ORGANIZATION OF TOURIST CHAIN

by

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ABSTRACT

Tourism is essentially linked to the progress of mobility and transportation. By train, car, bus or plane, it is necessary to control mobility. The complexity of tourism is linked to several factors, borders, integration of tourism programs, political environment. The Offer proposed to the client must be accompanied by a flow synchronization of the transport chain dedicated to tourism. The sector of the tourism began year 2012 in force, the World Tourism Organization has celebrated on December 13th the arrival of a British tourist on visit to Madrid (Spain) which represented symbolically, the billion international tourists having travelled in 2012. This observation requires a transport organization for tourism. The implementation of new organizations design and production of tourism services led to profound changes in the exchange of information and knowledge between different actors (individuals, groups, services, client tourism, tourist service provider, subcontractor, tour operator. This raises the issue of cooperation between actors (sharing resources, Risk management, social and economic co-design. We propose in this paper a model taking into account several criteria, the seasonality of tourist transport, site development, location of natural or monumental parks. This model involves a strategic organization having for objective the limit of the transshipments in the tourist chain.

KEYWORDS
Transport, Transshipment, Tourism, Modeling

INTRODUCTION

The tourism is the activity of a person who travels for his pleasure, visit a region, a country, a continent other one than his, to satisfy his curiosity, his sense of adventure and discovery, his desire to enrich his experience and culture [1]. The short-term tourism, on the other hand, is a very recent activity and which already a significant evolution, while a few years ago, the tourist left only once for hanging holidays four or five weeks under the tropical sun, today it multiplies the number of trips, the stays are shorter, a few days or even a weekend. The offers are more varied and prices are decreasing. Another change, the traveler is no longer content to spend the day at the beach, he wants to grow while enjoying the landscape, emerging at the heart of foreign population and practice a new sporting activity [2]. To be a tourist is to forget everyday life and let live, stay reception and be pleasant every problem must be resolved as quickly and as simply as possible.

The idea of movement is central in tourism, according to Mr alii (2003p.24) "*Making tourism is necessarily move*", this movement must be accompanied by the development of means of transport and infrastructure. The development of the tourist sector is essentially bound to the mode of transportation, so the tourist transport sees endowing last elements of comfort: recliners armchairs, feet rest, air conditioning, toilet, sound system and video … These modern options allow to travel in complete quietude. It is also endowed with the last technical innovations such as the systems of assistance to the driving (ADA ADVANCED driver system assistance) [3].

To evaluate the features and benefits of travel products, including transport services and tours. It is important to take into consideration certain constraints. Once tourists come to the right edge and installed their hotels are visits and activities begin. Rather often the tourist resumes his life by regretting not visiting such monument or such museum...in giving as a reason "I do not know the way, or the previous visit was longer than expected, or I been informed of the existence of this site late " We propose in this paper a model of the sequence of visits or tourism and travel during a visit to a definite duration.

LOGISTICS COSTS AND TOURISM COSTS

Our model like the following assumptions:

Choice of destination: Establishing paths is a fundamental step in the measurement of accessibility and traffic flow in a network, if we assume that a site is visited only once by a tourist while traveling the path adapted to our problem will be a Eulerian path is a simple path and password only once and each arc. Some examples include historical places, monuments, zoos, aquariums, museums, art galleries, botanical gardens, buildings, constructions and structures (castles, libraries, former prisons, skyscrapers, bridges), national parks and forests, theme parks and carnivals and cultural events.

Tourism activity: The activities of people during their journeys to and staying in places outside their usual environment for a consecutive period not exceeding one year for leisure, business and other reasons (World Tourism Organization, 1994).

Choice of transport mode: the means of transport used by tourists are the plane, bus, train and boat.

- The plane is used for long distances. This mode allows the implementation of on-demand programming.
- The bus uses the same network as the car but is an alternative. The bus routes are ideal for local tourism group
- The train is the primary means of transport for goods[1] near the guy.
- The boat focuses more around the ferry. Crossing the ocean by boat is seen as a time consuming excessive. But generally ship transport is presented more as an entertainment rather than a mode of transport itself (Jean-Paul Rodrigue, tourism international, 2008.108 p)

Duration of the stay: so that a stay is to consider as tourist, the World Organization of Tourism defined a minimal duration and a maximal, and positions the duration in an interval between 12 hours and one year. These constraints can be found in all chain of productive activities from the Extended Enterprise [4].

It is in this context that the new key performance of tourism businesses (cost value) to maintain their competitiveness are included in a process of continuous innovation in its technological, informational, functional, commercial and organizational. "Tourism is seen as a form of temporary mobility, motivated by the search for pleasure, which takes place outside the usual home .... It can be expressed in various forms of travel. "

This definition suggests that these physical flows, information and financial need to synchronize. We are therefore at the heart of the problem caused by the design of logistics systems and systems by analogy "tourist".

The implementation of new organizations design and production of tourism services led to profound changes in the exchange of information and knowledge between different actors (individuals, groups, services) internal and external (client tourism provider tourist service, subcontractor, tour or tour operator) [5].

A supply chain is meant when performing logistics costs are minimal. We consider optimizing a tourism chain from the point of view of a provider in the tourism sector.

Chain tourist optimization

We illustrate the tourist offer in the following diagram:

[1] « La servuction », BRAGHIERI Laurent Marketing du Tourisme http://www.bts-vpt.com

FIGURE 1
STRUCTURE OF TOURISM

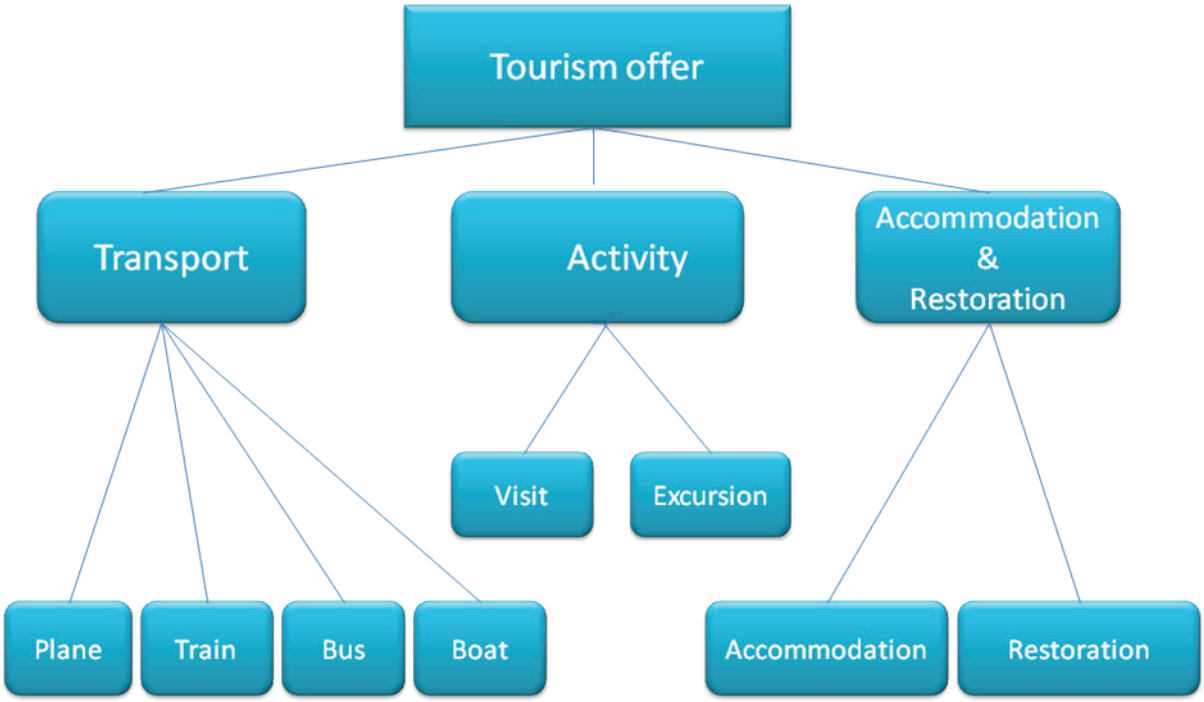

FIGURE 3
PATH OF THE TOURISM OFFER

Figure 2: Places of tourist mobility

We propose through this structure to optimize the two channels described in Figures 2 and 3.

Optimizing the Transport [6] :

We propose a mathematical model for the optimization of transport that particularity the fact that divided the downstream transport in two parts:

*Transportation from the point of grouping tourists and accommodation.
*The transport between the accommodation and the place of tourist activity.

Data :

H : places of accommodation h. h □ {1… … … … H}
M : transport means m. m □ {1… … … … M}
U : tourists u. u ∈ {1… … … … U}

T : planning periods to an offer t. t □ {1… … … … T}
A : places of tourist activities a. a ∈ {1… … … … A}

Function objective:
Minimize TC

$$TC=\sum_{h}^{H}\ \sum_{t}^{T}\sum_{m}^{M} Lhtm \times\ X_{htm}\ + 2x\ (\sum_{a}^{A}\sum_{h}^{H}\sum_{t}^{T}\sum_{m}^{M} L'_{ahtm} \times\ Y_{ahtm})$$

With :
TC : Transportation Cost

X_{htm} : The number of tourists transported from the regrouping point to the accommodation via the means of transport m.

Y_{ahtm} : The number of tourists transported from place of accommodation to a place of tourist activity via the means of transport m.

L_{htm} : The unit cost of transportation from the point of tourist group to the accommodation via the means of transport m.

L'_{ahtm} : The unit cost of transportation from the place of tourist accommodation to the place of tourism via the means of transport m.

We consider in this chain, the path to go equal to the back path between place of accommodation and place of tourist activity.

With constraints:

$$(1) \qquad X_{htm} \leq C_{1m}$$

$$(2) \qquad Y_{ahtm} \leq C_{2m}$$

C_{1m} : capacity of the means of transport m1 between assembly point and place of accommodation.

C_{2m} : capacity of the means of transport m2 between the accommodation and the location of tourist activity.

1.1 Optimization of the function supply:

We mean by "supply" provision of activities in terms of time and cost.

We consider the following indices:
P: service providers f. f ∈ {1… … … … F}
S: tourist activities s. s ∈ {1… … … … S}
Minimize CA

Function objective:

$$CA= \qquad \sum_{t}^{T}\sum_{f}^{F}\sum_{s}^{S} C_{f,s} \times$$

CA: Total cost of a tourist service
T: durations of each activity t. t ∈ {1… … … … T}

$C_{f,s}$: Cost of a tourist activity s subcontracted by the supplier f.

$Q_{(t,f,s)}$: The number activity s, provided by a supplier f, for a period t.

Notes and comments:

We did not treat in this study the problem of transshipment. Yet in a tourist chain the logistic transshipment of the tourists is frequent. We have to consider in that case the non-linearity of the process to be modeled. We do not pretend to model the tourism value chain in its entirety. Assumptions considered here are limited to a portion of the chain.

"The tourism enterprise is therefore defined as the assembly of pieces of a complex puzzle."

This complexity is generated by the development of connections within the Tourist Information system which memorizes and treats these rules and procedures [5].

CONCLUSION

The analysis and design of a tourism organization is part of the design of a socio-technical system. They require a comprehensive and interdisciplinary approach of technical tools, models, methods, uses and their interrelationships. Today, the digital technology has widely replaced the analog. The networks of high-speed digital communication on the one hand and the most powerful computers on the other hand, allowed the computer system to provide real-time and on the ground, the correct operation of the production process and management of increasingly complex and diverse. The computing, correctly transplanted to the company, allows to answer the double challenge of reliability and flexibility. These terms must be considered in the context of extended enterprise subcontractors and partners. The Sciences and Technology of Information and Communication (STIC) gradually modified the tourist company and the way of working within it and with his "outside" partners, in a context permanent evolution and increased competition. Tourism is one of the sectors most affected by the arrival of STIC, in particular in the way of envisaging and of designing the journey. The emergence of specialized commercial sites is the main manifestation of this evolution of tourism in the digital pulse, with major consequences for greater democratization of tourism by creating low-cost and offers a profound change in practice. The transition from tourism in the digital age begs the question of optimizing the chain of tourism actors. This allows a redefinition of roles, aspirations and motivations of each link in the chain. We have discussed in this article the problem of modeling the tourism chain.

We have proposed a model and optimizing the sequence of visits or tourist activities and movements during a stay for a period determined. This model must be supplemented by a formalism and a prototype computer. he information system of each tourist entity must consider the breakdown of SI Extended and the others SI Partners. Distribution and cooperation characterizes as the solutions for the Tourism Business Extended. The tourism enterprise becomes a virtual platform that integrates all the different services products. The problem is to integrate data and systems. This integration creates a synergy from the start of the project, more prior to the launch of the tourism product by the designer, and thus avoid losses relatively serious consequences in terms of technical efficiency, time and economic. In this context, we lead within our research team "of Integrated Logistics Information System" (ISIL) at LMAH work dealing with the "Analysis, design and development of an intelligent system for enterprise cooperation in the extended enterprise». From the perspective of inter-enterprise cooperation, this study proposes model-based agents with the integration of semantic web services for the development of a Framework intelligent. This model ensures cooperation and exchange of information between different actors in the supply chain, while respecting their autonomy and distribution [7] and [8].

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