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Markku Saeaeksjaervi
Department of Management, Helsinki School of Economics

M. Wagner
Department of Management, Helsinki School of Economics

Teemu Santonen
Department of Management, Helsinki School of Economics

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Customization as a Business Model for Online Newspapers

Markku Sääksjärvi, Teemu Santonen

Department of Management, Helsinki School of Economics, Finland
Saaks@Hkkk.fi, Teemu.Santonen@Osuuspankki.fi

Abstract

The evolving IS literature on business models for digital products assumes that the positive feedback effect will lead to price competition and biased concentration of the market. In theory, this will require companies to either differentiate or customize their products and services. In this paper we propose an empirical investigation of customization as a lock-in business strategy for online newspapers in a homogenous and well-developed market. We explore approaches taken to customization and evaluate their impact on revenue generation of online newspapers.

Our empirical tests with data from 42 online versions showed that mainly experienced, nation-wide online newspapers applied customization. We determined two main customization approaches for online newspapers, customer and process oriented customization. Interestingly, only the degree of process customization was an important predictor and moderator of revenue having a significant interaction effect on the impact of the number of both customers and editorial staff on revenue. Contrary to our main hypothesis that customization should help in increasing customer lock-in through personalization or versioning, the majority of online newspapers seemed to concentrate mainly on process customization in order to serve a maximal number of different types of customers and to increase their revenue. The promising positive effects of customization strengthen our belief that customization could be an effective business model for online newspapers.

1.   Introduction

World wide, there are currently almost 5000 newspapers online (Editor & Publisher 2001). While online newspapers are trying to identify their role, there seems to be no agreement yet as to whether the digital versions will be a financially viable medium for publishing companies.

The newspaper publishing industry itself is particularly interesting, since companies that have traditionally provided products in physical form are now actively pursuing digital options (Gallaugher et al. 2001, Sääksjärvi and Santonen 2002). Marketing on the web offers customers interesting opportunities to search for and compare products in a global marketplace. This extends the regional focus, demands new considerations with respect to content, and provides opportunities to win new customers by offering customized products and services (Palmer and Eriksen 1999). However, companies are taking on a

number of new challenges through their appearance on the net. It is well known that digital products are not easy to manage and require special skills, teamwork and strategies (Neuberger et al 1998, Stepp 1996).

At least the following factors make online publishing problematic for print paper companies. Firstly, the unique characteristics of digital products demand either cost leadership, effective differentiation, and/or customization (Shapiro and Varian 1998, Choi et al. 1997), and may even lead to cannibalisation of the company's own printed products. This setting is not typical to strategies conventionally applied in the printed paper industry. Secondly, there are several factors that may limit the interest of print paper companies in online versions, like the turbulence of the new marketplace, ambiguous business models, questionable profitability, and delays that may lead to peril as fast movers obtain financing and establish their brand (Harper 1999, Chyi and Lasorsa 1999).

Published empirical studies have not yet succeeded in providing any clear guidance on appropriate business models that could help online newspapers to generate revenue effectively (e.g. Gallauger et al. 2001, Sääksjärvi and Santonen 2002 includes further references). In digital markets, the greatest difficulty in business models and revenue accumulation is the concentration of revenue, i.e., the positive feedback effect. It is well known that markets with digital products, which typically have high fixed costs and only marginal re-production costs, will lead to "positive feedback" (Shapiro and Varian 1998), resulting in rapid growth and concentration of revenue to a few companies with the dominating brand. Even more, information goods, like online newspapers, are so-called experience goods, which means that charging the customers is difficult as they are not ex-ante assured of the utility of the product. This easily also leads to giving products for free, making it even more difficult for latecomers to get any compensation to cover their product development. For these reasons, both continuous investment in the existing customer base and effective lock-in mechanisms are needed.

According to Shapiro and Varian (1998), the basic strategy of a producer applying lock-in should be based on three key principles: effective investing in the customer base, entrenching customers so that they continue to invest in the producer's products, and leverage to maximise the value of loyal customers. Among the various alternatives to create an effective lock-in, customization is one of the promising approaches not yet empirically studied as a business model for online newspapers. Not much is known of how customization is applied to digital products in general, either. Therefore we focus our empirical evaluation on the interesting relationship between customization and online revenue.

2.   Objectives of This Paper

In this paper, we explore empirically how intensively online newspapers apply customization, and to what degree customization affects their ability to generate revenue. We are interested in defining the generic customization approaches implemented by online newspapers. Moreover, we will introduce a research framework that describes customization as a non-visible product strategy aiming at better satisfaction of the customers, and also effective lock-in. Therefore, customization may not be a direct predictor of business success (revenue) but it should affect the relationship between accumulated customer base and revenue positively. Customization, if effectively implemented, should help online newspapers to generate more revenue than other strategies. Therefore, we are interested in determining the generic approaches to customization, and also the synergetic impact of the accumulated customer base and degree of customization on online newspapers' ability to create revenue. In order to get

valid and reliable knowledge of this complex phenomenon, we will combine sets of both perceptual and absolute financial measures in our survey instrument. In order to provide a stable focus for the study and enable better control of the representativity of the data collected, we have concentrated on only online version of companies that publish a print newspaper.

The paper is structured as follows. In chapter 2, we review the role of customization in the context of a business model for electronic commerce in general, and for online newspapers in particular. Then, in chapter 3, we describe our research methodology and hypotheses. In chapter 4, we explain our data collection and the results of our analyses. After a short discussion of our findings in chapter 5, we will finally conclude our observations in chapter 6.

3.   Customization as a Business Model for Online Newspapers

According to Amit and Zott (2001) a business model depicts the design of transaction content, structure, and governance to create value through the exploitation of business opportunities. On the basis of their extensive empirical survey in fifty companies, they proposed that the value creation potential of e-business (in practice) hinges on four interdependent dimensions, namely: novelty, complementarities, efficiency, and lock-in. Each of these dimensions can be valuable and economically effective also for online newspapers.

Lock-in as a value dimension for digital products is related to the well-known difficulty to maintain and value the installed base of customers, very important also to national and local newspapers. Typically the print newspapers have durable and loyal customer bases (e.g., annual subscribers) for their print paper editions. However this favorable condition may be lost when launching an online version. Therefore, online customers have to be engaged in repeat transactions and to improve their associations with the online version. This requires effective lock-in mechanisms to prevent the migration of customers to competitors. Lock-in can be realized in several different ways, e.g., loyalty programs (special bonuses), application of proprietary standards for products and services, and through customization.

Customization has originally been seen mainly as a new paradigm for marketing (Davis 1987, Pine 1993), based on the idea of adapting the product or service to better satisfy the needs of individual customers or small segments of customers, at the same time benefiting from production economies. Gilmore and Pine (1997) identified four distinct approaches to product customization and named them collaborative, adaptive, cosmetic, and transparent customization. In the collaborative customization approach, companies help end-users to indicate their individual needs. Based on this, the product that fulfils the identified needs is prepared by the company. In adaptive customization, the product is designed so that end-users can modify it themselves without any direct interaction with the company. Both of these approaches involve end-users in a co-design process of the product that encourages the customer's purchase (Kahn 1998). The two other customization approaches introduced by Gilmore and Pine, cosmetic and transparent, are fundamentally different. Cosmetic customization changes only the representation, not the functionality of the products. Transparent customization provides tailored products without letting end-users explicitly know that those products have been modified to better fit their specific needs.

Several other customization approaches have only recently been proposed for web sites. Among these is the modular product approach (Manber et al. 2000), not far from other more general product platform approaches for effective generation of product variants

(McGrath 1995, Meyer and Zack 1996, Sääksjärvi 2002). Other approaches proposed are the generation of recommendations based on user preferences or user similarity compared to other earlier users (Mobasher et al. 2000, Balabanovic and Shoham 1997). Also, search agents may help customers to find the products they really need (Palmer and Eriksen 1999). The creation of several simultaneous product versions designed for different target groups may also help customization (Lampel and Minzberg 1996).

As a summary, in the case of digital products, we can identify several specific approaches to customization. These may be potential value drivers of the business model applied, not only to achieve customer lock-in through personalization of products and services, but also to improve efficiency (flexibility of the publication process), and to generate complementarities (product versions). Not much is known of how comparable online newspapers are to other e-commerce businesses in terms of business models and specific revenue logics. According to the existing theory, customization should be an important driver of lock-in for online newspapers, and therefore, an important (strategic) factor affecting a company's ability to create revenue.

Research Questions

For our study, we formulated the following two general research questions. These will be later specified into detailed research hypotheses.

RQ1) What are the generic approaches to customization applied by online newspapers?

RQ2) Do the observed customization approaches contribute to the revenue accumulation of online newspapers?

Our empirical survey was carried out in an interesting and homogenous market, the Finnish newspaper industry. Finland is one of the globally leading countries regarding the national IT infrastructure available for online services. Also, the population's motivation and ability to read newspapers on a daily basis are the highest globally (Statistics Finland/Tilastokeskus 2002). In the following we will describe our research methodology and the hypotheses generated, and then present the results from our analyses.

4.   Research Model and Hypotheses

Framework and Hypotheses

In order to specify our research questions, we designed our research framework, which serves as the basis for our detailed hypotheses. The idea of the framework is grounded in the assumption that the intensity of customer oriented customization (e.g., personalization) should help online newspapers to better benefit from their accumulated base of customers. Customer oriented customization should help in satisfying the customers' individual needs better, making it easier for them to accept a certain price for the services. On the other hand, we assume that process oriented customization – e.g., by creating versions or complementarities resulting in a more effective lock-in of the existing customers – should help in generating more revenue. The framework is presented in Figure 1.
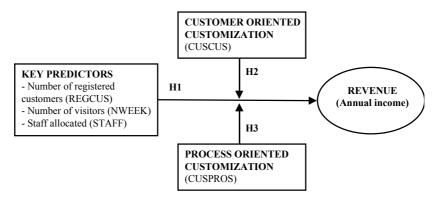
Figure 1: Research Framework

It serves as a basis for testing the following three hypotheses:

H1) The customer base and size of editorial staff devoted to the online version are positively related to online revenue.

H2) The degree of customization is in a synergetic (interaction) relationship with the number of accumulated customers in terms of its impact on online revenue.

H3) The degree of customization is in a synergetic (interaction) relationship with size of editorial staff in terms of its impact on online revenue.

Hypothesis H1 serves mainly as a test of our basic assumption that the key predictors (customer base accumulated and editorial staff devoted) are positively related to revenue. Hypothesis H2 assumes that the degree of customization positively affects (moderates) the relationship between the key predictor of revenue (accumulated customer base) and the revenue itself. The idea that the degree of customization is not a direct predictor but a moderator of revenue corresponds well to the theory of customization as a business model.

Lastly, hypothesis H3 assumes that the degree of customization positively affects the relationship between special editorial workforce allocated and revenue. Application of process customization should improve the ability of a given size of editorial staff to attract and serve more customers, thus leading to larger revenue.

In Figure 1, the key predictors explaining the revenue are described on the left. The arrow (H1) indicates that we assume a direct relationship between the annual revenue and these predictors, number of customers and the editorial staff resource measure. Hypotheses H2 and H3, on the other hand, describe the expected interaction effects caused by the customization approaches.

5.   Research Method

Sample and Data Collection

We finalized and pre-tested the questionnaire consisting of as many as 17 different variants of customization discussed briefly in the literature review, other key predictors of online revenue, and absolute figures of annual revenue in 2001. The questionnaire was pre-checked and improved in a few interviews with specialists of the Finnish Newspaper Association (a partner of our study) and a few development managers of leading online newspapers to make sure that all questions were semantically precise and understandable.

The names of the newspapers and personal addresses of the most potential respondents were collected with the help of The Finnish Newspapers Association. According to the Association's annual statistics, 129 newspapers also published an online version in 2000. The accumulated circulation of these newspapers covered 88 percent of the total circulation of newspapers in Finland.

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 company. To improve the reliability of the responses we asked all respondents to identify themselves and include their contact number.

After one follow-up letter and a few reminder phone calls to the largest online newspapers, we had responses from 46 online newspapers. Four of these were short announcements that the online version had been discontinued, thus the overall response rate was better than merely acceptable, about 32 percent. The data represent a very satisfactory sample of the target market, taking into consideration the fact that among the major newspapers (publication frequency 7 days per week), over 70 percent had responded. In rough terms, our data consisted of 15 national level newspapers, the rest having clearly more restricted regional or only local readership. Accordingly, we classified the online newspapers into two markets: national (15) and regional (27). Based on telephone calls to a handful of the non-responding online newspapers, and comparison of the response group to the Finnish Newspaper Association's annually updated list of online papers convinced us of the representativity of our data.

As many as 23 of these 42 online papers had generated revenue, the annual (2001) average being about 46 000 euro, they had about 18 000 registered subscribers, and approximately 11 000 weekly visitors (October 2001). The accumulated online revenue was on average less than one percent of the annual income of the printed newspapers. These figures varied significantly between the national and regional players. The average age of the online versions was 3.6 years, and the average annual workforce, about 4 persons (minimum less than 1, maximum 9). From these figures, it is easy to see that on the whole, online newspaper publishing was not a profitable business at the period studied.

Measurement of Customization

In order to construct reliable customization dimensions, we applied factorial analysis only to those newspapers that had generated profit. We assumed that revenue is the real motivation to customize. Taking the fact that the size of our data was only limited, we could not fully use all the customization items collected. In three confirmatory factorial rounds (principal component analysis; rotation method: varimax with Kaiser normalization) we dropped, stage by stage, those six variables that loaded into more than one component. Among these were variables measuring alternative procedures available for advertising companies to select potential customer segments for their purpose, and the variable that defined the number of different payment methods available for customers. The outcome was a compact three-dimensional model described in Table 1 (appendix). Based on the items loaded into each dimension, we named these three dimensions as follows (in order of statistical significance):

F1) Personalization of online newspaper (CUSPERS).

F2) Versioning and adaptation of online newspaper (CUSVERS).

F3) Process customization of online newspaper (CUSPROS).

Of these three dimensions, both F1 and F2 are product or service oriented approaches, enabling or affecting the customers. Both of them seemed to be in line with what is said of typical lock-in strategies in the literature regarding better customer loyalty and commitment, both typical to lock-in strategies. In the following, we will, therefore, use the average of these two first customization dimensions and simply call it the customer oriented customization approach (CUSCUS).

On the other hand, F3 seemed to represent the process oriented customization approach. It seemed to aim at improving the flexibility of the publication process and offering a flexible product platform for transparent and automatic adaptation of products and services to a variety of customer needs and technologies.

As shown in Table 1, in general the averages of customization variables were only low. Evidently, customization was a main approach only for a handful of online newspapers. The degree of process customization had a higher average (2.04) than the degree of customer oriented customization (1.32). Altogether, only six online newspapers of these 23 had applied no sort of customization.

6.   Results

Testing the Base Relation H1

In Figure 2, we have presented the correlations between the key variables. All key predictors of revenue were significantly related to revenue (number of registered customers REGCUS 0.693**, number of weekly visitors NWEEK 0.658**, and size of editorial staff STAFF 0.612*). These observations support our hypothesis H1. Interestingly, only process customization was significantly related to revenue (0.640**). Despite the low average of customization variables, both main approaches seemed to be important direct predictors of revenue.

Testing Hypothesis H2

Our hypothesis H2 assumed that at least the customer oriented customization (CUSCUS) is a moderator of the customer base and therefore, has a synergetic impact on the relationship between number of customers and revenue. In fact, we had collected figures on two different classes of customers, number of registered customers (REGCUS) and weekly visitors (NWEEK). Our basic assumption was that at least customer oriented customization should have a synergetic (moderated) impact on the relationship between the number of customers and revenue. This kind of an assumed synergetic relationship can be easily verified by comparing two regression models predicting online revenue, one with the key predictors alone, another with the interaction term included. If there is a positive interaction (moderation effect) between customization and other key predictors of revenue, then the interaction term will improve the regression. According to Baron and Kenny (1986) a variable is a moderator if it is not correlated with the predictor (independent variable) and the interaction between the independent variable and the moderator (their product) is significant in a regression explaining the dependent variable. According to Sharma et al. (1981), a variable that is related to the independent predictor or criterion (dependent) variable and has an interaction effect with the predictor is a quasi moderator. In our case, the examined two customization approaches were non-symmetrically related with the key predictors. Therefore, we analyzed their moderation effects on revenue separately.

The results of three sets of regression models are collected in Figure 3, one for registered customers (REGCUS), another for weekly visitors (NWEEK), and the third for the size of editorial resources (STAFF). Interestingly, only the process oriented customization CUSPROS significantly increased the regression of all three key predictors. It significantly moderated the relationship between registered (probably more loyal) customers and revenue (the regression improved from 48 to 67 percent) but not the relationship between more random weekly visitors and revenue. According to the theory presented, process oriented customization seemed to work well in the case of more intimate (durable) customer relations, but not so well in the case of more random weekly visitors. These observations support our hypothesis H2.

Customer oriented customization was probably, on average, still too weak to moderate revenue. On the other hand, process oriented customization was an important direct predictor of revenue and therefore, not a pure but a quasi moderator. It seemed that online newspapers had started with more general process customization, concentrating perhaps on maximizing the total number of customers rather than on forming durable customer relations, as the theory of lock-in would advise. This could be well explained by the quite monotonous revenue logic generally applied, the banner revenue model.

Based on the above observations, we conclude that hypothesis H2 was only partially supported. Only process customization seemed to contribute to the synergetic relationship between customer base and revenue.

Testing Hypothesis H3

As we can notice from Figure 3 the interaction of CUSPROS and size of editorial staff (STAFF) was significant. The regression to revenue improved significantly, from 38 to 58 percent. Therefore, process customization seemed to be an important moderator of editorial resources devoted. The significant correlation between STAFF and CUSPROS indicated that CUSPROS was no pure moderator but a quasi moderator, partly competing with size of staff. However, these observations supported our hypothesis H3.

7. Discussion

The results obtained supported our general assumption that customization should be an important factor contributing to revenue of online newspapers. The analyses indicated, however, that only process customization was in effective use and followed our assumptions underlying the hypotheses. Besides moderating revenue through its interaction with the registered customer base, process oriented customization also seemed to help online newspapers to better utilize their special staff. Accordingly to the lock-in theory, customization had a synergetic effect on revenue only with more durable registered customers, not with weekly visitors. This result supports the lock-in theory quite well, and provides some evidence that customization is systematically used as a business model. On the other hand, our data indicated that only experienced online newspapers start applying customization. As online newspapers are still evolving rapidly in Finland, companies are still increasing their online content and services to attract more customers (novelty and variety). Therefore, the balance between process and customer based customization approaches may change in the future. Also the fact that a great majority of the online newspapers applied a monotonous banner revenue logic – in which the revenue was almost linearly dependent on the total number of customers, not only the registered customers – may have influenced the policy of starting with a more general process customization, not personalization or effective generation of variants.

8.   Conclusions

Our literature review on the business models of digital products in general, and online newspapers in particular, revealed that the transformation from printed newspapers to online form is no simple process. This is due to the problematic characteristics of digital products, which at least in theory make earning money difficult and risky. Our exploratory analyses of online newspapers in a country with a well-developed national IT infrastructure revealed that customization was evolving, but not very intensively implemented yet. From the empirical data, we could define three main dimensions of customization. These were personalization, versioning and process customization. After combining the two first into a single dimension (customer oriented customization), we had two main approaches to customization to analyze and compare: the customer and process oriented customization approaches.

Although the implementation of customization was still only weak and evolving, our data provided logical evidence of the importance of customization both as a direct contributor to revenue and as a moderator of revenue. The moderation effect was significant on the relationship between the more stable customer base (registered customers) and revenue, but not on that between more random weekly visitors and revenue. Because of the marginal role of customer oriented customization, we concluded that in general, instead of being an explicit business model aimed at customer lock-in, customization served more as a way to improve process efficiency. Because of the ongoing rapid evolution observed, lock-in may in the near future be an important driver of the business model. Very probably, all managers of online versions having a mixture of customers were not yet aware of the critical role of customer loyalty and lock-in for their revenue.

In order to get a more accurate picture of the evolution of online business models applied and of the related revenue logic, we should carefully run longitudinal case surveys of online newspapers. We should also survey the customer perspective on online products and services, and compare it with the actual business model implemented. It also seems that more research should be devoted to finding effective ways to create flexible (technical) product and process platforms for online newspapers to help them to create customized products and services.

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Table 1: *Customization Group Factor Model*

Factor	N	Factor loading	Mean	Std. Dev	Items correlation with total score	Eigenvalue
F1						**4.588**
C2 Select visual alternatives	23	0.800	1.174	0.576	0.912**	
C10 Select content versions	23	0.980	1.043	0.209	0.926**	
C12 Store favorite contents	23	0.980	1.043	0.209	0.926**	
C13 Customized content	23	0.980	1.043	0.209	0.926**	
F2						**3.283**
C3 Individual view on content	23	0.897	1.609	1.438	0.885**	
C4 Modify outline of pages	23	0.831	1.609	1.530	0.864**	
C9 Select objects of interest	23	0.689	1.696	1.579	0.731**	
C11 Personal recommendations	23	0.837	1.217	0.850	0.820**	
C15 Personal search criteria	23	0.760	1.652	1.496	0.776**	
F3						**2.003**
C6 Flexible publication process	23	0.858	1.391	0.891	0.789**	
C7 Distrib. channel alternatives	23	0.699	2.696	2.141	0.835**	
C8 Adaptation to technologies	23	0.728	2.826	1.946	0.736**	
C17 Customer selection tools	23	0.912	1.957	1.965	0.905**	

** Correlation is significant at the 0.01 level.

	CUSPROS	NWEEK	REGCUS	REVENUE	STAFF
CUSCUS	0.268	-0.161	0.907**	0.466*	0.398
CUSPROS	1.000	0.574**	0.390	0.640**	0.658**
NWEEK		1.000	-0.009	0.658**	0.543*
REGCUS			1.000	0.693**	0.780**
REVENUE				1.000	0.612**

Figure 2: *Correlation between key Variables (N=23)*

* Correlation is significant at the 0.05 level, ** Correlation is significant at the 0.01 level

Variables in the regression model	R2	Delta R Interaction	Signific. (model)	Std. Coeff Beta
REGCUS	0.481		0.001**	0.693
CUSCUS	0.217		0.025*	0.466
Interaction	0.394	0.000	0.004**	0.628
REGCUS	0.481		0.001**	0.693
CUSPROS	0.409		0.001**	0.640
Interaction	0.672	0.191	0.001**	0.702
NWEEK	0.433		0.001**	0.658
CUSCUS	0.217		0.025*	0.466
Interaction	0.443	0.010	0.001**	0.665
NWEEK	0.433		0.001**	0.658
CUSPROS	0.409		0.001**	0.640
Interaction	0.442	0.009	0.001**	0.665
STAFF	0.375		0.004**	0.612
CUSCUS	0.217		0.025*	0.466
Interaction	0.224	0.000	0.035*	0.473
STAFF	0.375		0.004**	0.612
CUSPROS	0.409		0.001**	0.640
Interaction	0.580	0.205	0.000**	0.762

Figure 3: *Comparison of Regression Models*