Business-to-Business Model for an Integrated Internet Strategy: Using the web for content development and delivery as a practical solution for multilingual communications

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Millipore is a powerful business-to-business model illustrating the effective incorporation of an Internet strategy to achieve myriad corporate objectives. What began as a cheaper, faster means of information delivery has evolved into a multi-faceted strategy for incorporating evolving Internet technologies into a global sales and marketing model.

While the Millipore model is an examination of the application and integration of best practices in a rapidly and dynamically changing Internet environment, it also provides a detailed blueprint for the range of problems an organization can expect to face in making this shift.

The perspective offered in this paper is that of an agency who is the interface between the technology and the communications goals of two disparate industries. This case study is identified as a best case scenario for the integration of the multilingual communications industry and leveraging its role in not only enabling the delivery of information but also its ability to draw upon varied experiences to develop solutions for translations which migrate to the broader communications strategy.

Historical Premise

A business-to-business model is an effective means of illustrating the practical implementation of the theoretical proposition. The internet is one such proposition,, [L] with its original roots in the delivery of pure data across educational and scientific institutions. Data had a static profile. The motivation was to design an administrative tool for transfer of binary data and executable files in the most efficient mode possible, allowing the recipient to manipulate the data at the destination point(s). This network of file transfer protocol, *useNet,* also provided the basis for text-based research to be delivered via a new phenomenon - email - to other groups such as news groups.

Meanwhile, in the profit-driven business sector, data transmission was also a subject of critical concern. The data took on a more composed form — mission critical directives, product information, image construction, visual cues, legal messages, training documentation, etc. The era was pre-globalization. Large corporations

concern over consistency. The evolution of branding and the power of consumer behavior theories was emerging. A few companies (i.e. Proctor & Gamble, Ford) capitalized on these trends that have proven to be not trendy but smart investments.

Then came the vision of a few who saw potential in expanding business opportunities outside of national borders, not only in client-vendor relationships (the typical export-import model), but also in new sites for operations - production, development, sales. Growth was exponential across all industries and corporate disciplines. With this growth came growing pains. Managing the flow of information consistently across borders was a challenge. The natural tendencies of divisional conflicts and desires for autonomy were amplified by cultural factors. One school of thought was to allow for in-country influence with consideration for their assumed knowledge and expertise in their native land. The decentralization theory was supported by the lack of market intelligence for home-office decision-makers. The issues with this option was the readily apparent lack of consistency across borders. Although branding was still just catching on, the main concern was information accuracy. Mechanisms for accountability and monitoring were not in place to ensure communications were executed as planned by corporate headquarters.

Another school of thought was the complete centralization of all information, from development to delivery. A centralization theory was supported by the insecurities of home-office decision-makers. The original theory dedicated all execution of communications to one location, to monitor development and ensure timely delivery. This responsibility within behemoth corporations was cumbersome and incited disloyalty amongst in-country partners who felt imposed upon and distrusted.

As history has proven, neither extreme schools of thought was ideal. Compromise was the commonality. History is defined here, though, in days, and some corporations still exhibit tendencies to pursue one of these schools of thought with varying degrees of success.

Transformation of Technology: Driven by Business

Information and communications specialists began to deliberate on ideas to ease the process of information management in appreciation of the new scale of business. Interdisciplinary discussions brought forth the concept of the internet. Still in its nascent state, designed for simple delivery mode, it sparked the imagination of a few key players. It not only provided the means by which information could be transported quickly to partners around the world, it also allowed for dialogue at an efficient pace, opening doors for communication about in-country preferences, and faster consensus-building and decision-making. In effect, it allowed information to travel in raw data form, permitting a flexible platform for discussions. But the potential remained unmined.

Information is only effective in how it is received. Pure data is unpalatable. Internally, self-motivation exists to process the information. Externally, the ultimate consumer of information is the customer who has no immediate stake in either

processing or even noticing the information. The compelling proposition is the responsibility of communicators. The need to grab attention is high priority for those who manage information for public consumption. The internet, this network of primarily electronic mail and streams of data, was not a sufficient solution for the increased pace of competition that global business demanded. Visual compulsion became critical. The presentation of information is critical to how and if it is acknowledged. This simple theory, adopted from print and other traditional media, began its transformation to the digital era. The true value of the internet would soon emerge.

Case Study Subject: Millipore Corporation

Millipore is a multinational, high technology corporation that develops, manufactures and sells a broad range of purification products to the microelectronics manufacturing, biopharmaceutical manufacturing and analytical laboratory markets. With company headquarters in Bedford, Massachusetts, Millipore employs 4,500 people in seven manufacturing plants and more than 31 offices around the world. In 1997, Millipore revenues totaled $759 million. By geographic area, 43 percent of revenues were in the Americas, 29 percent in Europe and 28 percent in the Asia/Pacific region.

Millipore was founded in 1954, when an engineer named Jack Bush purchased the rights to the newly developed membrane-production process from his employer-the Lovell Chemical Company of Watertown, Massachusetts. The Millipore Filter Corporation, as Bush's new company was called, quickly expanded and changed its name to the Millipore Corporation, to reflect its wide range of products for fluid analysis and purification. Over the past 42 years, Millipore has pioneered the use of membrane technology in hundreds of diverse applications. Through strategic acquisitions, international expansion and substantial R&D investments, the company has broadened its technology and market base and today is the world leader in the purification industry.

Millipore's robust international clientele represents the nature of the scientific field, [L] Its non-competitive and collaborative environment means the rapid recognition and adoption of communicating with international partners as a means for sharing critical research. The global growth of corporations in this industry illustrates an accelerated model for other industries.

Millipore has four business divisions: Analytical, Biopharmaceutical, OEM Products, and Microelectronics. Each division serves the needs of each industry sector, drawing upon the basic filtration and purification systems that is the core of Millipore's business. Each division is unique and applies Millipore technology for varying purposes.

In the analytical laboratory, Millipore offers a range of tools and services to improve productivity, whether a lab is developing sophisticated assays or decontaminating fluids. Products range from ultrafiltration devices to purify and isolate proteins, to

devices that sterilize tissue culture media to a full range of laboratory water systems that provide the ultrapure water needed for research and the pure water needed for routine laboratory work. It would be difficult to find a laboratory without a Millipore product on the bench or on the wall. As they work to advance science, labs around the world use Millipore filters and filter-based systems 1,000,000 times a day.

In microelectronics manufacturing, Millipore purifies just about every gas and liquid used in creating a semiconductor device. In fact, to create a typical computer chip, a semiconductor fabrication plant will use Millipore products at up to 2,000 critical points during the process. Millipore offers the broadest range of processing technologies, including filtration, purification, dispense, flow, pressure and vacuum control.

From contact lens solution to recombinant proteins, pharmaceutical and biotechnology manufacturers uses Millipore purification systems everyday. Millipore products and services include scale-up systems, sterilizing filters, ultrafiltration systems, process chromatography systems and a full-range of validation services. Millipore works closely with pharmaceutical and biotechnology companies during the entire drug development process - a process that takes years of collaboration and testing and validating before a drug reaches market. Virtually every new chemical entity introduced over the past five years has used Millipore products in discovery, preclinicals, clinicals, and/or manufacturing and validation.

OEM products test beverages for purity, sterilize insulin, and control the purity and flow of gases that etch the microchips in microwaves - and are used in hundreds of other critical applications. The key differentiator for Millipore is the expertise to apply that technology to customer needs. There are 1,200 direct sales and service people in the field around the world - many of whom are former customers.

While there exists a common thread throughout these divisions, the differences were enough to foster a well-meaning sentiment that each division knows its sector best and should therefore be charged with the development of information for its unique focus. Additionally, these divisions existed within the affiliated countries. The new language component supported the theory that in-country experts should develop . [L] information - they knew their product, market and language best.

The information took the form of more than 22,000 skus presented in product spec sheets, marketing brochures, manuals and packaging. One of the largest compilations of information and highly used resource was the Millipore catalog. Prior to 1995, each country created its own catalog using its own decentralized resources. While each catalog was created from a similar template which maintained the general look and feel from market to market, there were glaring inconsistencies throughout. For example, some countries left acronyms and product names in English while others chose to translate. Even measurements and product specifications were treated inconsistently from market-to-market.

Catalogs were taking two years to create. By the time the international versions came out, they were nearly obsolete. The process was a time drain on the country managers,

who had to manage the process and in some cases, do all of the translation themselves.

Catalogs were very expensive due to the process being replicated several places around the world. Because they were all on different production schedules, no efficiencies were achieved in terms of project management or the ability to do one print run and switch the black plate (simplifying documents to black text only and leveraging color film plates across all languages in single catalog productions).

Not only were there redundancies in processes, there were role duplications in people who had to manage those processes. The resource allocation for such efforts surmounted any budgeted figure. The other revelation was the non-connection between any one piece of marketing material in France versus any in neighboring Germany. Millipore was a company of widows and orphans with no identifiable mark tracing it back to Millipore roots.

Identity was compromised not only in the catalogs but across all forms of collateral. Packaging varied from country to country, which was detrimental as some of the key customers are researchers and scientists who work all over the world. Advertising strategy was different in every market and execution tactics were questionable. In France, a Millipore product was shown next to an orange for no apparent reason, while in Germany, it was shown next to a giraffe with a slogan that translated to "head and shoulders above the rest".

Possibly more costly than the visible errors and inconsistencies, was the loss of opportunities to leverage production across offices to achieve simultaneous launches for any product line. The corporate value of such an orchestrated achievement would have provided the ailing brand with much support.

The migration to a new business model began in 1993 with the simple objective of reducing catalog production time and cost for Millipore. This required the commitment of the four business divisions, and their corresponding international subsidiaries, to a long term development strategy that would radically change workflow and alter the way information is disseminated to their diverse customer base.

Attempts were made to begin to centralize processes for information development and management. There was resistance to central control and loss of autonomy. Each country manager had its core groups of vendors for translation, design, printing, etc. and was reluctant to concede control over the process. The degree of resistance varied greatly from market to market. Some countries were fiercely opposed to the idea of centralization (France, Japan), others were relieved to no longer have to assume the burden of these activities (Italy, Spain). As expected, the degree of cooperation from these countries was found to be in direct correlation to their receptivity to centralization.

Steps were taken to begin filtering information through the world wide web. At this stage, it still had a pure delivery focus. The unexpected challenge was the in-country

capability to manage this new flow of information. Internet connections in most countries outside the U.S. is 28.8/56kbps. In addition, computer systems were neither aligned nor had sufficient memory to handle this new mode of delivery. Costs for on-line connection time can burden individual profit centers. These constraints remain an issue today.

However, Millipore was committed to its objectives to achieve effectiveness by ensuring consistency and accuracy of information, the integrity of the corporate identity, while at the same time developing efficiencies in terms of hard cost savings, time savings, resource savings. Millipore needed to deliver a clarity of message in numerous languages around the world and also project the same visual image that a world leader in the medical filtration industry deserves. The challenge: How to begin to put together a puzzle when you are missing half the pieces?

The Initial Solution - Stibo Datagraphics

Stibo Datagraphics is an international company who delivers multiple media publishing solutions. The primary tool was an Oracle relational database whose original concept was as an electronic publishing solution for large quantities of data. The language content was the critical component.

The goal was to develop a dynamic flow of information and capability to customize delivery media. Content needed to be repurposed across all forms of collateral with the goal being able to dynamically pull any and all product information to the web, print or CD-ROM. The database was then translated into seven foreign languages by DLC. However, data input to and output from the database during the translation stage was a major challenge.

The translation process involves many stages for quality assurance. With a sizable endeavor like Millipore — over 100,000 words across 7 languages— the requisite proofing stages were a file-transfer nightmare. File sizes were unwieldy, particularly for double-byte languages such as Japanese. Files were transferred from the translation company (DLC) to Millipore, then to and from Millipore to in-country - managers, then back to the agency. (A more detailed outline can be seen in Figure 1 below.) This process introduced technology issues with countries who do not have the full complement of software and hardware to efficiently manage the process. As inefficient as it was, this file transfer method was used for production of a 7-language 250-page catalog.

1. Stibo exports individual coupon files from database to rtf and locks coding using a proprietary tool.
2. rtf files emailed to DLC
3. translators work directly in locked rtf files
4. editors provide edits to content in locked rtf files
5. proofers verify translations in locked rtf files
6. Locked Word 6.0 files sent via email in country

7. In-country managers make their edits in locked word 6.0 files—edits show up to DLC in color and with strike-throughs
8. DLC accepts and incorporates edits
9. Final files sent back to Stibo as rtf
10. Stibo imports rtfs back into database

Figure 1 - DLC translation and file transfer procedures were customized for the development of the Millipore catalog using Stibo tools.

The advantages inherent in the process was centralization which allowed for the same quality assurance procedures for all languages. DLC was able to develop a dedicated team of professional language specialists with the subject matter expertise necessary for the most efficient and accurate turnaround for translations. Glossaries were developed which allowed multiple translation teams to perform translations simultaneously while ensuring consistency. This in turn reduced the amount of time spent on the editing and proofing processes.

The quantifiable results included a significant time savings—from a prolonged and duplicative production cycle of 2 years to an efficient execution model of 8 months. Quality and consistency was not only apparent within a single catalog but also amongst different language versions. Production costs per catalog dropped from $15 to $6 — a 60% savings. In one extreme example, another division of Millipore had even costlier catalogs due to lower print runs. The most recent Microelectronics Korean catalog cost $50 to produce. This figure only reflects the hard costs of production; soft costs, mainly away from core activities, are not reflected in this figure. Even more detrimental, a downturn in the semiconductor industry and the Asian economic crisis has made the high cost of the Korean catalog non-sustainable under current market conditions. Consequently, Millipore is no longer producing a Microelectronics catalog for Korea.

On a qualitative front, Millipore's brand image was slowly coming into alignment around the world. A true identity was beginning to emerge. However, the resistance to centralization of catalog production was a large obstacle, and still remains an issue 5 years into the initiative, although to a much lesser degree. The technology overhaul overcome, cultural variables and individual concerns about autonomy still account for significant efforts in producing consistent marketing material.

Direct Access Phase

The next objective was to enable both Millipore "gatekeepers" and translators direct access to the catalog database maintained by Stibo so that the file transfer could be negated. Direct access in the English database, and some of the European language databases, is currently up and running, and non-problematic.

English edits are entered directly into the database for new versions of the catalog. Translators make the necessary changes in each language. Millipore country managers are alerted electronically, and go directly into the changed coupons within their language database and make their edits using a Net editor. Catalogs can be

automatically re-output, customized for the specific markets of each division and country. Information resides in the single database and is available for output to various media — print, CD-ROM, and web.

However, some of the technical hurdles remain. The varying speed of on-line connection in some countries, as well as the cost of connecting via the Internet, has hindered progress in other subsidiaries. Additionally, some subsidiaries have difficulty viewing the product information out of context — information exists in cells rather than in coherent page layouts.

The remaining technical challenge is that while the catalog database is double-byte enabled to accept Asian language files, Stibo's proprietary layout program is not. An interim solution has been developed to address this issue. Japanese language files must be backed out of the database as rtf files. Layouts are given to DLC in the appropriate page format and saved as pict files. DLC overlays the rtf-formatted text on the pict files which are placed in Japanese QuarkXpress. Black text plate film is then output from Japanese Quark and run with the other 4 color plates of film. This process leveraged film plates and saved on output costs.

Direct Access Phase II: In-house Solution

Building on the Direct Access model that Stibo and DLC had designed for multilingual catalog production, Millipore's Analytical division pioneered an in-house system for authoring multilingual product manuals, data sheets and other assorted documentation.

Millipore tech writers author documents directly into a Lotus Notes Domino database that replicates to the web. The source language depends upon the country where product development occurs. Its multilingual communications partner, DLC, is able to access the database remotely and perform translation directly into the database, delivering the translations on-line. Such a dynamic pace requires joint training and workflow development with the agency and clearly defined protocols for access.

Once the various languages are in the database and finalized, the information is replicated to Millipore's web site, where it is accessible to employees and customers worldwide. Millipore's global customers can view http://www.millipore.com in 7 languages. The complete localization of the site is part of the strategic plan that allows funds freed from the hard costs of printing and production to be re-purposed to accessing new markets in language. Customers and sales force access the catalog on-line and are able to effectively customize a personal catalog of the products or systems that match their specific requirements.

Conclusion

The translation of the database occurs in the database environment using human resources, enabled and supported by powerful management tools. This catalog model