

Cruise reservation systems used by European passenger ferry companies in Internet:

an evaluation with media richness theory

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Abstract

Internet is just one additional medium to make travel reservation alongside traditional telephone and personal visit to travel agency. This paper examines Internet reservation systems' competitiveness compared to traditional reservation media, in media richness theory's perspective. In total 92 Web sites of European passenger cruise companies were browsed through to find best practices in Internet reservation systems. Results indicate that few companies have invested in state-of-the-art interactive online reservation systems, although according to media richness theory Internet would be the most effective medium for the customer to make the travel reservation.

Keywords: cruise reservation system, Internet, media richness

Introduction

Making a travel reservation can be a very complicated task. There are several components to be reserved, for outward and return journeys, or even for different legs. If we consider cruise reservation, a mutual understanding between the customer and the travel agent or the computer making the actual reservation, has to be reached in many variables: one-way or return journey, route, departure date and time, passenger number for outbound and return journeys. If customer requires a cabin even more data is needed for every cabin reserved, for example: is there a window, shower, bath, what is the physical location of the cabin and so on.

Internet is just one additional medium to make travel reservation alongside traditional telephone and personal visit to travel agency. Internet has not substituted these traditional media, as telephone has not discontinued travel agency visits. However, when telephone became more common, less personal visits to travel agencies were made; and also in time the market shares will be redistributed differently, as people discover Internet is a useful travel reservation medium.

Many articles of Internet presence of companies in tourism industry have focused on flight or hotel reservation systems (e.g. Gustafsson et al., 1999) or travel agencies (e.g. Standing and Vasudavan, 1999). Also some attention has been put to travel portals (e.g.

Martin, 1999). However, passenger ferry companies Internet presence has not been of much interest recently. Geographical difference between Europe and USA, the leading country in information systems science journals, may be one of the reasons behind this. There are many passenger ferry companies operating on Europe's many, almost historical, seaways; their situation should be of research interest also.

In this study the focus is on passenger ferry companies' Internet reservation systems in Europe. Are there any, what kinds of systems there are and what features are included in them, were interesting questions to the researcher. Keeping in mind that the actual numbers of shoppers in Internet are still low, at least in Europe, determining any clear inhibiting factors for use, or finding attractive, ingenious solutions was interesting. In this research the question is about media choice in customers point of view: are the Internet reservation systems able to compete with telephone reservation and personal visit to travel agency? Media richness theory was decided to be used to answer this question.

Why media richness theory?

Media choice theories have been previously used to assess communication effectiveness in organisations. Managers media choices, group communication, use of new media are some examples of previous research (see e.g. Trevino et al. 1990, Kock 1998, Dennis and Kinney 1998). Organisations are fruitful environments for this kind of research, because they have many media in use possibly before the great masses and effectiveness is of considerable importance. In this case Internet, the new medium, is available for great masses. Travel agencies and telephones are probably little more common than Internet accesses, but as we know, the diffusion of Internet has been explosive. Although effectiveness may not be the as important factor in public's media choice as pleasantness of use, the focus is still in the media choice. There are also studies that argue for example social environment influences media choice (see e.g. Rowe and Struck, 1999, Webster and Trevino, 1995). In this study we use media richness theory, because it is probably most widely used of media choice theories.

While attempting to establish Internet's status as a travel reservation medium, it is important to study, why people choose certain medium; and especially what are the reasons behind choosing Internet or not. By eliminating inhibiting factors for use and strengthening facilitating factors, we can make Internet an attractive travel reservation medium. For instance, although many Internet users have fast connections from work places, several World Wide Web (later the Web) sites are still slow and hard to use, for example because of graphics. On the other hand Internet allows us to use unique features and develop new ones that can not be used anywhere else to our advantage, for example hypertext links to hotel's online camera of the beach.

Internet is not a traditional medium in the sense media choice theories (e.g. Barry and Bateman, 1992, Daft and Lengel, 1992, Fulk et al., 1990, King and Xia, 1997) understand medium (for ex. face-to-face, telephone, electronic mail, written memo, numerical report). In Internet every "medium" or format from numerical report to real-time videoconference can be used. It may be difficult to place it into different classifications, because it's usage may vary enormously. Therefore it is essential to consider it as a medium to execute a task (like travel reservation) and define exactly

which different formats will be used.

The task considered in this paper is travel reservation: filling an Internet reservation form or using Internet reservation application is seen as a task equivalent to telephone or personal travel agency reservation. In total 92 Web sites of European passenger cruise companies were browsed through to find best practices in Internet reservation systems. In these systems, there were no essential audio or video features in the reservation forms or applications themselves, natural language was used where appropriate (for example timetables were numerical).

Media richness theory

Media richness theory by Daft and Lengel (1986) argues that performance on high equivocality tasks improves when people use a richer media. Debate, clarification and enactment are required for reducing equivocality. Uncertainty, however, decreases when more information is available. This can be achieved with more formal e.g. leaner media. Formal information systems, rules and regulations and special reports give such structure to media that decreases uncertainty.

Media richness theory argues that four factors influence media richness: the ability of the medium to transmit multiple cues, immediacy of feedback, the use of natural language and the personal focus of the medium. Information can be communicated with multiple cues like the sound of voice, facial expressions and body language. These cues can also be interpreted as feedback, thus in face-to-face situation immediacy of feedback is very high.

Richest media in classification is face-to-face, and then in decreasing richness order, telephone, personal documents for example letters and memos, impersonal written documents and numeric documents. Newer media e.g. computer-mediated communication was not directly considered in the original theory. However, computer systems, like decision support systems, were included and determined to be an impersonal and lean medium.

More recent research has been trying to fit also newer media into the theory. Electronic mail is placed just after telephone in the classification, but it often lacks cues and immediate feedback can only be achieved in Internet chat systems. Personality and naturalness of language in e-mail messages vary considerably, and Trevino, Daft and Lengel consider e-mail as a lean media (1990). On the other hand, El-Shinnawy and Markus (1992) argue that media richness theory may not be applied to new media without modifications. Their research found that in equivocal situations electronic mail is preferred over voice mail, which can convey cues and therefore is richer medium than e-mail according to previous research. Wijayanayake and Higa (1999) found that e-mail was used effectively also for discussion, which is considered a complex task.

Media richness theory is not yet an acknowledged theory, there has been studies that agree (e.g. Webster and Trevino, 1995) and disagree (e.g. Dennis and Kinney, 1998) that high equivocality can be reduced using richer media. However, uncertainty is more generally approved to be decreased with leaner media and more information. Messages

may be more uncertain than equivocal considering travel reservations; customer chooses one of many specified alternatives. On the other hand many travel reservations are made in travel agencies, where a clerk may reduce equivocality by clarifying different definitions in the brochure.

According to Huang et al. (1998) media choice may not be just a rational decision based on the task or message needed to be passed, it may also be a social decision. There may be social pressure to use a certain medium. Internet and e-mail have become in recent years more commonly used and therefore they may have become also acknowledged media in certain demographical groups. They argue also that people understand language and cues differently. The basic conclusion was in Huang et al.'s study that lean media - like e-mail - could also convey rich information.

Study details

The data for this study has been collected in October and November 1999. During this time period, 92 European passenger ferry companies' Web sites were examined to determine whether a travel reservation system of some kind existed or not. If a reservation form or application was encountered, all accessible pages of the system were printed for later examination. Also some additional data was collected, like the URL-addresses, operated routes, maximum cruising times and whether ships had cabins.

The data was collected to find the "best practices" in the industry. It was used while designing a cruise reservation system to a passenger ferry company. The aim was to learn from other existing systems, find useful features that could be integrated to the system in design and also to avoid making fatal mistakes.

Researcher was not able to acquire a complete list of all European ferry companies, but the list seemed quite extensive for a representative of a European ferry company. List was found via a link list of International Maritime Organisation's web pages, European Shipping Pages provided the actual list of companies. Although there is no certainty of it's extensity, the amount of companies (92) was impressive enough to be used as data for this study. Basic analysis methods like cross tabulating and pattern matching were used to find similarities and differences in data.

Majority of the companies in this study operated on Baltic Sea and Mediterranean. North Sea, English Channel, Irish Sea and Northern Atlantic were also represented. The maximum cruising time was under 5 hours for almost half of the companies, mainly on English Channel and Irish Sea. On Baltic and North Seas and Mediterranean companies had over twenty hour cruises.

Companies varied greatly. In addition to basic cruise companies, some focused on sight-seeing tours or operated as a ferry in straits or short crossings; some were mainly cargo shipping companies but welcomed also passengers with or without car (companies concentrating only in cargo shipping were not included in the data). Also the sizes of the companies were different, some operated only one or two ferries, others had over dozen ferries. Very few (18/92) stated in their Web site passenger counts, numbers varied between 325 000 - 11 million passengers per annum. Lack of data inhibited making

conclusions about interdependence between passenger count and existence of an Internet reservation system.

Reservation systems differed enormously. Although in all systems the basic information required was similar (route, departure date and time, passenger information), the fields were different in almost every system. Route may be divided into several legs and entered for outward and return journey separately. Passenger information included name of the customer in minimum case or detailed address information and titles and all possible phone numbers of all passengers in maximum. In case customer required a cabin, usually it was selected from given alternatives in drop-down list. Half of the companies did have cabin reservation possibility in general and very few of them (5/38) who had a reservation system in Internet did not include cabin reservation possibility in the system.

Analysis of Web sites

The Web sites may be classified into three categories:

1. Informative Web site, where customer can obtain contact information to reserve a journey by telephone, or personally from company or travel agency
2. Inquiring system, in which customer has an opportunity to make a reservation inquiry by electronic mail
3. Interactive system, where transaction is enabled and customer may make an online reservation

Table 1: Cruise reservation systems in passenger ferry companies' Web sites.

		RESERVATION SYSTEM			
		Informative Web pages	Inquiring system	Interactive system	Total
AREA	Baltic Sea	19	12	2	33
	North Sea	9	7	1	17
	English Channel	5	4	1	10
	Irish Sea and Northern Atlantic	5	3	1	9
	Mediterranean	11	5	3	19
	Total	49	31	8	88

Just over half (55,7%) of the studied companies did not have any reservation system in Internet in October-November, only informative pages. Some kind of an inquiring system based on electronic mail was used by 35,3% of the companies and 9,1% had interactive online reservation systems. Online system requires serious planning and designing and thus genuine trust to invest resources to company's Internet presence. Half of the companies do not share that trust: they may be waiting for better times or just do not experience electronic commerce to be worth investment. Companies with systems based on electronic mail are following the situation closely, when sufficient amount of inquiries begin to flow in, it is time to proceed to next level.

The second class can be divided into subclasses:

1. Reservation inquiry. Form with not customised user interface, which will be sent by electronic mail. Customer fills in name, contact information and a free text field, asking for information about interesting journey. In some services customer was informed to include certain information in message.
2. Inquiry of specified departure. A customised form which will be sent by electronic mail. Customer is asked to fill in fields, and send this reservation inquiry, which will be confirmed and billed if there is space left.
3. Reservation of specified departure. A customised form which will be sent by electronic mail. Service provider informs that reservation is valid when customer has received reservation confirmation and paid the bill.

These subclasses are actually equal to each other: they are mere inquiries that cause no immediate action compared to an online reservation. But if the medium used was telephone, differences become clear. In two first classes, customer has no guarantee for a reservation stated by service provider, as opposed to last category, in which service provider and customer commit to make the reservation. In last two classes customer fills in complete data, even for a second best choice, and it is possible to make a reservation with given data, when in the first class, there is every likelihood that customer has to give additional information to complete reservation.

Online reservation is by definition real time and interactive application that verifies immediately reservation status, when customer chooses a certain departure. Customer is enable to make the reservation and even if the confirmation will be sent later by (electronic) mail, there is a clear difference between online reservation and the third class of reservation by electronic mail: like a real time or batch processing information system.

The evolution pace is remarkable with these passenger cruise companies' Web sites. This data was first collected in August 1999 and updated in October – November 1999 for this study. In this short period, two electronic mail systems had evolved into online systems and one company presented its' new web site featuring an electronic mail system. Last time the European Shipping Pages' list was browsed through in March 2000, again at least three new online systems appeared (two of which were former electronic mail systems) and about ten companies introduced their new Web sites, most of which contained a some kind of electronic mail system. Some companies with systems based on electronic mail also stated that their reservation system is being constructed, and in the mean time customers should use reservation inquiry form.

Conclusions and discussion

According to media richness theory negotiation and clarification may reduce equivocality of the task and uncertainty may be reduced by providing more information. Equivocality is defined as ambiguity, the existence of multiple and conflicting interpretations and uncertainty is defined as absence of information. When the amount of information to perform a task is greater than the amount already possessed, uncertainty will be experienced in executing the task. In equivocal tasks simple yes-no answers will not

clarify situation, as will in uncertain tasks.

Travel reservation is more of an uncertain than equivocal task. Customer has to choose from alternatives, and the differences between them are quite simple although several. The decision can be formed when sufficient amount of data is available. The real problem is usually the enormous quantity of alternatives, not the ambiguity of the alternatives.

In many of the reservation systems based on electronic mail, the amount of fields was enormous. Length of the systems on Web pages varied between a fourth of an A4 page and 6 pages when printed out. Uncertainty should be very limited in the last case. Not customised reservation inquiry form, however, may require additional information and the task may become equivocal if customer does not know what questions to ask. Online systems were shorter, although in many phases, in which the content was determined by input in previous forms. Online systems require less user input, so online systems are easier or faster to use, in customer's point of view; therefore they should be preferred.

For equivocal situation a richer media is needed and for uncertain task a leaner media is enough. Daft and Lengel (1986) argue also that information systems that provide objective data in form of computer reports and are therefore an impersonal, lean medium that do not reduce equivocality. Instead they can be used to obtain additional data to answer explicit questions, and reduce uncertainty.

The quality and quantity of cues and the delay of feedback differentiate personal visit to travel agency from telephone reservation. And the lack of cues and personal focus are characteristic for Internet reservation. In online systems the immediacy of feedback is higher than in systems based on electronic mail, which makes online system richer than electronic mail based system. But as stated before, online system is easier to use because of it requires less user input. We can determine that Internet is the leanest medium of these three and using telephone is a leaner way to make a reservation than personal visit to travel agency. So Internet should be the best medium of these to make an uncertain travel reservation, and online system is easiest to use, therefore it should be preferred. This kind of preference seems to be already existing: the evolution of Internet reservation systems indicates that an online reservation system is in the state-of-the-art and the last form of evolution of stages presented in this study.

For better customer service, the cruise company wants to present all possible combinations and special offers that might interest the customer and not any confusing additional data. This may be a very demanding task for even the most experienced travel agent. For example customer asks information in October about cruises in January, so sales person will not promote Christmas cruises, even customer would be actually interested in them but assumed they were all reserved already. In Internet it is easy to present all the information and leave the customer to browse by himself.

Rationally Internet would be the most efficient medium to make a travel reservation. Greenfield Online (2000) found that 28 % of business travels are booked on the Internet as opposed to 33% on telephone. Business travelers are likely to seek efficiency more than recreational travelers, like in any other activity. Although

expectations are high in consumer electronic commerce, travelling related or not, current figures are not as promising. Reuters (2000) reported that only 3 percent of reservations to European hotels are made through Internet; at the annual International Tourism Exchange executives agreed that Internet is perfect for simple booking, more complicated reservations are made through travel agents.

Why people use so little Internet to make a travel reservation, when it seems to be the most efficient medium to process the task? Safety and privacy issues concern people, they are afraid using their credit cards in Internet (IDC, 2000). Other media choice theories than media richness theory give alternative explanations. Fulk et al. (1990) argue that social influence affects individual's media choice. Markus (1987) states that interactive media needs a critical mass of users to become successful. Internet has been widely accepted, and electronic commerce also in tourism is becoming more common, but also the cruise reservation requires its critical mass. Companies have to invest in Internet reservation systems, half of the companies in this study have not yet felt the need for it, and just 9% have invested to an online system and so demonstrated their belief in electronic commerce's potential.

With media richness theory we were able to determine that Internet reservation system is the most effective medium to make the travel reservation, because the uncertain nature of the task. Theory could also be used to reason characteristics of other tasks and thus conclude the most effective medium to process them. This could help organisations to make the decision to introduce a new medium for customers or not. However, findings of other research concerning media richness theory have found that some modifications to theory should be done, for example to include the social influence to it. Therefore organisations should also consider other media choice theories when making the investing decision.

In this paper focus has been to achieve a basic understanding of passenger ferry companies' Internet presence. The success of Internet cruise reservation systems is another project. Further research could be done by expanding the data. Now, it represents Europe, it is not necessarily very extensive, and much more information could have been collected from companies, for instance passenger count, reservation counts from different media and so on. Also some comparative research would be interesting, for instance between flight and cruise reservation systems or different geographical areas. The research of this area has important contribution to make, to both organisations and research in tourism field.

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European Shipping Pages' list of ferry companies in URL-address:
<<http://members.xoom.com/euroship/europe/ferry.htm>>

International Maritime Organisation's URL-address:
<<http://www.imo.org/>>