

# The E-tourism And The Virtual Enterprise

*TRACK:* Electronic Commerce Applications

## *Authors*

Scavarda, Annibal José

annibal@rdc.puc-rio.br

Lustosa, Leonardo Junqueira

ljl@rdc.puc-rio.br

Teixeira, José Paulo

jpt@rdc.puc-rio.br

All with the Department of Industrial Engineering - Pontifícia Universidade Católica do Rio de Janeiro, Brazil

## *Abstract*

The dramatic progress and dissemination of computer power and telecommunications allowed the development of a network of firms that divide with the larger manufacturers the responsibilities of product design, production, supplier's interactions, goods distribution, consumer marketing, and several other functions formerly disconnected, or else, concentrated in a single large company. The service sector is also changing. The tourism industry is in transformation, and is likely to originate an e-tourism industry. This paper intends to examine the nature and likely developments of e-tourism industry. This industry may be dominated by "virtual enterprises" that can combine the quality and the reliable fast delivery, usually associated with vertical integration, with low cost, and flexibility.

*Key words:* Globalization, virtual enterprise, e-tourism

## *Introduction*

The main objective of this paper is to examine the implications of the information technologies (IT), and of the virtual enterprise, for the tourism industry. To discuss the issue, it is fundamental to review the technological advances information technologies, the accompanying socioeconomic changes, and the globalization process. The paper will also analyze some of the areas that may develop into an e-tourism industry.

We call e-tourism industry a new form of organization of certain tourism industry operations. These operations involve many different business agents cooperating, or competing, in an environment where the consumer deals with a single agent as a virtual enterprise that sells and manages a package of services composed of activities of many different agents.

Though more complex in some senses, e-tourism enables the tourism industry to have a simpler and efficient interaction with the customer (B2C), and mainly among the business companies (B2B). To enter e-tourism business, people should be educated and prepared to work in a much more complex and volatile environment. Geographic distance is no longer a critical point for developing tourism businesses. Tourism operations, and managerial activities, as well as the logistic infrastructure should be highly integrated across companies (according to well established standards and practices) resulting in faster and more efficient processes.

Many members of the tourism industry, like the tourism operator and the tourism agent, will have to redefine their functions. While the operator benefits from more opportunities, it will face competitors from all over the world and will be forced to enhance some of its abilities and give up some activities as his business will become a very specialized one.

In the remainder of the paper, the changes in the background scenario accompanying the IT advances, and globalization will be sketched. Some relevant possibilities for changing business operations offered by the IT advances will be reviewed and the likely implications of these changes on some tourism industry members will be discussed. Finally some considerations and conclusions of a more general nature will be presented.

### *Impact of Globalization and Information Technology on Tourism Industry*

The process of globalization became relevant for discussions within the government, as well as in large and small corporations. It is also largely commented in the media, generating mixed feelings in the world population due to misunderstandings, uncertainties and attendant anxiety. Since the speed at which changes occur has increased dramatically, the concept of globalization is as much a scenario for decision-making for the rapidly growing segment of small companies induced to adopting new technologies, as it is a phenomenon of recent political concern. As a first glimpse, a universal comprehension of the globalization process is vital for its development. Moreover, the short loop between decisions and available scenario generated the necessity of iterative communications and proactive actions what explains the success of the Internet.

Globalization refers to the shift toward a more integrated and interdependent world economy (Hill, 1998). Commerce, finances, markets and production are not locally bound; the supplier of parts or raw materials, the service or manufacturing industry and the consumer, each one being located anywhere in the world.

The planetary view of national strategies and business decisions is not new; it probably started by the turn of the XVI century with the first trip of Columbus to America, followed soon afterwards by the Magellan's circumnavigation journey. At that time, the globe started to be used as a representation of the planet and, nowadays, became a synonymous of Earth (Encyclopaedia Britannica).

A deeper integrated view of the world was underlined by the industrial revolution started in the XVIII century in England. Historians recognize three waves of this revolution, each one heralding a specific way of using knowledge and a continuous decentralization process. The first wave was the beginning of the revolution itself. The second wave brought the shift to local decentralized mechanical power, due to the internal combustion engine. The third wave came recently with the decentralization of intelligence, due to the microcomputer (Warnecke, 1993).

Globalization, as an offspring of the recent third wave, was made possible by the development of telecommunications and computers, which enlarged the range of interactions. In the present stage, the area of activities reached the planetary size. Paradoxically, each individual became the central player of the economy, either as a consumer or as an entrepreneur (Naisbitt, 1994).

There are two main factors that impact the globalization process: "trade and investment barrier factors" and "technology innovation factors".

The trade and investment barrier factors are based on the fact that local laws may facilitate, or reduce, the impact of globalization. Some governments still use and most of them have already used trade and investment barriers to protect the national industry from foreign competition. High resistance and bans to FDI (Foreign Direct Investment) reduces external investment and high trade tariffs rates raises imported product prices, both facts reducing the average competitiveness of local industries. As an example, exports among countries fell from 9% to almost 7% of the GDP in the 1920 – 1950 period due to trade barriers (The Economist, 1999).

The other factor, technology innovation, comprises the technological changes during the second half of the last century that contributed to increased world integration by adding new services and lowering costs (See Table 1 for cost reduction examples). Consequently, for many industries formerly characterized by non-tradable products, such as services, geographic barriers were busted by technology innovations bringing in new and unexpected competitors. It is now feasible for a hotel chain to buy and exert managerial control on a small inn in a far away continent, a university can offer competitive courses in foreign countries at low cost, and a tourist operator can directly assemble and manage tourism packages in other countries without any local direct employee.

Table 1: Declining costs (US dollars) of air transportation, telecommunication and computers (source: International Business Lecture Handouts).

Year	Average air transportation cost per passenger mile	Cost of a 3-minute phone call from New York to London	Relative cost of computing power
1950	0.30	53.20	-
1960	0.24	45.86	125,000
1970	0.16	31.58	19,474
1980	0.10	4.80	3,620
1990	0.11	3.32	1,000

**Transportation:** Travelling or product transportation became safer, easier, more reliable and cheaper, as shown in Table 1, what allows people to get “in loco” information and education.

**Telecommunication:** Cost reduction and portable phone facilities. It is possible to call or e-mail New York from a bus in London at low cost. It became easier for firms to communicate to their operation units or plants in other countries. The wide use of satellites and optical fibers allow TV networks (CNN, BBC, Globo Sat, ...) to spread local cultures, facts and world facts analyses.

**Computer:** It became more powerful, faster and cheaper. Software became standardized, facilitating communications and interactions (e.g.: MS office).

**The Internet and the World Wide Web:** Today it is easier to obtain on-line information, even at home. The interactivity of the Web, contrary to the one-directional transmission of TV or radio, facilitated the on-line interactive decision making mechanism, what includes the e-commerce, reducing the relevance of where someone and his partners are.

Together with globalization and fast technological innovations, society is presently going through fast and deep changes. These changes are not only physical, where the technology may contribute for improved performances, but they also involve values and concepts regarding behavior of the consumer and of the producer as well.

People, more in more, have access to other cultures and points of view adopting new consumption patterns, seeking new life experiences, becoming more open to changes in habits and values. Whether this is a desirable trend, or not, is highly controversial. Some argue that diversity is enriching, and globalization means just that. Others consider that globalization brings about cultural homogeneity facilitating the expansion of the dominant culture over the local, and peripheral ones - a fact already observed in the world colonization process engaged by European countries since the great navigators landed the Asian and American continents.

Global competition has forced local industry to adopt new standards even to compete in its traditional markets. In return, if successful in adhering to these standards, the local industry may be rewarded with new markets. The tourism industry is rapidly changing as

people become more aware of new touristic destinations, new styles (eco-tourism, health spas, etc.), and as stricter “world class” standards are developed.

A new very complex tourism market, a global market, with many consumers and companies spread out worldwide is emerging. In other words, globalization has increased the diversity of both demand and supply, and at the same time, increased scale and imposed more universal standards. Tourism companies no longer originate at the touristic places that they explore. More in more they are companies with managerial expertise, and good financial records, that invest on tourism ventures wherever good opportunities arise.

Of course, advances in communication, in logistics, and in passenger transportation have made this possible. The dissemination of low cost powerful computers, and the tremendous expansion of worldwide telecommunication networks allowed the development of a myriad of small firms that divide with the large airlines, hotel chains, resorts, and car rental system the responsibilities of offering world class tourism services. Supplier’s interactions, sales, service delivery and coordination, marketing and several other functions that once were part of the large companies main activities, now may be shared and jointly managed by a chain of suppliers and customers, from the raw materials to the end consumer.

### *The Virtual Enterprise Implication on the Tourism: E-tourism*

This new scenario has direct implications on the tourism industry. An example is the reduced price, like in the air industry case presented in Table 1, allowing people to travel more often, and expanding the airline market. Recently in Brazil, when low fare airlines started to operate, many passengers over forty were flying for the first time, shrinking a three day bus trip to a few hours flight. A simplified low cost reservation system with no physical branch office, or travel agents, was key to cost reduction. Perhaps any airline can reduce costs by simplifying their commercialization channels, for example, by integrating their seat control systems with the operations management systems of hotels. Hotels could then offer their customers reservation and ticket sales services at almost no additional cost to anyone.

Many industries are changing their business performance as result of the Internet use, a process named e-shift, mainly in three domains: e-shopping, e-learning and e-networking (Starr, 2000). The same process is occurring with the tourism industry and the end result could be an e-tourism industry.

Both B2B and B2C are very important for the tourism industry. The B2C, or e-shopping (also known as online shopping, e-buying, consumer e-commerce or residential e-commerce) is the process of buying for consumption through the Internet. In most of the industries, the B2C does not have the same sales performance as the B2B because it is highly fragmented (Starr, 2000).

E-commerce is very relevant for the tourism industry because the buyer (both the final consumer and intermediate companies) is usually far away from the places where "production" actually takes place, and often fast delivery is crucial. The geographic distance impact can be decreased and costs may be reduced. In the tourism industry, B2C opens new opportunities to develop and to implement advanced operations management techniques, such as revenue (or yield) management, because more and more up-to-date information is usually easier to obtain.

Presently, the travel component (such as airline tickets) is one of the most important activities in the B2C. Travel, together with book, music, software, hardware, clothing and electronic represent the major part of B2C (Golob and Regan, 2001). It is important to observe that success of e-shopping for these items may be partly explained by the fact that these are standard items already well known by the consumer when she goes shopping.

B2B allows deeper integration between the industries and companies involved in tourism production, while the B2C makes the tourism product more easily available, and cheaper to sell. As the desires of the client vary from individual to individual, and change over time, this kind of business requires high variety flexibility along with fast customer response. The companies can act in a faster and more efficient way, mainly when there is a high level of integration allowing close interaction with other companies (suppliers or customers) that are involved in their production, resulting in net benefits for the whole chain of suppliers converging to the consumer.

For example, suppose a traveler bought a package including airline ticket and hotel accommodation. If the hotel and the airline operations are highly integrated, a long delay in the flight could be immediately perceived by the hotel that may reschedule the reservation, avoiding to turn away the customer at late arrival and, with luck, sell to someone else the now available room. Of course buying the airline ticket - accommodation package from the same virtual company would save the consumer time, provide both, the hotel and the airline, more useful information, and enhance service quality. Of course much more than just a reliable and efficient information channel is required: integration of operations processes, mutual trust, benefit and risk sharing agreements, and a customer oriented culture are crucial for this integration.

Big companies (airlines, hotel chains) and small companies (even a one-person travel agent), as well, can work together with more efficiency. They can be geographically spread out, and through integration of their managerial processes (for which processes compatibility, information channels, and trust are key), and/or through a high degree of standardization, they can operate as a single virtual enterprise.

This “new environment”, the virtual business environment, is not independent of the “old one”. Each one complements and supports the other; they are co-dependent. Among other reasons, this is necessarily so because depending on the product offered, on the target market segment, and on other factors, the same company may find it beneficial to operate in both environments.

Direct connection with the client, even when he/she is at work, can help to promote the tourism. Many tourism firms have direct links with other kinds of companies, being able to expose their advertisements in the companies’ intranet (The Economist, 2000). This is a good mechanism for the tourism company to be closer and enjoy faster contact with other companies and their workers. The tourism agent being authorized to access some parts of the companies’ information may offer customized products. Those companies benefit from this practice since they can guarantee cheaper holidays to their workers without waist of time.

One of the hardest difficulties involved in IT based processes is the preparation of people to new situations and training them in new procedures and tasks. Fortunately, IT itself can help. E-learning has improved with new educational developments and technological improvement on bandwidth, networking capacity and memory (Starr, 2000). Now, employees, customers, and suppliers can learn to operate systems and to execute new tasks by themselves by downloading, or searching on large quantities of available material. Moreover, companies can more easily prepare and instruct their workers by offering them necessary information, computer aided procedures, and also being able to follow up and help them during their development phases. As the (both chain's and companies' internal) processes get more in more integrated through IT systems, the less important it is whether, or not, their agents belong to the same company. Taken to the limit, many companies participating in the process can become a one-person company.

Self-employment is very important in the tourism industry, mainly when the person has special constraints that impede traditional office work. It may not require full-time dedication, the worker may be free to exert other activities. The flexibility of working gets so

evident that people do not need to work in an office, and in some cases, to have a regular schedule. This is very positive for the tourism industry since often, the involved activities (such as the ones of tour guides) are geographically scattered, mobile, and time-wise irregular.

Flexibility is also present in the way clients are treated. As information becomes more accessible, it is possible to know more about a customer by checking his history. It is possible to know his preferences and necessities (Bieber, 1989). Knowing who the client is, the company can offer him a personalized service just when he needs it. If it is the case, the company can (unfortunately rightfully, or not) avoid him (e.g. a guest that has offered problems in the past). The virtual company can share this information with its partners, or members of the correlated supply chain, making it possible to offer a personalized seamless service flow along the whole chain, even if some of its firms are serving that customer for the first time. With access to this information, it is also possible to make some analyses and forecasts about future demand. These forecasts may be useful for marketing to anticipate offers, and for operations to improve planning.

The probability of occurring mistakes, and their consequences may be reduced. The integration of processes makes information more readily accessible, updated and reliable, avoiding the problem generated by absent or misleading information that could result in "wrong decisions". The information integrity may also be improved because integration means less problems with data manipulation because information is directly generated by the operations activities and automatically processed. For instance, when the check in at the airline counter issues a boarding card, the chance of the passenger not showing up at the destination hotel where he booked a room is almost completely eliminated. If the hotel reservation system is integrated with the airline's boarding control system, the act of checking in for the flight did confirm the hotel reservation, although that was not the primary purpose of the act. Nobody had to remember (or to forget) to confirm with the hotel.

It is not possible to work efficiently in a chain with many suppliers and customers unless everyone can be sure that each one will do his part, and seek long term global efficiency, rather than immediate advantage. Trust is essential for this new virtual enterprise environment. Sometimes, there are new members and there is lack of information about them, but it is still necessary to trust them. Trust is necessary to eliminate double checks, clearances and other non value adding security measures that delay interactions and add cost to the processes. As each member of the chain becomes dependent on the others, trust and cooperation become vital.

However, trust may be difficult to obtain when the virtual tourism company is itself almost an asset-less firm. Consequently, economic barriers to entry, and to exit, are minimal, meaning that almost anyone can enter, and exit this market, filling it with a multitude of new and unknown firms with not much to loose. The partners are scattered around the world, and subject to different laws. On what foundations then can "trust" be built on? Not, as in usual businesses: on long time relationship or reputation, not on large equities. More likely trust will be based on accreditation agencies, standard practices, clear rules, and enforcement devices. New legislation, international legal agreements, and regulatory agencies are necessary for full development of the virtual company of e-tourism.

The actual virtual firm game is a win-win game where transparency and cooperation are key. It is important to a member of the chain to help the other ones passing on information and knowledge, issuing warnings, assisting in recovery from failures, and so forth.

Matching capacity and demand is a key issue in most service industries and pervasive in the tourism industry. It is customarily said that in manufacture supply chain management, information substitutes for inventories, and since inventories tie up capital and produce other costs (e.g. storage, pilferage), better information saves money. This is because inventories are

often a protection against lost sales, idle capacity, or tardy deliveries that uncertainties bring about. Because services cannot be inventoried, management has one less degree of freedom for matching capacity and demand to avoid these undesirable consequences of uncertainties. Therefore, if reducing uncertainties is important in manufacture it is much more so in services. In tourism, submitting customers to long unexpected waits and turning them away for lack of capacity, is not only costly, it may be disastrous.

The e-tourism can avoid delays and waits partially because it offers easy, fast and cheap communications between the chain members that are providing the service. The best way to measure the delays and waits is by the customer satisfaction and not just by the real speed of the service. By using the Internet, it is possible to be easily in contact with the customer and probe his satisfaction. Knowing what pleases, or not, the client, the company can change the way of providing the service to reduce the duration of the inconvenience, or make the delay or the waiting less unpleasant to the customer. The e-tourism virtual enterprise may also quickly add capacity by contracting other services from new partners or non-partners.

### *Changes in the Functions of the Tourism Operator*

E-tourism is important to connect all the tourism suppliers and providers. One of the tourism chain members that may have a fundamental performance is the tourism operator meaning the company that assembles and sells tourism packages, either directly to the consumer or through tourism agents. He offers an efficient connection between the client and the rest of the chain and adds other conveniences such as hostesses and guides. Of course, the client can establish a direct contact with the whole chain members, but still the operator will have a fundamental role, he can offer to the client its experience and advice adding expertise to the tourism package. He also makes in advance block reservations at airlines and hotels at discount prices.

The operator and the tourism agent can participate, and should, of the three service stages - the pre-purchase, the counter and the post-purchase phases (Kurtz and Clow, 1998). Pre-purchase involves advertising (more dependent on the operator) and counseling (more dependent on the sales agent) and the counter is mainly in control of the selling agent. Post-purchase in tourism as in many other services is where action really is, and at this phase the operator is the coordinator of the service processes making sure that things run smoothly as the tourist progresses through the various services that comprise the experience. At this phase coordination is key and the operator must work with his suppliers in perfect accord such that the client is never left unassisted.

People are still used to the idea of buying an airplane, train or bus ticket from a travel agent. With the e-commerce, the pure purchase of an isolated item is from an agent is increasingly less frequent. But this does not mean that the travel agent is bound to disappear; she/he is changing from a simple transaction processor to a tourism counselor.

The travel agent can help the consumer to find a nice and pleasurable holidays or to get a rest-time; she can "feel" the customer's desires and constraints to elaborate the "best" tourism service combinations. Many times the solution can be a customized tourism package assembled to order by the agent using her expertise and the information readily available at the Internet. With easy access to the service providers (hotels, airlines, car rentals etc.) the agent can then act somewhat like an operator, assisting her customer throughout his journey.

The operator can coordinate the execution of chain of services execution and react to the feedback (complains or comments) that he gets from each customer. This makes it possible to make changes or additions on the tourism service, maintaining the rest of the chain aware of the actual needs of a specific client. This entices the client to continue to use the chain, and in addition, transforms him in a marketer of the chain, providing subsequently

the presence of other clients. By this mechanism, the “client” will continue being member of the chain even if he stops to consume the chain’s services.

### *Final Considerations*

Globalization has become a risk to the enterprises that insist on passed practices and even to Nations that insist in not developing strategies for competitiveness (better infrastructure, improved and disseminated educational policies, etc.). On the other hand, it opens a period of great opportunities for those that decide to modernize, dare to lead and have the courage to promote changes. The 3<sup>rd</sup> millennium has just begun, and as changes become faster, less certain the future becomes.

Information technology plays a very important rule to link the tourism chain bringing benefits to all its members and, ultimately, to the final consumer. The electronic commerce can catalyze the tourism industry activities. An e-tourism industry will change many ways of developing the tourism business. The tourism operator and the travel agent new roles are just an example, but there are many others that are not still foreseen.

It is a great opportunity for touristic destinations that still do not have an adequate infrastructure, communication, or local entrepreneurs to participate of the international tourism market. The competition is harder, but the market is expanding fast. There are more tourism suppliers and providers, but, at the same time, more and more clients are available. Even small tourism companies have the opportunity to make a niche attending a very specific group of customers around the world and, for that, it can participate of a far reaching chain with many other firms.

Last but not least, the tourism industry can receive large benefits of the new IT and globalization, but for that, the it must risk, build trust among its partners, create adequate standards and practices, and struggle for new domestic and international laws, and regulations to reduce the risk inherent in commercial relations among very heterogeneous partners.

### *References*

- Bieber, T. P. "Guest-history Systems: Maximizing the Benefits". *The Cornell H.R.A. Quarterly* (November 1989). pp. 20-22.
- Golob, T. F. and Regan, A. C. "Impacts of Information Technology on Personal Travel and Commercial Vehicle Operations: Research Challenges and Opportunities". *Transportation Research Part C 9* (2001). pp. 87-121.
- Hill, C.W.L. "International Business: Competing in the Global Marketplace". *Chicago: Irwin*. Chapter 1, 1998.
- Kurtz, D. L. and Clow, K. E. "Consumer Expectations of Service". *Services Marketing*. John Wiley & Sons (1998). pp. 64-96.
- Naisbitt, J. "Global Paradox". *Avon Books*, 1994.
- Starr, M. K. "POM and the E-shift". *First World Conference on Production and Operations Management* (2000). pp. 177-186.
- The Economist. "E-management". *The Economist - Survey* (November 11<sup>th</sup> 2000). pp. 1-28.
- The Economist. "A Survey of the 20th Century". *The Economist – Survey* (September 11<sup>th</sup> 1999). pp. 33-34.
- Warnecke, H. J. "The Fractal Company". *Springer Verlag*, 1993.