Information Overload at

Ford Motor Company

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As modern technology is further developed and improved, it is becoming essential that it be incorporated in business practices so that companies remain competitive. Ford, like other large corporations, and like businesses in general, need to be able to use technology to stay competitive. Technical advances, as they relate to the business at hand, coupled with effective management and visionary direction, can keep Ford at the forefront of the technological explosion.

Problem Definition

Symptoms that require attention

There were several symptoms at Ford that were evident. Too much information was unreliable or outdated. Although Ford updated their data, not all individuals received updated data in a timely fashion. Workers on the same project were known to have had different versions of needed information.

Slow retrieval of data was another symptom of the problem. Stuart (1997) pointed out that it could take up to six months for requested data to be retrieved.

Physical space was required for the storage of information. Binders of data were shelved in files in company offices. Also, Ford stores some archive material in a warehouse facility in Highland Park, Michigan. At this facility, boxes of data were stored as high as 15 feet, making retrieval of a specific document difficult.

Almost half of the professional workers at Ford stated that they had lack of access to information needed to successfully perform their jobs. Poor productivity could always be blamed on an “I didn’t have what I needed” excuse.

Underlying fundamental issue

Ford needs a unified system for storage of and access to available information. Without a system to manage their huge amount of data, they will become overwhelmed with problems trying to access data that is needed.

Justification for Problem Definition

Ford is now the most profitable automobile maker in the world (Kerwin, 1999). Their ownership interests in Jaguar, Volvo, Aston Martin, and Mazda make it a company that must conduct business in a veritably global sense. Ford's centralized product development and marketing efforts have hurt them in Europe in terms of lack of sensitivity to preferences that are desired in Europe. Also, Ford's acquisition of auto-related companies such as Britain's Kwik-Fit make it all the more imperative that Ford develop some effective and efficient system for maintaining and retrieving information. As Ford broadens its investment horizons, it must incorporate information management that will compliment that expansion.

Alternate Courses of Action

Improve their Local Area Network (LAN)

Ford could improve their LAN system at each location by making the data easier to access. Since a LAN connects users' computers with printers and file servers, the system is already a foundation for transfer of information.

Make no improvements to their current system

There can often be benefits to making no changes to a system that currently works. Employees, especially those that have been around for many years, may think that what worked yesterday can still work today. Some employees may think that too many changes cause confusion.

Create a departmental-based or segmented Intranet

This alternative would include the principals of Intranet design, but the procedure would provide that the Intranet be segmented by department, and designed when needed by a department. For example, engineers and designers would have a specific Intranet for the engineering department. Workers in each department would have access to their own respective, or segmented, Intranet. Each segment could be designed and deployed at different times. For instance, the marketing department could have their Intranet a full year before the human resources department would have their Intranet.

Create a Web-centric Intranet

Jacques A. Nasser, Ford's new chief executive officer, wants to "… reinvent (Ford) as a growth-oriented consumer powerhouse for the 21st century." So why not use the medium that will continue to grow in the 21st century – web-based technology. Ford's public web site already looks impressive with this technology, so designing their own Intranet with the same technology is a logical progression.

Evaluation of Alternatives

Improve their Local Area Network (LAN)

Advantage(s). The LAN system would be set up for those that have a need for the data that can assist them with their jobs. Some managers may feel that there is no need to set up a completely new system with information that can be accessed by all individuals in the company. Not everyone needs access to all information. Also, LANs are relatively inexpensive and easy to install. For a basic LAN, all that is needed is a circuit board in the computer, a connecting LAN-to-circuit board cable, and connecting LAN-to-cable hardware (Comer, 1997).

Disadvantage(s). An improved LAN is really not an effective solution if it does not help speed access to data, and make data available to all of the individuals who need it. A LAN without web technology is going to fall short of the benefits offered by systems with web technology. Also, LANs are really designed for use at one physical location, usually within one building, primarily due to the need to keep a strong connecting signal. An improved LAN system will not help Ford with *global* communications and *global* information transfer.

Make no improvements to their current system

Advantage(s). Affordable. Ford can use its resources where most needed. For instance, they can earmark more resources for improving car design. While their trucks and Sports Utility Vehicles (SUVs) are already successful, slow car sales accounted for only 12 percent of profits in North America in 1998.

Disadvantage(s). Leaving the current system in place without making improvements could only be seen as a short-term option. If they grow the way Nasser plans for them to grow, they need a long-term solution.

Create a departmental-based or segmented Intranet

Advantage(s). Information needed can be accessed by the department members who require the information. Since the Intranet is segmented based on department, information will be entirely relevant to each department.

Disadvantage(s). It may not always be easy to determine what information may or may not be needed. Employees may actually benefit by having access to information from other departments, even if it has nothing to do with their specific job. A segmented Intranet would discourage a sense of unity within the company.

Create a Web-centric Intranet

Advantage(s). Design and implementation of a Web-centric Intranet would give a sense of unity because all company data, except secure information, would be available to all employees who have access to a computer. All employees can learn more about the company with access to all non-secure data.

A Web-centric Intranet is a "modern" solution that is appropriate for Ford as it moves into the future. Internet technology is continually improving and its use is growing exponentially.

Disadvantage(s). Design of a Web-centric system could be costly, and could take company resources that may be better used elsewhere. Also, some individuals do not like learning new technological systems, preferring instead to remain with a system already in place (Ambegaonkar, 1997).

Review

Huge amounts of data were poorly managed at Ford. If all of their information (design specifications, technical data, procedural manuals, meeting minutes, memos, and other company records) was printed out, it could total up to 30,000 pages. A company with that much data needs a system that is reliable. Nasser has shown his willingness to utilize the technologies of the Internet. Consider Ford's recent deal in September 1999 with Microsoft's MSN CarPoint web site service. Their investment in this service allows Ford to glean data from the web site so that they can better understand the motivations and preferences of buyers.

Businesses across the world are increasingly moving toward web-based strategies. Worldwide, the number of business web sites is approximately 700,000 now, and is expected to exceed one million by 2003 (Baker 1999).

Increasing numbers of individuals are becoming Internet savvy. For example, the percentage of Americans online has risen from 14 percent to 41 percent since 1996. Also, in Japan, web usage has increased by over 15 million people since 1995. (Encardio, 1999).

It is clear that Ford needs a web-based solution. As business across the world increasingly move into an Internet age, more and more solutions to business problems should include web-based technology.

Conclusions

Ford Motor Company should design and deploy a Web-centric Intranet. The company is already on the verge of needing it, and the timing could not be better. The Intranet pilot program, as discussed in the article by Anne Stuart (1997), was a huge success. The design of a Web-centric Intranet is complimentary to the whole Ford 2000 program[1]. In order to get away from a large centralized bureaucracy, Nasser wants to redesign the company so that executives run independent units for which they are fully accountable. A unifying Intranet will be needed now more than ever in order to give everyone some sense of unity. Even though there may be independent units within Ford, there is a useful need for an Intranet that allows for effective management of information, an Intranet to which all employees have access.

I recommend that Ford choose Digital Pilot Corporation to design and implement their Intranet. Digital Pilot Corporation is a Dallas-based information technology company that specializes in high-performance Web-based solutions for companies needing help managing volumes of data. Nationwide, Texas ranks number one in employment for data processing and information services (Gore, 1999), and Digital Pilot is among this growing group of companies. Their versatility has attracted clients from the manufacturing, retail, healthcare, and defense

[1] "Ford 2000," started in 1995, is a reorganization plan to establish a single management authority, merge all operations worldwide, and create five vehicle centers for centralized vehicle development (Stuart, 1997).

industries. Their expertise will help ensure a smooth information transfer "across geographical, technical, and organizational boundaries" (Kitchens, 1999). This information transfer is consistent with Ford's corporate infrastructure, information from which extends beyond geographical, technical and organizational boundaries.

With an Intranet in place, workers can no longer complain that they cannot access information needed for their jobs. An engineer that needs a design specification sheet for an old model will not have to order it through the archives department and wait days or even weeks. He or she can access it directly through the Intranet. Thus, productivity will improve. If an employee needs a simple answer to a question from another employee in a different country or in a different time zone, he or she can simply send an e-mail message. Thus, inter-company communications will improve.

When Digital Pilot designs the full company Intranet, there are many features that they must include. All features chosen must be included to simplify and speed up information access. The objective should be to create an Intranet that will allow all employees access to all non-sensitive company data. Sensitive data, such as future product design specifications, could be accessed by individuals with proper authorization.

Ford's Intranet design must be simple enough to be easily accessible by the great majority of the employees. Just because Ford is a very large corporation in size, does not mean that the Intranet will be convoluted and confusing. A table of contents should offer broad category choices. Buttons and tabs should be user-friendly. Graphic images can be used when desired to make the Intranet more visually appealing. Row after row of text-only hyperlink choices can look confusing by appearing homogeneous; an easier-to-use solution may be to have small graphic hyperlinks leading to the main anchored areas of the Intranet.

Home pages should use the same basic template with the same basic design. A company logo and table of contents should be placed on each of the main home pages. An employee from the marketing department should not get slowed down during an information retrieval session by having to get used to a different home page format for information from the engineering department.

HTML will be the basic design format because of its interactive nature. Maps, databases, graphical images, and other specific documents can either be converted to HTML using appropriate document conversion tools, or can remain in their current formats (e.g. .pdf, .xls, .gif) but be accessible with hyperlinks as necessary.

Pop-up menus should be added where appropriate. They will allow for more details and options without making the home pages seem too cluttered.

Platform independence will allow for the support of multiple browsers. An employee using a Macintosh will be just as able to utilize the Intranet as an employee with a Windows computer or a Unix computer.

A newsreader should be a part of Ford's Intranet. On-line internal discussion groups allow participants to discuss ideas, post questions, and add suggestions. The newsreader should be organized by group or topic headings, so that have employees will be able to easily gain access to those groups or topics in which they are interested.

The web server should be able to integrate the Intranet with existing databases using relational database connectivity. Individuals will need access to these databases, and need to have a smooth display or transfer of information. A company library can be created by adding links to various databases and by providing access to scanned images and documentation.

E-mail will be a part of the Intranet. Many employees prefer to communicate with e-mail whenever possible. E-mail provides an "electronic trail" (compared to a "paper trail") with time/date markers and with electronic storage folders for "old mail." Employees can always communicate via more traditional methods when desired.

Employees should be able to venture outside of the firewall of the Intranet with an external server when they need to do job-related research on the Internet. Access to the Internet during employees' business hours should be restricted only if management ascertains that too much time is being wasted by non-productive or personal "surfing."

Evaluation

The procedure should be fine-tuned prior to final implementation with the use of a hyperlink checker application. One of the first stages of an evaluation procedure would be to have a small handful of workers in different departments test Ford's Intranet to see how they like it. A questionnaire should be used to standardize the evaluation procedure. Substantial room should be left at the end of the questionnaire so that employees can add comments, suggestions, or elaboration of ideas. The questionnaire should be faxed to a toll free fax number to those responsible for development of the Intranet, preferably management from the Information Systems department.

After full implementation, and on a periodic basis, many employees should be encouraged to "surf" through the Intranet to see what information needs updating, and to provide suggestions of needed improvements or desired future additions. Their responses should be reported using a questionnaire via a back-end service made a part of the Intranet.

The objective of the project is to have an interface that allows workers to learn more about the company, gather needed data in a timely and efficient manner, and be more productive

at their jobs. A Web-centric solution will guarantee the success of this objective. Ford is ultimately responsible for the overall success of their business, but incorporating a company-wide Web-based Intranet will provide them with the effective and efficient management of their information, and will reduce the horrors associated with their prior “information overload.”

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