

**KNOWLEDGE INTENSIVE SERVICE ACTIVITIES IN THE
SPANISH TOURIM SECTOR**



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1. INTRODUCTION

This report presents the major findings of the study conducted by Centro de Estudios Económicos Tomillo (CEET) about Knowledge Intensive Service Activities (KISA) in the Spanish Tourism Sector. The report, developed in the framework of the OECD multi-country study on the role of KISA on innovation, envisages KISA as “production and integration of service activities undertaken by firms in manufacturing or service sectors, in combination with manufactured outputs or as stand-alone services”¹.

Available research about KISA, the concept and its relation to innovative activity, is rather scarce. Thus, the study is developed with the purpose to explore the nature of KISA and its role on innovation of tourism firms. In particular, following the project plan of the KISA Focus Group, an attempt is made to address the following questions:

- Which are the most relevant KISA for tourism?
- What KISA are important for what type of innovation?
- How KISA are provided?
- What motives explain external provision of KISA?
- How firms use KISA to gain competitiveness?

From a methodological perspective, there are three questions that should be considered. Firstly, it is necessary to clarify the definition of tourism adopted in the study. We will analyse KISA in two major tourism sectors: hotels and travel Agencies. These industries represent a significant share of tourism consumption in Spain and their supply is mainly devoted to visitors. Thus, they are clearly Tourism Characteristic Activities². Notwithstanding the focus on hotels and travel Agency, we will eventually adopt a broader definition of tourism (in particular, to offer a general view of the impact of tourism in the Spanish economy).

Secondly, in order to investigate the role of KISA in tourism, 8 in-depth interviews to Spanish tourism firms (hotels and travel agencies) were conducted. Four experts from the hotel business and another four experts from travel agencies were asked their view about the use of knowledge intensive services in the tourism sector, its influence on innovation and their opinion concerning the main obstacles firms face to engage on innovative activities. Additionally, we employ official statistics and data collected by CEET to describe the role of tourism in the Spanish Economy and to highlight general features of innovation in tourism.

¹ OECD DSTI/STP/TIP (2003) 11.

² World Tourism Organization (2000), “Tourism Satellite Account: Methodological References”.

Thirdly, it is important to stress that some attention to innovation has to be paid before analysing KISA. Actually, KISA and innovation are such related concepts that one can hardly study KISA without a previous focus on innovation. In effect, it is necessary to address, first, what are the industry's innovations and how they innovate. This given, it is possible to explore the relation among KISA and innovation, that is one major issue investigated in this report.

The structure of the paper is the following. Section 2 presents a general overview of the Spanish tourism sector and its economic relevance. As it will be shown, tourism is an engine of the Spanish economy. In turn, this makes especially interesting the selection of the sector with the purpose of studying KISA, since policy implications can be derived in order to foster innovation and competitiveness of a pillar of the economy.

Section 3 addresses the analysis of innovation in the Spanish tourism sector. Key questions that are investigated include the following: the types of innovations, the sources of innovations and the characteristics of the innovative process. All this will permit, in a later step, to establish the relation among KISA and innovation.

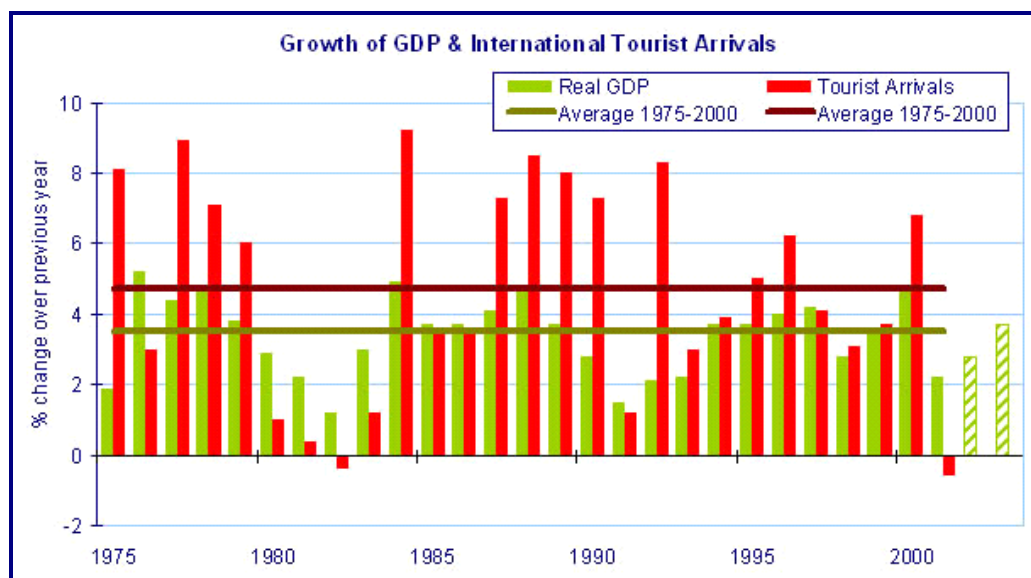
In Section 4, the results obtained about the nature of KISA, and their role for innovation, are presented. Main knowledge activities for the tourism sector are reported, as well as the sub-set more relevant for certain types of innovations. Also, it is shown how firms use KISA to gain competitive advantage and how they are provided (externally or internally). Finally, policy proposals to foster KISA are presented.

Section 5 presents the main conclusions that are derived from the study.

2. GENERAL OVERVIEW OF TOURISM

Tourism is a thriving sector. As the world economy grows, consumers are willing to spend a greater share of their income in tourism³. The graph below shows that world tourism has grown faster than real GDP in the past 25 years and this trend will continue in the foreseeable future. Torres Marques (1998)⁴ estimated that world tourism expenditures would double and that expenditures in Europe would increase by 30% in the next fifteen years⁵. Recent data and future trends support this estimate: economic growth, the ageing of population and the increase in time devoted to leisure in developed societies will foster tourism. Under a regional perspective, the European integration process -the internal market, the Schengen agreement and the European Monetary Union and its common currency, the euro- will also contribute to tourism growth and provide competitive advantages to the area.

Graph 1. Tourism, an increasingly important economic activity



³ Technically we would say that tourism is a luxury good, its income elasticity is greater than one. Most estimates place it around 1.4. This means that tourism will grow 40% faster than income and gain importance in GDP.

⁴ Torres Marques, H (1998) "The Euro and Tourism"; CEU/ETC Seminar on The Euro and Tourism; 5-8 May, 1998, Greece, pp.45-47.

⁵ The Asian market will be the fastest grower next century. Mature and bigger markets like the European will, as it is usually the case, grow more slowly.

Spain is today one of the world top tourism countries. As international tourism destination, Spain occupies the second position in the ranking of the countries with greater number of arrivals worldwide. In 2001, the number of international tourist arrivals was equal to 50.1 millions; that is, Spain yearly receives more tourists than inhabitants it has. In terms of receipts, Spain also ranks second in the list of countries with greater international tourism receipts (Table 1).

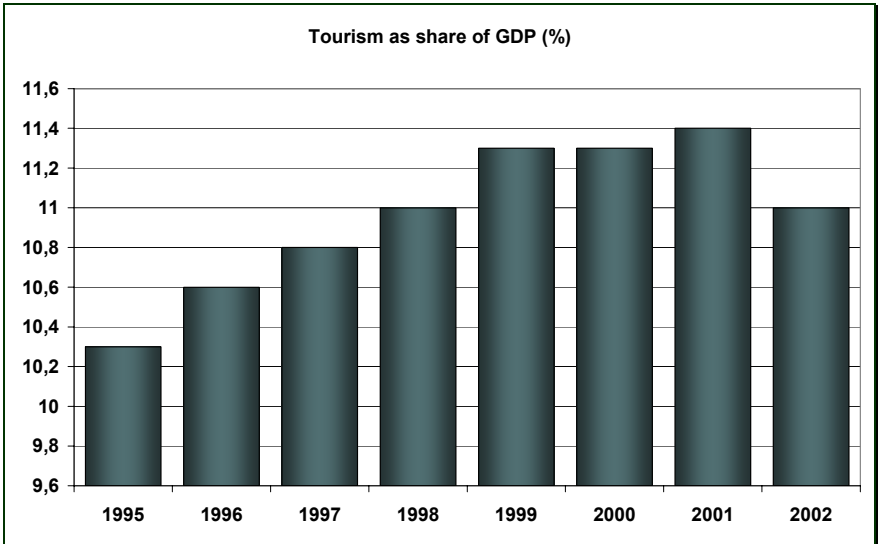
Table 1. World's Top 5 tourism destinations. 2001

International tourist arrivals			International tourism	
1	France	75.2	United States	80.7
2	Spain	50.1	Spain	36.7
3	United States	45.5	France	33.5
4	Italy	39.1	Italy	28.8
5	China	33.2	China	19.9

Source: World Trade Organization estimates

Such a massive inflow of tourists (and revenues) left its footprint in the Spanish economy. As Graph 2 shows, tourism accounts for as much as 11% of GDP. This highlights that tourism is a major economic engine of the Spanish economy, which largely determines national economic performance.

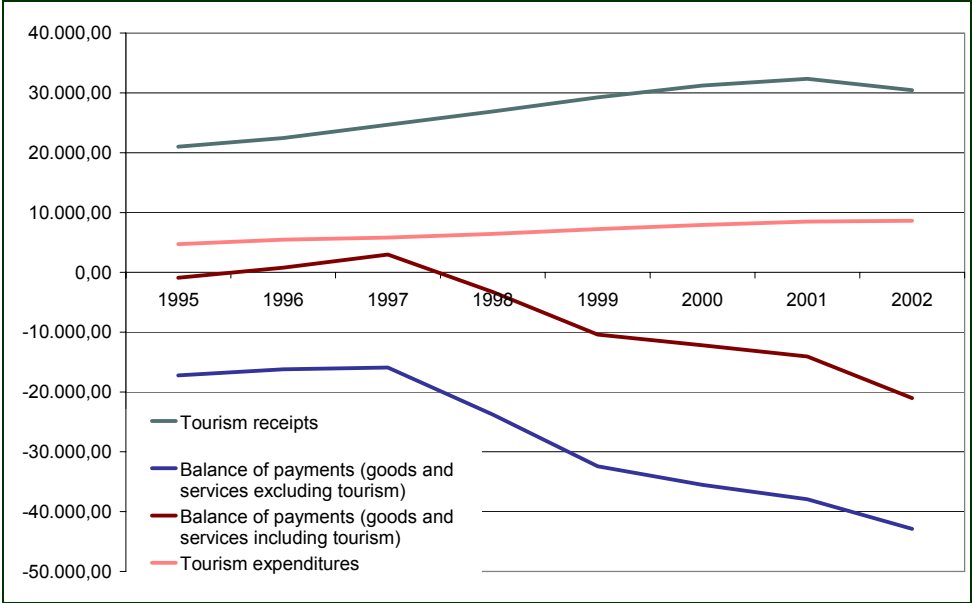
Graph 2. Economic importance of tourism in Spain



Source: Spanish National Institute of Statistics

The importance of tourism in the balance of payments is even greater. From the fifties to the end of the century, tourism's receipts provided the international means of payment needed to finance industrial imports. However, those imports have increased lately in a way that tourism alone can no longer finance them and foreign investment and capital imports have added to the balancing parties (Graph 3).

Graph 3. International tourism and the balance of payments in Spain



Units: 1995 constant millions of euros. Source: Spanish National Institute of Statistics

All in all, the data presented illustrates the critical role of tourism in the Spanish economy. It accounts for a large share of GDP and it contributes significantly to financing trade deficits. Thus, the focus of the study on the tourism sector will allow us to gather information about innovation and related activities (KISA) in a sector that is of the utmost importance for the Spanish economy. This is particularly relevant since, in the new knowledge economy, innovative activities are in the core of economic growth and competitiveness. In consequence, understanding how innovation and KISA are developed in the sector may help to design more effective policies to support them.

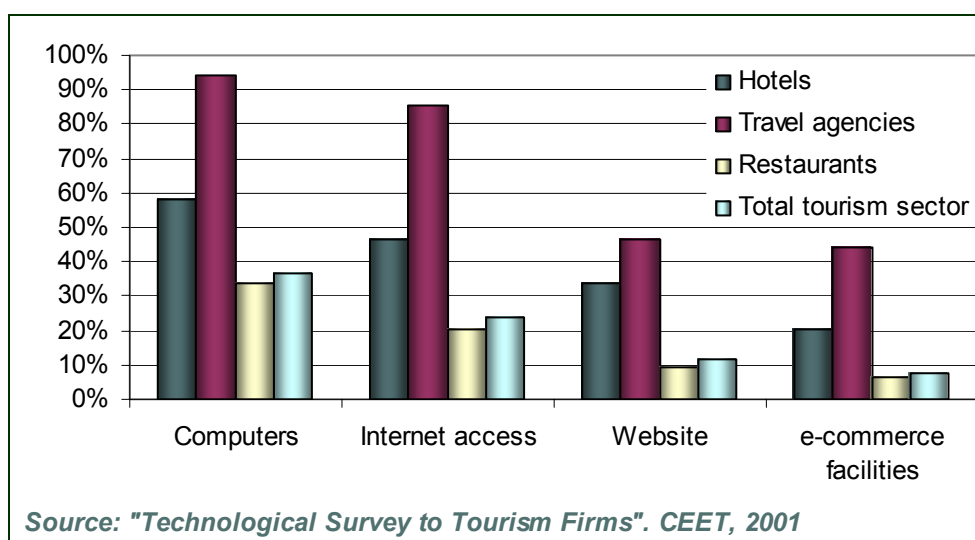
3. INNOVATION IN TOURISM

The purpose of this section is to illustrate the most relevant features of innovation in the Spanish tourism sector, thus allowing a later exploration of KISA as activities that may contribute to innovation. As an introduction to the subject, we use statistical information about innovation, technology and innovative process in the industry. After that, we rely on qualitative information gathered through in-depth interviews to shed light about innovative activities, sources and processes.

Facts and figures

In order to analyse innovation in the tourism sector⁶, it is interesting to focus on ICT technological equipments since, as it will be seen below, innovation in tourism is often embodied in new ICT equipment and software. As Graph 4 shows, travel agencies use more intensively all types of ICT related equipment. More than 90% of them use computers and 85% have access to the web. On the opposite side we have restaurants, where less than 30% of the firms use computers and less than 20% can access internet. Almost half of travel agencies have a website and about the same proportion do some form of e-commerce. These are the most advanced forms of ICT usage and the latter implies getting some form of yield out of the use of these technologies. On the other hand, restaurants are again the firms that less use e-commerce with a mere 6%.

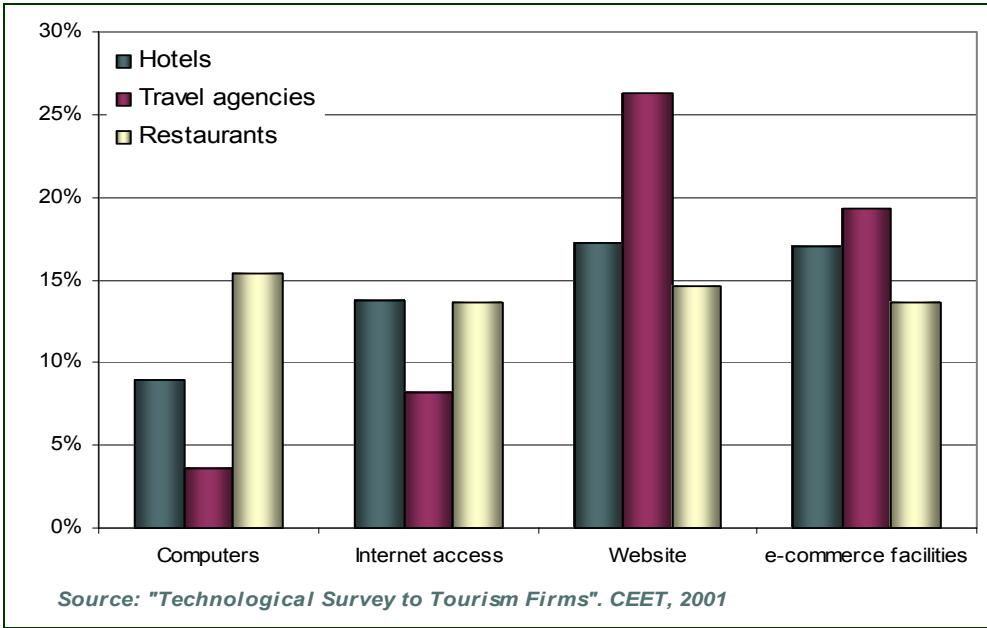
Graph 4. Use of ICT equipment among tourism firms



⁶ The data covers three tourism related activities: hotels, travel agencies and restaurants. Data is obtained from the "Technological Survey to Tourism Firms" conducted by CEET in 2001. The results derived from the survey were published by Fundación Tomillo in 2004 (La Tecnología de las Empresas Turísticas de España).

An approximation of technological gaps can be obtained if we compare firms that need the equipment with firms that do actually have it. In particular, we will measure technological gaps as the proportion of firms in each sector that need an ICT equipment but do not have it. The result is pictured below.

Graph 5. Technological gaps



It is interesting to note that travel agencies present large technological gaps in websites and e-commerce, despite the fact that the share of travel agencies that have ICT equipments is the greatest of all tourism sector. This illustrates the importance of ICT in travel agencies, who use these equipments as a common instrument to handle competition and are especially aware of ICT needs. In contrast, in restaurants and, to a lesser extent, in hotels, the use of ICT is lower than in travel agencies. They feel more technology gaps in relatively older equipments (computers and internet), while travel agencies feel more deficits in more recent innovations (website and e-commerce).

On the other hand, more general data can be presented to put forward major aspects of innovation in tourism. To begin with, it is worth considering the year when firms introduced their last innovation. As we can see in the table below, the proportion of travel agencies whose latest innovation was less than one year old was well above that of hotels, and this one is above that of restaurants. This suggests that travel agencies do not only have more ICT equipments, as evidenced before, but also that they are more innovative than hotels. Also, hotels are clearly more active in innovation than restaurants.

Table 2. Age of Innovations

The last innovation was introduced before,,,				
	1990	1995	2000	2001
Hotels	0,80%	2,70%	48,30%	51,80%
Restaurants	3,30%	5,00%	55,50%	44,30%
Travel agencies	0,90%	3,50%	38,30%	61,60%
Tourism sector	2,80%	4,70%	56,10%	44,00%

Source: CEET, 2001

Furthermore, bigger firms have a greater propensity to innovate than small firms and this conclusion is valid across all tourism sectors. As we can see in the table below, the proportion of firms that introduced the last innovation in the current year is greater the bigger the firm. The percentage goes from 50% above the sector average in the case of restaurants to 30% in the case of travel agencies. We may also draw another conclusion from the table below: the higher the innovation culture in a sector the smaller the importance of size in innovative behaviour albeit its importance is a great one in all cases.

Table 3. Innovation and size of the firm

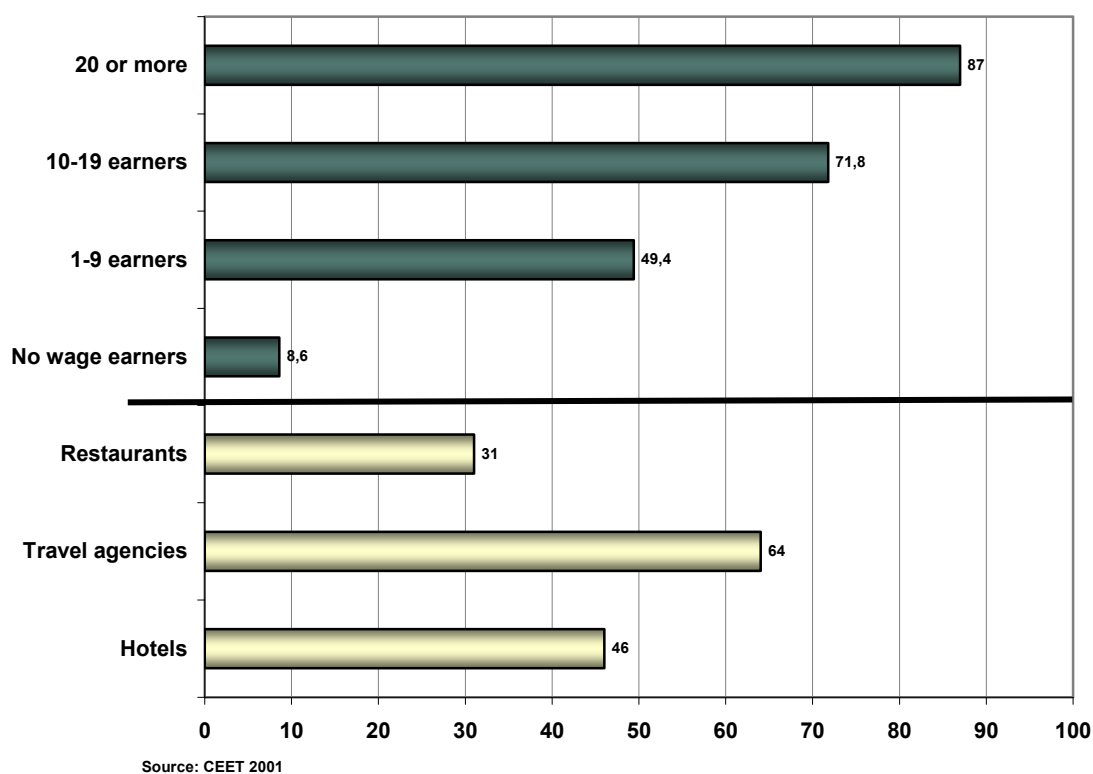
Proportion of firms that introduced the last innovation in the current year					
	Size of the firm (measured by the number of workers)				Total
	No wage earners	From 1 to 9	From 10 to 19	More than 20	
Restaurants	37,7%	49,1%	51,2%	66,7%	44,3%
Hotels	48,8%	48,2%	60,8%	70,7%	51,8%
Travel agencies	57,4%	63,4%	69,6%	81,0%	61,6%

Source: CEET (2002)

Finally, data about training activities related to innovation in tourism are reported in Graph 6. Training is common in travel agencies: more than 80% of these firms engage in training (regularly or occasionally) in order to prepare workers to perform under innovative environments. This result was expected, since travel agencies is the sector that uses more ICT and innovates more. But training is also relevant in hotels (48% of firms) and even in the least innovative sector, restaurants (31%).

The analysis of training activities by firm size shows again the great influence of size on innovation. There is a direct relation between firm size and training, firms with no earner rarely engage in training with innovative purposes (8.8%) while the percentage of firms with 20 or more employees that offer training services to workers is close to 90%.

Graph 6. *Percentage of firms that engage in training activities to innovate*



To sum up, the data presented shows that ICT have been extensively introduced in travel agencies, who are more active innovators than other tourism sectors and engage more often in training activities to facilitate innovation. Hotels occupy an average position in innovation, compared to the leaders (travel agencies) and the less active restaurant firms. But ICT deficit are present in all sectors, what indicates a need for more active innovation policies in the firms, especially in small firms where innovation and training related activities are scarce.

Forces that promote innovation

What are the forces that lead to innovation in tourist firms? The case studies conducted in the context of this research highlight that **cost reduction** is a major engine. In effect, the interviews evidence that innovations are mainly incorporated as a tool to reduce costs and, thus, improve firm competitive position. For instance, hotels and travel agencies regularly introduce new ICT equipments and software to gain efficiency in management that provoke cost reductions. Also, environmental related innovations in hotels are introduced to keep costs under control.

But the search of cost reduction is certainly not the only explanation of innovation decisions. On the one hand, **customers' preferences** often translate to innovation in product, services and processes. A clear example can be found in the hotel sector, where

environment related innovation help the firm to improve its image among their Northern European customers, who have stronger feelings about the environment than Southern customers. On the other hand, **competition** is other engine of innovation. Competitors increase the firm's effort to innovate whenever the management feels they are losing competitiveness. In this respect, it is possible to distinguish between (few) technology leaders and a majority of firms that behave like followers.

Innovation is also fostered by **crossed effects** among tourism sector. For instance, travel agencies need hotels with on line facilities to offer their customers reserves on a real time basis. Correspondingly, hotels without these facilities cannot access a market of increasing importance for the services they sell. Therefore, an outdated firm will get out of business, at least of a great part of businesses, since its possibilities to interact with customers and providers are severely limited by technological deficits.

Last, but not least, **corporate culture** is other critical aspect to understand innovation. If a firm is going to engage in innovative activities, managers must be aware of the importance and role of innovation. In certain cases, innovation is somehow recognised as part of the firm's culture, and this certainly leads to more innovative activities. To take an example, some hotels adopt as a principle that procedures must be environmental friendly, and that fosters environment related innovations. In other cases, promotion of workers health is part of the firm culture, thus favouring innovations in equipments to avoid risks.

Types of innovations

Regarding the type of innovation, the interviews suggest that **radical innovations**, resulting in deep changes in the way the industry works or in the exploitation of new markets, are scarce, albeit there are some. The most radical innovations in the tourism sector have consisted in the widespread use of the capabilities introduced by ICT. Electronic tickets, on-line sales and reservations have changed the way airlines, travel agencies and hotels work.

Incremental innovations are the vast majority of innovations in the tourism sector. They improve existing ways of doing things or consist in the exploitation of new markets adjacent to the usual ones. Our research on the field shows that new destinations, in the case of travel agencies, or new and better beds, in the case of hotels, are examples of this type of innovations. ICT also play an important role in incremental innovations. Management is continuously changing as computing power becomes cheaper. Access to computing power at affordable costs fosters demand for new software and together they make new ways of management possible. This is the case of yield management, also called revenue management. Yield management is an ICT management solution to generate the highest profit from a fixed supply of hotel beds. It consists, basically, in changing the price of beds following real time information on demand. Yield management is slowly making its way through Spanish hotels starting from the biggest ones and from hotel chains.

A more in-depth analysis of the types of innovations of the industry can be made by considering both product/service and process innovations. Regarding **product innovations**, the following must be mentioned:

1. New products

New products have a growing importance in tourism since customers typically purchase packages rather than single products. Customers are not willing to take the effort of choosing and bundling together an array of products and services. Even though this is the task of travel agencies, hotels are recently contracting activities little related to their traditional business on behalf of their customers. Their objective is to make sure that their customers enjoy their stay. They provide them with sports and gyms, sightseeing, group activities and the like. These services are becoming a significant and stable revenue source and they also provide valuable insights into customers' changing needs, an information essential for proactive innovation.

Small and very specialized travel agencies have developed new and little standardized products to compete with big firms. They offer adventure trips, dating or relax packages. They also specialize in specific markets like big companies executive staff, urban professionals or retired workers. This specialisation allows them to offer products more specifically designed to meet the needs of the customer.

2. High quality design

High quality architecture and hotel design is another product innovation since it results, for instance, in a new type of rooms than can be sold at higher prices. Accordingly, high quality design is gaining importance in hotels, especially in the new ones, even though many old hotels have been reformed to adapt to new tastes. Hotels are increasingly aware of the importance image has for sales since many customers associate it with quality. Customers demand more than a simple bed, they demand a place to enjoy, and the way the hotel looks has a lot to do with it. New hotel architecture and design are intended not only to improve the hotel's image but also to welcome the disabled and people with reduced mobility.

3. Environment friendly procedures

Environment friendly innovations are another product innovation, relevant in the hotel industry. Hotels use the green label to attract customers and they get green certificates and ecolabels like certification 14.000 and others. Solar cells and other energy saving devices have been heavily introduced. Construction materials and hotel design are often adapted to meet environment criteria.

4. ICT related innovations

Among the most cited product innovations we have interactive TV sets and wifi technology. Many hotels use TV sets to offer and sell new services to their customers. Wireless access to the internet is slowly making its way through the hotel sector starting from luxury hotels and hotels specialized in business travellers. Broadband access is more common but many firms fear to get stuck in a technology if they have devoted too many resources to its acquisition.

Technology evolves too fast and some hotel managers fear investing in frontier equipment if they feel that it will get outdated too fast. On the other hand, favourable ICT prices and the widespread use of renting or leasing have made changing technologies less risky.

As regards **process and organizational innovations**, these result in new ways of organizing existing production lines. Among these innovations, we may recall changes in process induced by introduction ICT, the certification of some procedures, as well as other innovation process fostered by corporate strategies.

1. ICT related innovations

ICT technologies are used by hotels internally by the administration or accounting departments, for example. These technologies have made possible the introduction of “yield management”, a new way to adapt room prices to market conditions in real time. Hotels get different prices for their rooms depending on their needs and travel agencies special offers as they need them. The most advanced use of ICT technologies is the integration of SAP systems and big travel agencies have direct access to their providers systems such as Amadeus⁷. In this way, the travel agency can book flight tickets directly saving time and costs.

The tourism sector uses knowledge intensive services to keep up to date on new information and communication technologies (ICT). However, most software is standard and many hotels admit that they are not ready to get the most out of their software. If training were available at affordable prices, from software sellers or from other sources, they could make a better use of existing equipment. Time is another handicap. Training hotels workers is time consuming and, in this sense, expensive. Only big hotels and chains have the resources to plan in advance staff training. Consulting companies or software retailers, often with public support or with the support of industry associations like EXCELTUR, provide ICT training to hotels.

ICT technologies are today central to innovation in the travel agencies business and they have changed the way travel agencies work. In most cases we have now workers less skilled than before, workers who don't know so deeply the travelling business, but who have instant access to a lot of information through ICT. ICT have also changed inventories' management through centralized and real time reservations management. Consulting companies and ICT retailers provide travel agencies not only the equipment that embodies the technology, but also with information about new developments that may interest them. As it was the case with hotels, small and medium size travel agencies use mostly standard software, sometimes with minor adaptations to their specific needs. On the other hand, the biggest agencies engaged in the wholesale market have demanded specific software to well known companies like IBM. However, some interviewed professionals, mainly from travel agencies, feel that ICT still have a lot of potential since many customers prefer printed tickets and they get most of their demands by traditional means: phone or visits.

⁷ However, Amadeus' importance is falling since both airlines and travel agencies prefer to use the internet because it is cheaper.

It can be argued that ICT process innovations have been more important for travel agencies. If hotels have to be alert to know what products customers demand, travel agencies need to know the most efficient and less time consuming way to provide traditional services. 15 years ago travel agencies needed about a week to confirm a vacation package, today they only need about 20 minutes in the worst cases and most of the time they can do it in real time.

2. Certifications

Many hotels have obtained quality certifications like ISO 9000, Madrid Excelente or Q-Quality. These labels help hotels organize themselves. They force hotel workers to put in common the different know how they have, to choose the best way to proceed in different situations and to record it for future use by other workers. The result is that the certification process is usually something more than a standardization process and it brings real improvements in the way hotels work and organize themselves. These labels usually improve the way clients see the hotel and many medium size hotels have taken advantage of these certifications.

Quality certifications can play a very important role in the travel agencies business since quality fails abroad use to have an extensive media coverage giving the wrong impression that these practices are commonplace. However, only big agencies and tour operators give quality labels some importance.

3. Corporate strategies

Some hotel and travel agencies have adopted new strategies in order to enhance their competitive position. In the hotel sector, for instance, a hotel may increase its traditional scope of activity vertically to strengthen its position (thus the company purchases the land, takes all the necessary steps to get the proper license and builds on it the hotel).

In turn, some travel agencies organise themselves in groups to get more bargaining power with airlines or hotel chains. Even though this is not an innovation since it is a well known procedure, it can be considered so in the travel agencies business where it is relatively new. Hotels also constitute groups and franchises with similar objectives.

The innovation process

To conclude with the analysis of innovation in tourism, we address several questions concerning the way firms innovate, including the activities carried out to innovate and the information and procedures followed. This will permit to improve understanding about innovation activities thus facilitating, in a later step, to establish a relation between KISA and innovation.

A first aspect to be considered is how **innovation is planned**. “Formal plans” for innovation are the exception to the rule. Only big hotel groups or travel agencies with a large dimension have a plan for innovation or department dealing with the issue. Medium size firms typically rely on management staff to discuss and adopt innovative proposals. Also, they may have a specialized executive in charge of innovation, who communicates trends and makes proposals.

It is frequently found that innovation lacks of formal planning. In these situations, firms tend to innovate “by impulse”, whenever competitive trends make it highly necessary. “Intuition” seems to be important in this case to take decisions about innovation. All this reflects a weak innovative culture but also the effect of firm size, since small firms resources are scarce to invest in general.

How information is gathered to innovate is a second relevant issue, quite related to the way innovation is planned. Most interviewed firms think that clients are a primary source of information. The point here is how clients’ demands and preferences are detected and incorporated in innovation strategies. The following has been found:

- Specialized employees are set to collect information about clients’ demands, as well as staff responsible of key company departments. In certain cases, internal studies are regularly made to analyse firm’ demand and trends, but this is not common.
- Employees in direct contact with customers can be a valuable source of information about changes in demand. Even though most interviewed hotel managers acknowledge the potentiality of this information source, they invariably remark that it is an instrument still to explore. This suggests that, to some extent, Spanish hotels are loosing opportunities to improve when they neglect information from workers in direct contact with customers. Travel agencies seem to deal something better with this issue. They get information from their customers in a more natural way through direct contact with the agency’s workers. They also use questionnaires and, sometimes, petitions from internet sites to get this kind of information.

To sum up, the executive staff typically gets information from specialised employees or heads of departments. In the hotel industry, it is acknowledge that hotel workers in direct contact with the clients can be an important transmission channel between clients and the hotel management. Yet, very few hotels have implemented formal mechanisms or incentive schemes to organize and enforce this flow of information

Apart from information provided by clients, managerial staff uses external sources like fairs, congresses, specialised press and consulting companies. But firms find very hard (though useful) to get information about successful innovations by competing firms.

A key question that should be addressed concerns the **way innovations are introduced**. We have found that technology driven changes have been the main engine behind the deep transformation of the tourism industry in the last decade. Computers, machinery and equipment embody technology are of the greatest importance to keep up to date with the services customers demand and to introduce innovations.

In other cases, new staff is an important channel for introducing innovations. Qualified and experienced staff contributes to the dissemination of innovations and good practices across the tourism sector whenever they change their job. The firm that hires them is buying their expertise and knowledge of other firms’ know-how.

It would be expected that Research and development (R&D) activities had a certain importance for firm innovation. Yet, interviewed companies give little or no importance to R&D activities. As it has been mentioned above, tourism firms get their technology

embodied in the equipment they buy and they do not develop almost any technology of their own. The technology they use is quite standard and state of the art technologies almost inexistent. This may be explained, in part, by the fact that tourism may be considered as a mature sector.

On the other hand, training has a recognised role for innovative processes. Most firms think that training is a very important source of innovations and they regret they could not allocate more resources to it. They have found that trained workers bring valuable knowledge to the firm. This information deals mainly with new equipment or software. The process is symmetric: new equipment also needs trained workers to offer the best results. One inconvenience is that this new know-how rarely passes to other workers in the firm. Also, indirect costs like lost working hours make training prohibitive for many small firms.

To conclude, it is worth mentioning the position of the sector about **cooperation and protection of innovation**. The impression one gets from the qualitative information gathered through case study is that cooperation for innovation is practically non present, with the exception of providers. In this case, we find flows of information between firms and their technology suppliers that somehow constitute a way of cooperation. But cooperation with R&D centres or competitors is not detected. Cooperation is only relevant among firms belonging to a group. All together, it seems that firms are suspicious to cooperate: they find it very useful to share information with other firms in the sector, yet only firms belonging to the same group do that.

Concerning the protection of innovation, this activity seems quite irrelevant. But this was expected given that innovation is mainly introduced through new equipment. That is, firms do not develop products and applications ex-novo.

4. KNOWLEDGE INTENSIVE SERVICE ACTIVITIES

In this section we present the major findings of the study about KISA in tourism and firms strategies concerning KISA. First of all, KISA detected in the study are reported and it is shown what KISA are more important for the different types of industry innovations that were reported in the previous section. After that, we present the results about KISA provision (internal or external), the causes that explain externalization of KISA and the impact of KISA on competitiveness. Finally, initial proposals for innovation policy with reference to KISA are reported.

Knowledge intensive service activities

In the context of this study, KISA are seen as knowledge activities that facilitate innovation, or are used to engage in innovative processes. Yet, a first clear suggestion deriving from our case studies is that knowledge activities are common in tourism companies, but not all of them are related to innovation. Hence, in a first approach, it is worth to identify knowledge activities (not necessarily connected to innovation), in order to put forward which of them actually lead to innovation (that is, can be considered as KISA).

According to the information gathered through in-depth interviews, **knowledge activities** more relevant for hotels and travel agencies are the following:

1.- **Strategic management.** Management of the firm is in itself a knowledge intensive activity. Hotels and travel agencies executive bodies use massive amounts from information and process it in order to take decisions about the firm policy. Information sources are diverse, including clients, workers, specialised press and consultancy advice. But even if basic information may be obtained externally, its use with the objective of adopting strategies is internal (by the top management staff).

2. **Training activities.** Tourism firms use both external and internal training services. The biggest groups have their own trainers, sometimes they have even founded a tertiary education institution, but they also hire external services. Training on management, human resources and the firm's specific know how and procedures is usually provided internally while training on languages and computer skills and more standard skills is more often provided externally.

3. **Personnel recruitment.** Tourism firms use external knowledge services when looking for highly qualified professionals. Head hunting is almost the only external service related to human resources management. To fill lower profile vacancies, the firm's human resources department starts personnel selection from personal contacts or CVs that may come from the firm's website.

4. **ICT-related activities.** Being ICT of paramount importance for competitiveness of the sector, notably for travel agencies, activities concerning daily management and functioning of ICT in the firm are a must. Firms generally have a specialised department or a member of the staff in charge of ICT. For the introduction of new equipments or

systems, they usually rely on information provided by suppliers or, to a lesser extent, consulting companies.

5. **Quality and environmental related activities.** The introduction of quality standards and environmental procedures requires, initially, a considerable effort of planning to make ends meet. The lack of expert staff typically leads to the use of specialised consultancy services in order to get the information needed to implement firm's strategies about quality or environment. Once a hotel get a quality certificate or adapt to environmental systems, daily management of quality and environmental issues becomes relatively trivial and it is incorporated in ordinary management. Eventually, depending on firm size and the important given to these issues, the hotel may have a member of the staff responsible for guaranteeing a proper functioning of the hotel in environmental and quality issues.

6. **Legal advice, accounting and taxes.** Legal advice is provided both internally and externally. Most big hotel chains have their own legal department but they also rely on the services of external lawyers. Small hotels use external services whenever they need them. Accounting and taxes are usually done externally, by specialized firms, in the case of small and medium enterprises and internally in the case of big firms and groups. The use of these knowledge intensive services by tourism firms is generalized.

Are the aforementioned knowledge activities relevant for innovative processes? That is, **can they be defined as Knowledge Intensive Service Activities?** In order to answer this question, we will consider separately each activity.

Strategic management has been found to be critical for innovation. Certainly, not all of it gives rise to innovations, since it also includes general management activities and decisions that are not innovative in nature. Yet, whenever a firm innovates, the innovation project is first launched (or approved) by the top managerial body. One could say, accordingly, that strategic management is a KISA that is at the heart of the innovation process. Without agreement and support of the management body, innovations cannot be executed.

Also, **training activities** have an active role for innovation. Most interviewed professionals think that training is very important for innovation in the firm. It helps to prepare human resources for introducing innovations (especially in ICT) and operating under innovative environments. In consequence, it can be defined as a knowledge intensive service activity.

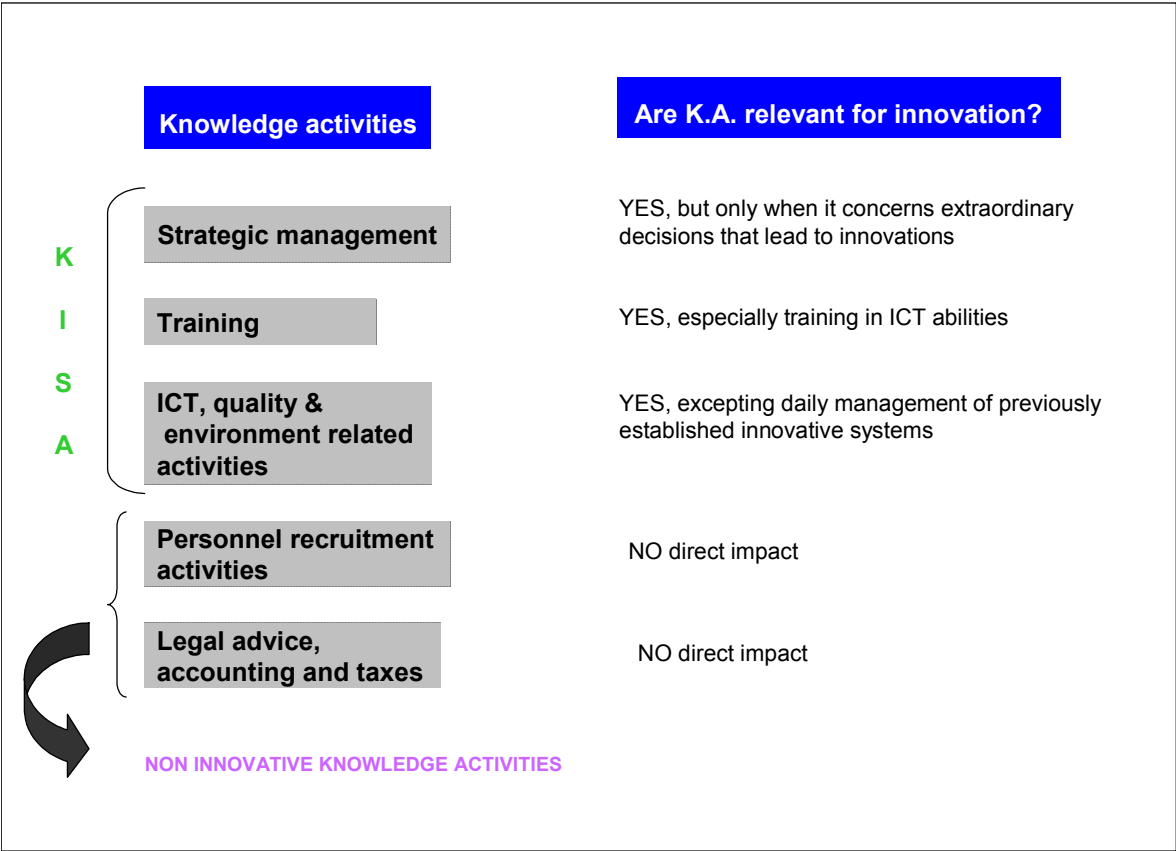
Contrarily, the research suggests that **personnel recruitment activities**, though being knowledge intensive, have little influence on innovation. Notwithstanding this fact, an incidental effect on innovation is found if new qualified and experienced workers bring with them innovations and ideas they may have witnessed in the firms where they worked previously. But, generally speaking, it is not felt that the activity of hiring works itself contributes to innovation.

The impact on innovation of ICT, on the one hand, and **quality and environmental related activities**, on the other hand, is quite similar. Part of these activities has a clear impact on innovation. Whenever a firm introduces new ICT equipments or software, or makes an attempt to get quality certificates or to adapt to environmental standards, investments are made to introduce new products or processes. In these cases,

consultancy services have a great importance to guide quality and environmental changes. But there is something else that can hardly be considered as KISA, in particular, regular management and controlling of ICT, quality and environmental issues. That is a knowledge intensive activity, typically developed internally, that has no clear impact on innovation.

Finally, **legal advice, accounting and taxes** do not seem to influence innovation processes. Even though these services have taken great advantage of new technologies to reduce overall costs, they have little influence on innovation in the tourism sector. They reflect economy wide changes, usually not pioneered by the tourism sector.

Figure 1. Knowledge activities and KISA in tourism



All together, the results suggest:

- a) KISA are a subset of knowledge activities (Figure 1). Tourism firms engage (internally or externally) in a large amount of activities intensive in knowledge, but not all knowledge activities contribute to innovation. There are at least two activities that, though being intensive in knowledge, do not facilitate the innovative process, that is, personnel recruitment and legal advice, accounting and taxes. They can be considered as Non innovative knowledge activities.

- b) The most relevant KISA for tourism are strategic management, training activities, ICT, quality and environment activities. These activities do not always contribute to innovation; they have a more general role in the firm. Yet, the connection between them and innovation is direct.
- c) Focusing attention on strategic management, training activities, ICT, quality and environment activities as KISA, it is found that:
- Strategic management is provided internally.
 - Training activities are both developed internally and by external provider.
 - ICT, quality and environment activities largely rely on external expert advice and consultancy services.

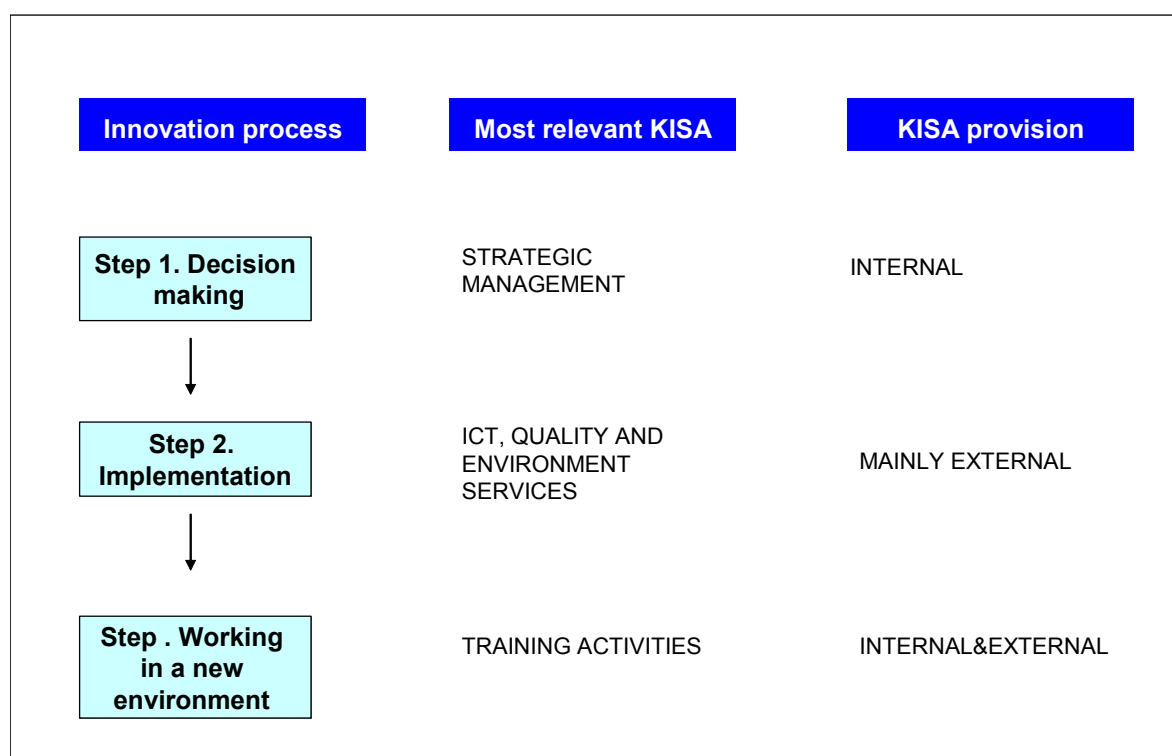
Importance of KISA for each type on innovation

Bearing in mind the set of KISA identified, it is possible to study the relation between such activities and the main innovations introduced in the sector (reported in section 3).

In a first step, it is interesting to put forward **what KISA are more important for general innovation processes of tourism firms** (Figure 2). To do so, it should be noted that innovation typically involves three stages. First, a decision is taken about the type of innovation. Secondly, the innovation itself is introduced, involving changes in product/services, in processes or both. Finally, the firm has to adapt in order to function under a new environment.

No doubt, strategic management is critical in the first step. Innovation decisions are taken by the managerial body, thus knowledge activities involving the collection of information (through clients, employees, etc.) and the adoption of corporate strategies are a necessary condition for innovation. In a second stage, once innovations have to be implemented, most relevant KISA are ICT, quality and environment activities. It is the time to decide, for instance, how environmental innovations can be introduced, what changes are necessary and what firms can provide suitable support. To do this, tourism firms typically rely on specialized consultancy services. In the final stage, training seems to be the most relevant KISA, since it enhances workers capabilities to perform under new environments.

Figure 2. *KISA used in different stages on innovation processes*



Additionally, it is possible to suggest **what type of KISA is more relevant for each type of innovation** the industry has recently introduced. Regarding strategic management, it has a general impact on all types of innovations. That results from the nature of this KISA, which lies at the heart of the innovation process. In order to innovate, firms must have a managerial body that supports changes and related investment. Accordingly, tourism firms more active in strategic planning, though formal or informal means, are more likely to innovate (provided that corporate culture is also favourable to innovation). Changes in services, in ICT policies, environment and others need, first of all, a positive view of firm managers.

Moreover, it has been put forward before that environment and quality innovations and, to a certain extent ICT, are supported by external consulting services. Such KISA (specialized external advice) have a clear impact on the ability of firms to implement changes in products and processes, since they complement firm knowledge, typically insufficient to deal with these issues without external support.

Concerning the role of training, it seems especially important for fully benefiting from ICT product and process innovations. In this sense, we should bear in mind that many innovations are introduced though purchases of new technology (mainly equipment and software). In order to fully benefit thereof, workers need to adapt their abilities, so as to transform a potential innovation into an effective one. And this affects mainly innovations in ICT equipments and software.

KISA provision

KISA are provided both internally and externally. Yet, it is found that **external KISA have a significant role**, even in medium sized firms. Software and computer retailers, consulting firms and the tourism industry's organizations are the more important external providers of knowledge intensive services.

Some firms pointed out that it is hard to find high quality providers of KISA and that difficulty leads to a little use of the services. When firms find quality providers acquainted with the tourism sector, they consider these services very useful. In these cases, interactions between the firm and the external service provider have proved an enriching experience for both parties. Tourism firms get the best results when the external firm also provides assistance and training. However, the very small firms cannot even buy these services in the market and they cannot innovate as a regular and planned activity. Even though small firms find some knowledge intensive services essential for innovation and innovation key to success, everyday business absorbs almost all their resources leaving little margin for innovative efforts. The lack of resources to engage in innovative activities and the need for innovation and new products are more strongly felt during economic slowdowns or demand downturns.

There are several reasons that explain **decisions about the source of KISA provision**. Possibly, the main reason for externalizing knowledge intensive services is lack of **dimension**. Many firms do not have enough size to provide themselves with these services. Firm activity has to reach a certain level so as to justify internal provision of KISA; otherwise it is more profitable to get it externally.

Tourism firms also have **flexible access to more specialized services and at a lower cost** in the market than internally. Market services allow for more flexibility than internal services, they can be used when needed and abandoned when not. The search for flexibility is felt in part as a consequence of labour legislation rigidities. If a certain KISA is provided internally, the company may have to hire a new employee. If this worker's performance is not suitable, the firm faces the problem of rigid labour legislation, which makes complex and expensive to fire a worker. All these difficulties are avoided when KISA are provided externally.

Moreover, when KISA are provided externally, suppliers can be selected among worldwide providers. This possibility to have access to more diverse services, at competitive costs, is an important reason mentioned by interviewed firms to explain their externalization of KISA.

But **external provision of KISA is avoided when it concerns critical information** for the firm. For instance, strategic planning is often backed by information about performance of the firm (and possible about competitors), and this information is processed internally to avoid that it flows out of the company.

All in all, it seems that the reasons underlying externalization of KISA do not differ in a sensible way from other activities. Firms externalize services for efficiency reasons (to save costs) and to profit from a larger variety of services (what may increase productivity). Yet, some KISA are critical for the firm and its competitive position, and these are not externalized.

KISA and firm competitiveness

Innovation processes of tourist firms are supported by KISA. These can be defined as activities undertaken mainly to implement new firm strategies that allow companies to introduce new services or processes. More innovative firms use more knowledge and related services, provided both internally and externally.

In consequence, KISA can be considered as an instrument to engage in innovative activities. Indeed, most interviewed firms find KISA essential to innovate, while innovation is considered as a key to success. This contrasts, in certain cases, with a certain lack of innovative efforts, that are partly due to scarcity of resources but, also, to weak innovative and strategic firm policy.

The nature of KISA, as services that support innovation, implies that their role on firm competitiveness is basically equal to the role of innovation. That is, KISA enhance firm competitiveness since it facilitates innovative process that translate in cost reductions and permit to meet clients' changing preferences. Also, KISA may allow firms to keep their technological level in line with competitors, thus avoiding the loss of market shares.

In conclusion, knowledge intensive service activities are of paramount importance to gain competitive positions in the tourism sector. Innovation is essential to compete in the global economy, and the tourism sector needs to innovate to continue creating as much value as in the past. KISA, as part of the innovation process, are thus critical for firm competitiveness.

Policy issues

The previous analysis has highlighted major aspects of KISA and the way firms use them, thus allowing us to make initial proposals for innovation policy with reference to KISA.

1.- Fostering innovative culture

Tourism firms present a certain lack of innovative culture. Often, everyday business management absorbs almost all efforts and the need for innovation is more strongly felt when demand downturns. Indeed, relevant innovative activities and strategies, as Research and Development and cooperation, are hardly present, even in firms that have reached a medium size. This suggests that, in order to boost competitive position of the sector, more effort is needed to introduce innovation as a regular element of firm culture and its strategy. This given, KISA will naturally gain relevance, provided that such activities are a necessary tool for introducing innovations and performing under innovative schemes.

2.- Avoiding information asymmetries

Policy instruments that promote trust towards knowledge intensive services providers are needed. As with many services, the information buyer and seller have about the same knowledge intensive service is very different. Many interviewed tourism professionals remarked that it was very difficult to find high quality knowledge

intensive services and that this was a very important reason behind the little use many firms make of these services. As it is always the case in the presence of information asymmetries, signalling is an obvious policy instrument. Quality certificates among service providers or publicly financed demonstration experiences can promote their usage.

3. Favouring access to external KISA

Tourism activities cluster for reasons like the abundance of natural, historical or other types of assets that act as tourists' attractors. However, these assets are sometimes located in peripheral regions, where they have poor access to knowledge intensive services, more commonly located in core areas. Any measure targeted at reducing the impact of distance through better communications or at favouring the location of the providers of these services in tourist areas can have a positive effect on the usage of these services by tourism firms and, hence, on innovation.

4.- Networking

Interactions between firms, research institutions and KISA providers foster innovation and multiply their effects throughout the economy. Personal relations are key to cooperation. The more fluid and intense these relations among key agents, the greater the innovation system's output and the faster it spreads across the economy. KISA providers, as intermediaries among these agents, are essential since they are a natural but indirect way to establish relations with other agents. In a similar way, internal KISA are the gateway entrance to the firm. Public promotion of these activities can then result in a more efficient innovation system.

5.- Training

Human capital formation is essential for success in innovation and for economic growth. Investment in human capital takes place in two different ways: firms hire educated workers and they also invest in firm specific skills giving their employees training opportunities, opportunities to work in different positions and opportunities to build new competencies. The latter has a great importance to allow firms to fully profit from innovations. Yet, training is very expensive for small firms. Even in the case where training is provided free of charge, small firms have to support the burden of providing their employees with time to attend the courses. Policy targeted at building capabilities that allow the workforce to make the best use of human capital investment is essential. Public policy must find a compromise between aiding small and medium enterprises and avoiding the moral hazard issue that may come up if they also paid for the workers time.

5. SUMMARY AND CONCLUSIONS

Innovations are new ideas or new combinations of existing knowledge, services or procedures. Tourism firms engage in innovative activities to profit from cost reductions and to keep their competitive positions relative to leading competitors. Also, clients' preferences often give rise to firm innovations. In recent years, these forces have promoted both product/service innovations (new products, hotel design, ICT equipments and environmental procedures) and process innovations (ICT related, quality certifications and new corporate strategies).

The innovation process is knowledge intensive in nature. Knowledge activities play an important role as creators, shapers and carriers of innovations, whether they are managerial or technological in nature. The innovation process, that is, planning and implementing innovations, implies the generation and use of a great amount of information and knowledge.

Accordingly, it can be considered that innovation largely relies on knowledge intensive service activities. KISA are used by firms whenever they engage in innovative activities. They are important for all the steps of the innovation process: from decision making to implementation and to adapting companies to operate under new schemes.

But there is something else. Tourism firms engage in knowledge activities for a variety of reasons. Innovation is one, but knowledge activities also play a significant role to deal with ordinary management of the firm. For instance, personnel recruitment, what requires to acquire and to handle a large amount of information, is executed with the purpose of adapting company staff; innovation plays an irrelevant role as a motive for engaging in this knowledge activity. In consequence, a distinction must be made among knowledge activities and KISA. While the latter are connected to innovation (contribute to innovative processes), the former are not necessarily related to it.

The main knowledge activities found in the tourism sector are strategic management, training, personnel recruitment, ICT, quality, environment and legal advice, accounting and taxes. A subset of such activities can be considered as KISA, due to their instrumental role as activities that generate innovations. In particular, the study suggests that personnel recruitment and legal advice, accounting and taxes are Non innovative knowledge activities. The rest of them can be considered as KISA, in a substantial part. In effect, not all strategic management is a KISA, but only management activity that concerns extraordinary decisions that lead to innovations. Similarly, not all ICT related activities can be taken as a KISA, since daily management of previously innovative ICT equipment or processes is not innovative in nature. Something similar happens with quality and environmental related activities.

All in all, the study suggests that strategic management is critical for the overall innovation process, since top management support is necessary to engage in any innovative activity. ICT, quality and environmental activities are relevant for innovations in their respective field. In turn, training has a special impact for ICT product and process innovations, since it prepares firms to operate under new ICT environments.

KISA are provided both externally and internally, though external provision is of the utmost importance. This is reasonable since most firms do not have enough size so as to hire specialized workers to conduct a specific KISA. Thus subcontracting is more efficient for firms and, also, it permits to have flexible access to a larger variety of suppliers. Yet, KISA that are strategic in nature, by dealing with internal information, are developed internally by firms.

Being KISA an instrument for firm innovation, their impact on firm competitiveness is basically the same that can be assigned to innovation itself. These activities are part of a strategy developed by firms, formally or informally, mainly to reduce costs, ensure market shares (by answering to clients' demands) and improve their competitive position with respect to competitors.

Policy promotion of KISA may help to develop firms innovative strategies and, hence, to improve competitiveness in the global economy. In this sense, it is felt that action is needed to favour access to KISA providers and to promote more intense networking among firms, research institutions and KISA providers. Support of training would favour firm innovation, notably in critical fields as ICT. Last, but not least, efforts are needed to enhance innovative culture of the sector, especially in small sized companies.