santonen 2002). Another market environmental dimension, which can be use to classify the online newspaper market, is the geographical focus of the parent print newspaper. Even though the Internet has significantly decreased the relevance of geographical boundaries by creating online market environments, the online newspapers are still rather strongly restricted by geographical limits. Basically, the majority of content in online newspapers is still adopted from the parent print newspapers, making online newspapers closely dependent on the geographical focus of the print counterpart (Chyi and Sylvie 2001). Chyi and Sylvie (1998) suggested that the geographical market for the online newspapers can be classified as local, regional, national or even global.

Regardless of geographical orientation, however, the marketing literature usually divides the potential market environment factors into the following three dimensions: market turbulence, competitive intensity and technological turbulence (eg. Jaworski and Kohli 1993, Slater and Narver 1994). Environmental turbulence or more specifically market turbulence, ie., the rate of change of customers and their preferences (Slater and Narver, 1994), indicates the amount of instability, uncertainty, and lack of control within a firm's market place (Pine, 1993). The following measures have been used to estimate how competitive the market environment is: the rate of market growth (Kohli and Jaworski, 1990), the number and power of competitors (Day and Wensley, 1988), and competitor concentration and hostility (Narver and Slater, 1994). Technological turbulence, on the other hand, refers to the degree to which technology changes over time within the industry and the degree to which such changes affect the industry (Low and Mohr 2001).

In this study we are mainly interested in analyzing the effect of market turbulence and competitive intensity on business success, and therefore we will exclude the technological turbulence dimension. In addition, since we have already analyzed the effect of the geographical focus of the parent print newspaper on success (Sääksjärvi and Santonen, 2003), we will exclude this dimension as well.

2.1 Research questions

Since the products and services in the digital domain are so easily copied (Choi et. al 1997), we are assuming that the revenue accumulation should be related to the level of competition. Especially in the restricted and fairly small markets, the presence of many players with similar business models – commonly relying only one major banner revenue stream (Sääksjärvi and Santonen, 2003) – should unavoidability force the companies into a battle for the same advertisers and users. Stated formally as a research question:

RQ 1) Can we find evidence for the suggestion that the level of competition is related to revenue?

If the online newspapers are not able to control the level of demand turbulence, this should weaken their ability to accumulate revenue. The higher levels of demand turbulence might be a result of not understanding the end-users' true needs or because of extremely heterogeneous user wants, in a situation in which the company only has standardized services for the average customer (Sääksjärvi and Santonen, 2003). This assumption is mainly based on the general suggestion in the marketing literature, which argues that a company that satisfies its customers' individual wants and needs better will eventually have greater sales (e.g. Pine, 1993).

RQ 2) Is the higher level of demand turbulence making it more difficult to accumulate revenue?

Previously Santonen (2003) has suggested that the more experienced companies are to some extent able to control the level of demand turbulence. In addition, Sääksjärvi and Santonen (2003) argued that only national players seemed to improve their average success scores along with experience, whereas the regional online newspapers typically showed declining trends in the achievement of business success. By following these suggestions and the above-mentioned assumptions underlying research questions 1 and 2, we are assuming that the summary effect of market environment factors and experience in online publishing should be a better predictor of annual revenue than these items individually. Basically, we are wondering:

RQ 3) Can we find evidence for the suggestion that the market environment factors and accumulated online publishing experience have an interaction effect on revenue accumulation?

3. RESEARCH METHODOLOGY

3.1 Data collection and response

The Finnish online newspaper industry was identified as a suitable target population for our research, since Finland is one of the leading countries in communication technologies and Internet accessibility, yet the Finnish population's motivation to read newspapers on a daily basis is one of the highest globally (Statistics Finland, 2002a,b). The mail survey questionnaire was finalized and pre-tested on the basis of a few interviews with specialists of the Finnish Newspapers Association (later FNA) to make sure that all questions were understandable. The names of the newspapers and personal addresses of the most potential respondents were collected with the help of the FNA. The pre-tested questionnaire was addressed directly to the manager responsible for the online newspaper business activity. If there was no certainty over the right person, this was confirmed by a telephone call to the newspaper. According to FNA annual statistics, 129 newspapers also published an online version in 2001 (FNA, 2001).

After one follow-up letter and a few reminder phone calls to the largest online newspapers, we had 42 acceptable responses, which gave us a nice overall response rate (about 32 per cent). The data provide a very satisfactory sample of the target market, taking into consideration the fact that over 70 per cent of the largest newspapers (publication frequency 7 days per week) had responded. On an average, these 42 online newspapers had a customer base of 11 000 weekly readers (October 2001). The average annual workforce was about 4 persons, while the average age of the online versions was about 3.6 years. Only 23 newspapers

had generated revenue, which on an average (annual 2001) was about 46 000 euros, and represented on an average less than one per cent of the annual income of the parent print newspapers.

3.2 Construction of the market environment measures

In the marketing literature, the potential market environment factors are usually divided into the following three dimensions: market turbulence, competitive intensity and technological turbulence (eg. Jaworski and Kohli 1993, Slater and Narver 1994). Previously, Pine (1993) has defined an extensive market turbulence map instrument to determine the level and type of the market environmental turbulence. His instrument was based on seventeen individual variables, which were logically divided into demand and structural categories. According to Pine, demand turbulence indicates the degree to which a company can control, stabilize, and reduce uncertainty within its markets, whereas structural turbulence reflects the basic nature of an industry. On the contrary to the more commonly used and previously introduced three-dimensional classification from the marketing literature, Pine included the dimensions of competitive intensity and technological turbulence as a part of the structural turbulence items. However, in this study we are mainly interested in analyzing the effect of market turbulence and competitive intensity on success, and therefore we will exclude the technological turbulence dimension.

In the survey questionnaire, we used the modified market turbulence map instrument introduced by Pine (1993). Instead of using Pine's original per cent scale (range 0-100%), the turbulence items were evaluated on the more common 7-point Likert scales. Taking into account the fact that the size of our data was only limited, we could not fully use all the market environment items collected. Therefore, Pine's original demand turbulence and structural turbulence dimensions were simplified.

Demand turbulence. In order to construct reliable demand turbulence dimensions, we applied factorial analysis to only those four items that in our opinion were directly related to demand turbulence. The selected items included 1) rate of change in customer needs and wants, 2) homogeneous versus heterogeneous demand, 3) stability and predictability of demand levels, and 4) easily defined versus uncertain customer needs and wants. The indirect demand turbulence variables adopted from Pine's survey instrument that we dropped would have measured service levels, fashion, price and quality consciousness. The outcome of the factor analysis was a simple two-dimensional model described in Table 1 (Appendix). Based on the items loaded into each dimension, we named these two dimensions as : F1) Unstable user needs and F2) Individual user needs. In addition, an item for the overall level of demand turbulence was formed on the basis of the mean values of the two demand turbulence factors.

Level of competition. The individual items for the overall level of competition measure were adopted from Pine's structural turbulence category. In order to simplify the level of competition measure, several exploratory factor analyses with all Pine's structural turbulence items were conducted. Based on their results, the following three individual items, which formed a one-dimensional competition measure, were selected to evaluate the dimension of non-existent vs. intense competition: 1) competitive intensity, 2) economic cycle dependence and 3) buyer power. The mean value of these three items was considered to represent the overall level of competition.

In Appendix Table 2, we have presented the results of the correlation analysis between the overall and individual competition items. All individual competition items had a significant relationship (sig. < 0.01) with the overall level of competition item. The Pearson correlation coefficient measures (2-tailed) ranged between 0.622 – 0.805. In addition, a correlation analysis of the demand turbulence and level of competition items was conducted to evaluate if our key measures were interrelated (Table omitted). Since we did not detect any significant relationships, we were assured that both the perceived demand turbulence and level of competition items achieved high levels of internal consistency, yet were truly measuring different dimensions of the market environment.

The typology of business models was based on the number of important revenue streams. For this purpose, our questionnaire included a set of 13 different revenue possibilities. We asked the respondents to fill in the exact figures for both the total value of the annual revenue, and its distribution among different revenue streams.

3.3 Constructing the subgroups for statistical testing

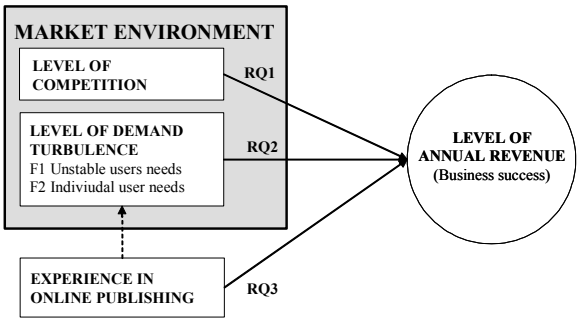
In this research we wanted to evaluate the market environment's effect on online newspapers' ability to generate revenue. Based on the literature review regarding the measurement of the market environment effect, we identified two market environment dimensions: demand turbulence and level of competition. We attempted to isolate, yet also to summarize the effect of both market environment factors by dividing our total sample group into smaller groups. Based on the level of demand turbulence and level of competition dimensions, the online newspapers having revenue (N=23) were roughly divided into two groups according to both of these dimensions. Based on this classification we had four groups, from the "low level of demand turbulence and competition" subgroup to the "high level of demand turbulence and competition" subgroup.

In the Appendix tables 3 and 4 we have presented the mean values of the demand turbulence and level of competition items in the four particular subgroups. Based on the t-test for equality of means, it appears that the mean values of demand turbulence and level of competition differ significantly between our main market environment dimensions. In addition, we conducted Levene's test of equality of error variances to make sure that the differences in the variances in demand turbulence and level of competition among the four subgroups were not in violation of the equal variance assumption. Since the significance values of the test in the case of demand turbulence (0.487) and in the case of level of competition (0.147) were greater than 0.10, there was no reason to believe that the equal variances assumption was violated. Therefore, the small differences in group standard deviations observed in the descriptive statistics (tables 3 and 4) were due to random variation. As a result, we were assured that all the four groups are truly different in terms of the mean values for market environment conditions, and therefore can be used to test our hypothesis.

3.5 Research framework

The final research framework summarizes the results of our construction of the key measures (Figure 1). In the research framework the circle on the right depicts the amount of annual revenue, which we used as a criterion for business success. The box on the top left includes our two market environment dimensions: overall level of competition and demand turbulence. The overall level of demand turbulence was formed on the basis of factor analysis, which resulted in a two-dimensional demand turbulence measure: unstable user needs (F1) and individual user needs (F2). Finally, the "experience in online publishing" measure is presented in the lower left-hand box.

Figure 1: Research framework



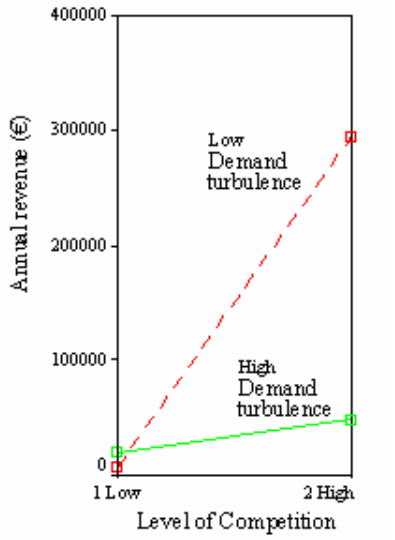
4. RESULTS

4.1 Answering research questions 1 and 2: The effect of the market environment on business success

The simple mean value comparison between our four subgroups suggests that the group means for ability to generate revenue might be different (Appendix Table 5). In addition, the significance value from Levene's

test (0.000) indicated that there were also differences in the variances of annual revenue among the four groups. In figure 2 we have graphically presented the estimated marginal means of annual revenue according to our main market environment dimensions, level of demand turbulence and competition. In the figure, it is easy to observe that the higher the level of competition grew, the greater the effect of demand turbulence appeared to be. In addition, we suggest that the substantial revenue accumulation was inevitably leading to intensified competition.

Figure 2: Estimated marginal mean of revenue (€)



To evaluate how strongly the variance of the annual revenue was affected by market environment conditions in our four quadrants, we applied univariate analysis of variance (Appendix Table 6). It allowed us to model the value of annual revenue based on its relationship to our between-subject factors, demand turbulence and level of competition. The significance values for all our market environment terms are clearly less than 0.05. Therefore, the level of demand turbulence and competition items have, individually and also in combination, a significant effect on the variance of the annual revenue. The partial eta squared statistic in the Appendix Table 6 reports the "practical" significance of each term. The larger values indicate a greater amount of variation accounted for by the model term, to a maximum of 1. The highest significance value (0.497) was detected in the case of the level of competition item, while the second highest value (0.403) was observed in the case of the summary effect of the demand turbulence and competition items. It appeared that the level of demand turbulence had the weakest effect (0.350).

Based on the above-mentioned observations we tried to explain the variance of the annual revenue item by using a stepwise linear regression analysis with the demand turbulence and level of competition as a predictors of annual revenue. The results of this regression model including all the cases having revenue are collected in Appendix Table 7. When the effect of market environmental factors was evaluated individually, the level of demand turbulence appeared to be slightly better in explaining the variance of annual revenue. The level of demand turbulence (model 1) explained 25 per cent of the variance of the annual revenue, while the level of competition (model 2) explained 23 per cent. However, the regression to annual revenue improved significantly when both market environment factors were used (model 3). Adding the level of competition to the model with the level of demand turbulence increased the explanatory power of the model by 19 per cent and the total explanatory power increased to as much as 44 per cent. Furthermore, we conducted additional linear regression analyses with all our four subgroup as sample groups. However, this analysis did not result in significant relationships, probably partly due to the very limited sample size in the subgroups.

The additional regression analysis was conducted to evaluate which demand turbulence dimension, unstable user needs or individual user needs, was the main cause of the above-observed effect. It turned out that only the unstable user needs explained the variance of the annual revenue (model 4). The unstable user

needs factor alone explained only 17 per cent of the revenue, but together with the level of competition it explained 38 per cent (model 5). When comparing this outcome with the results for the overall demand turbulence measure, it is suggested that the overall demand turbulence measure was a better predictor of annual revenue than the unstable user needs factor, when considering the summarized effect together with the level of competition (44 per cent vs. 38 per cent). Indeed, the higher the levels of demand turbulence (basically as a result of the unstable user needs), the more difficult it was for companies to generate revenue.

4.2 Answering research question 3: Enhancing the model with experience

We expanded our regression model based on purely market environment factors with the companies' online publishing experience as a additional predictor of annual revenue. The results of this model are also collected in Appendix Table 7.

It appeared that the accumulated experience in online publishing was a better individual predictor of annual revenue than our individual market environment items. Experience alone was able to explain about 34 per cent of the variance of annual revenue (model 6). However, this was still less than the combined effect of demand turbulence and level of competition (34 per cent vs. 44 per cent). Nevertheless, the best model (model 7) to explain the revenue accumulation included all our identified predictors of revenue: experience, demand turbulence and level of competition. These items together resulted in a very satisfactory 64 per cent explanatory power.

4.3 Discussion

To summarize all our findings, we suggest that the attempt to accumulate substantial revenue in the restricted online newspaper market was leading to intensified competition. Since the business models, revenue sources, content and service selections were currently very similar among the major competitors (Sääksjärvi and Santonen, 2002), end-users and advertisers probably had ample opportunities to select the best and cheapest services at any given time. These opportunities apparently roused up the competition. Ensuring true business success in the future and avoiding a useless battle for the same advertisers and end-users will require more innovative business models. These might be based on, e.g., interactivity like having end-users as content providers, differentiated yet sufficient content selection, faster delivery of news, complementary services with partners, or other efficient mechanisms that might attract customers back. The path to success also calls for continuous and sensitive observation of the ever-growing end-user needs. According to our results, at least some of the more experienced online newspapers had discovered partial methods to control the level of demand turbulence, and this was helping them to generate higher revenues. These methods included advertising, newsletters, competitions for end-users, and smooth linkages between print and online version content. The loyalty of the current customer base, which in the case of print newspapers is usually very high, is easily lost in the digital domain as a result of the characteristics of digital products (Choi et. al 1997). Therefore, more innovative and hard-to-copy business models are required to lock-in customers and increase their loyalty (Shapiro and Varian, 1998). In a way, the level of demand turbulence could be used as a one potential measure to evaluate the true loyalty of the customer base.

It has been suggested that the online newspapers will have two main strategic options to go forward. They can either try to collect as many customers as they can and attract the advertisers with the size of their customer base, or they can focus on smaller niche customer segments, which are highly valued among targeted advertisers (Martin, 1998). However, from the point of view of the market environment, the outcomes of these two strategic options are radically different. In the mass market, dependent on the size of the customer base, online newspapers will have to compete not only with other online newspapers, but also with other major online players like search engines and portals. According to Martin's suggestions, the advertisers in these markets are not interested in the quality of the customers, but in their total numbers. At least currently, the individual online newspapers in Finland have clearly smaller customer bases than the largest players in the market (http://www.gallupweb.com/redmeasure/). On the other hand, in the niche markets the newspapers must find interesting and sufficiently large customer segments, while keeping up the delicate balance between sufficient content selection and affordable production costs. Yet the company must also make certain that the niche is not too crowded by other competitors or too easy to enter by other companies. One of the most obvious niches for online newspapers is naturally the geographical orientation.

However, both of these strategic options could cause problems for online newspapers from the point of view of the market environmental effect. The main objective for online newspapers in Finland is to support the parent print newspaper (Sääksjärvi and Santonen, 2002). Therefore, all the actions taken for the benefit of the online service should also be closely aligned with the interests of the parent print newspaper. In addition, the expected total amount of annual revenue coming from online services is anyway still a fraction compared to the revenues generated by the parent print newspapers. This obviously limits the possibilities to introduce new online services. In future studies, we should not only analyze the effect of the online market environment on the success of the online business , but also the effect of the print market environment. This might uncover that some of the online newspaper are actually voluntarily sacrificing their online revenues on behalf of the print version.

5. CONCLUSION

The present study aimed to analyze the suggested effect of the market environment on the business success of Finnish online newspapers. In addition, we were interested in evaluating whether we could enhance the explanatory power of our success model by introducing the company's experience in the online publishing market alongside the market environment factors as a predictor of business success. To isolate the effect of different market environment factors, we formed four sample groups based on the dimensions of non-existant vs. intense competition and low vs. high demand turbulence. As an outcome of our statistical analyses we suggested that a higher level of perceived demand turbulence (basically as a result of the unstable user needs) was related to difficulties in generating revenue. In addition, the perceived level of competition seemed to be connected to the revenue accumulation. Our enhanced regression model, including experience in online publishing, level of demand turbulence and competition as predictors of annual revenue, achieved a very satisfactory explanatory power of 64 per cent.

These results are also consistent with previous findings by Sääksjärvi and Santonen (2003), which suggested that customization could be an effective business model for online newspapers. By implementing the customization business model, online newspapers could differentiate their online services, avoid direct competition with other rivals and increase their business performance. The customized online newspapers using flexible publication processes should unavoidability result in better success, since the customized products take better account of individual user needs and thereby create superior value to users compared with standardized products. In addition, the implementation of a customization business model requires a better understanding of customer needs, which should help to reduce demand turbulence, even though Santonen (2003) was not able to establish the suggested relationship between demand turbulence and customization in the case of Finish online newspapers.

As a final outcome of this study, we suggest the market environment and especially the perceived level of competition and demand turbulence as extensions to the online newspaper success model originally based on the importance of the business goal, customization, experience, geographical focus of the parent print newspaper and size of the customer base (Sääksjärvi and Santonen 2002, Sääksjärvi and Santonen 2003).

6. LIMITATIONS

Finally, we present the most important limitations of this study. Due to the nature of the small and homogeneous sample group, the generalizability of our findings calls for further research. Since practically all our sample group newspapers were published only in the Finnish language, no truly global markets are available for them. Therefore, the expanded sample group should also include online newspapers in English or some other global language to add a truly global dimension to the market environment. Future studies with larger sample groups will support or reject the observed results among local, national and global newspapers operating in different countries. In addition, our results were based purely on data collected through a mail survey, with respondents including only the managers responsible for the online newspaper business. Therefore, our results only represent an online-focused, managerial point of view, not that of the whole organization (eg. top management or journalists) or that of the customers. Evaluating online newspapers' success from all key players' points of view would generate a comprehensive understanding of the factors

affecting the online newspapers' success. In-depth interviews with all the key players, using multiple case companies, would probably give substantial insights into the online newspapers' business objectives, market environment and success. Extensive cross-case analyses might also reveal potential differences between online newspapers with niche customer segments (e.g. finance news) and ones with a mass-media orientation.

ACKNOWLEDGEMENTS

I am grateful to my dissertation supervisor professor Markku Sääksjärvi at the Helsinki School of Economics for giving me valuable comments and innovative research ideas during this project.

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APPENDIX

Table 1. Factorial analysis of the perceived demand turbulence

Factor name	N	Mean	Std. Dev	Factor loading	Items correlation with total score	Eigenvalue
F1. Unstable user needs	**42**	**3.540**	**1.015**			**1.530**
D13 Our online newspaper's end-users needs and wants are unstable and difficult to define	42	3.548	1.310	0.852	0.732(**)	
D1 Our online newspaper's end-users have quickly changing needs and wants	42	3.691	1.297	0.787	0.674(**)	
D9 Our online newspaper has an unstable and unpredictable demand level	42	3.381	1.738	0.419	0.696(**)	
F2. Individual user needs	**42**	**3.571**	**1.610**			**1.036**
D4 End-users have individual needs and wants	42	3.571	1.610	0.948	1.000(**)	

** Correlation is significant at the 0.01 level

Table 2. The correlation analysis results between individual structural turbulence items and the overall level of the competition (N=42)

	Level of competitive intensity	Economic cycle dependence	Level of buyer power	Overall level of competition
Level of competitive intensity	1	0.393(*)	0.302	0.805(**)
Economic cycle dependence	0.393(*)	1	0.112	0.701(**)
Level of buyer power	0.302	0.112	1	0.622(**)
Overall level of competition	0.805(**)	0.701(**)	0.622(**)	1

** Correlation is significant at the 0.01 level (2-tailed), * Correlation is significant at the 0.05 level (2-tailed).

Table 3. The mean values of the level of perceived demand turbulence

	Level of perceived competition					
	Low			High		
Level of perceived demand turbulence	N	Mean	Std. Dev.	N	Mean	Std. Dev.
High	5	4,033	0,415	7	4,119	0,416
Low	7	2,881	0,416	4	2,500	0,624

Table 4. The mean values of level of perceived competition

	Level of perceived competition					
	Low			High		
Level of perceived demand turbulence	N	Mean	Std. Dev.	N	Mean	Std. Dev.
High	5	2,400	0,683	7	4,429	0,713
Low	7	2,571	0,535	4	5,833	1,171

Table 5. The mean values of annual revenue (€)

	Level of perceived competition					
	Low			High		
Level of perceived demand turbulence	N	Mean	Std. Dev.	N	Mean	Std. Dev.
High	5	20.370	38.463	7	47.659	47.608
Low	7	6.579	5.767	4	294.118	197.196

Table 6. Univariate analysis of variance. Dependent variable annual revenue (€)

Source	F	Sig.	Partial Eta Squared
Corrected Model	11.368	0.000	0.642
Intercept	25.746	0.000	0.575
Level of demand turbulence (Low vs. High)	10.251	0.005	0.350
Level of competition (Low vs. High)	18.770	0.000	0.497
Demand turbulence * Competition	12.826	0.002	0.403

Table 7. Result of stepwise regression analysis. Dependent variable annual revenue (€)

			Unstandardized Coefficients		Standardized Coefficients	.
Model	Variables	R2	B	Std. Error	Beta	Sig
1	(Constant)		348.118	107.931		
	Demand turb.	0.247	-80.195	30.547	-0.497*	0.016
2	(Constant)		-81.741	66.034		
	Competition.	0.231	41.953	16.709	0.481*	0.020
3	(Constant)		186.034	113.458		
	Demand turb.	0.247	-74.195	27.070		
	Competition	0.441	38.573	14.650		
4	(Constant)		245.452	86.690		
	Unstable user needs	0.173	-52.930	25.291	-0.415*	0.049
5	(Constant)		87.308	98.381		
	Competition	0.231	39.768	15.415		
	Unstable user needs	0.379	-49.166	22.496		
6	(Constant)		-157.083	73.432		
	Experience	0.339	3.919	1.193	0.582**	0.004
7	(Constant)		3.735	109.260		
	Experience	0.339	3.078	953		
	Demand turb.	0.518	-65.485	22.480		
	Competition.	0.639	31.029	12.302		

** Correlation is significant at the 0.01 level (2-tailed)
* Correlation is significant at the 0.05 level (2-tailed)

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Working Papers on Information Systems | ISSN 1535-6078

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