Patricia Seybold Group

Customers.com® Case Study

Miller Aviation

Building e-business Connections on the Flight Line

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Miller Aviation: Building e-business Connections on the Flight Line

Capitalizing on an Extended Business Partnership in the Age of the Web

By Geoffrey E. Bock

Executive Summary

Miller Aviation is a long-standing IBM customer in the general aviation services and corporate aircraft charter market. As an IBM business partner, Miller Aviation also has extensive experience in developing and deploying its own packaged business application. Recently acquired by Corporate Wings, the company is now in the midst of creating and supporting an interactive Web presence that serves primarily as a marketing tool for the combined operations of the two firms.

By relying on the capabilities of Lotus Domino, Notes, and Net.Data running on AS/400 Systems, Miller Aviation's experiences illustrate how a well-established solution provider can leverage its existing expertise with IBM products and technologies, adapt its know-how to the requirements of networked connections over the Internet and the Web, and begin to serve both existing customers and prospects in new ways.

Customers.com Critical Success Factors in the Miller Aviation Story			
	Target the right customers		Let customers help themselves
	Own the customer's total experience	✭	Help customers do their jobs
✓	Streamline business processes that impact the customer		Deliver personalized service
	Provide a 360º view of the customer relationship		Foster Community
✭	= Featured in this discussion	✓	= Touched on in this discussion

✓ Streamline Business Processes That Impact the Customer

Miller Aviation uses the Internet and the Web to expand the ways in which customers can gather information about the company and its services.

✭ Help Customers Do Their Jobs

Miller Aviation is beginning to offer a series of interactive applications where customers can query various databases over the Web, find answers to specific questions, and place orders for aircraft spare parts.

MILLER AVIATION: BUILDING e-business CONNECTIONS ON THE FLIGHT LINE

Miller Aviation, recently acquired by Corporate Wings, is both a general aviation services firm that includes a corporate aircraft charter business and an information services organization that deploys packaged applications in the small-business marketplace. With its combined expertise and long-standing technology know-how, it is creating an interactive Web presence that illustrates the adaptability of IBM products and solutions, as well as the business benefits of an extended business partnership.

Business Context: A Fixed Base Operator for General Aviation

Background: Building on the IBM Experience

FROM AN AVOCATION TO A VOCATION. Miller Aviation got its start in 1975, when Jim Miller teamed up with Ralph and Nick Cerretani to launch an aviation services company at the TriCities Airport in Endicott, New York. Miller had gone to work for the IBM Federal Systems Division in 1967, right after graduating from Penn State as an associate engineer. While working for IBM during the day, he found that he was spending more and more time in aviation at small airports, and he eventually decided to transform his avocation into his vocation.

The three co-founders began a maintenance and services operation for general aviation aircraft. As the business grew, Miller Aviation expanded to become a Fixed Base Operator (FBO), where it also sold aircraft spare parts and previously owned airplanes, and started to charter executive jets to corporations. It also moved its home base to the Binghamton Regional Airport in neighboring Johnson City, New York.

A NEED FOR MANAGEMENT REPORTS. Right from the start, Miller missed the "wonderful reports" about business operations that he had routinely received at IBM, then only available on multimillion-dollar mainframes. But, with the advent of microprocessors, silicon memory chips, and other technological innovations, the costs of computer hardware steadily declined throughout the 1970s. Taking advantage of the shifting landscape, IBM began to roll out ever more affordable systems and started to target the needs of small businesses.

Miller bought his first System/34 in 1979. He immediately developed a series of accounting, financial track-

ing, and operations applications that would meet his company's needs on the general aviation flight line.

Creating a Technology Services Division

AN EXPANDING PARTNERSHIP. In the early 1980s, IBM sought to penetrate new markets with its small business systems. The company came to realize that selling to small businesses required different product development and marketing strategies than those used when servicing large corporations. Departing from its long-standing practice of producing complete business systems on its own--combining hardware, software, and peripherals--IBM began to develop a series of business partnerships with third-party application developers in targeted markets.

In 1983, Carl Conti, then executive director of IBM's Glendale Research Labs and located in Endicott, approach Miller with an attractive business proposition: a partnership where IBM would resell the Miller Aviation accounting and flight operations package to corporate aviation departments and general aviation services firms across the United States.

With IBM backing and support, Miller continued to develop and enhance his application package for the aviation services marketplace, porting it next to the System/36 in 1984, and then to the AS/400 in 1988.

In addition, Miller set up a separate division, Miller Information Technologies, and steadily hired the specialized technical staff to tailor the packaged application to the specific operational environments of individual FBO customers. This division evolved into its own line of business, largely separate from aircraft operations on the flight line.

FBO.MIS: A GREEN SCREEN BUSINESS SYSTEM. This "green screen" application package, now sold as the FBO.MIS System, contains over 5,000

separate screens and six million lines of code. It includes all of the capabilities of a small-business accounting package, including accounts receivable, accounts payable, and general ledger applications.

FBO.MIS integrates a range of specialized applications for general aviation into the business system, such as aircraft maintenance tracking, job-costing, charter aircraft scheduling, and the management of line services. Thus, mechanics can track their time and parts used to repair individual airplanes, accounting can immediately invoice the customers, and line managers can have up-to-date reports of their departments' activities. Initially deployed using 5250 terminals connected to a shared system, the packaged application now also runs on PC clients accessing a back-end application server.

A BOUTIQUE INFORMATION SERVICES FIRM. Through its long-standing relationship with IBM as well as its close proximity to major IBM engineering facilities, Miller IT has developed into a highly technical "boutique" information services organization. It specializes in setting up AS/400 systems and integrating e-mail systems.

Beyond its initial focus on the aviation marketplace, Miller IT has a deep knowledge of IBM solutions for the small business marketplace and an expanding list of ordinary business customers. It tackles complex systems problems requiring a high technical skill level.

Miller IT became a Lotus Notes VAR in 1996. It installed Notes first within Miller Aviation and now includes Notes-related solutions within its portfolio of information services.

Miller IT has continued to push the envelope of opportunity in the small-business marketplace. With the advent of the Web and IBM's efforts to support e-business initiatives in cyberspace, Miller IT has extended its

> ### Business Benefits
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> - Miller Aviation's Web site provides a "7 by 24" presence in the global marketplace. Site traffic continues to grow and now reaches more than 1,400 hits per day, a substantial amount of activity for its particular market niche. Inquiries for spare parts have come from as far away as South Africa and New Zealand.
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> - As a long-standing IBM customer and business partner, Miller Aviation has deployed an overall set of e-business solutions that directly extend the capabilities of its existing investments in AS/400 systems and Lotus Notes/Domino to the Web.

AS/400 systems expertise to deploying a variety of networked business solutions.

The Business Environment: A Growing Marketplace

ACQUISITION BY CORPORATE WINGS. Miller Aviation operates in a growing and continually changing marketplace. In 1997, it had combined revenues (from both aircraft services and information services) of $60 million, employed 180 people, and owned 14 airplanes.

In September 1998, Miller Aviation was acquired by another FBO, Corporate Wings of Cleveland, Ohio, for $12.5 million. The combined firm now has the second largest fleet dedicated to chartered flights in the United States--with 41 jets, 500 employees, and 1998 projected revenues of $100 million. Expanding beyond its existing terminals in Cleveland and Columbus (Ohio), Rochester (New York), and South Bend (Indiana), Corporate Wings gains an operational base in Johnson City, close to the New York City metropolitan area, where there is a strong demand for executive aircraft charters.

Although the organizational structure for running the information services subsidiary within the new corporation has yet to be worked out, Miller IT has gained an expanded market for its FBO.MIS application and a growing need to manage information about aircraft services across multiple operational centers.

CUSTOMERS AND KEY STAKEHOLDERS. The customers for Miller IT's FBO.MIS application are the small to medium-sized operators with roughly 100 to 150 employees who service general aviation aircraft. The application is now installed at over 100 sites around the United States and is used by roughly at 1 out of every 15 firms in the FBO marketplace. In addition, as a Notes VAR and specialist on AS/400 systems, Miller IT also services a growing number of small busi-

nesses throughout the Northeast, building and customizing various kinds of business systems.

Miller Aviation remains both a key customer and the major stakeholder. Miller IT continues to deploy solutions that meet the needs of its corporate parent and then incorporates its know-how into enhancements for Notes and other software applications installed at other customer sites.

COMPETITION. Miller IT finds that it is in a class by itself with the price range of its FBO.MIS application, a solution costing between $100,000 and $500,000. By comparison, flight services operators at major airports and major airlines require substantially more complex systems that are priced between $3 million and $5 million. PC-based solutions, appropriate only for managing very simple operations at a single location, cost under $10,000.

Miller IT is also gaining on its competition for serving general aviation installations. Over the past two years,

Miller IT has made the investment to ensure that all of its software applications are year 2000 (Y2K) compliant. It is now rapidly attracting new accounts--general aviation services firms that realize that they need to retire their non-compliant business applications before they encounter the "millennium bug." Included among the new accounts that are currently installing FBO.MIS are the existing Corporate Wings operations.

Business Problem/Initiative/Opportunity

MANAGING A PROFITABLE ENTERPRISE. With its acquisition, Miller Aviation's primary business remains a services-oriented enterprise, albeit now involving many more people and airplanes. As an FBO, it still needs to manage executive aircraft charters and their flight crews, service small planes at a number of airports, track maintenance and repairs down to the smallest details, and then ensure that bills are properly sent and payments received. It needs to maintain the aircraft repair logs to ensure compliance with FAA regulations

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Electronic Services from Miller Aviation Technology

Illustration. Powered by Notes/Domino, the home page for Miller Information Technologies provides one-click access to a wide range of electronic services, including interactive support information about the FBO.MIS business application.

and mandates, as well as the financial records to ensure proper accounting of all transactions.

Over the next 12 months, Miller Aviation anticipates integrating its business activities with those of its new corporate parent, continuing to use the most appropriate systems and applications available for its needs. It continually seeks to find ways to enhance its relationships with its customers and to improve the efficiency of its day-to-day operations.

FOUNDATIONS FOR e-business SOLUTIONS. As a Notes VAR and a sophisticated integrator for small business systems, Miller IT needs to maintain an up-to-date infrastructure servicing first its current customer accounts, including Miller Aviation operations. It is continually exploring opportunities that capitalize on its customers' investments in information systems and that enable customers to extract additional business value with modest costs. Leveraging the capabilities of AS/400 systems and opening them up to Web access is a case in point.

As part of Miller Aviation's emphasis on building relationships with its customers, Miller IT has begun to enhance and extend the company's existing IT infrastructure. It is now developing ways whereby Web access might both improve internal business operations and build e-business opportunities with an ever-expanding network of general aviation customers.

The e-business Initiatives

Organizational Decisions

A TACTICAL APPROACH. Miller Aviation has based its e-business initiatives on a set of tactical decisions, using available technologies to create new business opportunities. It initially started its corporate Web site in early 1997 as a way of publishing marketing information about the company. It steadily adds new content about a wide range of aviation services on a monthly basis.

Led by Clinton Smart, software development manager, the technical staff within Miller IT has made it a point to identify and then to quickly implement various Internet-based applications that utilize Miller Aviation's existing infrastructure and data sources.

For example, many FBOs and corporate aviation departments now have Internet access. Managers, mechanics, and pilots at customer sites routinely surf the Web looking for information about spare parts or airplane charters. To better serve its marketplace, Miller Aviation has added Internet access to its core business application and now uses the Web to distribute information about its aviation services.

EVOLVING THE TECHNICAL INFRASTRUCTURE: ENABLING TECHNOLOGIES

Miller Aviation relies on the capabilities of Lotus Notes/Domino 4.6 and DB2 to create a seamless, interactive e-business environment for its customers.

The company deploys its public Web site on a Windows NT system and then transparently accesses AS/400 systems for secure document storage and data retrieval. Notes/Domino running on an AS/400 manages all of the security and access control activities, automatically registering individual users and enabling them to access the relevant areas of the site.

Notes/Domino is the primary document repository for the company's Web site. Once they have secured access to the protected portion of the site, customers can browse through the document listings by title, author, and date created to find updated documentation and articles about Miller IT applications.

Customers query the FAA aircraft registration and program temporary fix (PTF) databases directly from their Web browsers. IBM's Net.Data toolkit provides the capability to collect database queries from HTML forms, pass them to DB2 databases running on the AS/400, and return the results as ordinary Web pages.

The FBO.MIS application is currently written in ILE/RPG and accesses a shared DB2 database running on an AS/400. Remote customers connect to the centrally managed application using a variety of communications protocols. When TCP/IP network connections are used, the application runs IBM's Client Access product, which is an integral component of Personal Communications AS/400.

Investment

INTERNALLY FUNDED ACTIVITIES. Using existing systems resources and staff, Miller IT has developed an interactive online presence for Miller Aviation. Miller IT publishes extensive information about the company's operations on the corporate Web site and provides interactive access to a number of existing databases running on the AS/400.

In addition, without substantial additional expenses, Miller IT has adapted the capabilities of FBO.MIS to run remotely and in a highly secure manner over the Internet.

Serving Current Customers at Multiple Airports

REMOTE ACCESS TO THE LINE SERVICE MODULE. Small aircraft pilots and owners depend upon flight line services. When they fly into an airport, they usually need to have their aircraft fueled and serviced. They often want a hotel for the night or a rental car for traveling the last few miles to their destinations. FBOs build customer loyalty by retaining records of customers' prior activities and remembering pilots' and operators' preferences.

The FBO.MIS application includes a line service module for managing and tracking flight line services, regardless of the airport where pilots land. All of the Miller Aviation facilities access a shared application and a common database, using TCP/IP as the networking protocol and interconnecting through a virtual private network (VPN) on the public Internet or 56 KBPS leased lines. As a result, wherever they land, Miller Aviation is able to track its customers' activities, provide personalized services at remote locations, and also offer centralized billing and accounting.

An Expanded Web Access

PUBLICIZING AVIATION SERVICES. Miller Aviation has an extensive Web presence that serves as a marketing tool for its combined operations with Corporate Wings. The site identifies the company's various services and profiles the staff who deliver them.

For instance, the Web site lists the different types of aircraft available for charter. It includes descriptions of the individual planes' capacities and flight ranges, to-

gether with exterior and interior pictures. Most important, it lists the phone number to call to receive a price quote and arrange for a charter.

The site features access to an FAA aircraft registry as an example of the various interactive databases running at Miller Aviation. The registry database was created in about three days by Tony Shuba, a programmer/analyst at Miller IT. Using Net.Data, users can input the tail numbers of individual planes on the Web and then find the owner's name, address, certification, and aircraft specifications.

EVOLVING THE TECHNICAL INFRASTRUCTURE: INFORMATION ASSETS

Miller Aviation transparently provides Web access to its existing information assets that are stored in various Notes document databases and DB2 relational databases. Consequently, the company need not alter its existing methods of operations nor invest in additional information repositories. Rather, it can distribute information on the Web as needed to meet its marketing goals and business objectives.

SUPPORTING INFORMATION SERVICES. Miller IT also uses the Web site to support the FBO.MIS application and communicate directly with general aviation and corporate aviation operators that have installed the package.

Miller IT has organized its support activities into a number of sections on the site. Customers first automatically register for access online and can then do the following:

- Access a series of online discussions regarding the line service and the aircraft maintenance tracking modules. Support specialists describe solutions to reported problems and post solutions.

- Find the latest FBO.MIS manuals in an online document library. Customers can find and then download the latest revisions of all the system documentation, as well as several technical newsletters, tips and techniques, and information about Notes.

- Query an interactive database to find the latest program temporary fixes (PTFs). Customers can quickly view a listing of all the bug fixes, which are catego-

rized within existing program modules, together with descriptions of what they contain.

As shown in the illustration on page 4, Notes/Domino provides the enabling infrastructure that directly links internal business processes with public Internet access. Miller IT staff add new contents to their existing Notes databases and then automatically publish them on the corporate Web site.

Exploring Opportunities for Electronic Commerce

ORDERING SPARE PARTS. Miller Aviation runs a large spare parts operation out of its facility in Johnson City. It stocks the majority of Cessna's remanufactured components and maintains its own extensive exchange pool of additional items. It also distributes a surplus parts listing to 15 other FBOs around the country, notifying them of the part numbers, descriptions, conditions, and asking prices for a wide variety of items.

The parts department is steadily expanding its on-line access capabilities. It publishes a partial listing of some of the spare parts that it currently has in inventory as a precursor to an interactive database inquiry application. In addition to calling the company over a toll free number or sending a fax, aircraft mechanics can now directly e-mail their inquiries to the parts manager at any time of the day or night. They only have to fill out a form, listing their e-mail address or phone number and the description of the aircraft parts that they need, and they can receive a quote on the next business day.

IBM's Value

IBM's definition of e-business is IT + Internet—that is, leveraging the power of existing systems and the opportunity of the Internet to transform a company's business.

IBM identifies four specific areas of value that it provides to its e-business customers.

✓	It's about business, not just technology.
✓	Start simple. Grow fast.
✓	Build on what you have.
✓	Expertise you can trust.

In the Miller Aviation case, IBM's major contribution is based on an ongoing business partnership, extending back more than two decades, with a firm serving the general aviation marketplace. IBM continues to provide systems expertise and solutions--most recently, with Lotus Domino, Notes, and Net.Data--so that customers can access existing repositories running primarily on AS/400 systems. Moreover, Miller Aviation is able to capitalize on its existing know-how and adapt its IBM-oriented environment to the interactive, customer-facing requirements of the Web.

Results

Reaching an Expanding Marketplace

TWENTY-FOUR HOUR ACCESS. With its corporate Web site, Miller Aviation has a 24-hour presence in the global marketplace for aviation services. For instance, mechanics working on aircraft all over the world are beginning to do business with the Miller Aviation parts department. E-mail inquiries have come from as far away as South Africa and New Zealand, enabling Miller Aviation to easily reach into new markets.

Potential customers shopping for pre-owned aircraft can easily find the listings of the planes available for sale from Miller Aviation. So far, one person has even bought a corporate jet after first finding the listing on the corporate Web site. Many others have found background information about the company and its services on the site.

SITE TRAFFIC. Miller Aviation has been logging site traffic since March 1998 as a measure of its reach into cyberspace.

Since then, it reports just under 10,000 hits for its home page and roughly 1,400 hits per day on its site. Given its specialized focus, this is a substantial amount of activity for its particular market niche.

A Compelling Value Proposition

EXTENDING AN EXISTING INFRASTRUCTURE. Moreover, Miller Aviation has built its Web presence without any substantial investments in additional infor-

mation technologies. The site runs on a combination of its Windows NT and AS/400 systems and is closely linked with other aspects of its computer operations.

Miller Aviation uses Notes/Domino both to streamline its internal business processes and to publish content on its Web site. E-mail messages received from customers over the Web are automatically routed to the appropriate individuals using Notes Mail.

For those areas of the site that require registration and security, Notes/Domino manages the Web-based access control as an integral part of its security activities. Net.Data provides the forms and access routines for querying the contents of existing DB2 databases.

Finally, installations relying on Miller IT's FBO.MIS application to support general aviation customers at multiple airports can query the shared database over the Internet. As an AS/400-based business application, Miller IT's solution can support multiple modes of remote network access, including running as a virtual private network over the public Internet.

"Miller remains committed to basing its business strategies on IBM technologies and solutions."

Future Directions

An Expanded Web Presence

Miller Aviation is steadily adding content to its Web site, as it recognizes promising opportunities. It is continually providing updated information about the additional services that it now offers as a result of its merger with Corporate Wings.

Aviation customers and prospects are frequently looking for various kinds of information about spare parts, executive charters, or aircraft to purchase. Miller IT is planning to add a number of additional interactive applications to the site, using the capabilities of Web-based forms to access existing databases. In the near future, mechanics will be able to query a database over the Web and check on the availability of specific spare parts on their own, before placing their orders with the parts department. Travel planners looking to schedule a corporate charter will be able to verify the availability of individual aircraft before they contact Miller Aviation.

A Continued Commitment to IBM Solutions

Miller IT remains committed to basing its business strategies on IBM technologies and solutions. It is also continuing to invest the resources to keep its FBO.MIS application current and up–to-date.

Now that it is Y2K compliant, Miller IT is investigating how best to add additional functionality to this business system so that customers at remote sites, linked together by secure Internet connections, can readily share the information they need.
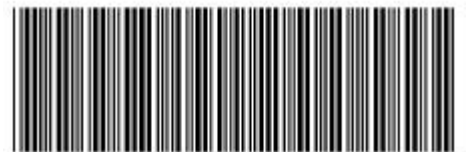
Currently, FBO.MIS is a self-contained, character-based application running on the AS/400. Over the next two years, Miller IT is planning to build on the strength of its centrally managed system and introduce a component-based solution for the FBO marketplace, using the capabilities of IBM's San Francisco Project. Miller IT will update the capabilities of the application to include such things as automatic faxing, e-mail, and the ability to incorporate external information sources. It will also add an intuitive point-and-click capability so that FBO.MIS will have the look and feel of a Web-based e-business application.

LESSONS LEARNED FROM THE MILLER AVIATION STORY	TAKEAWAYS FROM THE MILLER AVIATION STORY
1. Extend the capabilities of an existing infrastructure. Miller Aviation has developed its Web presence in a modular fashion.	1. Lotus Domino and Notes represent a sound investment for a small business solution. Miller Aviation continues to run its business internally using conventional Notes document databases, and it can then directly publish information on the Web using the Domino server.
2. The content of a Web site is constantly changing. Customers from around the world are continually looking for new and different information. Be prepared to respond to their requests.	2. Miller Aviation now offers services to aviation customers at multiple remote locations by accessing a single business application over the Internet. High-speed network connections substantially improve the quality of customer service, even with a character-cell-oriented "green screen" business system.
3. A business application is easily managed in a centralized manner that will substantially improve the quality of customer service. The Internet can provide high-speed, highly secure access to a centralized database from many remote locations.	

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