

Interdependence and Environmental Uncertainty as Drivers of the Relationship Intensity in Distribution Channels. An analysis in the Tourism Industry

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Abstract

This paper is an exploratory analysis in which we will focus on how the internet and information and communication technologies (ICT's) are shaping the relationships structure of the distribution channel and how do channel members perceive the impact of consumer's participation on the value creation process. The conceptual starting point is the framework in which interdependence and environmental uncertainty act as the main drivers of relationship intensity. An exploratory empirical analysis provides some additional points to structure the ongoing research. Both for goods and in the tourism industry, ICT's and internet favour the adoption of more complex relationships although some channel positions, in tourism, look less favourable. The impact of consumer participation is not so clear although some findings point in the negative direction: some intermediaries might be put at risk.

Keywords: Distribution Channel Structures, Information Technologies, Tourism Industry.

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1. Introduction

Marketing channels have been defined as sets of interdependent organizations involved in the process of making a product or a service available for use or consumption (Stern and El-Ansary, 1992). Bucklin (1966) points out that different structures imply different levels of distribution services and the decisions about the amount of the output delivered by the channel members is influenced both by the abilities of the channel members delivering these services and by the service outputs desired by consumers.

As such, the basic structure of the distribution channel (number and type of participants, and the relationship links) should be, primarily, the result of the service output demanded by final customers and the internal organization arranged by the participants to supply the desired service levels efficiently. In these terms, there is a wide array of alternative structures to cover different demands, giving place to the adoption of multi-channel solutions to serve different customer targets with different distribution services (product differentiation based on the service provided by the channel). Another observation from the market is that different companies serving the same types of customers with very similar products (direct and intense competition) reach the final customers with different channel structures. These observations are valid both for industrial and consumer markets but need to be reconsidered for the tourism industry.

In the tourism industry, the supply-demand interaction generates a two-direction road for new product development. On one direction, changes on consumer needs and wants result in the demand pulling for new tourism products. On the opposite direction, new technologies and organizational innovations, providing a wider variety of low cost products, keep enlarging the market with new consumers generating a great value for organisations (Lee, 2001). And, technology has revolutionised a wide range of functions including communicating with partners and with consumers at large (Buhalis, D., 2004). But, contrary to other sectors, the participation of the consumer in this development takes place not just at the bottom line (the consumption of the service) but also at different levels of the channel in which the consumer makes decisions about the final assembly or customization of the product. The assembly may be made by conventional consumers at the retail level of the travel agency or by e-consumers combining the components from final service producers and intermediaries at different levels. This peculiarity calls for the need of applied research on the factors governing the structure process of marketing channels in the tourism industry.

In this direction, our research will identify the underlying forces which determine the dynamics of the channel's structure with the general objective of analysing the role of information technologies and the derived organizational innovations in the distribution channels.

But the present paper will reflect the first stage of the research; an exploratory analysis in which we will focus on how internet and ICT's are shaping the relationships structure of the distribution channel and how do channel members perceive the impact of consumer's participation on the value creation process through internet on their positions.

To do so, we will first provide the theoretical basis to understand the underlying forces shaping the intensity of inter-organizational relationships in distribution channels. In the third section we will present some of the most generalize results found in an exploratory analysis distribution channels of industrial and consumer goods. In the fourth section, we will present our empirical exploratory analysis in the tourism industry and its basic results as a list of research propositions. In the fifth section we will present the oncoming research.

2. Relationship intensity and channel structure

In any given structure, different relationships are established among the participants of distribution channels (producers, wholesalers, retailers or end-users). The intensity of these relationships has a wide range of variation and dependent on two major dimensions: interdependence and environmental uncertainty (Frazier and Antia, 1995). In this direction, a second objective of this paper is to identify some particular conditions, associated to these two dimensions, under which firms develop different relationship intensities. Relationship between companies and their customers may develop very tight links (i.e., total integration of the distribution and logistical systems) or very loose relationships (i.e., only market transactions). Most determining factors come from the internal political economy of the channel and some others from the structural dimensions of the channel.

Many authors have posited a positive effect on manufactures' results developing close relationships with distributors and end-users as an alternative to the traditional market transactions or integration scheme. (Anderson and Weitz, 1992; Dwyer, Schurr and Oh, 1987; Anderson and Narus, 1990; Johnson, 1999). However, as Frazier and Antia (1995) note, there is a dual trend in distribution channel relationships. At the same time that some firms are reinforcing their relationships with their distributors and end-users in business markets, many channel relationships are becoming weaker. Sometimes, strong relationships are too costly to maintain as the benefits they could provide are small. Frazier and Antia (1995), propose a framework to explain the nature of exchange relationships in distribution channels in which relationship intensity is dependent on two dimensions: interdependence and environmental uncertainty.

When interdependence between both firm and environmental uncertainty are low, pure market transactions without any commitment between parts are likely to prevail as the potential gains of increasing the intensity of the relationships are low. On the other hand, when both dimensions take high values, bilateral, close relationships with very high commitment provide higher value for channel members and are more likely to develop.

On this basic framework in which interdependence and environmental uncertainty act as the main drivers of relationship intensity, we will examine our two initial research questions: the impact of internet, and the effects of customer participation on the channel relationships.

3. Previous exploratory findings in distribution channels of industrial and consumption goods

These questions were explored in distribution channels of industrial and consumption goods by examining the effects of different factors on the relationship intensity between manufacturers and their most important customer. The empirical study was made on the basis of questionnaires completed by the managers of 200 hundred companies (Cortiñas and Mugica 2001).

We defined the length of a channel as the number of agents acting in the channel. One company may use more than one channel; the mean number of channels was 1.54 with a maximum of 6. As expected, in consumer markets indirect channels are more frequent than direct ones while the opposite holds for business markets (Table 1).

Table 1: Channel length in consumer and industrial markets.

Channel Length	Direct channel	One intermediary	Two intermediary or more
Consumer market	17,2%	49,5%	33,3%
Business Market	53,4%	37,4%	9,2%

Relationship intensity is measured with a binomial variable regarding the most important client in a channel (see Table 2 for results): high-Intense relationships and low-Intense ones. High-Intense relationships when the relationship involves either cooperation agreements, joint investment in logistic systems, product customization, joint development of new products, and joint ventures; and low-Intense relationships when the relationship is restricted to market transactions or to sales planning.

Table 2: Relationship intensity

Channel Length	Direct channel	One intermediary	Two intermediary or more
Low intense relationship	32,0%	33,0%	42,6%
High intense relationship	68,0%	67,0%	57,4%

With this empirical setting the findings were the following:

1. *The effect of the use of internet on the intensity of relationships*: In indirect channels, the use of Internet favours the adoption of more complex relationships. However, for direct channels, the use of Internet has no effect on the complexity of the relationships. Very likely, the non presence of third parties makes it possible to avoid internet communications to develop dyadic relationships.

2. *The effect of product customization on the use of intermediaries*: The effect of the product customization on the use of intermediaries between suppliers and consumers is negative. When product changes by consumer request are frequent, the probability of using a direct channel increases

4. Preliminary analysis on the tourism industry: empirical setting and research propositions

As in any other sector, the tourism e-market structure is actually a tourist information network linking all market participants and reflecting the economic relationships between them (Si-qing Liu 2005). The economic foundation of the relationships explains the B2B initiatives of market participants. Traditional players such as suppliers (hotels, airlines...), wholesalers (tour-operators), and retailers have initiated e-market operations or have joined the initiatives of new entrants (GDS's, e-commerce specialists, software companies...). Given the important role of the consumer in assembling the product along the distribution channel¹, the impact of information technologies will depend on the complexity of the demanded product, and on the level(s) of the channel in which consumer perform the product assembly.

In this direction, our preliminary research was addressed to obtain the perceptions from managers of leading companies in the tourist distribution channels. Twelve interviews were conducted in the Eyetravel 2007 Summit in London (May 2007), the results of these interviews are summarized in the following discussion (see Appendix for the questionnaire included in the interviews).

4.1 The effect of consumer participation in the value creation process on channel structure

The participation of consumers in the final assembly of products has been analyzed from the perspective of mass customization. Pine (1993) and other authors have provided different scales for the description of the different levels of product customization which have been summarized and adapted

¹ In a research developed (since 1995) on the Internet as a distribution (sales) channel for Regional and Tourism Research in Denmark, Marcussen (2007) emphasis the importance of study ICT's in travel/tourism services. He shows that, in the European online travel market, dominated the direct channel (69 %) and, by type of service they were online air tickets (56 %), continuous the sales by hotels and packages (16 %).

to the tourism industry by Sigala (2006) as shown in Table 3. This classification gives a first view of the wide variety of ways by which consumers get involved in the final assembly of tourism products.

In general, the interviewers agreed -only two of them disagreed- with the statement “The participation of the consumer in the assembly of the final product is transforming the relationships among intermediaries and among consumer and intermediaries”. But when asked about the potentially negative effect of this participation on the role of the different types of channel participants, the responses were not so clear. The statement was “The participation of the consumer in the assembly of the final product has affected negatively the contribution of ... (suppliers, GDS’s, CRS’s, tour-operators, travel agencies) in the value creation process”. The responses were very alike for the impact on the different channel participants; there was a slight inclination towards agreeing with the statement. Only suppliers had a different evaluation; except for two of the respondents, the managers of the companies did think that consumer participation had not a negative impact on the value creation of suppliers.

Table 3: Mass customization levels

MC generic levels	MC in travel
8. Design	Collaborative design of travel products between supplier-customer
7. Fabrication	Flexible Itineraries determined by the traveler
6. Assembly	Traveler selection of travel components from a supplier predetermined list: dynamic packaging
5. Additional custom work	Customizing features / services of travel products, e.g. excess weight, destination tours, insurance
4. Additional services	Personalized services, e.g. SMS alerts for flights cancellations, delays
3. Packaged and distribution	Selection of distribution-delivery systems, e-tix, printed ticket
2. Usage	Adaptation of pre-defined packaged tour
1. Standardization	Pre-defined packaged tour

Source: adapted from Sigala (2006).

So, it is not clear for the managers of the leader companies interviewed that the activities or functions undertaken by consumers when purchasing or browsing in the internet has an impact on the activities of the rest of participants. Some questions arise from this observation: is there a relevant functional shift from suppliers and intermediaries to consumers? If yes, is it generating an improvement in the whole channel economy?

4.2 The effects of internet and ICT’s on relationships and channel positions

The following dimensions were explored in the impact of internet and ICT’s on relationships and channel positions: vertical relationships, horizontal relationships, strategic alliances and diagonal integration and, jeopardy for intermediaries.

1. Vertical Relationships. There is a general agreement on the positive role of ICT's in the intensification of vertical relationships. But the use of internet and ICT's doesn't seem to have a significant effect on the intensification of vertical relationships of travel agencies with suppliers and wholesalers. Large suppliers have been engaged in developing multi-channel strategies specially by setting their own e-channels direct to final customers. These initiatives might have caused a reallocation of resources from the conventional channels to the new e-channels and a consequent drop in the relationship intensity. On the contrary, ICT's do seem to have a positive influence in the intensification of vertical relationships with the new participants (CRS's) and travel agencies.

2. Horizontal Relationships. Horizontal relationships have been also seen as a beneficiary from the ICT's in terms of their intensification. One major example of this is the worldwide spread of the Destination Marketing Organizations that coordinate independent suppliers of tourism-services and products in tourism areas. These organizations make and manage horizontal connections between the local tourism enterprises and other partners working with their own web pages at the Internet (Grängsjö, 2003).

3. Strategic alliances and Diagonal integration. Dale (2003) has pointed out that strategic networks have been used by tourism e-mediaries as a means for gaining sustainable strategic advantage. In this preliminar research, seven of the interviewees gave a value of 6 or 7 in the Likert scale to the statement "New information technologies provide strategic alliances". This can be interpreted as a major reason why ICT's are seen as a facilitator to diagonal integration (according Poon (1993) key vehicle for controlling the value creation process of the travel and tourism industry), in travel and leisure sector.

4. Jeopardy for intermediaries. The dynamics in the industry are not still clear; the exits and entries from the sector are being seen at similar rates in all the levels of the value chain. Data reported by the CRS Amadeus show that the number of travel agencies in Spain keeps on growing (1.7% in the first semester of 2007) though at a decreasing rate (8.5% in 2005, and 5.6% in 2006). According to the company, this saturation might be due partly to the increasing use of Internet for airline reservations (46% increases in 2007). But in other countries such as United States, their number has been decreasing steadily in the last decade. In our exploratory interviews, half of the respondents did foresee a decrease of travel agencies forced by the growth of internet. For the rest, the impact was not as bad, probably thinking on the services which cannot be paralleled in the internet.

A somewhat surprising result is that the strongest position of all channel intermediaries seems to be the one of the tour-operators; six out of ten respondents disagreed with the statement "New technologies will force tour-operators to exit the market". When new technologies provide suppliers and final consumers the ability to by-pass intermediaries, as it is the case in the tourist industry, wholesaling is the most jeopardized position. The reason is that with the ICT's, other participants (retailers and suppliers) can undertake easily the contribution of wholesalers to the value creation in the channel. Probably, the assembling ability of tour-operators is a value creating activity which cannot

be replicated efficiently by the other members of the channel². They commercialize a specific type of product, with low customizing potential, for a market segment in which consumers are very price orientated.

More risk was seen for new comers GDS in terms of losing power relative to the other channel participants; four respondents did agree with the statement “New information technologies will force GDS to loose power in the distribution channel”. It is interesting to highlight that the more pessimistic about the evolution of GDS position among our respondents are the software and data mining providers. The ICT’s facilitators might be more aware about the potential of new alternatives succeeding in the market in the next few years.

5. Conclusions and propositions for oncoming research

Given the exploratory nature of the paper, the conclusions are to be confirmed by the following stages of the research. However, we are confident about the robustness of two driving ideas as both analyses -the exploratory empirical analysis made for distribution channels for goods, with a highly representative sample, and the one made in the tourism industry with a qualitative focus- show two basic common points. First, internet and ICT’s are effective tools to intensify relationships in the channel, and second, the participation of consumers in the value creation process through internet has a negative impact for some intermediaries.

Based on the basic theoretical framework described in section 2 in which uncertainty and interdependence are identified as the main determinants of intensity in the relationships, and also based on the exploratory works on the distribution channels for goods and tourism described respectively in sections 3 and 4, our propositions which will guide our future research are the following:

P1. - For simple assembly operations by consumers, it is expected that incremental rates of use of internet by consumers to assemble the final product will result in the increase in the intensity of horizontal relationships among members of the channel.

P2. - For complex assembly operations by consumers it is expected that incremental rates of use of internet by consumers to assemble the final product will result in the increase in the intensity of vertical relationships among members of the channel.

P3. - In direct channels, i.e. consumer-final service provider, the increase of internet use to assemble the final product will result in the increase in the intensity of horizontal relationships among final service providers.

² Nowadays tour operators are generally perceived as the most influential group within the channel of tourism distribution (Buhalis and Laws, 2001).

P4.- In indirect channels, i.e. consumer-intermediaries-final service provider, the use of internet links to assemble the final product at the retail level (TA's) will result in increases of the vertical relationship's intensity.

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APPENDIX:

MAY 2007

QUESTIONNAIRE ABOUT ICT's IN TRAVEL AND LEISURE DISTRIBUTION CHANNELS

This is a questionnaire driven to intermediates in Travel and Leisure distribution channels. It serves to empirical work of a research project that is being developed in

Thank you very much for your collaboration.

Please, answer from **1 (I strongly disagree-SD)** to **7 (I totally agree-TA)** or **don't Know/No Answer (DK/NA)**, these general statements about the situation of the Travel and Leisure Industry and the use of new Information and Communication Technologies (ICT's).

1.- Information Technologies (IT) are having profound implications for the travel and tourism industry.	SD						TA	DK/NA
1.1. Information Technologies change the rules of the game in the travel and tourism industry	1	2	3	4	5	6	7	
1.2. Information Technologies are substantially altering the role of each player in the value-creation process of the industry	1	2	3	4	5	6	7	
1.3. Information Technologies facilitate the production of new, flexible and high-quality travel and tourism services	1	2	3	4	5	6	7	
1.4. Information Technologies help the transformation of travel and tourism from its mass, standardized and rigidly packaged nature into a more flexible, individual-oriented and sustainable and diagonally integrated industry	1	2	3	4	5	6	7	

2.- The relationships and communication of the intermediaries of tourism industry have been improved thanks of information and communication technologies.	SD						TA	DK/NA
2.1. The use of information technologies intensify* substantially my relationship with Suppliers	1	2	3	4	5	6	7	
2.2. ... with Tour-operators	1	2	3	4	5	6	7	
2.3. ... with Central Reservation Systems (CRS's)	1	2	3	4	5	6	7	
2.4. ... with Travel Agencies	1	2	3	4	5	6	7	
2.5. The information technologies have generated a globalization of tourism market	1	2	3	4	5	6	7	

*To intensify means here more one to one, complex, closer, shearing of several things, in relationships.

3.- How Information and Communication Technologies (ICT's) have altering the role of each player in the value-creation process of the tourism industry	SD						TA	DK/NA
3.1. The information is the most important component of the value-creation process in the tourism industry	1	2	3	4	5	6	7	
3.2. The use of ICT's give more power to the services providers in the distribution channels	1	2	3	4	5	6	7	
3.3. The use of ICT's give more power to the intermediaries in the distribution channels (GDS, TTOO, AAVV)	1	2	3	4	5	6	7	
3.4. Those players closest to the consumer will gain a better position in the market	1	2	3	4	5	6	7	

3.5. Those players in control of the manipulation and distribution of the industry's information will increase their share of the industry's value	1	2	3	4	5	6	7	
3.6. New technologies contribute lower distribution costs for travel industries	1	2	3	4	5	6	7	

4.- How Information and Communication Technologies (ICT's) facilitates the production of new, flexible and high-quality travel and tourism services	SD						TA	DK/NA
4.1. Information and Communication Technologies (ICT's) facilitate the production of flexible, segmented, and customized products	1	2	3	4	5	6	7	
4.2. It will improve the efficiency of production	1	2	3	4	5	6	7	
4.3. It will improve the quality of services provided to consumers	1	2	3	4	5	6	7	
4.4. It will lead to generation of new services	1	2	3	4	5	6	7	
4.5. It will engineer the spread of whole new industry "best practice" ?	1	2	3	4	5	6	7	
4.6. ICT's eases the production of global products (services)	1	2	3	4	5	6	7	

5. - The transformation of travel and leisure industry structure with new technologies.	SD						TA	DK/NA
5.1. ICT's increase vertical relationships with others intermediaries at tourism market	1	2	3	4	5	6	7	
5.2. ICT's increase horizontal relationships among members of the same channel	1	2	3	4	5	6	7	
5.3. ICT's had generated the possibility to offer integrated services to the end user	1	2	3	4	5	6	7	
5.4. New information technologies provide strategic alliances	1	2	3	4	5	6	7	
5.5. New information technologies provide diagonal integration in the travel and leisure industry	1	2	3	4	5	6	7	
5.6. New information technologies will force travel agencies to exit the market	1	2	3	4	5	6	7	
5.7. New information technologies will force tour-operator to exit the market	1	2	3	4	5	6	7	
5.8. New information technologies will force GDS to loose power in the tourist distribution channel	1	2	3	4	5	6	7	
5.9. New information technologies allow suppliers to by-pass intermediaries and reach more directly the final users	1	2	3	4	5	6	7	
5.10. The direct sale of tourism products via the internet is not feasible	1	2	3	4	5	6	7	
5.11. It is compatible to sell products via the internet, via tour operators and travel agents at the same time	1	2	3	4	5	6	7	

6. About final consumers	SD						TA	DK/NA
6.1. I think that the use of internet in the travel industry could change the network with customers	1	2	3	4	5	6	7	
6.2. The use of ICT's have increased substantially the participation of final consumers in the assembly of the tourist product	1	2	3	4	5	6	7	
6.3. The participation of the consumer in the assembly of the	1	2	3	4	5	6	7	

final product has affected negatively the contribution of suppliers in the value creation process								
6.4. ... of GDS's in the value creation process	1	2	3	4	5	6	7	
6.5. ... of CRS's in the value creation process	1	2	3	4	5	6	7	
6.6. ... of Tour-operators in the value creation process	1	2	3	4	5	6	7	
6.7. ... of Travel Agencies in the value creation process	1	2	3	4	5	6	7	
6.8. The participation of the consumer in the assembly of the final product is transforming the relationships among intermediaries and among consumer and intermediaries	1	2	3	4	5	6	7	

Please, answer now from **1 (Much lower-ML)** to **7 (Much higher-MH)** or **Don't Know/No Answer (DK/NA)**, these general statements about the situation of the Travel and Leisure Industry and the use of new Information and Communication Technologies (ICT's).

7. About the use of ICT'S and future	ML						MH	DK/NA
7.1. The use of ICT's by my organization in comparison with my nearest competitors is ...	1	2	3	4	5	6	7	
7.2. Can you foresee a return to more interpersonal communication between customers and providers?	1	2	3	4	5	6	7	
(Please, answer now from Strongly Disagree to Totally Agree):	SD						TA	
7.3. The use of internet in buying and booking in tourism industry is a passing fashion	1	2	3	4	5	6	7	

Position of the respondent in his/her business:

Company (type of distribution channel member: GDS, tour-operators, travel agency, provider):

Email:
