American Axle & Manufacturing:
Intranet Business Case

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American Axle & Manufacturing (AAM) is a growing, multi-billion-dollar manufacturer of automotive driveline systems. AAM is headquartered in Detroit, Michigan and has five U.S. manufacturing facilities. Manufacturing at these facilities is supported by a state-of-the-art technical center located in Rochester Hills, Michigan. AAM is planning near-term expansion in Europe, Asia, and South America. AAM employs more than 8,500 associates. The IT infrastructure of the corporation consists of more than 2,100 desktops supported by a variety of UNIX and Windows NT servers. Fiber-based local and wide area ATM networks link these resources. In spite of AAM's state-of-the-art IT infrastructure, the company has been reluctant to build a company intranet and has no immediate plans to implement one. In the following pages, this paper related examples of successful corporate intranets. The intranets discussed were chosen for their characteristic ability to be applied (with only minor modifications) to similar tasks and opportunities at AAM. In conclusion, the risks of implementing an AAM intranet were presented along with a recommended course of action.

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American Axle and Manufacturing, Inc. (AAM) is a growing, multi-billion-dollar manufacturer of automotive driveline systems. AAM is headquartered in Detroit, Michigan and has five U.S. manufacturing facilities (three in Michigan, two in New York, and one under construction in Mexico). Manufacturing at these facilities is supported by a state-of-the-art technical center located in Rochester Hills, Michigan. AAM is planning near-term expansion in Europe, Asia, and South America.

AAM employs more than 8,500 associates. The IT infrastructure of the corporation consists of more than 2,100 desktops (Windows NT with MS Office and MS Exchange) supported by a variety of UNIX and Windows NT servers. Fiber-based local and wide area ATM networks link these resources.

In spite of AAM's state-of-the-art IT infrastructure, the company has been reluctant to build a company intranet and has no immediate plans to implement one. In the following pages, this paper relates examples of successful corporate intranets. The intranets discussed were chosen for their characteristic ability to be applied (with only minor modifications) to similar tasks and opportunities at AAM. In conclusion, the risks of implementing an AAM intranet are presented along with a recommended course of action.

Success Stories

The Gartner Group defines intranets as "a deployment model based on the adoption, adaptation, and integration of Internet-derived technologies and communications protocols for use in internal information systems. An intranet is a network that uses common Internet-based technology, but that is internal to a specific organizational structure and is secured from, or disconnected from, the global Internet, typically via firewalls (Apfel, 1997)." Intranets use the same communications protocols and hypertext links as the Web and thus provide a standard way of disseminating information internally and extending applications worldwide at the same time.

Examples of successful corporate intranets are both plentiful and diverse. Intranets specific to human resources applications are perhaps the most well known (Alexander, 1998). The intranet success stories described below focus on sites created by manufacturing companies (i.e. companies with problems not all that different from those encountered by AAM). These sites include human resources (HR) applications as well as applications dealing with engineering, finance, information systems, manufacturing, and quality.

Engineering

As with any manufacturing company, engineering plays a vital role in AAM's success. Callison Architecture, a Seattle-based engineering firm, uses its intranet as a central repository to enhance existing sample and catalog libraries (Doherty, 1998). According to Scott Williams, MIS Director, "the combined ability to create, publish, read, and search information across the firm, whether locally, nationally, or internationally, makes the intranet pay off with big dividends." Being connected via an intranet also allows Callison's offices to work together and collaborate on projects. The company is thus able to draw from a large and varied pool of engineering resources.

Key to the management of engineering drawings at AAM and other manufacturing companies is change-management. Products are always changing, and this is reflected in necessary changes to mechanical CAD drawings, electrical system drawings, software source code, and manufacturing control plans. In a recent interview in Computerworld magazine, Robert Harr of GM 's Powertrain division described the benefits of using an intranet as a Web front end to gain access to its engineering change-management system (Anonymous, October 26, 1998). "I don't have the dollar figures," Harr said. "It's more that if we hadn't done this, we would not be able to do some of our activities." Harr currently has 20,000 documents on the intranet site and that number is growing rapidly.

Another example of intranet use by a manufacturer, is Ford Motor Company's RLIS (Research Library & Information Services) intranet. The RLIS site catalogs a collection of 30,000 books and 600 journal subscriptions. It also provides access to numerous engineering online databases as well as an audiovisual library (Pack & Pemberton, 1998). AAM engineering associates do not currently have access to such databases.

Finance

In the area of financial applications, Bristol-Myers Squibb recently turned its global network (BMSnet) into an HTML-based intranet (Messmer, 1998). BMSnet applications include cash-flow management, financial reports, and legal-expense tracking. These applications allow thousands of employees and outside contractors to submit data in Web forms for direct processing into back-end databases. As a result, manual entry of paper-based information is eliminated.

In one of the more unusual uses of an intranet, Bristol-Myers is saving $2 million per month by using BMSnet to manage currency trading internally rather than outsourcing the procedure to a bank. In addition, Bristol-Myers is in the process of replacing all of its financial and consolidation systems with the intranet. Currently, AAM's financial and consolidation systems are similar to those at Bristol-Myers prior to the conversion to BMSnet. Comparable benefits would result at AAM from such a conversion.

Human Resources

To date, most applications on intranets (particularly self-service ones) are human resources related (Hoffman, 1998). The following are examples of manufacturers that have successfully deployed intranet-based HR applications (Solutions Series, 1998):

- Amoco Chemical's intranet allows employees to share their knowledge of how to do their jobs with employees who are new to their positions. The sizable influx of new employees at AAM would make such a site very beneficial.

- British Petroleum uses its intranet to disseminate benefit and career training information to 53,000 employees worldwide. Currently AAM uses an inefficient paper-based system to accomplish this.

- Case Swayne, a specialty food manufacturer uses an intranet to post job listings, policies, benefits, handbooks, and company news. In contrast, AAM's employees are often required to look in local newspapers to find out about current job postings.

- Eastman Kodak offers course registration and online training on its intranet.

- IBM uses an online service developed by Brielle Executive Gifts as part of its company intranet (Wilder, 1998). The Brielle service provides a custom interface that links Brielle's online database of executive gifts and employee awards to IBM's intranet. This company-wide intranet store allows authorized employees buy gifts for colleagues such as administrative assistants or retirees.

- Olin Chlor Alkali Products uses its intranet to develop, deliver, and track mandatory OSHA training. This centralized approach to OSHA training would greatly benefit AAM's industrial health and safety group.

Information Systems

Perhaps the best place to begin deploying an AAM intranet is in the information systems area. It would be very appropriate for the IT group to set an example and be the first to bite the "intranet bullet." A successful IT site could then be used to promote intranet development elsewhere in the corporation. One example of an IT department using intranet-based network management is Dow Chemical's. The Dow intranet features status boards for checking the availability of servers and computer systems worldwide (Frook, 1998).

Companies such as Cisco, Tivoli, Nextpoint and Manage.com have recently begun offering Web-based management tools and suites that would allow AAM's IS support staff to serve users in new ways (Herman, 1998). For example, Intranet-based interfaces to help desks would offer self-help to users and provide bulletins about outages or new services. Automated, intranet-based processing of administrative tasks such as moves, adds, and changes would also free up the support staff for more critical issues. Another improvement would be the deployment of an intranet-based online computer catalog. Such a catalog (linked to the company's preferred supplier) would greatly improve the computer hardware and software purchasing process at AAM.

Manufacturing

Two new intranet technologies promise to make a large impact on manufacturing at AAM and other companies. The first is push technology. Push technology is a data distribution technology in which selected data is automatically delivered into the user's computer at prescribed intervals or based on some event that occurs. This is contrasted with pull technology, in which the user specifically asks for something by performing a search or requesting an existing report, video, or other data type.

Companies such as Intellution and Pointcast are teaming up to provide push technology products specific to the factory floor (Gunst & Stein, 1998). For example, a manufacturing manager, from within a free Pointcast client, is able to (using the Intellution Fix Broadcast application) choose a list of report categories (e.g. batch, sales, or scheduling). After selecting a category, the manager is presented with a list of reports from within that category. These reports, automatically updated as often as desired, eliminate the existing need for paper reports. AAM manufacturing managers, with access to this intranet technology, would no longer have to search for the information required to run their manufacturing operations. Typical report types pushed down might include:

Production Schedules	Historical Data
Maintenance Schedules	SPC Data
Work Schedules	ERP Data
Sales Forecasts	Database Data
Batch Data	MRP Data

The second intranet technology promising to make significant improvements on the factory floor is browser-based electronic document management (EDM). Companies such as Documentum (the recognized leader in enterprise document and knowledge management) are offering intranet-based products that allow manufacturing personnel to easily find, view, and print any one of thousands of manufacturing and maintenance drawings from any workstation in the enterprise.

Quality

Producing quality products is a top priority at AAM. In 1996, all of AAM's manufacturing facilities earned ISO 9001/QS 9000 quality certification a full year ahead of the automotive industry deadline. Once earned, this certification does not last forever. All AAM facilities must continue to pass biannual audits given by the industry designated auditor, KPMG. Presented with the same ISO requirements, Liquid Control Corporation of North Canton, Ohio decided to use intranet technology to manage the company's quality manual and stay on top of ISO certification (Chase, 1998).

Liquid Control created an intranet, called the ISONet, on which it publishes the company's complete quality manual. The first step in creating ISONet entailed converting all of the existing quality documentation to HTML format. Rod Baxter began the process when he was hired as quality assurance manager. "We had several hundred hours worth of work converting our documentation, linking it, and troubleshooting it," Baxter stated.

Once the documents were converted, the process of keeping the documentation up-to-date was much simpler than before.

Liquid Controls' quality documents are now revised and disseminated via electronic mail, and the ISONet system electronically archives older versions of documents, eliminating the need for hard copy archives. Also, web browser functionality such as search, shortcut, favorites, and hyperlinks allow Liquid Control employees to quickly find the information they need. Another benefit of the ISONet intranet is that company employees are using ISO quality documentation on a more regular basis than before. In fact, the ISONet has been so successful that other departments and divisions are expanding the intranet to include everything from speed-dial lists to safety manuals.

Conclusion

In summary, intranets are a good risk for most organizations. More than 83 percent of the IT managers surveyed expected to earn a positive return on investment (ROI) (Anonymous, September 21, 1998). Results also showed that the more money an organization invests in its intranet, the more likely it is to predict a strong ROI. A strong return was expected by 91 percent of companies that spent more than $100,000 on their intranets. It is reasonable for AAM to expect similar results.

On the other hand, a recent report by TFPL consultants concluded that an intranet will only add value to a company if its content and applications enable users to do their jobs better (Anonymous, November, 1998). First generation intranets were often managed directly by the IT department. They were technology led and full of electronic versions of existing printed documents. The popularity of these early intranets dropped off at alarming rates once users found the benefits were not as promised. This caused many companies to reassess what the objective of their intranet should be, and what level of resources should be allocated to it.

In light of the above, it is obvious that AAM has waited long enough to begin implementation of its own corporate intranet. The AAM intranet should start small and expand slowly - driven by user demand and support. Finally, AAM should be cautious and implement only intranet applications and technologies with proven success records. AAM's late start in deploying an intranet has provided it with the luxury of learning from the success of others.

Reference List

Anonymous. (1998, September 21). Intranets provide payback. *Informationweek*, 701.

Anonymous. (1998, October 26). Intra-national intrigue. *Computerworld*, 32(43), 72-73.

Anonymous. (1998, November). Intranets: Problem or solution? *Information World Review*, 141, 4.

Alexander, S. (1998, August 24). It's serve yourself at Kraft's Intranet Café. *Computerworld*, 32(34), 17.

Apfel, A. (1997, August 27). Strategic analysis report R-INT-116. *Gartner Group*.

Chase, N. (1998, October). Case studies: Intranet eases quality-manual headaches. *Quality*, 37(10), 48-51.

Doherty, P. (1998, October). Intranets: Knowledge as power. *Interiors*, 157(10), 40.

Frook, J. (1998, September 14). From the top - Dave Kepler, CIO, Dow Chemical Co. *Internetweek*, 732, 25.

Gunst, C., & Stein, J. (1998, November). The internet: Fast, cost effective methods to improve communications on your plant floor. http://www.intellution.com/download.asp?fname=products/fixwebserver/techexpo_paper.doc

Herman, J. (1998, November 2). The next big thing: Management intranets. *Network World*, 15(44), 45.

Hoffman, T. (1998, September 7). Intranet smoothes Dow travel. *Computerworld*, 32(36), 37-38.

Solutions Series. (1998, October 5). The top 100. *Informationweek* http://www.techweb.com/se/directlink.cgi?IWK19981005S0002

Leonard, B. (1998, September). A few companies communicate employee benefits via the Web. *HRMagazine*, 43(10), 26-27.

Messmer, E. (1998, October 12). Bristol-Myers moves back-end apps to the web. *Network World*, 15(41), 35.

Pack, T., & Pemberton, J. (1998, September/October). The cutting-edge libraries of the Ford Motor Company. *Online*, 22(5), 14-30.

Wilder, C. (1998, October 12). Sales over intranets. *Informationweek*, 704, 80.