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If we are to gain the perspective necessary to explain the role of computerized reservation systems (CRS) in the hospitality industry, we should adopt a broader view of the hospitality function within the travel and tourism industry.

In commercial terms the hospitality industry includes accommodation and food service businesses (profit and non-profit) that cater to people who are away from home. This paper refers particularly to the accommodation industry as a subsector of tourism which includes hotels, motels, resorts, and bed and breakfast enterprises.

Due to their commercial significance this paper places special emphasis on hotels, motels, and resorts that are chain owned and operated. Since the 18th century the development of hotels has been inextricably intertwined with revolutionary developments that have occurred in transport and it is clear that its future is intimately tied up with the future of the travel and tourism industry.

The travel and tourism industry is, however, an economic branch with a relatively low degree of integration. In spite of these observations several authors have made reference to the travel industry or a tourism system consisting of four main parts: (1) a market made up of people who travel; (2) an attraction situated in a destination to which people travel representing part of the supply side of the tourism industry; (3) a series of linkages comprised of services such as (tele-) communications, transport, banking/finance that afford information and people flows between the market and destination area; and (4) a destination area infrastructure comprised of a set of services that cater to the requirements of travellers, including hotels, food services, retail stores and many other products.¹

Viewing travel and tourism as a system suggests that the systematic marketing of the tourism product is possible and desirable through the value chain. The importance of

the value chain has been captured as follows: poor performance by one business affects the tourism industry as a whole. By the same token when tourism operators produce quality goods and services, their quality work brings both them and the industry success.

The value system in travel and tourism includes related services such as telecommunications, credit card, and banking services and indirect supplier value chains like computer reservation systems, brewers, construction firms, real estate and educational and training institutions. The suppliers of related services and manufactured goods provide inputs to the hotel firm's value chain. Within the functioning travel and tourism system the hotel firm exists to provide overnight accommodation to guests who have moved to a particular destination outside their normal places of work and residence for pleasure or business purposes (or a combination of the two). A hotel firm's product often passes through the value chain of distribution channels on its way to the ultimate consumer. In fact, the hotel suppliers' need to be identified in the marketplace may be defined as follows:

hundreds of thousands of lodging establishments are seeking to gain identity with untold millions of potential customers covering the whole spectrum of incomes, interests, knowledge, sophistication, and needs; but few single establishments can afford the marketing costs.²

As a consequence single or independent hotels tend to be extremely vulnerable, while hotels operating within a chain or network tend to have access to the necessary capital, marketing expertise and technology necessary to survive.

The discipline of marketing appears to be entrenched as a *force majeure* in the competitive strategy of companies, as well as within the literature. Since competition in the hotel industry takes place on the local level the conduct of the independent hotel and chain affiliated hotel will tend to influence to a significant extent the strategic decision process of both.

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tion to ensure survival. Chain hotels, on the other hand, are likely to focus more and more on system *coordination* to improve communications and cost control. The matrix depicted in Figure 1 draws together the basic ideas of the evolving globalization and industry structure in the hotel sector. The vertical axis distinguishes between independently owned hotels and chain operated hotels. The horizontal axis contrasts the local and global market. Most independent hotels are local in nature and therefore operate in quadrant 1, whereas many of the larger chain operated hotels are active on the global level in quadrant 4. The matrix illustrates the need among independent hotels to direct their efforts to become affiliated with a global external network (quadrant 2), or to expand into a corporate chain (quadrant 3).

Despite the ever present pull on corporations to localize production and produce local products, a growing number of chain affiliated hotel firms which operate on a local basis (quadrant 3) are being drawn into the global marketing arena (quadrant 4) for two main reasons. First, the weakening of growth opportunities in their home markets is pushing hotel firms to expand abroad. And second, hotel firms based in Europe, the USA and Japan are being pulled into foreign markets by growing opportunities for their product abroad.

But such a characterization masks other factors that drive the industry toward globalization including a combination of four sets of conditions: market drivers, cost drivers, government drivers and competition drivers.³ These will be briefly considered before fuller discussion of CRS.

Cost drivers

Beside the hotel type(s) firms decide to construct, the location determines to a great extent where they build, a hotel's customer mix, the direction of the marketing strategy and profitability. Local factor costs, in particular, have a significant effect on hotel demand in that costs of land and labour comprise a large part of hotel capital and operating expenses. International hotels are therefore significantly and most directly influenced in their pricing policy by local factor costs.⁴ If land prices are high, such as in major cities like London, then well sited hotels will all have broadly the same underlying fixed cost structure and will have to set their rates accordingly. Similarly, a selection of hotels offering the same level of service will require roughly the same level of staff per guest to provide that service, and therefore their cost structure will be influ-

Market drivers

A major market force that affects hotel industry structure and profitability is the bargaining power of buyers. In the hotel industry, buyers include tour wholesalers, travel agent retailers and consumers. We will use the words buyers and consumers interchangeably in this analysis. Buyers impact on the hotel industry by forcing down prices, demanding higher quality and greater variety of services, and playing competitors against one another – all at the expense of industry profitability. Buyers, sure that they can always find alternative hotel space, have used this knowledge to play one hotel firm against another (for example when meeting planners of a company or association negotiate to hold their conference at a particular hotel).

Similarly, wholesalers, travel agencies and tour brokers account for about one-third of the roomnights consumed annually in the USA.⁵ The needs of travel organizations who resell the hotel rooms they buy is different from the user. Although consumers are expected to continue to play the starring role, there are certain developments in the hotel-client relationship that are worth noting: (1) hotels have become more removed from their clientele; (2) client decisions are largely controlled by more than just the individual user; and (3) the gap between supplier and consumer continually appears to widen.⁶

Government drivers

Most governments around the world play a significant role in restricting trade in travel and tourism services by erecting both financial and legal barriers which contribute to reduced tourist flows. The restrictions tend to be most severe in the Americas and have contributed to the decline in tourism market shares *vis-à-vis* East Asia and the Pacific where travel within the region is facilitated and has contributed to the fastest growth in tourism receipts.

Government drivers have been indirectly significant in that the deregulation of the airline industry in the USA in 1978 brought along a broad choice of airfares and much greater complexity in selecting the most competitive offers. This development required computerized systems capable of handling a vast amount of data and resulted in the changing role of the CRS from airline information and booking system to marketing and distribution system. As the world of travel, information and reservations started to change in the late 1970s – first in the USA and then gradually throughout the world as a result of deregulation

overseas and offshore companies expanding in the USA. Although the international hotel industry is still dominated by US companies, foreign companies are rapidly progressing either through acquisition, joint ventures or physical expansion. As changes occur in the market, hotel firms have to develop new strategies to maintain market share. Technological developments in information processing and the availability (or lack) of skilled personnel are likely to have a major impact on the policy, planning and strategic direction of hotel corporations.

Competitiveness can be assessed along two dimensions. First, a global dimension which measures competitiveness in terms of numbers of guests attracted, market share, revenues, and expansion. The second dimension focuses on the functions performed in an industry subsector and attempts to explain why one sector is more successful than another. Canada's hospitality industry seems to be behind its competitors in terms of the provision of information, marketing analysis capabilities, and interconnection among systems and databases. These functions tend to be most critical in terms of industry-customer interface and affect perceptions and competitiveness most directly.⁷ The traditional competitive strategy paradigm which focuses on product-marketing positioning is greatly and increasingly dependent in hotel firms on human resources management, which is an integral part of the value chain.⁸

Though market drivers, cost drivers and government drivers provide stimuli to globalization in the hotel industry, competitive drivers, especially CRS, if effectively utilized can play a crucial role to contributing to the hotel firm's value chain. As the CRS expands, an increasingly complex hierarchical system of transport and travel networks is evolving which provide important opportunities for gaining competitive advantage by those hotel firms with the necessary competencies and skills to capitalize on the new technology.

The emerging systems based on information technologies will afford hotel firms the opportunity to compete with rivals and complement other travel industry suppliers' services. The idea that the hotel firm is part of a network of economic transactions implies that in order to expand geographically and operate profitably the international hotel firm must perform its role effectively in the functioning tourism network. This requires cooperation between the hotel firm and travel industry partners, such as CRS rental car, airline and travel agency firms. The hotel firm should also formulate strategies which take into account the host country's tourism policy and regional development priorities. In this regard, a potential obstacle to

Computer reservation systems were first developed when airlines began to computerize their internal functions and booking procedures simply as a time saving mechanism. The simple, relatively inexpensive internal system first developed in 1962 by American Airlines helped them obtain a dominant position in the market. CRS were a natural progression of this early internal technology and American Airlines was the first to realize the benefits of expanding its computer systems to include on line terminals with direct reservation capabilities located in travel agencies.⁹ American Airlines first began marketing their CRS extensively in this way immediately following the deregulation of the airline industry in 1982. Their CRS named Sabre has assisted American Airlines in capturing a large market share and has been an integral key to the competitive advantage the company has secured. The deregulation of the airline industry fuelled the rapid development and expansion of CRS in the USA, and this has led to the many dynamic sophisticated systems in existence today.

These early systems were the predecessors of the multi-million dollar megasystems which are used extensively throughout the world today. It was not too long after deregulation when the remaining airlines realized that they could no longer compete with those utilizing CRS technology. The major airlines either began development of their own systems or they merged with other firms that already possessed the technology. The reservation systems are usually on line, so all information provided about seat availability and cost tends to be accurate and current. The travel agents know exactly how many and what class of seat is available, which in turn makes the service they provide appear more valuable to a consumer. The terminals that are being used by travel agents are micro-computers that also perform office functions such as accounting, database storage, financial management and other operations that have helped to improve the efficiency of many travel agencies. Airlines began offering terminals as an incentive for travel agents to use their respective CRS.

Meanwhile, CRS have also diversified into many other reservation functions such as car rentals, hotel reservations, train reservations and other tourism and hospitality sectors. Product diversification is making the airline systems appear more attractive to the travel agents as such systems would not only increase their competitive advantage but also increase their profitability. This profitability would be derived from the increased commissions they would be receiving from hotels and car rental companies

Implications of CRS on the hotel industry

For the hotel industry the vital feature is that, while CRS are airline led and dominated, the customer is increasingly able to reserve hotel space as well as many other features of his or her travel arrangements in addition to the airline seats which are the starting point for most travel transactions. Hotels within large national markets and across frontiers run the risk of losing business if they do not feature on these megasystems.

The major CRS may well consolidate into perhaps two or three dominant international systems by the mid-1990s, and indeed this consolidation process has already begun. How these groupings might in reality develop is not a subject for this paper, but the implications for the international hotel industry clearly are, and are likely to be very far reaching.

Hotels have little practical choice but to ensure that they feature on these systems, though how the choice of system is made and how many systems a given hotel company needs to participate in remains unclear. These issues will only be resolved once a clearer picture emerges as to which systems will succeed and how they will be positioned in the international marketplace.

It does seem clear, however, that the costs to hotels will be very significant, and could well result in an all round rise in hotel room rates. The cost of making reservations through CRS may, in some cases, increase by as much as 25 to 30% of the published nightly room rates. Indeed, hotels would be well advised to calculate exactly what the costs of such reservations will be to them, before they sign any agreement.¹¹

On the other hand, the hotel industry stands to gain some significant benefits from the mega CRS. First, much improved yield management techniques will be available via the systems. Yield management broadly means maximizing occupancy rates, and matching variations in demand on a seasonal and weekly basis to different pricing structures in order to maximize revenue. Use of new reservation technologies can help to set targets for the number of rooms that can be sold at a given set of prices on different days of the elude and/or seasons of the year. Such parameters can be built into the CRS and can be used to manage capacity by influencing the decision to purchase at the point of sale.

Sell through techniques are part of this process. These are means whereby the day to day judgement of staff can be supplanted by set criteria within a CRS to influence the nature of bookings that a given hotel will accept. For

replaces the staff who are in the role of the hotel booking agent, found at most major airports, for example. The late release of rooms, or the necessity to manage room availability to cater for flight delays and the unexpected, is a difficult area for CRS. The hotel booking agent who puts a lot of business in one hotel or group of hotels will normally cultivate close personal relationships with the hotel front desk. In return for loyalty, the hotel will tend to help out the agent when rooms are needed at peak times, or late bookings have to be made.

The impact of CRS on the hotel industry will vary. Broadly, the bigger the company the greater the potential benefit. The major international groups will be better able to afford the investment necessary to bring their own systems up to a standard which permits them to interface with the CRS than smaller, less well off groups. In return, the majors will be able to develop a better, directly manageable source of detailed knowledge on their clients, will be able to manage their yields much more tightly, and should achieve the lion's share of advance reservations from foreign clients before their local, often independent rivals.

By the same token, the weakest and most vulnerable part of the hotel industry in the area of CRS development will be the independent property. The hotels most vulnerable would seem to be the smaller, independent properties whose business comes to a significant degree through sales and travel agents overseas or a long way from their local markets. In most cases the investment required to link into a large number of the major systems may be beyond the small unit. If they cannot place themselves in front of their national or international clients at the point of sale, they will obviously be at risk of losing a substantial slice of their business.

The key for all hotels, large or small, chain or independent, will be to have a detailed knowledge of their current markets and a reasonable appreciation of unexploited potential. This will give them the basis on which to define what sort of CRS linkages they need, and this in turn will give a clear indication of the investment costs involved. While not all hotels will then be able to implement all these aspects, at least some rational decisions will be possible. Fundamental decisions will have to be made here about distant sales representation and those that cannot afford to be in the CRS of importance in these markets will almost certainly lose market share.

Conclusions

Historically, the hotel industry has been slow to adapt to

bookings in other properties owned or operated by the same group with obvious advantages to the hotels in retaining customer loyalty.

The latter half of the 1980s, however, saw the accelerating development of global CRS owned by the world's major airlines. These systems are in a different technological league altogether, and operate at the forefront of computer and software system technology. The leading players were the US airline companies, whose success with CRS was such that other non-US companies – notably in Europe – were obliged to develop their own systems in order to avoid dependence on US companies for the management of their booking systems.

The role of today's CRS is that of a travel marketing and distribution system rather than an airline booking system. The marketing practices, and in particular the distribution strategies of hotel firms throughout the world, are increasingly influenced by CRS. Through strategic alliances CRS concentrate buying power in the hotel and travel industry in the hands of fewer players. CRS are moving hotels from product based to relationship based processes of value creation. This implies that the hotel market will be increasingly defined as a network of dealings between the hotel and its users rather than either a physical area served by the hotel or the people who buy the hotel services.

The automation issue, and CRS in particular, are causing increasing concern for hotels who want to be part of the new technology developments. At the same time, hotel firms view themselves as pawns in what is essentially an airline industry game. As global distribution systems CRS mean a loss of independence for hotel firms as it becomes increasingly clear that CRS are driving the hospitality business. Consequently, hotel corporations face several strategic imperatives to improve their information knowledge and techniques:

- Understanding the role of the CRS in the hotel industry within the value chain context as well as the policy, problems and plans of other operators in the value chain will assist hotel managers in formulating and implementing marketing strategies in a network transactions dominated environment.
- Within the CRS framework, competitive advantage is likely to become increasingly a function of how well a hotel firm can manage its relationship within the func-

- Finally, small hotel firms are placed at a disadvantage by CRS. In an effort to survive small hotel firms are more likely than before to join a consortium which can provide access to a sophisticated reservation system.

CRS have the potential to play an important part in making hotel marketing a more sophisticated process; but this will nevertheless remain an area where hotels must play an active rather than a passive role. The impact of computer technology, including global computer reservations systems, will prove central to the international travel industry and hotel operations in the 1990s and beyond.

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