

being a secondary, hidden factor. Naturally, this scenario created demand for schedule-based inventory and caused airlines to deepen their commitment to operational efficiency. Airlines eventually sold off these reservation systems, but the basic schedule-based inventory practices continued.

The introduction of the Internet expanded travelers' choice for points of purchase, thereby creating price competition for airline inventory. In fact, price is the main driver for purchasing travel online.⁹ Travel marketers created online booking engines that allowed travelers to compare available airline inventories by both price and schedule. The availability of price comparison sites, such as kayak.com and travelsupermarket.com, intensifies price competition.

Online reservations represent close to 40% of all U.S. travel in terms of booking dollar value, of which airlines represent 55% of the total.¹⁰ "Carriers' full-service websites now handle between 20% to 30% (for major carriers) and 70% (for low-cost carriers) of their total transactions."¹¹ In fact, the Internet has enabled thousands of tourism suppliers to offer computerized reservation systems that identify the availability of facilities, attractions, accommodation, and transport in real time.

The early airline reservation systems have later been further developed and evolved into what we know today as the Global Distribution System (GDS). GDS now not only allows travel intermediaries to make reservations for hotels, resorts, car rental, railways, cruise lines, and other tourism products, but also provides other integrated marketing services and information. Through a sophisticated computer system, travel intermediaries can sell a variety of product combinations in real time. This benefits the consumers by offering information transparency, broad range of product selection, and price comparison across product options. The six major GDS (i.e., Amadeus, Sabre, Abacus, Apollo, Galileo, and Worldspan) owned by three major GDS companies (i.e., Amadeus, Sabre, and Travelport) process more than 2,000 transactions per minute.¹² They distribute products for more than 550 airlines, over 90,000 hotels, the world's largest car rental companies, hundreds of tour operators, and the major cruise lines to travel agencies. GDS generates about two-thirds of all airline passenger revenue, over 10% of hotel room revenue, and about 30% of car rental revenues in the United States.⁹

Internet-Based Distribution for Hotels

Hotels, especially chain hotels, have been using central reservation systems (CRSs) to make room bookings. Large hotel corporations usually use proprietary CRS, whereas smaller hotel chains or independent hotels could use commercially available reservation software. CRSs are internal systems shared by member hotels. Holiday Inns launched the first hotel CRS, Holidex, in 1965 to enhance the efficiency and cost-effectiveness of lodging product distribution. The modern CRS is integrated into the overall enterprise systems and provides customer profile, preferences, and behavior information for data mining. The reservation functions on hotel websites are part of the CRS. CRS facilitates direct distribution, and at the same time are connected to GDS to make the three-level distribution more efficient.

Due to the advancement of technology, there is a new breed of intermediaries specialized in online lodging product distribution. These intermediaries could be lodging marketing organizations or trade associations that sell rooms for contracted hotel to earn commission. Examples include Utell International, The Leading Hotels of the World, World Hotels & Resorts, and Sterling International. Travelers can make reservations directly on their websites, which are connected to the GDS. Travel agents can also make room reservations on their websites and receive commission.

One research study showed that online travel agencies (OTAs) serve not only as a distribution channel for selling hotel rooms but also as an information source providing customer reviews and comments on their platforms. A case study of actual hotel