

# An Examination Of The Cultural Change Of Systems Implementation In Retailing

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## Abstract

*This paper reports on the findings from a case study of three retail organizations. Of particular interest to the researchers was the implementation of a quick response (QR) system in each of the organizations. QR requires a heavy investment in information technology (IT). As reported in the interviews, the success of the implementation was dependent on how the organizations adapted to the changes imposed by the IT implementation. This paper discusses the reactions of retail personnel to IT change in five specific areas: power relationships, communications, functional integration, changes in work methods, and other cultural issues of IT-enabled change. From the over 50 hours of interviews, six recommendations are provided to help retail organizations cope with the changes imposed by IT implementation.*

## Introduction

Today's successful retail manager faces the imminent and crucial problem of managing cultural changes brought about by the deployment of information technology (IT) throughout the organization. Information technology collapses time and helps eliminate unnecessary activities. In the search for competitive advantage, companies in the retail industry are implementing a system called Quick Response (QR) to aid in complex decisions regarding promotion, pricing, sourcing, and inventory management. QR systems are built upon cooperation between manufacturers, vendors,

wholesalers and retailers and are designed to streamline the flow of goods through entire distribution channels. These systems apply the just-in-time concept throughout the distribution channel, based on true partnerships between retailers and their suppliers. QR systems typically include: barcode scanning at point-of-sale, collection of merchandise data at the color/style/ size level, electronic transmission of purchase orders and other, 95% service level of order fulfillment from vendors, strict controls on retailer inventory levels, and vendor-managed inventory systems. The underpinnings of QR come from recent dramatic advances in information technology (IT). Information has become one of the three major economic resources of retail busi-

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*Readers with comments or questions are encouraged to contact the authors via e-mail.*

nesses, along with capital and labor. Information technology enables today's retail manager to focus on moving and managing information rather than product (Cooke, 1994). For example, updated logistics systems depend upon intricately designed delivery schedules and narrow delivery windows controlled by information technology.

The infusion of IT into any organization results in change. Most of the time, we focus on the change in the processes, for it is the process change that causes the desired organizational effect, such as increased productivity, reduced costs, quicker response to customer needs, and improved decision making. All change management can be problematic, but IT-enabled change is unique; it creates issues different from general change processes. Managers must know how to integrate the technology, business processes, and the organization's culture to achieve the goals they expect.

A recurring theme of systems implementation is the inclusion of organizational or corporate culture for managing IT-enabled change. Literature suggests that, in spite of resulting cost savings and decision-making improvements, many IT-enabled implementations are not successful, and their lack of success can be explained, not by shortcomings in the technology, but by failure to manage the resultant changes in corporate culture (Bamfield, 1994; Benjamin & Levinson, 1993; Sankar, 1991). Therefore, it may be concluded that successful management of IT-enabled change will include planning for and management of resulting cultural changes as well.

This paper presents results of a case study of three large retailers and examines the cultural changes due to implementation of QR systems. It documents some of the ideas, opinions and responses of professionals in those organizations toward the implications of IT-enabled change on their retail organizations. The objectives of the study were to investigate: (1.) How pervasive QR change was on retail organizations; (2.) How the organization as a whole had

changed due to QR's introduction; (3.) What long term effects QR had on the organization's culture; and (4.) How the implementation of QR had changed specific jobs within each retail firm.

Information from transcripts of over fifty hours of interviews was compared and analyzed to determine organizational and cultural changes resulting from QR implementation. Together, these interviews create a picture of the changes caused by the use of IT in retail companies and in retailers' search for technology that can reduce costs, increase productivity, and elevate customer service levels within the organization.

### **Cultural Issues of IT-enabled Change**

It is generally accepted that the infusion of IT into an organization results in organizational and cultural change. Those responsible for the infusion of IT into an organization (Information Systems professionals) and those receiving the technology (workers and managers throughout the organization) must understand that change is inevitable as new technology is introduced (Fougere, 1991). Several specific organizational and cultural issues resulting from IT-enabled change have been previously identified (Marcus, 1983; Morgan, 1992). These issues form the foundation of successful IT-enabled change. A brief discussion of these issues follows.

#### *Power Relationships*

One of the most conspicuous and significant areas of change is the redistribution of knowledge, power, and politics (Marcus, 1983). This area of change is generally characterized by uncertainty and conflict (Sankar, 1991). IT-enabled change affects organizational power in three ways (Lawrence, 1954).

1. Information equals power. Individuals that control access to the information used to define decision criteria or evaluate alternatives can influence the outcome of decision processes. The

implementation of technology is one method to change access to information. Knowledge and access to information represent power within an organization, and when these are changed, either by systems or other people, someone usually experiences a loss of power that results in insecurity (Benjamin & Levinson, 1993), apprehension, confusion and possible failure (Robbins, 1993). If information flow is changed by technology, sources of power and the distribution of power are also changed (Lawrence, 1954; Rochester, 1990).

2. Technology equals power. Access or control of technology can symbolize power or present the image or the ability to influence outcomes. The symbol or image can sometimes affect organizational power even though the intent or the ability of the individual to actually do so is nonexistent. The acquisition of technology is many times associated with the acquisition of power and powerful individuals and organizational sub-units.

3. Technology can be intimidating. The use of technology can change the behavior of individuals and the performance of organizations. This is especially true of individuals who shy away or are afraid of technology.

One result that comes from a shift in power relationships is that managers begin to shift their focus away from achieving organizational goals to power acquisition strategies for themselves.

### *Communications*

IT implemented change can result in improved or changed communications. Issues that influence system implementation include how well the benefits are communicated to employees, how comfortable employees feel in initiating questions, and how they receive information crucial to their changed jobs. Much of the new communications network in retailing is horizontal rather than vertical and can allow workers needing information instant access to the data they

need. Often work groups will develop informal processes for passing information between themselves more efficiently (Fougere, 1991). Sankar (1991) reports that in an information system implementation at GM, workers constructed a more detailed communication network with use of elaborate horizontal relationships instead of the previous narrow vertical channels. Organizational effectiveness was increased due to communication networking coupled with the technical power of the system.

### *Functional Integration*

The implementation of IT change reaches across different organizations in the retail chain and functions in each individual organization, from suppliers to customers. Databases and common access to IT improve links; however, databases often require gathering of data across several different organizational systems or across different organizations. Problems can arise if there are dissimilar infrastructures within the organization or organizations. Another element of functional integration in retailing is shifting the focus of executives to things that benefit not only their division or firm, but also all other participants in the enlarged system, including suppliers (Helms, 1990). Process changes dictate that managers responsible for the change must deal with various cultures and organizational structures. They learn to mobilize forces for the common good across organizational boundaries (Benjamin & Levinson, 1993).

### *Changes in Work Methods*

IT changes the way people work. It increases the pace of work by decreasing process or order cycle times, requiring faster response time. Increased energy, resources and time are required to deal with organizational issues brought about by a shorter cycle time (Benjamin & Levinson, 1993) because workers and managers have a shorter time to react and perform their everyday work tasks. IT decreases work autonomy and increases collaborative work, thereby increasing the productivity of mental work and

requiring more negotiation and less independence. IT also changes access to information, resulting in power shifts among managers and departments. Finally, IT changes access to people, both inside and outside the organization, changing the social framework of jobs. Each of these conditions changes work methods in the organization and is usually met with employee resistance.

#### *Other Cultural Issues of IT-Enabled Change*

Other cultural issues relating to IT-enabled change included: who initiated the change; how extensive the change was; and who resisted it. Change that is self-initiated has the greatest chance of acceptance. In the absence of self-initiation, visible support from upper management is crucial in taking the change forward. Employees must see how the change fits into the overall objectives of the firm. Extent of change is another issue. A large organizational change will encounter more resistance than a small change. The more people affected, the more resistance encountered. In addition, who resists the change will have a large impact on its acceptance. If an executive or manager resists, lower level personnel believe resistance is acceptable. Conversely, if the executive or manager champions the change, resistance will be lowered and the probability of acceptance increased.

#### **Methodology**

The basic methodology taken in this study was to obtain detailed data regarding IT-enabled change (using QR as the main focus of IT infusion into the organization) from three large retail organizations. Detailed data was collected from fifteen professionals in the companies using an interview methodology. These companies represented a good cross section of retail environments to facilitate comparing and contrasting of the results. While the companies were not randomly selected, they were carefully selected to represent diverse retail environments. It was hoped that by gathering data at the source (i.e. using the case study methodology), we

could identify specific areas of need for retail organizations and close the gap between theoretical research and the detailed study of a few actual organizations.

The first company is one of the five largest mass merchandisers with over \$30 billion in annual sales. Managers interviewed included the Vice President of Information Technology, Director of Vendor Relations, a senior buyer, three buyers, and a replenishment analyst. The second company is one of the top five department store chains in the U. S. with over \$5 billion in annual sales. The Vice President of Distribution and the Assistant Manager of Quick Response were extensively interviewed. The third business is a department store chain with \$1.5 billion in annual sales. Interviewed were the Manager of QR, Vice President of Training and Development, Distribution Center Manager, Manager of Training, Manager of Applications and Support, and a senior buyer.

It is believed that the comments of members of these three organizations would provide detailed insight into cultural changes that result in retailing organizations due to systems implementation. They were asked to respond to a series of questions regarding QR and IT change to validate and verify their experiences and to provide comparisons among the three organizations.

#### **Results**

The results of this study provide some interesting reactions concerning the cultural changes brought about IT systems, through the implementation of QR systems, in retail organizations. Managers in this study considered the implementation of QR a "pervasive" change because it involved changing many interrelated systems, including: vendor information systems, item number systems, purchase order management systems, sales audit systems, point of sale systems, order entry systems, physical movement systems, and promotional systems. Because of this widespread impact, managers report extensive cultural changes in their organizations

that resulted from the implementation of QR systems. Their responses are classified using the five specific issues of IT-enabled change previously discussed.

### *Power Relationships*

Specific power issues that were identified include: visibility within the organization, changes in perceived power, personnel numbers and accountability, and power relationships between retailers and vendors.

People from all three companies identified visibility within the organization. Any manager or department involved with the new system was highly visible, both to the company as a whole, and, more importantly, to executives. Departments that implemented the system showed obvious improvements in their sales and profitability while notably increasing customer service, all of which created favorable visibility and a perceived increase in power. Greater visibility often lead to greater resource allocation and generally more attention from management.

People from all three companies also mentioned changes in perceived power. Perceived power is important in an organization and desired by most managers. Changes in perceived power, due to IT-enabled change, can be both positive and negative. For example, the Training Department in each company played a more visible and vital role during QR implementation because everyone had to be trained. Trainers became essential to the success of the system, thereby gaining stature (and power) within the firm. On the other hand, there was a perceived loss of power within the MIS Department. They were now viewed as a support department for QR, on the same level as other support departments such as accounting.

Personnel numbers and accountability became an issue. In one company, a department went from two assistant buyers to one because of QR. In this particular case, it was viewed as an increase in power because departmental costs

were cut, increasing productivity, but other corporate cultures may have viewed this as a loss of power. The new system also increased individual accountability because each person's work was visible to everyone on the system.

Finally, power relationships between retailer and vendor changed with QR. The new system seemed to reduce or eliminate historical power struggles between retailers and their vendors. Retailers and vendors developed partnerships to work together to solve supply problems.

### *Communications*

Every interview included some discussion of improved communications. Specifically, QR implementation affected intra- and inter-organizational communications in numerous ways.

Communications inside the organization (intra-organizational communications) changed in three ways. The first change was with functional communication. Whereas before, people in different departments stuck to their own areas, the new system caused information to cross-functional boundaries. For example, sales associates now communicated directly with buyers and with personnel in the warehouse. Second, vertical and horizontal channels of communication were encouraged. Sales associates particularly were encouraged to discuss problems/issues both with their supervisors (vertical), with corporate information services and the QR department (horizontal). This is another way to empower employees. Third, upper management got information more quickly from the sales floor, allowing them to stay in closer touch with day-to-day floor activities. In the past, merchants were not informed of customers' requests. After implementation, the automatic replenishment system took care of reordering basics, allowing buyers to focus on areas not previously addressed, such as specific customer needs. Buyers talked more frequently with sales associates about these issues.

Communications between retailers and vendors (inter-organizational communications) also changed. First, communication with vendors became more frequent and more important to the retailer. These communications were often managed through a new function called vendor relations (nonexistent before), a professional group trained in dealing with vendors. Second, communication with vendors became more specific and detailed because each functional area had a point of contact with vendors. And, third, problem solving became faster because the two parties understood each other better. This was particularly true with vendor managed inventory companies, where vendors monitor sales and actually make replenishment decisions for retailers.

### *Functional Integration*

Functional integration increased significantly due to QR implementation. Functional areas within the retail organization began to work together after IT implementation. Before the changes, departments were very territorial (an "us vs. them" mentality according to several interviewees, especially from MIS). For QR to work, there must be cooperation between IS, accounting, buyers, customer service, and all other areas of the business. For example, dock personnel knew the importance of the new system and expedited "QR merchandise" onto the sales floor.

Not too many years ago it was unthinkable for retailers to share sales and other proprietary information with their vendors. However, with QR, retailers have truly integrated with their vendors, not only in information systems and warehousing interfaces, but also in sales analysis, inventory advice, and problem solving. Integration now sometimes goes back two steps from retailer to vendor to vendor's supplier. Problems are solved more openly and quickly because functional people within all organizations are talking to each other.

Functional integration also resulted in the

development of the Vendor Relations functional area. This happened because vendors now played such a vital role. Some retailers developed a new functional area specifically to deal with vendors made up of people who are internally and externally focused at the same time.

### *Changes in Work Methods*

While implementation of IT-based systems generally makes people's jobs easier in the long run, difficulties often arise in the short run from changes in work activities and processes. Work habits must be modified, new skills and routines learned, new work relationships formed, and new responsibilities handled. These changes in work methods cause stress for employees. Interviewees reported significant changes in work methods. Buyers spent less time with detailed re-ordering and more time with monitoring inventory, watching sales results, studying category movement, handling customer requests and planning promotions. Sales associates had more information, more decision making power, greater communication with others in the company, more power over reorders, greater understanding of the company and a greater understanding of how they fit into company goals.

The MIS Department was impacted by more communication outside their department and loss of exclusive information power. Usually, they were instrumental in initially bringing the system up, but then power shifted and MIS was left in a support role. In addition, they now had to deal with both internal and external people, requiring them to have skills they had never cultivated before.

Distribution center employees had to deal with quicker processing and more interactions with buyers and sales associates. They no longer had to mark items. Their work methods were easier, since most vendors have the same shipping standards. They performed their jobs under stricter standards but were much more efficient. Security operations became easier, due primarily to smaller shipments of merchandise, which were

easier to handle, watch over, and move around. QR reduced the amount of room needed for stock by about 40%. Finally, the use of Electronic Data Interchange (EDI) eliminated the need for human intervention for all but a few small vendors in every company.

In addition, people in all of these functions were now in contact with vendors on a regular basis. There was greater vendors participation in retailer decision making. Vendors understood the retailer better and were becoming more focused on the ultimate consumer. They could do their own planning better because retailers informed them of their future plans (like dropping an item or putting something on sale). Most vendors were considered "partners" to the extent that retailers were forming "vendor relations" departments and training their own people to deal more successfully with vendors.

#### *Other Cultural Issues of IT-Enabled Change*

There are several other cultural issues of IT-enabled change. These include top management commitment, the focus of change, the extent of change, resistance to change, and information shift.

Top management commitment was identified as an organizational change issue in all companies interviewed. All three companies indicated that their top management was strongly committed to the QR system. In one company, the idea originated with the CEO. In the other two companies, the idea originated in middle management (they heard or read about it), and they forwarded the idea to top management. In all three companies, QR systems were supported by top management, which everyone believed increased its chance of success.

Focus of change is that retailing can become a customer pull-through driven system. All three companies said that the main reason for implementing the change was for the customer. One concept on focus mentioned by all was that everyone's focus should be on the ultimate con-

sumer. That way the focus is consistent and clear to everyone. Retailers are encouraging vendors to learn more about ultimate consumers and sell to them rather than focusing on selling to retailers.

Extent of change is also an issue. Numerous system changes had to take place to accommodate QR, including: vendor information system, item number system, purchase order management system, sales audit system, point of sale system, and order entry system. The extent of the change caused by implementing QR systems was one of the more difficult issues for all the organizations.

Resistance to change was seen in many areas. High up-front costs were a problem for QR start-up in all the companies. Smaller retailers and smaller vendors especially resist setting up these electronic systems because of the huge up-front costs. Retailers usually pressure vendors to implement systems such as EDI to acquire or keep a competitive advantage. Smaller companies feel increasing pressure to implement these systems because otherwise they will lose business. One factor that helped overcome resistance was a retailer-initiated vendor start-up program. Two of the three retailers helped set up programs to assist smaller vendors in getting onboard electronically. Changes in the POS system were met with resistance due to the extent of change. Before, most companies' systems used a 7-digit internal stock number. As a result of the QR system, expansions were made in hardware, software, transaction types, and numerous other systems-related areas to accommodate a 12-digit UPC number. Cross-referencing of the old 7-digit stock number with the new UPC number had to be implemented in each of the systems so a particular item number from the old system was always associated with the UPC number in the new system.

An information shift was noticed in all companies due to the IT-enabled change. First, there was a better planned inventory due to the information shift. The exactness of an integrated,

automated system resulted in lower stock levels and higher turns. Stock now consists of what is actually selling. For example, associates used to key in an item number and hit the multiple-item key if there was more than one, even if it was a different color or size. Reorders then reflected this erroneous inventory information. Now they have been trained to scan every item individually to capture correct data. Second, the shift in information resulted in more accountability within the company. Because information had shifted to all areas within the business, accountability for one's area increased. Everyone had computer access, so everyone could see who was doing what. It was apparent quickly who was not doing what they were supposed to be doing. Finally, there was better customer service due to a shift in information because stock levels were replenished more frequently and more accurately, giving a more well rounded stock more of the time. In one company, order turnaround time went from 4-5 weeks to 10 days. Third, there was a shift of information to vendors. They were more active in forecasting and planning with retailers.

### **Recommendations**

Every person interviewed considered implementation of IT-based QR systems by retailers a pervasive organizational change. Every functional area within these companies that interfaced with the new QR system experienced dramatic alterations in how things were done. Given that employees typically meet IT-change with considerable resistance, it was expected that these changes would meet with similar resistance. This was confirmed for all three of the retailers that took part in this study, even though employee resistance was not specifically measured in the study.

How the organization had changed, the second objective of the study, was that systems, jobs, communications, work relationships, social relationships, job responsibilities and work standards, among other things, changed dramatically. Retailers implementing QR can expect all areas of their organization to feel the impact.

This impact is particularly striking in the area of corporate culture, the third study objective. QR-change paralleled IT change in every cultural area, including changes in work methods, the fourth study objective. A large percentage of workers in retail organizations implementing QR can expect to make significant adjustments in their day-to-day job activities.

Based on these findings, we see a parallel between QR change and IT change. Therefore, since significant resistance to IT/QR is likely, the following recommendations are offered as assistance in accomplishing IT implementation in retail organizations.

1. Obtain Senior Management Support. It is important that senior management be wholehearted supporters of any new system, and that they communicate to all employees why the company is adopting it. Resistance will be minimized the more employees see the reasoning behind the change and that the change is supported by senior management.
2. Develop an Implementation Strategy. There should be a systematic process plan for implementation providing the structure employees need. Each step must be detailed and contain a common vocabulary and frame of reference to maximize understanding and participation. The implementation strategy must be carefully conceived, written, and communicated to all affected personnel. Resistance will be minimized if employees are familiar with the direction the company is headed.
3. Put the Infrastructure in Place First. The foundation of IT change is suitable hardware and software. This especially pervades into the implementation of a QR system because there is an added dimension of the ability to inter-link with vendors (i.e. systems outside the organization). Attention should not focus solely on hardware. User-friendly software will enable employees to learn the system faster and not be intimidated. Resistance will be minimized if employee frustration can be lessened while learning the system

and all the hardware and software are in place before attempting to implement the system.

4. Fit the System to the Users; Don't Change the Users to Fit the System. Because change generates forces that impede organizational effectiveness, implementation should emphasize fitting the system to the needs and capabilities of its user, and not the other way around. Introduce the interpersonal domain to increase efficiency of communication and increase productivity. Give everyone in the organization, from sales associates to buyers to managers, the support they need. Engage subordinates in the process. Resistance will be minimized if the importance of changing interpersonal relationships is recognized.

5. Train All Users Prior to Implementation. The Training Department is instrumental in readying employees for their new responsibilities, including training in system access, information utilization, decision making/problem solving both individually and in employee groups, team building, and executive counseling skills. Resistance will be minimized if employees can effectively find the information they need quickly and then interpret and employ it as needed. To do that, all users must be trained before the system is implemented.

6. Encourage Open Communications. Open communications should be encouraged so employees have access to both traditional and non-traditional channels. They should be taught to use any communications means necessary to solve problems quickly. Through meetings and e-mail, intra-company networks should be established, with regular communication encouraged across organizational functions. Too often employees' primary communication is with their direct supervisors. With QR, horizontal channels should be supported in search of common solutions. Resistance will be minimized if all workers are encouraged to use all possible communication means.

## Conclusions

Perhaps the greatest barrier to change is the notion that IT-based systems simply happen or that people will simply change because it is necessary to do so (Robbins, 1993). There is no question that implementing technology in an organization involves organizational change. Implementing technology means change. Many of the difficulties detailed in this study in implementing technology may be due to the lack of recognition of and preparation for change. Understanding the nature of implementing technology and the likely results, can allow retailers to avoid some of the difficulties and be more successful in implementing IT in their retail organizations.

This paper has suggested that one should develop a strategy, ensure top management support, have the IT infrastructure in place, train, almost to the point of over-training, communicate, and focus on human needs to deal with the impacts of IT change. Each of these areas become important to ensure that IT implementation is successful in retail organizations. Information technology is one of the three major economic resources of a retail organization. Retail managers must learn to deal with the changes caused by IT implementation to survive the competitive nature of the industry.

## Suggestions for Further Research

This exploratory study opens many avenues for further research in understanding the impact of Quick Response on both retail and vendor organizations. The objectives of smooth transition and proper functioning of the new system demand greater comprehension of the affects of its implementation. Some areas for further investigation include: changes in the nature of power relationships within the firm, the enhanced role of sales associates, specific ways top management communicates its support for the new program, what positions within the firm experience increases or decreases in perceived power, and how power relationships between

retailer and vendor evolve as the system matures. In addition, changes in the nature of communication lines in the firm, measuring the degree of employee resistance and programs to overcome it, and the role of training in overcoming obstacles are all important implementation issues.

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