RFID: Thinking Outside the Closed Loop

by Stefan Stroh and Jürgen Ringbeck

It's hard to deny that radio frequency identification (RFID) technology is hot. Major retailers, such as Wal-Mart, Target, and Best Buy in the United States and Metro Group in Germany, have established full-fledged programs in which some or all of their suppliers will be required to put chip-driven tags on product pallets or cases, so shipments can be better tracked from warehouse to store shelf. These tracking applications, and similar ones developed by the U.S. Department of Defense, the U.S. Food and Drug Administration, Boeing, and Airbus, to name a few of the organizations using this technology, hint at the beginnings of a critical mass for RFID. Falling chip prices — from 40 cents a few years ago to as little as 20 cents per chip today — are also spurring such high-tech firms as Intel and SAP to announce significant investments to further develop the technology.

But reality often belies excitement. We wondered about the conditions under which it makes sense for companies to adopt RFID technology, and the opportunities it offers for the reengineering of business processes. So together with the M-Lab at Switzerland's St. Gallen University, we surveyed more than 30 leading European industrial and logistics companies to find out how they view RFID and its promise.

Our survey suggests that there is significant ambivalence among companies about RFID technology. They are excited about its future possibilities, but disappointed in the lack of a business case to adopt it anytime soon: Sixty-seven percent of the companies we surveyed said that RFID technology is strategically important for the development of their business, but fewer than 20 percent said they were earmarking more than 500,000 euros ($617,000) for RFID initiatives.

The problem is that RFID currently produces an obvious return on investment only in so-called closed-loop applications, such as asset management, or in an assembly line that operates solely within a single plant and doesn't require open transmission of data or supplies among internal or external business partners. In closed-loop RFID applications, which the automotive industry has been using for several years, both the product being manufactured and the component materials are tagged with chips so computerized readers can automatically identify the item being built, which options the customer ordered, and which parts should be installed.

One automotive manufacturer we interviewed said that before the company deployed RFID, the error rate in assembly (e.g., the number of missing parts or wrong parts) was around 50 percent. Now, with RFID, plant process efficiency has improved significantly. Further, ongoing system costs after the initial investment are relatively low because RFID chips can be reused.

Contrast this with an open-loop application being used in the supply chain initiatives led by Wal-Mart and Metro, which involve the stores *and* their suppliers. In those instances, the high initial investment in chips placed on pallets and crates, RFID readers, and software to integrate the data with corporate networks has discouraged suppliers from doing much more than slapping RFID tags on shipments. So has the lack of easy-to-develop procurement and factory applications to make use of this information.

The retailers (which don't shoulder the cost of purchasing tags) can make immediate use of the RFID data of course, using it to ensure that store shelves and warehouses are constantly stocked and to make more accurate forecasts based on real-time sales data. Because retailers, not suppliers, stand to reap instant benefits from the new systems, they are dictating the rollout of RFID.

RFID represents a supply chain infrastructure investment with a benefit that increases exponentially as the reach of the system broadens. If RFID allowed suppliers to "eavesdrop" on the sales and movements of their products minute by minute or to learn the exact location of raw materials in transit from Asia, the technology could, in many cases, pay for itself. But this would also require applications capable of handling a remarkable amount of network and data interaction between partner companies around the world.

Currently, there are many competing standards for RFID hardware, software, and data management. This makes it difficult to set up a network in which the systems of multiple organizations would be compatible. According to our survey, only 8 percent of companies have begun centrally coordinated efforts to embed RFID into overall strategic planning within the firm and with supply chain partners; 48 percent of the companies to which we spoke said they're still doing individual closed-loop projects. Moreover, because barcoding has helped warehousing and transportation companies continuously improve shipment tracking, 99 percent of shipments are already delivered problem free, limiting RFID's added value.

67 percent of companies said RFID is strategically important.

Despite the small number of successful RFID applications today, we believe that adoption of the technology will increase dramatically over the next four years. Some companies' resistance will be weakened as chip prices continue to fall and as standards inevitably take hold.

But there's also a tactical reason to be optimistic about RFID's prospects: As companies pursue more sophisticated mass customization, they need to track and analyze supply chain data at an increasingly granular level. To give customers what they want when they want it — customized, quickly, inexpensively, and efficiently — companies must know the status of supplies, inventory, manufacturing, and shipments almost to the moment. RFID could become the spy on the supply chain that every company wishes it had. ✚

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Making Differentiation Make a Difference

by Patrick Barwise and Seán Meehan

It is a widely accepted and rarely challenged tenet of marketing that companies can sustain competitive advantage only through "new and improved" product differentiation based on unique features and benefits. What a mistake.

Many companies wrongly allocate millions of dollars to add a slight twist to their product — a new color, a new taste, a new chemical, or a new label — to distinguish it from the previous version. They put an equal amount of money into promoting their new-and-improved product through advertising and other marketing campaigns. Their return, over the long term, is usually marginal.

Marketers ardently care about those little features because they believe the features make their products and services stand out. That's why they try so hard to build their brand's performance on tidbits like a deodorant with vitamin E, the cereal that proclaims it stays crispy in milk longer than the others, or the Web-enabled refrigerator. But customers hardly seem impressed. With all the brand tinkering that's gone on in the past decade, the University of Michigan's American Customer Satisfaction Index, which measures satisfaction for 200 companies in 40 industries, has never exceeded 75 out of a theoretical maximum of 100. Although scores in some industries have risen in the last few years, many industries rate lower today than they did in 1994.

What's wrong? When companies are so preoccupied with fiddling with individual products and brands, they lose sight of the value they can create for themselves, and for consumers, by raising the bar for the entire category. If Crest, Exxon Mobil, Tide, Citibank, or Marriott disappeared tomorrow, most American consumers would at worst feel slightly inconvenienced by having to switch to an indistinguishable alternative. (How different is Pepsodent, Shell, All, Chase, or Hyatt?) But how would they feel if an entire category — toothpaste, gasoline, detergent, consumer banks, or hotels — disappeared? That would have an effect on their lives they'd notice.

So how can a company be rewarded for getting consumers to notice their role in raising category quality? To start, companies need to know what customers really care about. In 1993, Unilever launched Mentadent toothpaste, a combination of toothpaste, baking soda, and peroxide delivered through a clever pump. Within two years, Mentadent became a $250 million brand with a 12 percent share of the U.S. toothpaste market, an impressive figure in this crowded category. Why? Because Unilever understood that dental hygiene is what's on people's minds when they buy toothpaste. So the company created a product that offered superior dental hygiene. Unlike a meaningless pink stripe down the middle of the toothpaste, this was differentiation that made a difference.

Because the product-extension mentality of "uniqueness without a difference" is so strong, however, executives who try to manage their brands by influencing category value frequently face an uphill struggle. That was Pat O'Driscoll's experience when she was asked in mid-1999 to lead an effort to improve Shell Oil Company's gasoline sales in its $30 billion European retail operation. Ms. O'Driscoll, then vice president of European retail sales for the oil giant, conducted extensive customer surveys to determine what really mattered to customers of all gas stations — not just Shell's — and what generally dissatisfied them. Overwhelmingly, customers responded that they wanted to refuel at a reasonable cost; be sheltered from sun, wind, and rain; and pay and exit quickly. Additionally, they expected the pumps and bathrooms to be clean and working.

Some Shell executives were hesitant to accept that merely fixing these basics would revitalize their European gas station business. To convince them otherwise, Ms. O'Driscoll asked senior and middle managers to make regular, unannounced visits to gas stations. She even conducted business meetings at gas station sites, all in an effort to let executives test her conclusions on customers by gauging their response to Shell's possible new initiative. Finally convinced that customers would respond well, Shell committed to retrofitting its European gas stations to meet these customer requirements by early 2000. The following year, Shell reported a double-digit increase in the European region's gasoline sales while its return on capital, which was zero prior to the initiative, reached double digits and exceeded targets.

This argument is not intended to advocate that companies take their eye off product innovation. In fast-moving industries, where the value added to products and services may quickly be commoditized, it's essential for companies focused on category expectations to be keenly aware of the product features that customers want, and to continue to deliver them as they improve their offerings and the expectations for the category. If they do not do these things, companies risk losing market leadership.

Orange PLC, a U.K.-based wireless operator, learned this lesson well when it debuted its mobile service, at the same time as another new entrant, in a market that already had two large players. Prior to launching its service in 1994, Orange had learned through consumer satisfaction surveys that cell phone customers were highly critical of mobile phone service providers. They complained about all kinds of issues — how call charges were computed, the mind-numbing number of rate plans, the poor network reliability. So Orange promised to reduce disconnected calls and improve reception. It also offered simpler rate plans, free itemized billing, caller ID, and a money-back guarantee if service failed.

None of these ideas was earth-shattering or technically challenging. But in the still relatively new market, being a standard-bearer for the category helped Orange gain substantial competitive momentum.

In response to Orange's success, rivals tried reducing their prices aggressively, threatening Orange's growth and survival. But Orange didn't change its strategy; it continued to add useful differentiating features that satisfied the basic needs customers expected their mobile carriers to fulfill: two lines on one phone, ISDN access, conference calling and prepay services, and credits for calls disconnected by the network.

Equity markets appear to have rewarded Orange's strategy. Orange and One2One, another startup, received their licenses at the same time. Both were well capitalized, and they were equally regulated. Neither had a technological advantage over the other. But while One2One stuck with the practices that gave the mobile phone service category a bad reputation among consumers — many calling plans, confusing billing approaches, and quirky networks — Orange sought to change them. In 1999, both companies were sold: Orange to Mannesmann and One2One to Deutsche Telekom. Orange fetched £20 billion, a premium of £13.1 billion over One2One's price.

What these examples tell us, and what we have learned from our research, is that most companies succeed by consistently satisfying basic customer needs better than the competition, not by continuously pitching them a unique selling proposition. ✚

How MNCs Can Fight the War on HIV/AIDS

by John Larkin, Ellen Knebel, and Joshua Trevino

HIV/AIDS is a human tragedy unparalleled in the sheer scope of the physical and emotional pain it inflicts on sufferers and on those who take care of them. The disease is also a global crisis that weighs heavily on corporations and governments worldwide — and it is getting worse. While HIV/AIDS epidemics in poor countries (many of them in Africa) are well known, the danger that HIV/AIDS will spread at the same speed through poverty-stricken and health care–challenged places such as China, Russia, or India is looming. Fearing the effects this would have on sales, labor resources, and suppliers in these emerging economies, more multinationals are engaging in local efforts to fight HIV/AIDS in countries where they operate, not just because it is socially responsible but because their businesses are at risk.

In March 2004, the Global Business Coalition on HIV/AIDS and the U.S. Department of Commerce sponsored a forum on leveraging the power of industry to fight HIV/AIDS. In preparation for that forum, Booz Allen Hamilton conducted interviews with key members of the international business community to gain a deeper understanding of current corporate HIV/AIDS initiatives, and to identify the best practices of multinational corporations in the battle against HIV/AIDS. A prime finding was that company efforts worldwide to conquer HIV/AIDS can have an even greater impact when organizations apply their core capabilities to the problem locally — in essence, using their leadership, expertise, and resources to address specific community needs in the countries where they operate.

It's no surprise that pharmaceutical companies, whose entire business is linked to curing and preventing disease, have been among the most active in using their competencies to combat HIV/AIDS, offering research expertise, clinical training, and critical health-care products. But increasingly, corporations from an array of non-health-related sectors are more aware of how HIV/AIDS can affect their businesses, and they are bringing their own capabilities to bear on the problem.

For instance, the media and entertainment industry is uniquely positioned to harness media access, messaging, programming, networking, and use of celebrities to deliver local awareness and education programs. And they're finding creative ways to get the message out. For example, Black Entertainment Television sends street teams to U.S. urban areas to educate youth about safe sex practices and the importance of getting tested for HIV. MTV administers sexual behavior polls to its employees to better analyze and understand HIV risk among certain age groups. Such practices could easily be adapted for other countries and cultures.

For manufacturers with operations or large work forces in regions affected by HIV/AIDS, the disease is directly linked to reduced productivity, high absenteeism, and increased demand for workers to replace stricken colleagues. In a 2003 study of the economic impact of HIV/AIDS in South Africa, conducted by the South Africa Bureau for Economic Research and the South African Business Coalition on HIV/AIDS, more than half of the manufacturers surveyed said the disease had led to lower labor productivity or increased absenteeism. Forty percent of manufacturers reported that HIV/AIDS had reduced their profits.

Manufacturers are highly integrated into the economic and social fabric of the communities where their plants are located. As a result, we found that they are well positioned to piggyback on existing in-country relationships and networks to provide health-care services and comprehensive prevention, testing, and treatment programs. In India, Tata Steel is utilizing its existing infrastructure of medical programs to mobilize resources to fight the pandemic. Tata Steel also developed a "Safe Highway" project to establish HIV/AIDS clinics targeted at truck drivers.

Black Entertainment Television sends teams to urban areas to educate youth about safe sex.

In our interviews, executives from consumer goods companies consistently stressed the long-term implications of HIV/AIDS on their global performance. These executives expressed fears that HIV/AIDS could reduce future product sales in emerging economies they have targeted for growth if the pandemic significantly erodes purchasing power in those locations. They also noted the mounting negative impact of HIV/AIDS on worker productivity among local supplier partners, as well as among in-country sales agents and workers in retail shops.

These growing risks are good reasons for consumer goods companies to tackle HIV/AIDS where the disease is doing the most harm. But there is another motive we learned about during our interviews: With competition among companies, brands, products, and marketing messages becoming more intense, increased involvement in the fight against HIV/AIDS is seen as a way to drive sales among the growing segment of consumers in the U.S. and Europe who are inclined to purchase products from companies active in supporting social causes.

Our interviews revealed that consumer products companies are applying a mix of marketing, advertising, messaging, and brand promotion capabilities to the creation of local campaigns for HIV/AIDS public awareness and education as well as to workplace programs for employee education, testing, and treatment. These companies are also using their power over the supply chain to enlist the help of channel partners. For instance, Coca-Cola Africa has enlisted Coca-Cola Bottlers of Egypt to join its employee health-care benefits program, which includes targeted HIV/AIDS services, such as coverage for antiretroviral drugs, for workers and their dependents.

Although the model initiatives discussed here are a hopeful sign that businesses are becoming more active leaders in the global and local fight against HIV/AIDS, there is much more companies can do. Because many companies don't know where to begin and don't have the skills to manage ongoing social issues campaigns, greater coordination is needed across industries to help engage companies in integrated HIV/AIDS programs involving corporations, governments, and NGOs.

It is equally critical that companies not view financial investments as the sole means of contributing to the battle against this disease. Leveraging their products, services, and assets to combat HIV/AIDS through co-investment strategies, in-kind donations, or other approaches that promote public–private partnerships is just as important.

One of our essential findings is the importance of executive leadership in the success of partnerships and in sustaining HIV/AIDS programs in the workplace. Direct interaction among top executives working in HIV/AIDS-impacted regions and their colleagues at the home office, and greater integration of leadership-training programs with strategic initiatives, need to occur. More executives from outside the region must visit subsidiaries and hospitals and other health-care support facilities to learn firsthand about the devastation of HIV/AIDS and to inspire leadership to do more to actively develop policies on HIV/AIDS and provide resources, education, and care services for their employees and the communities they serve.

Confronting HIV/AIDS makes good business sense, and our research shows companies are becoming more proactive and innovative in leveraging their resources in the global fight against the disease. Their strategies offer models for others to join this fight, too. ✚