UNIT - II

Unit Structure

Lesson 2.1 - History and Evolution of Global Distribution System

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Learning Objectives

At the end of this unit the learners will be able to

- Understand the significance and functions of GDS
- Get insight into the historical development of GDS systems
- Gain understanding of the relationship between CRS and GDS
- Acquire knowledge on the driving forces of GDS
- Know the relevance of HDS (Hotel Distribution System) to the Hoteliers.

Introduction

The technology revolution gave birth to one of the most effective business tool called e-commerce that could change everything around the business process and its dimensions to reach the customer. In unit 1 of the course material we were able to understand the significant role of the Information technology and e-commerce in tourism sector. The emergence of electronic median into Indian markets during 1990s brought about huge turnaround in the businesses and intense changes that empowered consumers of the tourism industry. Large number of people linked the emergence of modern travel distribution with the dawn of the Internet in e-commerce during the beginning of the 20thcentury. But in fact, internet commerce in tourism and travel had already experienced the "dot-com" explosion even in the beginning of 1970s in the and slowly become common platform during the late 1980s. The information technology and systems powered electronic version of travel industry with

the origination of CRS (Computerised Reservation System). These CRSs played critical role in changing the demand level for tourism and increasing the efficiency of the participants with better accessibility. Later, after a decade the CRSs got transformed into GDS (Global Distribution System).

The GDSs were very successful in offering the requirements of the tourism service providers as well as the consumers. These systems were the pioneers in facilitating Business to Business mode of electronic channel in the 1970s. The famous American based GDS organisation called SABRE came together with an UK based Apollo Inc to start planting their propriety in-house reservations systems in travel agencies. Before this, the traditional travel agents vested excessive time duration for registering the reservation by doing it manually. Many airline companies understood that adapting to information technology for their reservation process would make them more efficient and competitive in the market by reducing the time and effort taken to accomplish the reservation process.

The service producers realised that the technology oriented internet based travel agents could make the process more productive and specifically support airlines by acting as an extension of the marketing centre. Classical examples for the worldwide realization of electronic market coordination are the emergence of CRS and GD Sin to the travel and tourism industry. As the intensified competition is traced alongside rapid changes in the technological system there are questions about the relevance and the life of the existing distributions systems and scope for evolving these systems.

The existing distribution systems like CRS and GDS have already travelled quite a period of time in the western countries and at least a decade in the developing Asian countries like India.They actually originate from the aviation sector and of the travel industry. With the origination of commercial flights, the aviation companies required an efficient system to consent to travel agents to work on their behalf to make bookings and reservations for their flights.

Later due to the explosion of mass tourism, the GDS systems were modified so that they could also take care of the hotel booking and reservations, renting cars, cruises, packages including golf experience and various other things that are required for the tourists and facilitated by the travel agents. Deflecting into the leisure market demands, the GDSs were modified and redesigned to diversify their portfolio in order to gain advantage of their technological business components and network as well as economies of scale. Such changes supported the distributions systems to deliver diversified services to the diversified customer segments and fought against the challenge of business market saturation.

With this introduction this unit will discuss the functions of the GDS and offer comparison with the CRS and other distribution systems. The unit also looks to throw light on the evolution and development of the tourism distribution system and assess the cases of the major GDS systems like Amadeus, Galileo, Sabre, World span and Abacus in the current tourism scenario. Finally it will elucidate the models of the GDS and CRS and the changes happening across the world.

Understanding Global Distribution System

Internet as a distribution channel for travel needs can be learned by understanding the Global Distribution System (GDS) and its dynamics.

GDS can be understood as the set of networking operated by service enterprise that enables computer based transactions between service providers and intermediating agent to condition the tourism and travel related services to the tourists and travellers. GDS is the large and sophisticated electronic travel reservation systems currently in use throughout the world.

GDS is a system that integrates services, rates and bookings consolidating products and services beyond all travel sections like Airline reservations, Hotel reservations, Car rentals, and other tourism related activities.

It networks large number of tourism and travel service providers to offer a common stage for bookings and reservations (flight, hotel, packages and cars) to consumers across the world.

It facilitated both the leisure and business clients, by making the information available and facilitating to make reservations for entertainment services like Cinema, holiday packages and tourism destinations. Eventually the centre of the GDSs are perceived to be based on a chain of smaller, regional and specialised technological systems for their leisure market offerings..

They have gradually expanded their geographical coverage integrating both horizontally, with other airline systems, and vertically by incorporating the entire range of principals, such as accommodation, car rentals, train and ferry ticketing, entertainment and other provisions. It emerged as the major driver of IT, as well as the backbone of the tourism industry and the single most important facilitator of IT globalisation. It matured from their original development as airline CRSs to travel supermarkets.

GDS systems have revamped and positioned again to support the marketing and promotional activities for the providers (i.e., other intermediaries, principally travel agencies); changing their concentration from aviation industry to few other travel-related sectors; and leveraging their strong near-term cash positions to purchase or partner with other intermediaries to provide end-to-end links between end users and suppliers. Their online connection is through their support of other intermediaries, plus mergers, acquisitions, and partnerships with selected online players.

GDSs' improvement in terms of efficiency and reliability enabled principals to distribute and handle their bookings and reservations across the world by connecting the customer requirements with the tourism offerings. Therefore, great synergies are attained, where the forces of globalisation have stimulated GDS progress.

The GDS has been the instrument for some of the most critical innovations in the process and operations of tourism and travel industry. Some of the innovative practices evolved through GDSs are e-ticketing; travel e-commerce; graphic seat selection; and the ability for agents and travellers to view on one screen, public, private/negotiated, consolidator and Web fares. A Consumer is allowed to book an airline ticket, airport transfers, car rentals, book hotel reservations, plan sightseeing cruises, block theatre tickets and make dinner reservations, all these in a single schedule through a single GDS system.

Distributing the tourism and travel related services using GDSs' had promised enormous advantages to the service providers and consumers in terms of price, efficiency, and access relative to traditional print- and telephone-based methods. Capitalising on GDS, the service providers like hoteliers and destination have accessed the global market of travel agents, all clamouring to sell their range of services with meagre transaction cost beyond what these service providers would normally incur in terms of commission charges.

There are currently four major GDS systems: Amadeus, Galileo, Sabre and World span. In addition, there are several smaller or regional GDSs, including SITA's Sahara, Infini (Japan), Axess (Japan), Tapas (Korea), Fantasia (South Pacific), and Abacus (Asia/Pacific) that serve interests or specific regions or countries. Later in the chapter we will provide a closer look at the four major GDS.

Functions of Global Distribition System

As the previous section clarifies the basic understanding of the Global Distribution System and its significance to the tourism and travel related industries. This part of the unit will elucidate various functions performed GDSs. Global Distribution System provides the

basic functions for the reservation process such as product presentation, reservation, fare quote & ticketing and additional services.

a. **Product Presentation**

For a CRS, the most important source of information is the presentation of the products and services offered by providers in all areas related to the travel industry. Each group of service providers has individual screen categories the contents of which particularly represent the complexity of their offerings and specific features of their services. The product "flight" for example does not require complex descriptions since it is sufficient for a neutral product presentation to state the departure and arrival times, the route, availability of particular reservation categories and possibly the fare. It may, however, be difficult to describe the products of other service providers appropriately with only a limited amount of information. Hotels, for example, have so far only been able to provide information about the price, the size of the bed and its approximate location which alone is not a meaningful description for potential customers. For this reason, it is intended to link the particular offers to visual multimedia technology to be able to provide more detailed information to the customer.

b. **Reservation**

The core function of reservation systems and the main reason for developing them is the reservation of offered services in the travel industry. To this end, a so called Passenger Name Record (PNR) or Guest Name Record (GNR) is created for each passenger or each group of passengers. These records contain all services-related customer information. At the same time, this information is transferred to the internal inventory system of all service providers, distributors who thus have the latest information about availability at any point in time and can use it as a basis for a new offer. In addition, the system can also store customer related information such as e.g. all services provided to a certain customer, type of payment, service information etc.

c. **Fare Quote & Ticketing**

Just like the product presentation, the fare quote, ticketing and voucher generating process depend on the type and the complexity of the services offered. For flights, multiple fares are being offered which differ according to the reservation category, the date of the journey, the day when the reservation was made, the route and the length of the stay. That means that practically each fare needs to be calculated individually. In addition, fare quotes can change daily. The prices of other service providers, however, are relatively fixed so that

in most cases, they stay an unchanged part of the offer. For the ticketing, travel agencies receive a fixed number of ticket forms which may only be used after confirmation has been received from the respective service provider. Typically, the print-out of any additional information material is not supported by most systems as it is not always necessary, like for example a print-out of a hotel or rental car reservation..

d. Additional Services

Because of the increasing competition in the market, system operators were forced to offer not only the three essential components of an information and booking system but also additional services. Today, the user has direct access to essential travel information and can find further information in all CRSs about trade shows, visa regulations, particular events etc. Furthermore, programs and interfaces have been developed which facilitate the internal administration for each travel agent. Also invoicing, accounting, customer and quota management increasingly depend on the respective CRS. User prompting has significantly improved so that even inexperienced users can easily learn how to work with the reservation procedure. Since more and more PCs are being used in this area modern user interfaces have been introduced.

GDS companies offer far more than just simple air travel bookings. GDS systems are capable of booking:

- One way and roundtrip airline seats
- Rental cars
- Cruises
- Restaurant reservations
- Itinerary changes
- Rail
- Hotel rooms
- Tours and packages
- Insurance
- Theatre tickets
- Complex international routings
- Ferry
- Limousines

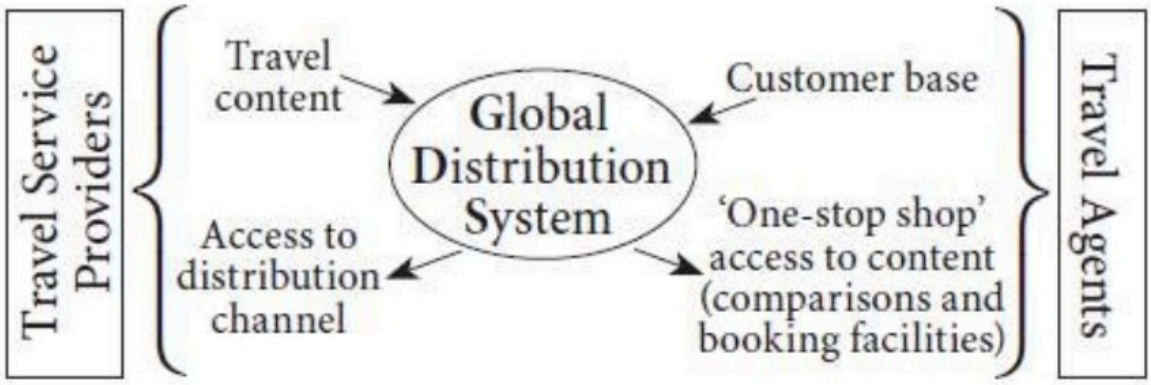
Ultimately GDSs should look to not only just meet the customer requirements but also to exceed the expectations of their stakeholders, (i.e. consumers, principals, travel agencies and shareholders), offer superior products.

Global Distribution System- Market

A Global Distribution System is a platform between two distinct groups of customers, airlines and agents.

a. On the one side of the platform, airlines provide travel content (namely prices and availabilities) to be included in the GDS offer to agents. Through the platform, airlines obtain access to a distribution channel, namely the network of agents using that GDS.

b. On the other side of the platform, each agent subscribing to a GDS provides its customer base to airlines via the GDS. Through the platform, agents obtain efficient access to travel content, with facilities for price/content comparisons as well as an interface for centralised bookings from different sources.



GDS Market

Source: Evans (2003)

The two sides of the GDS market exhibits (Figure) some distinctive features.

a. Airlines whose content is offered via GDSs tend to have a broader (pan- European or even global) coverage than agents using GDS services (only very few having a broader than national coverage).

b. Virtually all airlines subscribe to all GDS providers, whereas agents generally tend to use only one GDS.

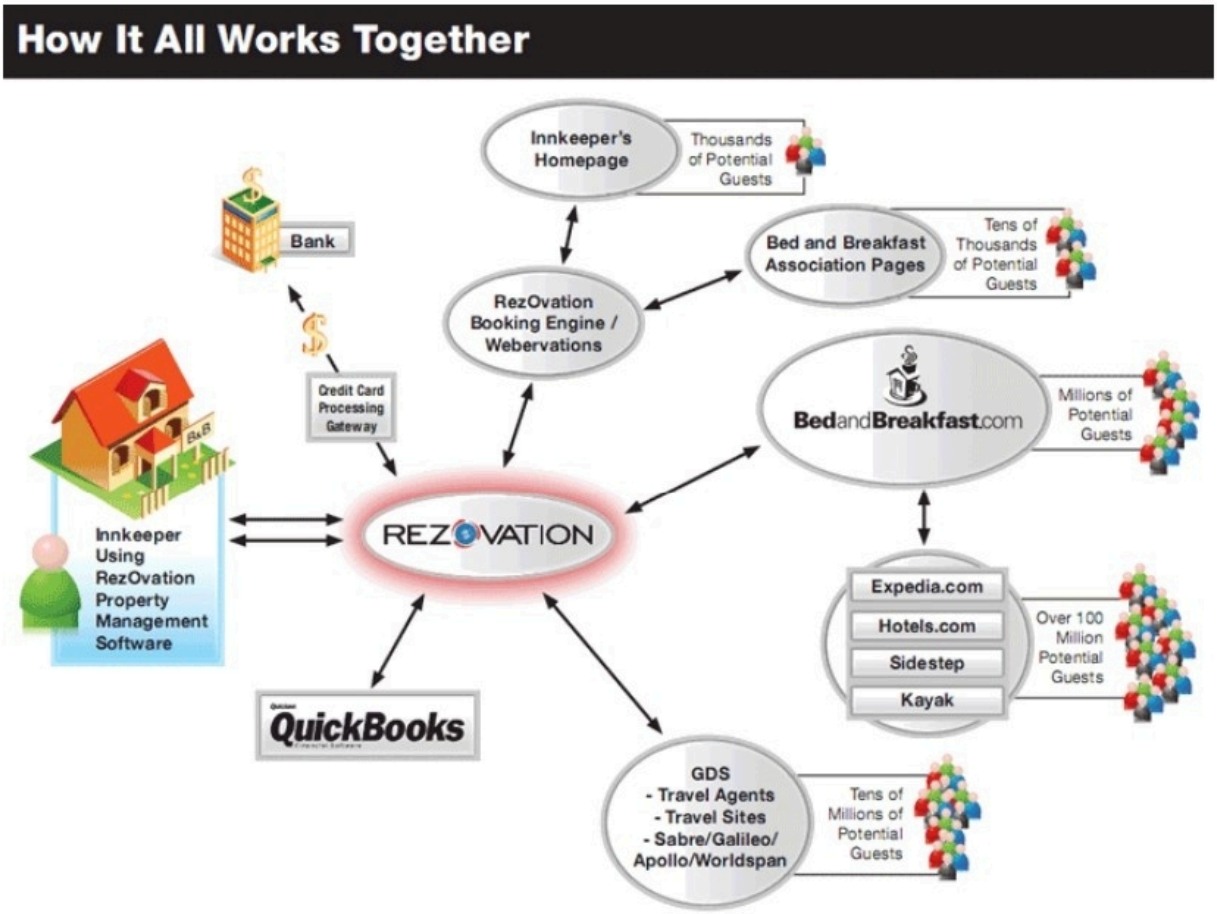
The existence of the GDS is justified by the value it creates in terms of

a. Lower transaction costs (or higher efficiency) especially for agents: Reduced transaction costs mainly benefit agents by making their searches more effective and less time-consuming, as compared to searches using a number of airline-specific sources.

b. Positive network externalities especially for airlines: As regards network externalities, 'indirect' (i.e. cross group) externalities for airlines make the two-sided nature of the market relevant for its analysis. In this specific case, indirect network externalities

arise from the fact that the wider the network of agent outlets (and the related end customer base) reached by airlines using a given GDS, the larger the value for airlines in using that platform.

The tourism market does not rely completely on these distribution systems, there are numerous other players and intermediaries also involved and playing role in tourism consumption. It is important to understand and be aware of the various other channels and access points (Figure) through which the customers can have information, book or reserve travel-related services. However, these different channels may have different groups of customers on their particular sides. Also, even when addressing the same customers as GDSs (i.e. agents), the functionalities provided by web-booking facilities may be limited. For instance, an agent may have a 'direct link' to the booking inventory of an airline, thereby bypassing



GDS and various other channels of Travel & Tourism Industry

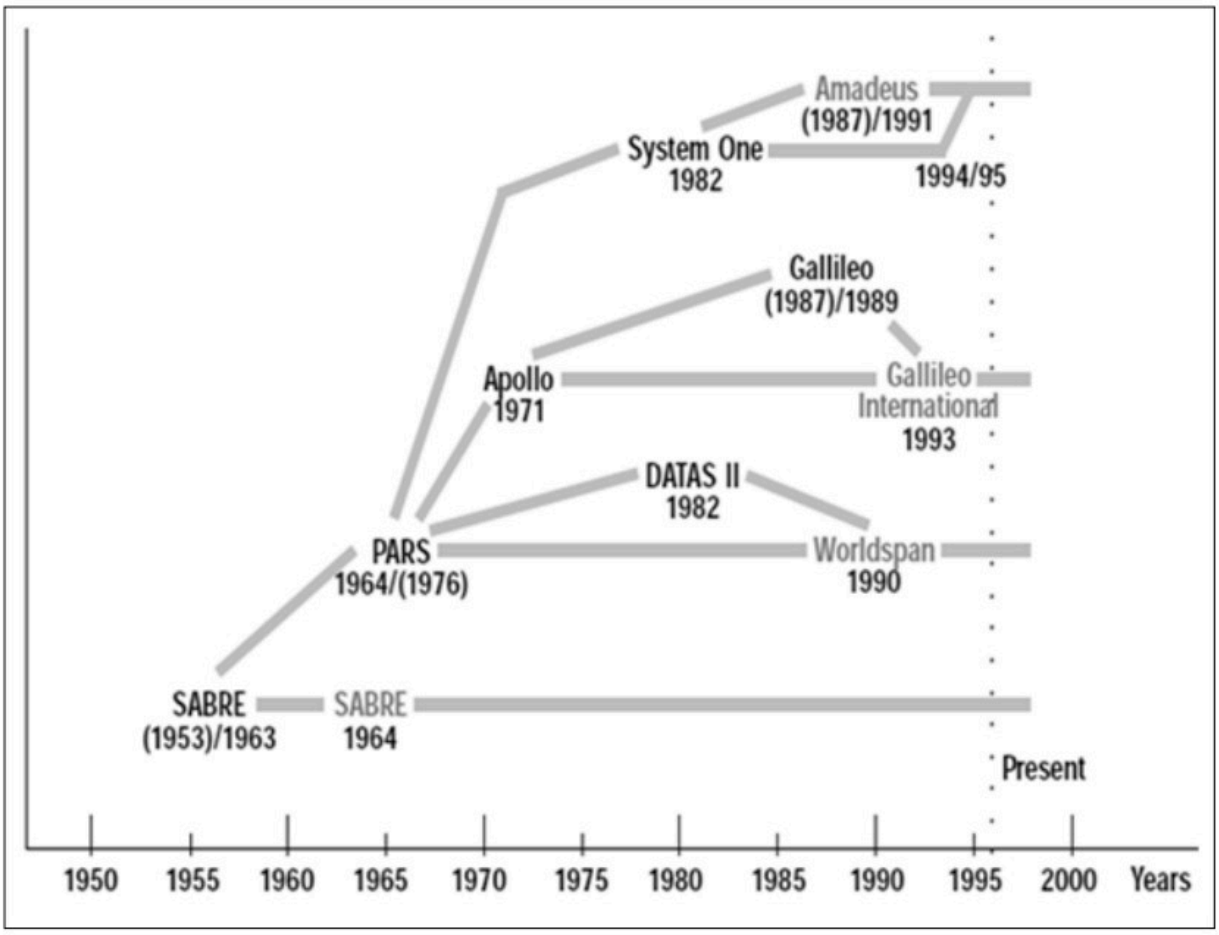
GDS providers and other related fees, but at the cost of losing the price comparison functionalities or of having to create in-house solutions to reproduce similar functionalities. The limited substitutability between GDS platforms and alternative channels suggests

considering a narrow product market for GDS, rather than a broader market including those other distribution channels as well.

History & Evolution of Globaldistribution System

There have been 3 stages of evolution the first reservation system was called an Airline Reservation system, the second a Computer Reservation System (CRS) and the third evolution is today's Global Distribution System (GDS).

The historical development of the GDS is explained in the Figure. The historical development of various GDSs and its interdependence of technology with one another is shown below (Figure).



Historical Development of GDSs

Source: Axel Schulz, Lufthansa Systems GmbH Vol.6 – No.2 – 1996

Global distribution systems (GDS) have evolved from the first computer-based reservation systems implemented by several U.S. airlines in the late 1960s. However, there are several key milestones and technological innovations worth highlighting.

Stage 2 (1960s)

American Airlines (AA) was the first company to develop a real-time computerized reservation system. In a joint venture with International Business Machines (IBM), the Semi-Automatic Business Research Environment (SABRE) was launched in 1964 and helped American process nearly 26,000 reservation requests per day (Sabre Travel Network History, 2004).

Stage 2 (1970s)

In the late 1960s and early 1970s, virtually all of the major carriers, including United, TWA and Delta were operating their own central reservation systems (CRS). It was not, however, until 1976 that these systems were installed in travel agencies, allowing agents to both book and change reservations directly in the system using remote access terminals. Clearly, the ability for airlines to operationalize their booking systems in geographically dispersed markets was a major competitive advantage for those who participated (Sabre Travel Network History, 2004).

Stage 3 (1980s)

The distributed system was paralleled by increases in computing and storage power; during 1980, SABRE was available in over 130 locations and could store 1 million airfares. After The Société International de Télé-communications Aéronautiques (SITA) is also outlined, which supplied telecommunication services to several of the GDSs and other travel and tourism organisations (Sabre Travel Network History, 2004)?

Stage 4 (1990s)

Amadeus Global Travel Distribution was formed in 1987, with each of the four European airlines Air France, Iberia, Lufthansa and SAS Scandinavian Airlines System owning equal shares. In 1991, however, SAS sold its share to the other three due to financial difficulties following the Gulf War, leaving Amadeus equally owned by the other three airlines. The Amadeus Central System was based on the software of the reservation System and located in Erding near München in Germany. The system became operational in 1991, integrating the four national reservation systems Esterel in France, Savia in Spain, Smart in Sweden and START in Germany, which were predominantly controlled and (partly) owned by the original four partner airlines, respectively, as well as integrating a number of other national systems of further airlines. Amadeus operated on its own network Amanet, on

various national networks and on the global SITA network, and, in 1994, claimed to have Europe's largest civilian database. Since Amadeus' foundation, the operation and marketing of the national Amadeus sub-systems have been conducted mainly by > 30 national marketing companies (NMCs) such as START Amadeus Vertrieb GmbH in Germany, and Amadeus Austria Marketing Ges.mbH in Austria, with SAS having also remained a national partner (Grubesic, Horner, Zook and Leinbach).

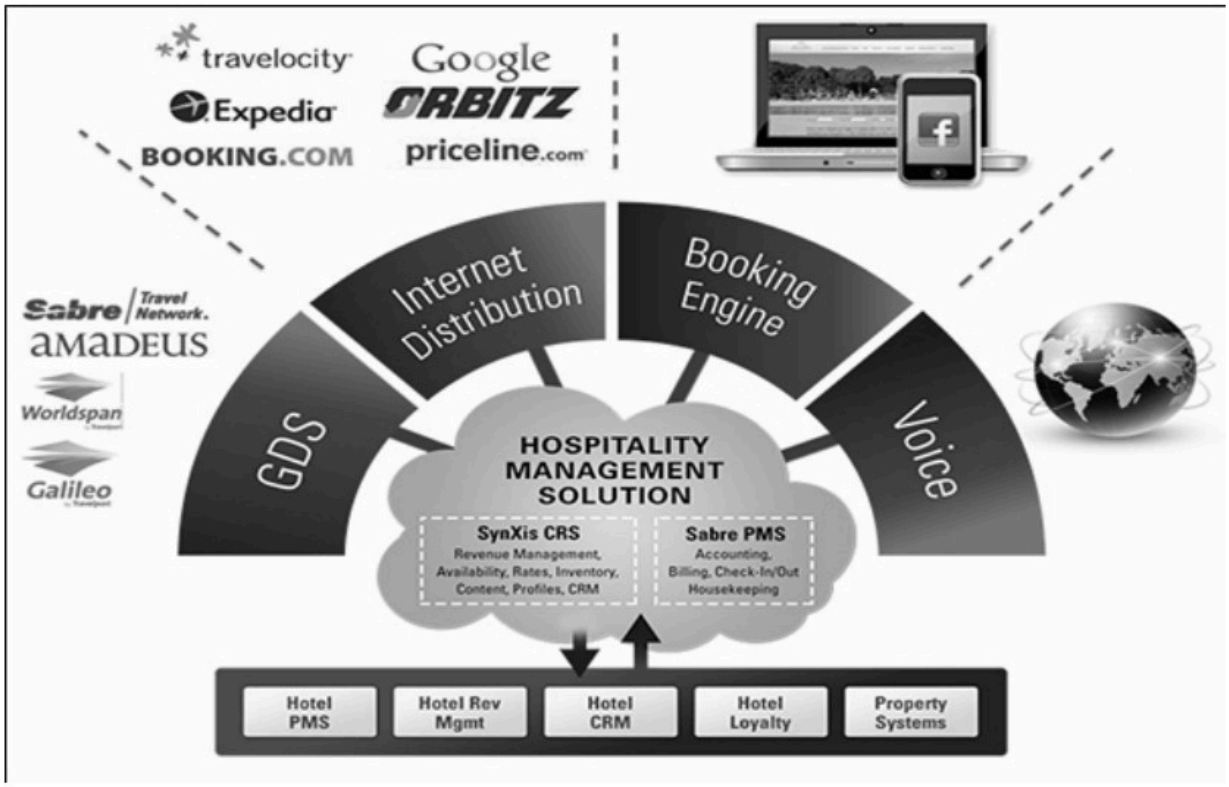
CRSS and its Participation in E-Tourism

The previous section of this chapter provides a detailed understanding of the origination and functions apart from its significance in to the travel and tourism industry across the world. The following section will provide the outline over CRS and give us the understanding of the functions and components of the system apart from elucidating its role alongside GDSs.

Computerized networks and electronic distribution in tourism emerged in the early 1970s, through internal CRSs. They became central to the distribution mix and strategy of airlines. CRSs are widely regarded as the critical initiators of the electronic age, as they formulated a new travel marketing and distribution system. A CRS is essentially a database which manages the inventory of a tourism enterprise, whilst it distributes it electronically to remote sales offices and external partners. Intermediaries and consumers can access the inventory and they can make and confirm reservations. The rapid growth of both demand and supply, as well as the deregulation of the American air transportation demonstrated that the tourism inventory could only be managed by powerful computerized systems. Airlines pioneered this technology, although hotel chains and tour operators followed by developing CRS.

CRSs enable principals to control, promote and sell their products globally, while facilitating their yield management. In addition, they integrate the entire range of business functions, and thus can contribute to principals' profitability and long term prosperity. CRSs often charge competitive commission rates in comparison with other distribution options, whilst enabling flexible pricing and capacity alterations in order to adjust supply to demand fluctuations. CRSs also reduce communication costs, while providing intelligence information on demand patterns or the position of partners and competitors. Hence, CRSs contribute enormously to both the operational and strategic management of the industry

The Flowchart or diagram (Figure) is an example of process and functions of CRS. The chart depicts the CRS of Sabre, one of the leading IT based reservation system software that enable s the stakeholders of the tourism to conduct their business performances with the help of information and communication technology.



Sabre – Example of CRS

Source: http://www.sabrehospitality.com/central-reservation-systems.php

GDS Vs CRS

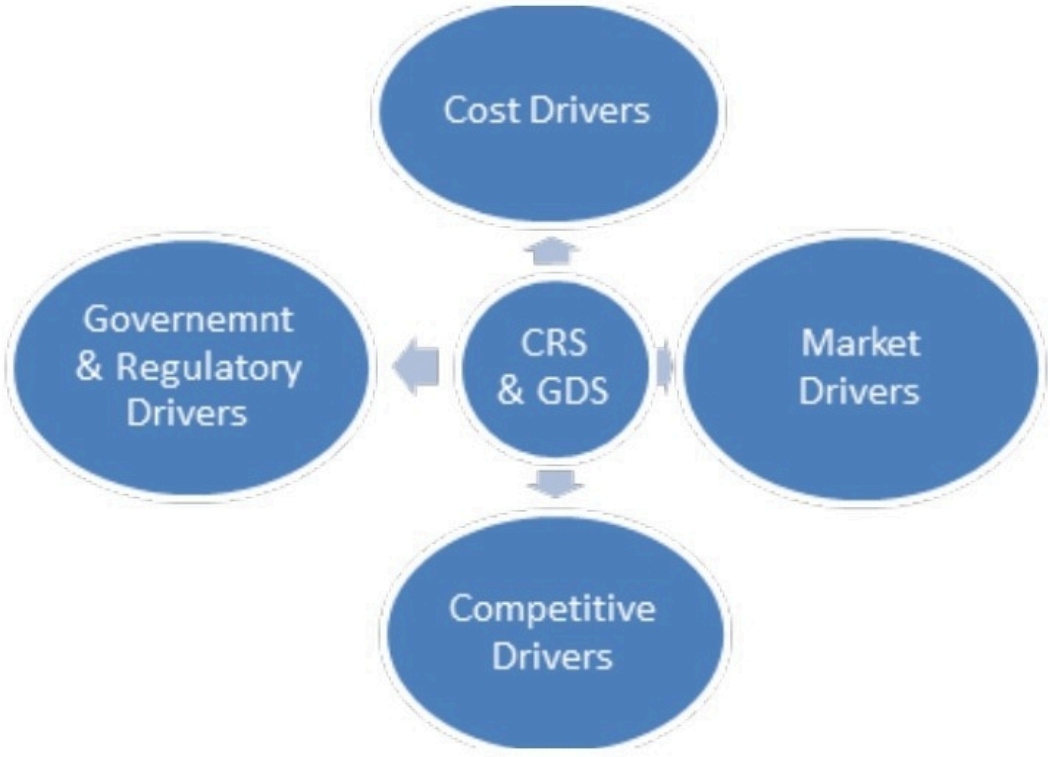
Though GDS has evolved from CRS, both have independent functions that needs co-ordination between them. This section of the chapter will provide discussion into the comparison and relevance of GDS functions with CRS.

GDS is different from a Computer Reservation System which is a reservation system used by the respective vendors. Primary customers of GDS are travel agents (both online and office based) to make reservation on various reservations systems run by the vendors. It is important to note that GDS holds no inventory, the inventory is held on vendors' reservation system itself. A GDS system will have real-time link to the vendor's database. For example, when a travel agency requests a reservation on the service of a particular airline, the GDS system routes the request to the appropriate airline Computer Reservation System. This enables a travel agent with a connection to a single GDS to choose and book various flights, hotels, activities and associated services on all the vendors in the world who are part of that GDS.

A Computer Reservation System is a computerized system for saving and retrieving information when needed related to air travel. CRS were created and used by airlines and at a later point they were finally used in tourism intermediaries like travel agencies.

The best known global GDSs are Amadeus, Galileo, Sabre, and World span with Amadeus being the only one which is largely owned by European airlines. Together with Galileo, it is the leading system in the European market. Galileo, however, also has a strong position in the US market after it merged with an American system. Sabre and World span have been developed in the US. There is one downside of using GDS and it is the fact that it costs airlines money to go through a GDS process. Airlines complain that the prices are too high and therefore some poorer airlines have decided to post their best offers by using their own websites instead of the global distribution system so that they do not go bankrupt.

CRS and GDS seem to have the same functions but the major difference between these two systems is that CRS only provide information about airlines whereas by using GDS you can reserve a ticket, a room in a hotel and also a rental car. CRS and GDS have been acting as the driving force of tourism and hospitality industry across the world. These systems play significant role in driving the tourism consumption at the global stage.



CRS and GDS as a Global Drivers for tourism and hospitality sector

The figure shows the four various aspects or forces of CRS and GDS that drives the tourism industry. The Cost, Government policy, market and competitive forces are the drivers of tourism across the boundaries. Figure displays various components of the driving forces for understanding.

Cost drivers	Market drivers
• Increase efficiency • Low distribution cost • Low communication cost • Low labour cost • Minimisation of waste factor • Facilitator of flexible pricing	• Satisfy sophisticated demand • Flexibility in time of operation • Support specialisation and differentiation • Provide last minute deals • Accurate information • Support relationship marketing strategies for frequent flyers/guests • Quick reaction to demand fluctuation • Multiple/integrated products • Yield management • Corporate intelligence • Marketing research
Government and regulatory drivers	**Competitive drivers**
• Deregulation • Liberalisation • Government supported	• Managing networks of enterprises • Value-added skill building • Flexibility • Knowledge acquisition • Strategic tool • Barrier to entry

Driving forces of GDS and CRS at Global stage

Source: Buhalis (1996)

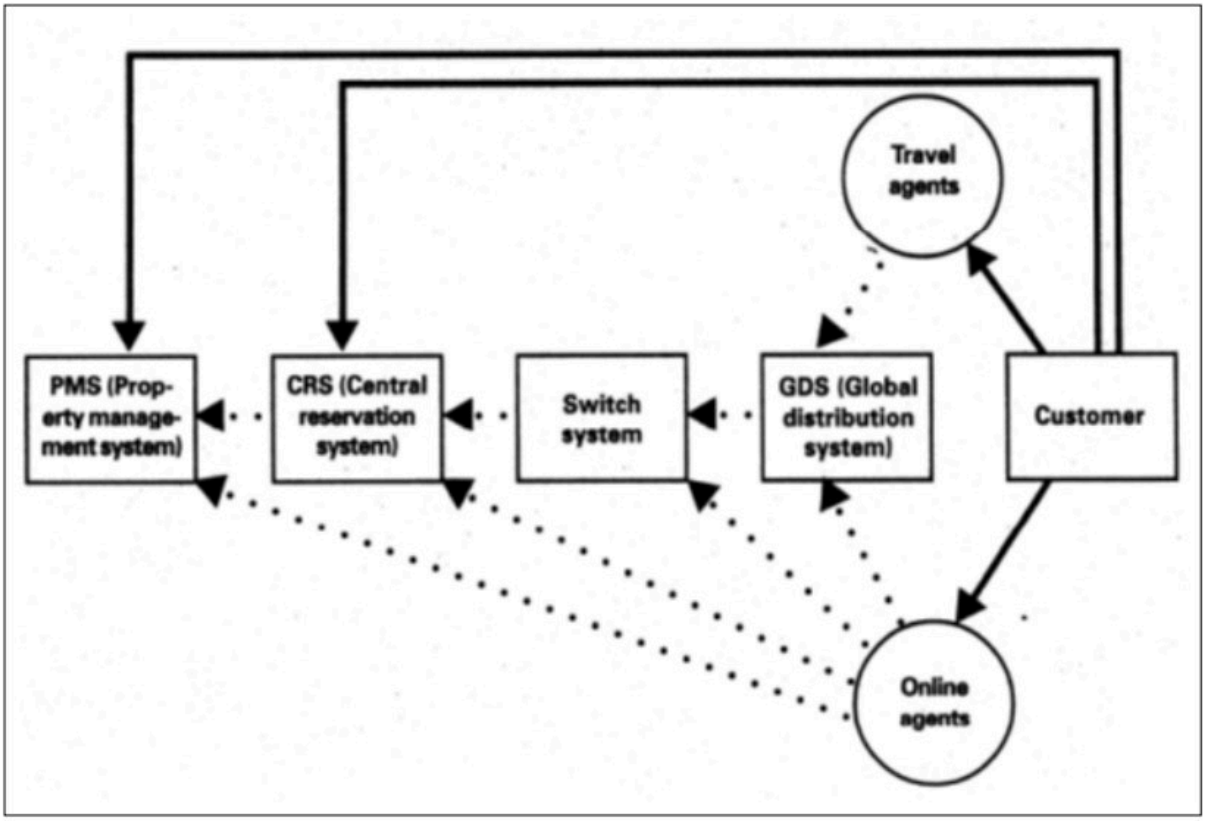
Hotel Distribution System

The distribution system of rooms in the hospitality industry is vast and complex for several reasons. First of all because it concerns a worldwide market and secondly because of the multiplicity of entities related to hotel distribution. Channels of distribution in the Hospitality industry are evaluating at the same time that the tourism sector does. At the beginning, when tourism was being generalized and accessible for a larger number of people a distribution system born – now it is known as the classic or conventional distribution system. The trend today and because of the full adoption of the Internet – supply and demand wants to be relating directly.

The HDS (Hotel Distribution System) involves tries to provide direct access to the customers to ensure lower cost. The tourism and travel related information and consumption can be done through distribution systems and as well as directly. Currently the Hotels try to own internet based and self owned distribution system through which they provide information, and book reservations for the customers directly instead of going through Online travel agent or GDS.

The HDS (Figure) is only one among the distribution system owned by the company to have direct access with the customer to lower the cost and improve efficiency. A company

though works through its distribution system it may not be viable or competitive enough to just operate through one distribution channel therefore, the Hoteliers try to utilise the services of various other channels like GDS, CRS and online travel agents to ensure consolidation of business across various channels.



Process and structure of Hotel Distribution System

Source: Choi and Kimes (2002)

Conclusion

This unit of the book facilitates discussion on the basic understanding on GDS functions and its significance to the tourism sector. The unit offers to understand that the GDS and CRS had emerged into the tourism sector 3 decades before and have evolved over the period of time. Its contribution towards the travel and tourism industries is huge and it still holds very significant role driving the tourism related services at global stage. These Distribution systems though add up to the cost, it certainly supports and offers more efficiency and convenience to both service providers and the service consumers. There are few misconceptions about the dependency of GDS and CRS, and this unit explains how these systems contribute to each other's success and the co-existence nature of them. It is critical to note that as the electronic tourism transforms in the world, distribution channels will become less identifiable as all are networked to different stages and in diverse ways.

It is becoming a common practice today, because of the full adoption of the Internet – supply and demand wants to be relating directly. One of the major challenges posed by GDS is the cost factor though these system offer better access and multiple channel points there is accost factor involved in integrating with GDS. Some of the tourism service providers like airlines, travel agencies and their managed travel customers choose to use the GDS for efficient access to content and for the ability to control preferred supplier usage at the point of sale. As a result, the carriers feel that for corporate customers, GDS fees can be at least partially offset by savings achieved through improved efficiency and processes. They also feel that the agencies should support some technology cost. But in practice there is problem in this assumption as there is already a threat in the name of LCC (Low cost Careers) that puts huge pressure on the competitors to rely on self distribution system rather than the Cost tagged distribution system.

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Lesson 2.2 - Popular Global Distribution Systems (GDS)

Learning Objectives

The learner will be able to appreciate the following at the end of this unit

- Contributions made by the major GDSs like AMADEUS, GALILEO, ABACUS, SABRE and WORLD SPAN to the travel and tourism industry across the world.
- Understand and analyse the business process and their offerings of the major GDSs to the Global tourism market
- Compare and contrast each of their accessibility and networking used for business operations.

Introduction

The previous lesson presented a discussion on GDS and its significance to the players and participants of the tourism and travel sectors. The Emergence of the Information technology and communication systems (ICTs) have paved way for the invention of the GDS systems that integrates and networks various tourism service providers, agents and customers. One of the major strengths of these systems is their flexibility and capability to offer multiple channel options and accessibility to the customers to have information as well as book or reserve travel related services. There are quite a few GDSs operate across the world specialising in different areas of travel and tourism. There are five major players of GDSs across the world namely:

1. Amadeus,
2. Sabre,
3. World span,
4. Abacus and
5. Galileo.

This unit will focus on Understand and analyse the business process and their offerings of the major GDSs to the Global tourism market. Each of these five distribution systems will be analysed in terms of the structure, service, performance and their competitive advantage in the market. The unit will also compare and contrast each of their accessibility and networking used for business operations.