

國立中央大學八十七學年度碩士班研究生入學試題卷

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Southwest Airlines: A Process Structure and Technology Case

Southwest Airlines was the seventh largest passenger airline in the United States in 1993, and one of the few airlines that has remained profitable and has even grown in recent years. Its success is based on providing a very limited product and using a simple, focused strategy emphasizing high quality and low price. Southwest is not as well known as other airlines because it does not serve the entire United States and has no international routes. It flies primarily short- to intermediate-range routes, usually 250-750 miles, and provides only one class of service, coach. (Passengers can travel between almost any two cities served by Southwest using two flights.) In contrast to its major competitors, Southwest has also not ventured into other areas of travel and leisure, such as operating hotel or auto rental divisions.

All of Southwest's operational subsystems are designed to support its order-winning dimensions of price and service quality, as defined by the availability of flights, on-time performance, and a minimum of service failures, such as lost baggage and general service complaints. This narrow product focus has made it possible for Southwest to construct its overall service process as a collection of simple, usually low-tech subsystems that use standardized materials and procedures. Let us see how each subsystem works.

1. *Ticketing.* With only one class of service, no reserved seating, and a simple pricing scheme, reservation agents require less training and can process ticket reservations more quickly than other airline agents. The fare structure is so simple that tickets are sold through vending machines at some airports.
2. *Check-in and Boarding.* There is no reserved seating on Southwest's planes: it is first-come, first-served at the airport gate. This avoids the time-consuming problems of passengers not getting the seats they reserved. Passengers know the rules and adjust their expectations; if they want a good seat, they get to the gate early. With this policy, Southwest saves the time and expense of tracking and issuing personalized boarding passes; it uses reusable plastic ones instead.
3. *In-Flight Operations.* One of the most important features of Southwest's production system is that it uses only one type of aircraft, the Boeing 737. This plane was designed specifically for efficient short distance flights. Pilots, flight attendants, and mechanics have to be trained, parts stocked, and service equipment and job procedures designed for only one type of plane.

Because almost all flights are one to two hours long, there is no need for hot foods or for any food even resembling a meal. Only peanuts and beverages are served on most flights, with cookies added for longer ones. Not only does this eliminate the material expense of full meals, but storage and food preparation space is eliminated. Further, flight attendants do not have to spend time preparing food, so fewer attendants (only those required for safety) are needed.

There are several operational benefits of having only one class of service: (1) more seats can be put on each plane; (2) the cost and complexity of the amenities expected in first-class seats, such as a separate set of foods and magazines, can be eliminated; (3) training and job requirements of flight attendants are reduced; and (4) fewer flight attendants are required.

With reduced responsibilities, the flight attendants often have free time to do some of the goofy things that have become a Southwest trademark. They will frequently sing songs and tell jokes to entertain passengers, especially if the flight is late.

4. *Flight Turnaround.* Southwest is known for having the fastest turnaround of flights in the industry (turnaround time is the interval between the time a plane arrives at a destination and the time it is ready to leave on the next flight). By turning around planes in 20 minutes or less (compared with 45 minutes or more for many competitors),

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Southwest is able to fly more flights per day per airplane, utilize its planes better, and spread its fixed costs over more passengers. In addition, with its rapid turnaround, Southwest can offer more flights each day, which provides better customer convenience. For example, two planes assigned to a pair of cities can provide 10 or more flights per day rather than the 6-8 of competitors.

The fast turnaround is due to several factors. (1) Because no meals are served on flights, little food must be brought on board and little garbage has to be removed. Interior clean-up is also minimal. (2) Baggage handling is relatively light because a large proportion of business commuters carry their own baggage onto the plane. (3) Refueling is fast because of the shortness of the flights (little fuel is consumed) and the standardization of the aircraft. (4) All the employees in the turnaround process follow well-designed, standardized procedures, minimizing errors. They work concurrently, and responsibilities are assigned so that all workers need approximately the same amount of time to complete their tasks. Yet employees can help with other jobs when necessary to stay on schedule; it is not uncommon for pilots to vacuum the floors.

5. *Maintenance.* By using only one type of aircraft, Southwest is able to keep its maintenance costs low. Mechanics need to know only one type of aircraft (although there are different versions of it), fewer parts have to be kept in inventory, and substantial learning occurs in working with only one aircraft.

Other aspects of Southwest's operations support its overall strategy. Two of the more important ones are its scheduling and route configuration and its airport selection. In the gate operations of most airlines, gates are often underutilized, either because there is no plane at the gate or because a plane is waiting for turnaround to begin or passengers to board. In contrast, Southwest has the highest utilization rate of gates in the industry. This is due not only to the fast turnaround of planes, but also to the design of their flight schedule and operations at each airport. Although each city is different, Southwest typically has two gates at an airport and serves four to six cities. Flights between that airport and each city are scheduled every hour or every other hour. The arrivals and departures, however, are staggered every 20-30 minutes so that turnaround crews can move from plane to plane as they arrive. At each gate, a plane is scheduled to arrive from a city at, say 8:30 and then return to that city at 9:00. This approach keeps the turnaround crews and the gates almost fully utilized without delaying flights. The system must be working, as Southwest consistently ranks at the top of the industry in on-time performance and fewest customer complaints.

The use of secondary airports has been part of Southwest's strategy for a long time. By using airports such as Love Field in Dallas, Midway Airport in Chicago, and airports in Oakland and Burbank, California, Southwest pays lower landing fees, encounters less congestion, and in many cases is closer to the center of the city than by using the primary airports such as O'Hare.

The central themes in Southwest's service system design are keeping the product mix narrow, focusing on price and service quality, and keeping the system as simple and standardized as possible. What is especially interesting is that some basic design decisions, such as the choice of aircraft or having only one class of service, have beneficial effects in several areas.

Questions

1. Compare Southwest Airlines with other passenger airlines. What are the major differences between their operations?
2. Identify two specific operations methods used by Southwest Airlines that could easily be adopted by other airlines (without major investment).
3. Identify two specific operations methods used by Southwest Airlines that could be adopted by other service producers outside the airline industry. Describe the companies that could adopt them and how these methods would improve the companies.

