

Jet Setters

Why SAP NetWeaver Took Off at Bombardier Aerospace

What was the most rewarding lesson that Bombardier Aerospace — the world's third largest manufacturer of jet aircraft — learned implementing SAP NetWeaver? The company no longer has to discount ideas because of IT complexity or cost.

“We shouldn't dismiss any solutions or opportunities without seeing if SAP NetWeaver can handle it,” says Khalil Nasrallah, director of emerging technologies at Bombardier Aerospace in Montréal.

Bombardier shares six lessons from recent SAP NetWeaver projects.

Nasrallah is the first to tell you that he has been pleasantly surprised. Bombardier, which specializes in jets for regional transportation and business travel and in specialized craft such as amphibious jets, has been an SAP R/3 customer since 1997. Two years ago, the company began implementing pieces of SAP NetWeaver — SAP Enterprise Portal (SAP EP) and SAP Business Information Warehouse (SAP BW). “We first used these technologies as a foundation to help us collaborate with external parties,” Nasrallah says.

by **Evan J. Albright**, Senior Editor





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Khalil Nasrallah
Director of Emerging Technologies
Bombardier Aerospace

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One reason for the strong emphasis on solving problems with SAP NetWeaver is that Bombardier has internal SAP competencies. "When we started with SAP, it was eight to one, consultants versus Bombardier employees," says Nasrallah. The company decided to bring that expertise in-house by creating a competency center in 2000, which is when Nasrallah came on board. "We've moved from a partner-driven implementation to an internal consultancy at Bombardier. Now we're more like 10 or 12 to one in terms of Bombardier employees versus consultants."

Bombardier Aerospace has all the required skill sets for implementing SAP, from application specialists to project management office (PMO) professionals, from administrators to change management experts. By bringing that expertise in-house, Bombardier has been able to apply SAP technology to a wide variety of business issues and opportunities.

Vendor Portal

"We have pressure to collaborate with external parties: vendors, customers, and partners," says Nasrallah. "So we asked, 'What's the best way to do it?'"

Procurement was a process mired in faxes and emails and hours upon hours of human intervention. Implementing SAP R/3 enabled some efficiency. The company generated purchase orders (POs), for example, in R/3 using material requirements planning (MRP), then published them to a fax server for transmittal to vendors.

The number of vendors required to build your average jet ranges in the hundreds, and some Bombardier

vendors received dozens of POs, some of which could have a hundred lines. The vendor received the PO by way of fax and would acknowledge the PO using fax; if there were changes or comments, those would be written on the PO, and upon being faxed back to Bombardier, those changes would be input into the R/3 system.

There were numerous pain points to address:

- **Faxing:** The vendor's fax system sometimes could not handle the volume of faxes Bombardier sent them. "A lot of POs failed to reach the vendors," Nasrallah says. "We'd send 20 POs at the same time; the first two or three would make it, but the next would fail; or the fax machine would be busy and we couldn't get through. So we actually had one person whose only job was to redo the faxing."
- **Changes:** Sometimes vendors needed to make changes to a PO. "They would put comments on some of the line items, and they would fax back an acknowledgment," Nasrallah explains. "Someone at Bombardier had to take the corrected PO and put the acknowledgment into SAP R/3."
- **Errors:** Because so much of the process required manual intervention, errors were frequent. "Also, it took lots of time, and it was hard to keep things updated," Nasrallah says.

"This is why we decided to use SAP Enterprise Portal," Nasrallah explains. The process is now almost exclusively electronic. Vendors log on to the vendor portal and check to see whether there are new POs for their company. If the portal indicates there are POs, the vendor can download PDF copies of the POs. "They can view a PO, and then they can electronically acknowledge receipt of it, which is reported directly back into our SAP R/3 system." More than 300 vendors are currently using the system.



Clockwise from left: The Bombardier Q400, Learjet 60, and CRJ200

Commodity Sourcing Enabler

A jet aircraft is the sum of its parts. There are thousands of fasteners, bushings, hoses, and clamps, all of which are provided by the multitude of vendors that serve Bombardier. But how does an engineer know what part to select?

Take, for example, a single bearing. A dozen different vendors may produce one that meets the specifications required by Bombardier, but every one of those companies has its own way to identify that part. Bombardier estimates that within 16 different databases, it has listings for more than 200,000 “hardware commodity parts.” Many of those parts are identical to each other, but the cost of each identical part ranges from least expensive to most expensive with a more than 400 percent difference.

Bombardier realized it needed a master index of commodity parts. By using that index, the company could consistently select the best price for each part and save an estimated \$28 million over the next five years. And the company would realize additional benefits:

- **Standards adoption:** The commodity sourcing enabler (CSE) required Bombardier to create a standard for every part, which in turn would enable the company’s various facilities around the world to “speak the same language” when it came to procurement.
- **Inventory management:** With standards in place, the company could better manage its inventory and

avoid purchasing the same part with a different name.

- **Volume discounts:** Orders for specific parts could be consolidated, and volume discounts could be sought from vendors on a global basis.

Bombardier relies on SAP BW to perform analyses using data from its CSE. “We can see the past history and project into the future,” says Nasrallah. “Now we can say, ‘I’m buying this part that I can now see is listed in four different systems under eight different names, and this is my spending.’ We are now able to negotiate with vendors to get the right supplies at the right price using a volume discount.”

Because this project came to fruition before SAP perfected its SAP Master Data Management (SAP MDM) component in SAP NetWeaver, Bombardier relies upon two products from Requisite Technology for its CSE: BugsEye, to identify similar parts based on attributes, and the eMerge content management system, to organize the data within a master data database.

Bar-Coding and Mobile Technology

Bombardier, like many companies, is implementing the components of SAP NetWeaver as required by the business. Sometimes, as Nasrallah learned, once the business

Putting SAP NetWeaver into Practice: Six Lessons Learned

Bombardier's growing reliance on SAP NetWeaver to solve business problems means the company has had to change the way it approaches challenges. Here are six lessons learned during recent implementations of Bombardier's vendor portal, commodity sourcing enabler, and bar-code mobile project.

1. Seeing is believing. It is hard to get users to understand the benefits of an SAP project before seeing a full-blown example, Nasrallah says. "So do a pilot before trying to sell a big project. The Bombardier Aerospace vendor portal began with a pilot of six vendors. Since it's been built," Nasrallah says, "the requests are piling up, not just from vendors, but from partners and customers, too."

2. Get "real" feedback from customers throughout the development of new tools.

Once you gather user requirements, don't presume to know how your customer will react to your new tool. When developing the pilot for our supplier portal, the Bombardier development team brought the participating vendors in three or four times during the evolution of the design and development, "and they gave us great advice," Nasrallah says. For example, the vendors were the ones who proposed adding the functionality to allow them to make comments when acknowledging the purchase orders. "Now our logistics agent can know automatically what exceptions to note," he says.

3. Don't be afraid when requirements change.

"Requirements *will* change once users understand the tool," Nasrallah warns. "Educate users early on, and don't be surprised when, as they learn how to use the tool, it changes the requirements they gave you." When Nasrallah and his staff started implementing SAP BW, the requirements they had from the business led them to develop certain solutions and reports. When the users started actively using those

reports, they rethought their requirements. IT had to change and refine the solutions that they delivered to be able to meet the new business requirements.

4. Use the new tools to solve new problems.

Before a vendor can use the supplier portal, Bombardier requires them to sign a legal agreement. When Bombardier launched the portal, it would send the agreement through the mail or via fax. "This proved to be very slow," Nasrallah says. "We put it online using the portal, and in the first month, we had 100 suppliers sign the agreement and begin using the portal."

5. Lean on your power users to assist with training.

You need to define your power users three or four months in advance of an SAP implementation, Nasrallah says. "They have to participate in the project, understand it, get used to it, and then be able to do the training," he says. Although IT is still responsible for the efficacy of the training, they must support the power users, who speak the same language as the customers of the new tool and can therefore transfer knowledge more efficiently and much more quickly.

6. Data cleansing is too important to leave to outsiders alone.

During construction of the commodity sourcing enabler, numerous issues arose with the data cleansing, which was being handled by a vendor with a team in India. "We learned that when dealing with an outside entity or consultant, you have to make sure you have a representative available full-time to resolve exceptions. Once someone from the vendor was on-board full-time, everything changed," Nasrallah says. Issues were resolved quickly, and the project moved along more quickly. [NWM](#)

executives see what can be done using SAP NetWeaver, they will drive application of the technology to solve a particular problem or jump on a particular opportunity.

"We had a request from the logistics side of our company that they wanted to do a proof of concept for using bar coding directly with SAP," Nasrallah says. "They wanted to use a handheld mobile device, but we had not yet started using the mobile technology of SAP NetWeaver."

Nasrallah was prepared to add the request to the long list of future SAP projects — until he discovered how simple the implementation of the proof of concept would be.

"At first I didn't want to do it," he says. "But after thinking about it, we found it to be a good idea and a good opportunity to promote even more of the tools we have.

"We created the iViews in the portal and then enabled the handheld to call them up using a URL," Nasrallah says. The handheld device records the bar code and inserts the information into the appropriate field in the iView, which is then imported directly into SAP R/3. The interval from conception to execution? According to Nasrallah, it was eight weeks.

Payback

"We're already reaping the rewards of managing our suppliers online, and more functionality is on the way in the vendor portal to extend collaboration with vendors and customers," says Nasrallah. "We're using SAP NetWeaver more and more to answer our business needs as they arise," concludes Nasrallah. [NWM](#)