Connexion by Boeing Successfully Launches Broadband In-Flight Internet Access

Executive Summary

With headquarters in Chicago, Illinois, Boeing is the largest aerospace company in the world. Created to develop an in-flight, high-speed, data communication network, Connexion by Boeing (CBB) enables passengers to access the Internet in the air. CBB solicited advice and counsel from several service-based companies, and Cisco was one of the key companies with which CBB developed a working relationship. Part of the Cisco role was to continue to help CBB 'change the DNA' of the company by shifting from a manufacturing mindset to a customer-centric consumer services company. Successfully launched in July of 2004, CBB already has garnered high marks for its venture into consumer in-flight Internet services, rating 94 percent customer satisfaction (satisfied and very satisfied) for its first year of operation.

Boeing developed a mobile, global broadband communications network with an array of high-speed data communication services by combining satellite networks with a ground-based network. Calling the new effort 'Connexion by Boeing,' the company enables commercial airlines to provide passengers access to the Internet, send and receive e-mail, watch live, global television, and keep up with news and information. Boeing's goal was to make high-speed communications in the sky similar to that currently experienced by most people in their homes or offices, thereby helping people to stay in touch even while moving 500 miles per hour at an altitude of 30,000 feet.

Business Challenge

As the largest aerospace company in the world, the Boeing Company is also the United States' leading exporter. Boeing's extensive global reach includes customers in 145 countries and manufacturing operations throughout the United States, Canada, and Australia.

Since its beginning in 1916, Boeing's traditional heritage has been one of manufacturing excellence in the aerospace industry, including commercial jetliners, military aircraft, rotorcraft, electronic and defense systems, missiles, rocket engines, launch vehicles, and advanced information and communication systems.

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Consistent with its moniker, "forever new frontiers," Boeing wanted to become a leader in the new mobile economy. To Boeing, that meant helping its airline customers and their passengers stay globally connected at all times. "We realized that travelers only had a few choices, such as reading a book, working via laptop offline, or watching a movie if available," says Scott Carson, former president of Connexion by Boeing and current vice president of sales for Boeing Commercial Airplanes. During Carson's tenure as president, he helped launch Boeing's vision of giving air travel passengers the ability to conduct business, shop online, e-mail family, or keep an eye on their stock portfolios. "The airplane will begin to look like your home or office and the experience of travel will be greatly enhanced," Carson says.

To achieve this goal, Boeing developed a global broadband communications network and other services that would provide air travelers with an array of high-speed data communication services via a combined satellite and ground-based network—for the same price of Internet access as a traveler would experience in a hotel or coffee shop. Connexion by Boeing pioneered a high-speed, in-flight connectivity service that empowers airplane passengers to access the Internet, send and receive e-mail, watch television, make or modify travel plans, and keep up with news and information. Boeing's goal was to extend home- and office-like connectivity into the skies, helping people to stay in touch and be more productive even while moving 500 miles per hour at an altitude of 30,000 feet.

Solution

Several years ago, Boeing began to test the feasibility of the concept and, over time, proved that stable and reliable connectivity could be established via satellite with an aircraft in-flight. "Boeing had developed the core antenna and communication technology as part of our defense business activities," says Joe Shaheen, director of operational services, Connexion by Boeing. "Through a phased array antenna we were able to do broadband data transfers to a moving plane at high altitudes and fast speeds. Then we started seeing the rise in Internet connectivity and the need for Wi-Fi hotspots. We envisioned putting the business traveler's 'office' into the airplane."

"Connexion by Boeing approached this activity for key business reasons. We approached the insight with the goal of making real change, real improvements."

—Laurette Koellner, President, Connexion by Boeing

Already a strong customer of Cisco, Boeing worked together with Cisco to provide products that support the build-out of the network as well as resolved the mobility solution for the service delivery network. This infrastructure included mission-critical call centers and service provider-like applications that covered the gamut from customer-facing to back-office environment. Connexion established an environment that was service provider-oriented rather than a standard enterprise IT environment. Scalability, reliability, and intelligent network services were required components to ensure end-to-end service availability between the space-based and ground-based communications.

The other critical challenge centered on the transformation of the Boeing culture, moving from an R&D, hardware design, and large-scale airplane manufacturer orientation to the fast-paced dynamic environment of a customer-centric, consumer-oriented service business. Connexion by Boeing leaders needed to shift Boeing's long-standing business model in order to fundamentally reshape the company's DNA to ensure the success of its new, important venture.

"We learned from Cisco how important it is to have an easily accessible central repository of data to track the performance of the service, insight to our customer interactions, as well as a near real-time assessment of the key business metrics. In addition, Connexion by Boeing is focused on the concept and approach of maximizing all customer touch points across the entire organization."

—Joe Shaheen, Director Operational Services

Reshaping Boeing's DNA

Through a two-year relationship, Cisco assisted Connexion's transformation through a series of high-touch and high-impact engagements with the sole purpose of helping Connexion achieve a successful Full-Scale Launch (FSL). Cisco shared lessons learned, customer-centric thought leadership, and solution-enabling insights that helped Connexion's internal transformation, along with Connexion's service-oriented, customer-facing, and revenue-generation transformations. A sampling of major events included a senior executive exchange with Cisco CEO John Chambers, a Blue Ribbon panel, customer-centric workshops, Full-Scale Launch Operational Readiness Reviews, and a Boeing-wide Services Summit.

Cisco participated in CBB's Blue Ribbon panel, a strategy review event that pulled together experts in the industry from whom CBB wanted to learn. "Cisco hit home the importance of a customer-centric and service-oriented approach," Carson says. "In fact, we began to understand the implications of a service business." It was at this event that Carson and his team learned the importance of standing in the consumer's shoes and relentlessly driving toward a consumer friendly, user approach. "Doing it the way we had been doing it, solely through our engineering eyes, just wasn't going to cut it anymore."

The Blue Ribbon panel was followed by a series of customer-centric workshops which focused on three fundamentals—the customer angle, the operational angle, and the product/service shaping angle. Connexion by Boeing learned how Cisco itself evolved from a hardware vendor to offering advanced services and service-oriented solutions. Connexion also learned the importance of finding trusted partners to out-task noncore functions, such as call centers and WAN service provider services.

"What we learned from Cisco is how to leverage real-time point of purchase sales data for fast reaction," says David Friedman, vice president, marketing and direct sales, Connexion by Boeing. "We also learned that in order to be more responsive to market needs, we had to re-analyze which items to outsource versus which to keep in-house," Friedman recalls. "There are certain things we didn't need to be experts on and that represented yet another cultural change for some of the people in this environment."

Connexion by Boeing attributes much of the success of its Full-Scale Launch effort directly to the culture change, customer service model, go-to-market model, and operations model that leverages people, process, and technology to enact and facilitate successful and positive change. Driving the business toward customer centricity and a services-oriented mentality allowed Connexion by Boeing to achieve both its objectives and the customer satisfaction results for which the business strived. "Customers have told us that they'll make their airline reservations in the future based on which flights have Connexion by Boeing service," Koellner says. "That's the share shift that the airlines are looking for."

Business Value

With its consumer service launched in the spring of 2004, Connexion by Boeing is revolutionizing the way travelers communicate, stay informed, and entertain themselves. By providing high-speed, two-way Internet-based connectivity to aircraft in flight, Connexion by Boeing currently serves two important market segments—commercial aircraft operators and their passengers, and executive aircraft, including operators of private and government executive jets. Using laptops, passengers can use secure, high-speed access to the Internet, personal and business e-mail accounts, and company intranets—all at home or office network-like speeds.

The service also brings value to aircraft operators, enabling them to use Connexion by Boeing's extraordinary bandwidth to obtain operational efficiencies, improve customer service, and enhance security. Leading commercial airlines including Lufthansa German Airlines, Japan Airlines, Scandinavian Airlines System (SAS), ANA, and Singapore Airlines are currently introducing the Connexion by Boeing service on major international routes. Korean Air, El Al, and Asiana have announced plans to equip their long-range fleets with the service.

Corporate clients are also taking notice. Siemens AG signed an agreement with CBB to become its first global customer for real-time, high-speed in-flight Internet services, giving 200,000 traveling Siemens employees the opportunity to remain connected in the air. By using the Connexion by Boeing service onboard an already-equipped Lufthansa aircraft, Siemens employees are now able to connect real-time to their corporate virtual private network, send and receive e-mails with attachments, and surf the Internet while in the air.

High Marks for Customer Satisfaction

Entering its second year of consumer service operation, CBB has already garnered high marks for its venture into consumer service. "We conducted a third-party survey of several hundred customers who used the service in 2004," says Friedman. "We had a 94 percent customer satisfaction rating (satisfied and very satisfied) for our first year of operation."

Not only did customers report that they were satisfied with the speed of the connection and the price-to-value ratio, 65 percent of respondents also stated that availability of the service would have an impact on their choice of airline for future travel, thus creating a competitive advantage for early adopting airlines in an extremely competitive industry.

In addition to high marks from its users, Connexion by Boeing can offer other benefits:

- **Increased productivity for airlines:** Airplane health checks can be conducted in midair, expediting airplane maintenance. "We will be able to help determine exactly what the issue is and, instead of waiting for the plane to get to the gate in three or five hours, maintenance activity can be ready and at the gate when the plane lands," says Shaheen. "This creates significant operational efficiency opportunities for the airlines."
- **Improved bottom line:** Telemedicine allows patients to be monitored in the air and medical data transmitted to medical professionals on the ground, potentially diverting unnecessary medical diversions. "When a passenger gets sick on a plane, the cost of a diversion is about a quarter of a million dollars," Friedman says. "If you can prevent as few as two diversions a year, the system adds huge value for the airline."
- **Enhanced service:** Passengers can reschedule flights due to delays or missed connections before landing, along with having access to other airline-related services. This relieves stress for airline passengers and ground personnel and reduces delay-related costs for the airlines.
- **Greater security:** The CBB service has the potential for real-time transmission of data from the Flight Data Recorder, cabin, or cockpit video which enhances situational awareness in emergency situations.
- **Competitive differentiator:** Applications such as Electronic Flight Bag (handheld device for pilots containing maps, graphics, and weather information), electronic supply procurement, and passenger health and monitoring result in customer preference and loyalty and help Boeing aircraft fly above the competition.

Next Steps

Connexion by Boeing is entering the maritime market with its high-speed Internet access services. "That industry also needs broadband access to information and data," Koellner says. In addition, CBB envisions an evolution of content over time that will further enrich the services that are currently available through its portfolio of services.

"As we begin our second year of in-flight Internet service for passengers, it's heartening to look back and see all that we've accomplished," Koellner says. "It's even more exciting for the team to look at all the opportunities that lie ahead."

MORE INFORMATION

For further information on Cisco Internet business solutions, visit: **http://www.cisco.com/go/ibsg.**

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