



Extreme Competition

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Changing Change Itself

Change happens. Nothing in business is more constant or challenging than “change itself,” which brings us to the need for radically improving “change management.” To be effective, change management should be multi-disciplinary, touching all aspects of the organization. However, at its core, change management is primarily a human-centered issue, for it is mainly concerned with how work gets done when change happens.

Implementing new work processes and technologies, and overcoming resistance to change are fundamentally people issues. But that doesn't mean that psychology and behavior modification are all there is to it; it also means finding new ways to support how humans actually work. Despite advances in business automation over the past fifty years, the heart and soul of every organization is still its people – without whom the organization will stop dead in its tracks. Yet there is presently no complete way to manage the complex, continually changing work processes carried out by humans – and current work support technologies treat people as if they were pinions in a machine. Frankly, we need to do better, and the International Truck and Engine Corporation provides us with an example of how process-enabled support of change management can provide the foundation for business transformation.

International Truck and Engine Corporation is a wholly owned subsidiary and operating company of Navistar International Corporation. It manufactures medium- to heavy-duty trucks and school buses. It accounted for 70% of the parent company's revenues of \$9.7 billion in 2004. International has a 40% market share in Class 6-7 medium trucks and maintains its number three position in Class 8 heavy-duty trucks. More children travel to school on International-built school buses than on those of all its competitors combined.

The truck manufacturing industry worldwide is going through the same pattern of stresses and change as did car manufacturing in the 1970s and 1980s – globalization, consolidation, cost slashing, supply chain streamlining, faster product innovation, and, most important of all, a new responsiveness to customers. To complicate matters further, the truck market is highly volatile because demand is so dependent on the economy.

There are ten major players in the medium-duty and heavy-duty truck market, all with massive global overcapacity. Most industry commentators expect the industry to become a consolidation of no more than five players. Every manufacturer has moved aggressively to cut labor costs, partly through productivity improvements. Renegotiations of union contracts, plant closings, and increased rationalization of capacity are the industry norm. So, too, is a faster product innovation

as the industry responds to increasing customer demands for enhanced features, quality, and services.

International Truck and Engine is challenging industry tradition. It is positioning for “exactly in time” manufacturing, with shorter product development cycles, aggressive production cost reduction and freshly designed vehicles built to “car like quality.” It aims to cut labor costs per vehicle by 40% and to change the cost dynamics of its business so that it can be profitable on low volume. It has already reduced the number of combinations of engines and transmissions in its medium-duty truck lines from 800 to 34. Its first NGVs (Next Generation Vehicles) were introduced in early 2001, with a continued flow of new models and enhancements coming on a regular schedule.

With this background, International has undertaken a series of innovations in business process management, of which the Product Change Management System (PCMS) initiative is one of the most striking successes.

Time is the issue in all of the subprocesses that make up International’s product development process. Complexity and fragmentation dominated the old process, causing unnecessarily long cycle-times. Producing a truck involves continuous interactions, collaborations, and negotiations among multiple parties. Developing new products and enhancing existing ones covers changes to, or new designs of, engines, chassis, mirrors, heating, electronics, seats, axles, fuel fills, gauges, transmissions, controls, welding, fenders, grilles, paint, and many, many other components. These cannot be handled in isolation. Even a small change may affect other areas of design, production, and part sourcing. Coordinating changes in the new PCMS involves many departments and external suppliers, meeting management’s demands for collaboration, integration, and visibility.

Prior to the PCMS, managers typically had to make a number of phone calls and send several emails in order to verify the status of their change requests. Frequently, they would wait for days for a response, often due to key participants being busy, traveling to plants or suppliers, or paper requests being lost or ignored. According to Bill Bailey, Director of Process Development, “In the past, the change management process involved too many ‘handoffs’ from one group to another. In many instances, engineers under pressures of deadlines and demands from other areas of the business used ‘workarounds’ (i.e., unauthorized, though understandable, bypassing of the process which was driven by the official request for change). Rework was commonplace when it turned out that some step, or someone, had been left out of the discussions and agreements.” International’s old product change management process was paper-based and lacked standardization. Members had no clear understanding of the entire process. Critical process information and performance metrics, if they were captured at all, were stored in disparate data repositories and spreadsheets on several hundred desktops and legacy systems. It wasn’t uncommon to lose much of this information with employee turnover. Consequently, International suffered unnecessarily long cycle times in an industry where time is of the essence, and delay represents significant costs.

Senior engineers and marketing professionals spent an inordinate amount of time searching for documents and waiting for approvals. Team members never knew, in real-time, who had committed to deliver a specific element of a product change, who was working on what, and when it was scheduled to be completed. These long cycle times were exacerbated by significant rework and tension among the teams due to lack of clarity and agreement about the work that was to be performed. Process participants had no visibility into the process, and they were not held accountable for their participation. Frequently, days would go by before the process owner could get an update as to the status of a change order that was under development. Moreover,

International's management was in the dark about a very critical portion of their business – time-to-market.

International's new PCMS resolved all of these issues. International's PCMS is no ordinary kind of technology, for it is not about traditional automation that aims to cut out human work; it's about providing technology support for people-to-people interactions. It can be thought of as a "human interaction management system," and is based on the closed-loop business interaction model of Drs. Terry Winograd and Fernando Flores, set forth in their 1983 book, *Understanding Computers and Cognition*.

A common complaint of business people is that technical folks have no real understanding of process. Most technical people view a process as a process map, a set of data systems, and a series of predictable sequential steps. For a business person, nothing could be further from the truth. For an executive, a mission-critical process is the sequence of actions that enables the company to deliver on its commitments and add value to customers, using a combination of people, methods, and tools. Executives, like customers, don't see or care about process maps; they care about customer satisfaction, time-to-market, reduced costs, increased productivity, and improved quality. This lack of understanding frequently makes the step of process redesign a lengthy and frustrating engagement for both technical and business people. So it is only through the use of the human interaction model that process redesign is transformed. As Bill Bailey, head of the Process Development Department, stated, "The interaction model acts as a translator between the language of business and the language of technology."



Figure 1. Winograd-Flores Closed-Loop Business Interaction Model.

International's PCMS is a new process design centered on managing and coordinating the negotiations that constitute the process – requests, collaborative agreements and commitments, and approvals. The streamlined process is described in the terms of the "loops" that form the core of the system design and implementation. The PCMS coordinates interactions between an individual or group making a request (the Customer) and the recipient of that request (the Performer) in four phases:

1. Preparation: The Customer proposes work to be done by the Performer and issues a request.
2. Negotiation: The Customer and Performer negotiate until they reach an agreement (commitment) about the work to be fulfilled.
3. Performance: The Performer fulfills the request and reports completion.

4. Acceptance: The Customer evaluates the work and either declares satisfaction or points out what remains to be done to fulfill the request.

Through the use of the PCMS, the project lead works with his business colleagues to map out the business process by asking certain questions: Exactly what work is required? Who is asking for the work to be performed – i.e., who is in the *role* of the Customer? Who has to perform the work – i.e., who is in the *role* of Performer? When is the work due? The model allows business people to assign roles to participants, to create accountability, and to eliminate confusion. After a Product Change Request has been approved, a Work Authorization is created. The Product Center Program Manager, acting on behalf of International's end customers, acts as the "Customer" in this subprocess step and requests a change to Engineering. The request is assigned to a Lead Engineer who acts as the "Performer." The two parties negotiate the conditions of satisfaction, thereby reducing potential misunderstandings that cause unnecessary delays and rework. Although the Lead Engineer may not actually perform all of the work for the change, accountability remains throughout this entire portion of the process. The Lead Engineer negotiates the actual design and other work with engineers of various skills, but all the while maintains the commitment to the "Customer" or Product Center Program Manager. When the product change has been completed, the work is sent back to the *Customer* for approval and acceptance.

A key benefit of using the Model is that no step in a process is considered complete until it is accepted by the *Customer* for that particular step. In other words, a business process designed using the business interaction model becomes a series of loops, representing interactions between parties involved at different stages of the overall process. When a step is done correctly, a loop is closed, and the process continues. Using this closed-loop methodology will ensure that each step of a job is done accurately and completely, leading to the desired end-result.

The competitive motivation for the PCMS initiative came from senior management who recognized that efficient planning and integration of product changes could enable the company's business transformation. The product change management process is the most complex of all of International's cross-functional and cross-corporate boundary processes. Successful instances of the process require creativity, collaboration, speed, and reliability. It is driven by the Change Request. This is where all the ideas for product change and innovation are created and debated among various department personnel. A Product Center Manager and a Chief Engineer review customer and company needs to determine the potential product changes that will move forward in the process. Overall, this subprocess has been reduced from an average of 30 days (in the paper mode) to an average of five days in PCMS (75% reduction). Changes can also now be processed in as little as two days. Senior management summarized the payoffs from its PCMS as ROI of 362%, 3 month pay back period, increase in productivity of 30% for process chain participants responsible for coordinating and completing key steps of the product change process, cycle time reduction greater than 75%, and reduction in rework along the process chain of steps by 33%.

But, according to Jeff Bauermeister, Process Automation Manager, there is much more to International's process journey. "Our Process Development Team has automated nearly 30 business processes ranging from administrative to key engineering, manufacturing and product development processes. We have taken extreme care to ensure a standard look and feel across all processes. This has resulted in users leveraging their previous Web-based process knowledge and drastically reducing training time. The training is focused solely on the new process. Another feature is that when you make a process change, it changes all future process instances immediately. Try that with a paper or manual process!"

As in many other areas of manufacturing, the short-term picture in the trucking industry is clouded and discouraging. The long-term scenario is one of increased competition, consolidation, globalization of operations and relationships, and, above all, of *innovation* as the price of staying in business. The new International is innovating everywhere and its new PCMS is at the core of that innovation. For International, the future looks clear and bright, and the lessons learned go beyond its industry, for, regardless of the industry, “changing change management” is an imperative for successful 21st century competition.

TAKEAWAY: Change is the only constant in today’s business, and change management must be taken to new levels in order to keep pace with the complexity and speed of global business. Let’s recall the words of former chief scientist at Xerox, John Seely Brown, “processes don't do work, people do.” So, at its core, change management is primarily a human-centered issue, for it is mainly concerned with people getting work done when change happens. Thus, new business process management tools must go beyond the system-to-system and human-to-system paradigms, and on to *human-to-human interaction management*. In the brave new world of total global competition, human interaction management is needed by companies that want to master change management to compete for the future. Is your BPM vendor going beyond workflow and on to human-to-human interaction management? If not, you need to sit your vendor down at the table and talk about your company’s future – and your vendor’s future at your company.

Peter Fingar’s latest book is *Extreme Competition: Innovation and the Great 21st Century Business Reformation*. (Meghan-Kiffer Press, 2006). To launch a 2 minute video: “Extreme Wake-Up Call” go to www.mkpress.com/extreme