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Optimizing inventory and store results in big box retail environment

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Abstract

Purpose – This paper seeks to examine key factors within the control of store managers to optimizing inventory and store results.

Design/methodology/approach – This research integrates principles of action research and traditional research in a big box retail environment.

Findings – While this study confirms theories that link inventory to sales, merchandise selection, and technology, it emphasizes the role of people. Furthermore, it proves that different stores within same companies and different departments within same stores deliver different results due, mainly, to human factors – specifically, critical thinking, functional knowledge, and leadership.

Research limitations/implications – This study does not address inventory assortment, space allocation, automatic replenishment, planograms design, technology, logistics, and other factors that may impact inventory but mostly outside the control of big box store managers.

Originality/value – This study proposes practical tools and ideas to optimizing inventory and business results in big-box stores. It also serves as an example of extracting and verifying retail management theory from practice. As such, it benefits both practitioners and academics.

Keywords Inventory management, Critical thinking, Functional management, Leadership, Action research

Paper type Case study

The issue: inventory management

Inventory optimization is a major challenge not only for retailers and manufacturers, but also for US Government. A study by the Government Accountability Office (GAO, 2005) concluded that the department of defense (DOD), does not have effective management processes, systems, and controls in place to assure that it is reutilizing excess inventory to the maximum extent possible and safeguarding excess items from damage, loss, and theft, as required by federal regulations, DOD policy, and GAO internal control standards. As a result, the study found substantial waste and inefficiency related to DOD's excess property reutilization program. Of the $18.6 billion in reported fiscal year 2002 and 2003 excess commodity disposals, $2.5 billion related to items in new, unused, and excellent condition (A condition). Of the $2.5 billion, the study determined that $2.2 billion included substantial waste and inefficiency because new, unused, and excellent condition items were being transferred or donated outside of DOD, sold on the internet for pennies on the dollar, or destroyed rather than being reutilized. The study also found that DOD purchased at least $400 million of identical commodities instead of reutilizing available A-condition excess items (GAO, 2005, p. 4).

Manufactures and retailers face similar challenges with excess inventory. In early 2006, Wal-Mart announced plans to cut inventory by $6 billion in 100 days; and

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Charles Holley, Wal-Mart Senior Vice President said "Inventory is playing a big part in return on investment… As we start getting more market relevant… you'll see inventory will still have a ways to go down" (Cassidy, 2006). Estimates of excess inventory vary widely. A survey by AMR Research projected that the excess consumer goods inventory would exceed $60 billion in the USA and $120 billion globally at the end of 2000 (*Frozen Food Age*, 2000). The survey of 165 manufacturers and retailers found that 4 percent of the $1.3 trillion in sales from manufacturers to distributors and retailers was excess inventory. Evaluating 20-inventory profiles from companies in different business sectors, Relph and Barrar (2003) estimated between 10 and 98 percent of the inventory values were "in overage".

Like excess inventory, Out of Stock (OOS), could be very costly as well. According to Gruen and Corsten (2006) worldwide OOS levels still average 8 percent. And for every 13 items a shopper plans to purchase, one will be OOS. For promoted items, OOS levels hover at 16 percent, or one OOS item for every seven promoted items a shopper plans to purchase. Furthermore, the gaps on shelves are costing retailers up to 4 percent of sales. When confronted with a shelf-level OOS, on average 30 percent of consumers switch stores; 25 percent switch brands and 20 percent switch to a lower-value alternative" (Gruen and Corsten, 2006). An average customer may not return to a store after three negative experiences and Wal-Mart estimates that each lost customer represents over $200,000 in lifetime lost sales (RRilley, 2004). If one assumed that a home owner would replace main items and structures such as roofing, siding, doors, windows, flooring, basement remodeling, kitchen, bath, appliances, etc. in his or her home once in a lifetime, such a loss could easily exceed $100,000 per customer for the home improvement industry.

Ideally, retailers' goal would be zero OOS and an inventory process where inventory is replenished daily as it sells, but logistics, customer demands, economy of scale, productivity, uncertainty, and unpredictability makes this goal a far-fetched dream at the present time. Imagine a retail world with exactly one day of supply everyday. A big box home improvement store with $35 million of sales would carry less than $100,000 in inventory instead of current estimates of $7-8 million. Turns in the retail world would skyrocket from its current estimates of 3-6 per year to over 350 per year. So, how did a simple industry like retail become so complex and so costly?

The context: the simplicity and complexity of big box retailing

A couple of years ago, I was asked to deliver a scholarship on behalf of the Winnipeg Chapter of the American Society for Quality in Manitoba, Canada alongside experienced career faculty offering scholarships to students. On the back stage, presenters (faculty members and guests) met for orientation prior to the ceremony. Most of the attendees introduced themselves as professors and/or other prestigious business roles. When my turn came, one could see eyebrows raised as I introduced myself as a Civil Engineer who have taught mathematics of finance at college level and working as a big box retail manager. I heard an unasked question: "how would retail fair with mathematics and engineering?" So, I volunteered an answer: as an engineer, in a highly predictable and well-defined physical laws, the most difficult equation I had to deal with involved few variables and few unknowns; but imagine an equation that has to do with 200 people who are influenced by hundreds of unknowns, and unpredictability interacting daily with over 1,000 customers who are influenced by

hundreds of variables and unknowns to offer over 35,000 products and services ranging from a simple nut and nail to sophisticated appliances and kitchens manufactured and/or imported from local communities or from across the glob to drive $35 million business or more. Trust me, I emphasized, I tried mathematical modeling but I could not build that equation. Indeed, I propose that mathematical problem for a contest challenge. Yet, proud and inspired retail managers and employees deal with this equation day in and day out; and deliver unparallel products and services.

Action research: the new experience

At the heart of centralized automatic replenishment systems, radio frequency identification technologies, advanced logistics, complex supply-demand chains, market dynamics, and extensive training for employees lays a simple goal for retailers: ensuring that the right product is at the right place at the right price with enough quantities everyday. For that seemingly simple goal some retailers offer customers a specific discount on any product that a competition sells at a cheaper price and/or a special upgrade if the product was OOS. With OOS and excess inventory in mind, my team and I initiated a collaborative enquiry to improve inventory optimization.

To me, six sigma was the preferred method of process improvement but my team and I had the flexibility and entrepreneurial spirit to use other methods to drive corporate core goals, so we initiated a collaborative inquiry to drive inventory optimization. Research in action continues not to be a daily vocabulary in big box retail stores, so we used our own corporate vocabulary to drive behaviors required by the unique process of action research. Ironically, collaboration was a team essential for us. And inventory optimization is a dynamic goal and part of retail business metrics.

The first question I had to address was ethical and legal in nature: how could practitioners engage in such a research and publish it without violating confidentiality and corporate standard operational procedures? The answer was simple, and two folded:

(1) rely on published information on inventory; and

(2) engage in the research, improve the situation, and present the results in the most comprehensive and acceptable ways.

The inquiry: exploration with store managers

Gathering buy-in is a key requirement for a successful ending in any improvement initiative, so I started a collaborative inquiry by creating an open dialogue with store managers around top most important projects for them. Ironically, seven store managers, operating seven different locations ranging in sales between $20 and 45 millions or so had similar priorities. Interestingly, one of their top focuses was inventory; a traditional focus for retail organizations. For that, we reviewed available data and noticed significant variations in inventory results between stores. For example, out of 11 selling departments, one department in one store had two OOS as indicated by the system; and the same department in another store had 30 OOS. Verifying the data visually, a similar percentage of variation existed. Stabilizing the variations and optimizing the results represented our ultimate goal. Thus, our mission became to strive to drop those two OOS to zero or at least to stabilize stores at two OOS in this department in every store if these OOS were due to factors outside the control of

stores such as logistics, imports, etc. In the meantime, we decided to drive 100 percent execution on our business practice to ensure that no customer leaves our stores unhappy even if we had to upgrade customers to the next level at the same original price.

So, optimizing inventory levels was selected by consensus for our collaborative project. The team established two holistic improvement objectives related to inventory:

(1) Reduce total inventory levels.

(2) Maximize availability of inventory from customers' point of view, i.e. the right product in the right location with enough quantities for customers' specific requirements. In order to sell a product quickly and satisfactory, not only it has to be in the store, but also it needs to be in its correct location, home, i.e. not on the overhead or backrooms.

In addition, the team established the following goals with specific percentages:

- Reduce slow moving inventory.
- Reduce clearance inventory.
- Improve the process of ordering, receiving, packing-out from receiving to overheads and homes, and packing-down from overheads to homes. This includes organizing overheads.
- Improve the process of products' markdown to achieve broader goals including preventive measures, i.e. reduced markdowns due to damage.
- Ensuring availability of "whole-project quantities" while reducing inventory.

Cycles of action and reflection: learning and improving

After establishing consensus on the project and its specific goals, my role shifted to provide empowerment, encouragement, support, follow up, and recognition so that the entire team act, and reflect to create learning and improvements. Furthermore, I acted as the facilitator of critical communications. The role of store managers was to design and execute specific plans that match their individual situations. We decided that the theory of one solution fits all stores does not work because each store has its own personality, its own strengths, and its own environmental challenges. Not surprisingly, internal and external factors contributed to the speed of improvements and progress towards results.

Our cycles of action and reflection can be summarized as follows:

- take action towards established goals, and reflect on these actions seeking better results daily;
- review and assess previous week's results individually, i.e. store managers alone, one-on-one with me, and as a team on weekly conference calls and e-mails;
- identify successes and opportunities;
- share practices that led to successes and opportunities;
- compare and contrast improvement practices;
- celebrate successes; and
- create new actions and targets for improvements.

In a one-on-one reflection with one of my managers exploring a situation that showed the slowest improvements, my manager assured me that his team was at the top of the situation; not only the results would soon follow, he stated, they would exceed other locations. So, with confidence we called this team for a meeting. After all, reports indicated improvements. When the store manager and I started asking specific and deep questions related to the project, it became clear that many answers were either wrong or incomplete. Finally, the store manager and I realized reasons some results were not up to par. Training and communication were clear opportunities for improvement in this specific case. In addition, the meeting revealed hidden stress and confusion because this particular location made some shuffling between team members and roles but leaders of this business unit underestimated the team's dissatisfaction with the change and its consequences. To me, the stunning fact was the "doers", i.e. players who make things happen told a different story. While in discussions with the team in terms of framing questions and reflecting on reports, it became clear that reports did not tell the whole story. Reports only showed numbers but they did not show emotions nor they showed true picture of the situation. Let alone its true long-term consequences. This inspired me to repeat the same approach randomly in different locations; and to my surprise the answers were not a lot better than the previous ones. As I reflected alone on the situation, I realized the critical nature of "context" on "real life" situations. Employees who had a good functional knowledge appeared to be comfortable and relaxed which was a positive factor but too much relaxation and reliance on the artistic repertoire resulted in inferior outcomes in certain situations; similarly, lack of functional knowledge also resulted in inferior outcomes. In further reflections, it seemed that there was something personal about success. There were those who wanted to reach the skies and those who just wanted to pass by. The ability of the leader to inspire others to wanting to become successful is crucial. For the doers, training and inspirational leadership were vital.

As a result of our reflection, we decided to introduce a new form of training; we called it "Training in Action". It is a training conducted by peers who actually do the work not by certified corporate trainers. This would become a major undertake because corporations tend to standardize, scrutinize, and formalize training. This training would be designed in the trenches by front-line associates to their peers.

This new approach brought challenges. Former trainers had to accept this new approach, department managers had to adjust their scheduling process, and human resource managers had to come up with new formats for this training. Store managers had to come up with a workable execution without burdening the budget or imposing obstacles on day-to-day activities. But the benefits were clear as Table I illustrates.

Although this form of training may require travel between big box stores within the same district, it can also be facilitated between different departments and/or different team members within the same store.

In addition, we decided to create a new report to track and stack results by store by department on a weekly basis. The new report would encompass all areas we were taking actions on to improve and/or stabilize with the goal of linking reports to future actions; not to just tracking historic results.

As retailers go in two opposite directions of centralization and opening new stores in closer proximity to existing ones, we decided to leverage this situation by creating a "sister" store system. Every two or three close locations would create a collaboration

Contrasts and benefits	
Traditional training	Training in action
Classroom setting	Field setting, i.e. sales floor
Designed situations	Reality based situations
May involve hands on experiments	Hands on, i.e. real life
Updated periodically by design	Updated as it happens by action
Facilitated by a certified trainer	Facilitated by an accomplished peer
Requires training budget	Mostly leveraging existing budget
Ends with the end of classroom	Forms mentorship after training
Measured mostly by situational tests	Measured by actual results
Large number of trainees to leverage cost	One-on-one while working reduces cost
May disrupt productivity on the short run	Can increase productivity by team work

Table I.
Traditional training vs training in action

process between inventory teams. In spite of existing transfer systems and sophisticated processes between stores, there was no substitute for old fashion "handshake" and "belly-to-belly" communication.

In the middle of this project, we conducted a business strategy meeting and we extracted two strategic themes as main business drivers for the upcoming quarter: people and processes. Although our strategic meeting did not result in inventory optimization as a strategic theme, I was delighted because mere focus on inventory does not drive behaviors, simple routines, and processes; rather behaviors and processes drive inventory. In the meeting, we agreed to expand the concept of training in action to reach all corners of business. We decided to start a directory of experts in our district and facilitate collaboration between all business units.

With time, our research reached a stage of mechanical movement where the span between action and reflection became less frequent than the first two weeks. As the gap between desired results and actual results diminished, the situation became more resisting to improvement and the newly created actions required more time to further improve the situation. This raised an interesting question about the interrelationship between time, action, reflection, improvements, and return on investment.

Based on previous experiences and this inquiry, inventory optimization started with many successes; then slowed down. So, the question became when should business leaders stop improvement efforts and let the situation take an automatic "routine"? While some businesses may afford delaying intervention as long as ROI is above corporate acceptable levels, big box retailers can not. With earlier estimates that one lost customer could cost over $100,000 in lifetime sales, it is justifiable to continue this cycle of action, reflection-learning, and improvements until zero OOS is reached within as minimum inventory as possible. Since, this remains an idealistic goal at the present time for all retailers, it is justifiable to upgrade customers when faced with OOS so that they do not leave unhappy. Not only is this the right thing to do but also the fiscally prudent to do.

Theorizing in practice

Based on personal academic and professional repertoire, and this collaborative inquiry, retail success at field level is simply a function of translating effective decisions into timely actions and executions at maximum productivity. In turn, this is a function of critical thinking (CT), functional knowledge, and leadership.

Definition of critical thinking, functional knowledge, and leadership

In order to clarify the meaning of the proposed theory, it is important to define its terms. In 1987, as a result of variations in the theories and definitions of CT, American Philosophical Association assigned Peter Facione to head a systematic inquiry into research on CT. Facione and a panel of experts representing several academic disciplines formed the "Delphi Project". One outcome of this project was a definition of CT. The panel's consensus statement regarding the definition of CT and the ideal critical thinker states:

> We understand critical thinking to be purposeful, self-regulatory judgment which results in interpretation, analysis, evaluation, and inference, as well as explanation of the evidential, conceptual, methodological, criteriological, or contextual considerations upon which that judgment is based. CT is essential as a tool of inquiry. As such, CT is a liberating force in education and a powerful resource in one's personal and civic life. While not synonymous with good thinking, CT is a pervasive and self-rectifying human phenomenon. The ideal critical thinker is habitually inquisitive, well-informed, trustful of reason, open-minded, flexible, fair minded in evaluation, honest in facing personal biases, prudent in making judgments, willing to reconsider, clear about issues, orderly in complex matters, diligent in seeking relevant information, reasonable in the selection of criteria, focused in inquiry, and persistent in seeking results which are as precise as the subject and the circumstances of inquiry permit. Thus, educating good critical thinkers means working toward this ideal. It combines developing CT skills with nurturing those dispositions which consistently yield useful insights and which are the basis of a rational and democratic society (Facione, 1990).

Browne and Keeley (2004, p. 11) defined weak-sense critical thinking as the use of CT to "defend your current beliefs". In retail, common slogans such as "stack it high and watch it fly" or "open it, they will come; price it and they will buy" may encourage such weak-sense CT.

Functional knowledge is not knowledge accumulated by working but it is intentional, intuitive, and rational knowledge gained through learning at work. It is not a result of working but it is the result of learning through working. As such, doing things with the same mindset over 20 years equates less functional knowledge than learning at work different ways to improve things in just one year. Jarvis (1999, p. 176) summarized nicely such process to accumulation of knowledge by saying:

> ... the practitioner might be invited to: A) Undertake activities and exercises, using new information based on their own practice position – a form of action research, B) Reflect on what they did in specific situations and consider how they solved, or failed to solve, problems they encountered, and C) reflect on their attitudes, beliefs, emotions, and so on, in specific situations.

Simply, it is translating information gathered through deliberate cycles of action and reflection into knowledge, on-going improvements, and business operating principles.

The most important aspect of big box retail leadership is its ability to energize others through actions, ideas, and words. In an article published by *International Journal for Retail and Distribution Management*, Arnold (2002, p. 569) concluded "It does not matter what the retailer sells or where they locate. Success originates with individuals who motivate others in the organization to be innovative in making customers and communities their top priority".

This leadership is more than charismatic leadership as it extends its wings to identify talent, grow talent, trust, empower, and follow up on commitments.

Furthermore, it is the ability to create an environment of candor, responsibility, and respect. It is about creating a balance between accountability and inspiration, courageously confronting reality and consistently building relationships. It encompasses strategic planning and tactical implementation. Leaders display true emotions when appropriate, and contain frustrations when needed. They help others see the vision, the future, and the possibilities so that what seems initially impossible becomes possible. This leadership is not a dreaming or imaginary endeavor because it is reality based. In this expedition, reality becomes the subject of thinking, reflection-learning, and improvements not the constraint of innovation and change.

Theory verification: workability

When my career shifted from designing structural elements in the office to supervising the construction in the field, my interaction with people in a work setting intensified. And as I watched construction workers try to execute my office design, my perception of "theory and practice" changed. I became convinced that theoretical knowledge and practical knowledge can be two different things. But, at that time, I remained convinced that theoretical knowledge is superior to field knowledge. The rational of the engineer refused to accept anything that was not measured, tested, verified, and scientifically proven. I maintained that understanding the overall theory allows practitioners choices when faced with untested "real life" situations.

As I began my retail journey with people, I found myself less concerned with theory and more focused on "what works". In a hyper-competitive retail environment, workability is more important than scientific accuracy because it means the difference between business success and failure. Tolerance to errors should be different as well because a $10 error in aerodynamics could mean the difference between life and death while the same $10 error in retail could be absorbed and quickly fixed. Greenwood and Levin (1998, p. 81) argued that "workability test is central" to creditability in action-based research. I agree wholeheartedly.

The cycles of action and reflection worked and rendered excellent results. After only two weeks of this process, 100 percent of the managers improved their in-stock position and 57 percent of managers exceeded goals. Before the beginning of this process, we were almost 5 percent over established goals in inventory levels, and after six weeks we actually exceeded the goal by 2.1 percent. Furthermore, at the beginning one location was over inventory goal by over 10 percent, while another location was 3 percent over goal. This gap was improved and reduced between 1.0 and − 3.9 percent. However, the location that reduced inventory to 3.9 percent under inventory goal experienced increased amounts of OOS. Ironically, another store was 3 percent under inventory goal and significantly in a high in stock position. Thus, we established a new goal to take all locations to that optimal goal of 3 percent under initial inventory goal with zero OOS whenever possible. Overall, the speed and consistency of improvements were impressive, but most importantly the lessons that our teams shared, learned, and gained forever were the most valuable return an employer would hope for.

Theory verification: making sense

Workability could be challenged by reason. Recently, I encountered situations where success and workability were the outcome of external and environmental factors; not the results of thoughtfulness and action. Thus, it is imperative that ideas and theories

make sense. Greenwood and Levin (1998, p. 82) suggested making sense out of tangible results as the second and complementary process in inquiries.

In business, many results can be artificially achieved. For example, a leader can easily achieve short-term results at the cost of morale or brand image. Stacking and ranking stores was one tool that we used in this project. Although the primary goal of "stacking and ranking" was to identify variations and successes, managers saw this step of the process as a "reward and punishment" tool. Sometimes, the process felt like "ranking and embarrassing". In turns, competitive managers raced to "beat" the report; sometimes at any cost. This raised an important question about motivating by ranking: "what if all resources were to be invested in the area of focus just to show improvements in this area?" There are consequences that no report can show but have long-term devastating consequences. Declining morale and brand image are examples of areas that daily reports and data may fail to capture accurately but can produce serious damage to retail organizations. Clearly, CT and functional knowledge are important factors to prevent such situations and to ensure that "ranking" is primary learning and rewarding tool not a punishment and embracement mechanism. Inspirational leadership becomes instrumental to motivating people to drive the results, and courageous leadership becomes vital for managing up, managing down, and confronting reality.

When an accomplished store manager was asked about his ability to drive inventory down while keeping his OOS low, he initially indicated it was his great team who did it all. As a good leader, he recognized his team; but since that was a general answer which did not contribute directly to our learning during this reflection step in our cycle of action and reflection, i.e. the answer did not generate new action, my role as a facilitator of this inquiry, was to ask for specifics, and his answer was:

> I looked at the "Purchase Report" gathered my team, and asked the questions that you and I reflected on the previous day; and my team came up with the answers; he continued, I had to follow up daily on our commitments and I had to recognize successes though.

When I visited his store the next week, he introduced me to his team, and one could see the smile on their faces when they learned that I was aware of the specifics of their improvements. It was a simple but sincere "thank you" that made their day and reinforced their commitment. This narration is clearly a summary of "critical thinking" because it was an exploration of facts not "gut feelings" incorporated into functional knowledge by allowing the expert doers to provide answers within an inspirational leadership context that recognized achievements, empowered people, and followed up on commitments. Functional knowledge of the situation allowed the leader to ask the right questions and quickly distinguish intelligent and factual answers from less than accurate ones.

As we continued to reflect in action, my team and I were amazed that an inventory goal became training, i.e. functional knowledge and process, communication, inspiration, and decision making. Suddenly, inventory optimization became a function of specific variables within a complex context.

Time and time again, it is amazing how business issues boil down to people and processes which in turn boils down to leadership. The elements of CT, functional knowledge, and leadership should work together holistically; otherwise, the situation becomes a combination of frustrations, departmentalization, and resistance to change.

Theory verification: a traditional approach of building on existing research

La Vere and Kleiner (1997) from School of Administration and Economics at California State University published a case study about three retail companies focusing on what they do to achieve excellence. They concluded:

> … all three organizations are different in their configurations of environment, historical evolution, and merit structure, yet in their uniqueness they have similarities of visionary leadership, management that interfaces with leaders and workers on the front lines, empowerment to these workers, and practices of continually institutionalizing new approaches (La Vere and Kleiner, 1997: Abstract).

The conclusion also supports the proposed theory for success because interfaces between leaders and workers on the frontlines, and empowerment are specific elements of inspirational leadership; and the continuity and innovation is an outcome of knowledge and CT that result in "outside the box" solutions, improved practices, and better results.

In addition, based on a survey of 101 chain store units, Dubelaar *et al.* (2001) published a study concluding "surprisingly, there is little published empirical research examining relationships between retail inventory, sales and customer service". In the study, they developed and tested a series of hypotheses about retail inventory and as expected found significant positive relationships between inventory, service, and sales. Specifically, support was found for the theory that inventory is a function of the square root of sales. Also, they found that greater product variety leads to higher inventory, and service level is an exponential function of inventory.

While the study was "scientific" "empirical" and "impressive" I would argue that professional repertoire would simply conclude the same, i.e. if stores do not have a product, or the product is out of customers' reach, then sales and service suffer. Furthermore, if stores carry more inventories than rate of sale plus a reasonable safety net based on trends' data, inventory grows. In addition, the reason little empirical research is published regarding the relationship between sales and inventory is simply wide variations in the "human factor" and "environmental factors" that cannot be predicted and/or specifically measured; then generalized into a theory. Moreover, confidentiality would play a main role in not publishing specific corporate data and/or trade secrets. Nevertheless, visual observations of the shelves of retail stores prove that within the same company, the same district, and the same store, business results, let alone inventory results vary significantly; but as per this collaborative inquiry results could be improved without added resources by cycles of action and reflection. In retail, the human factor is the most critical, but without processes, systems, and controls chaos prevails. Thus, while CT and functional knowledge are important for structure, technology, and process, inspirational leadership is the engine that fuels the human element.

The fruits of action research: theory and practice

This collaborative inquiry clarified and verified a personal theory about business success, improved inventory situation beyond initial expectations, and created the following practical learning:

- Although inventory is one of the highest expenses in retail and one of the most important factors to retail success, it is amazing how it could go out of control

and/or unnoticed while teams are focused on other areas. This project has raised the awareness around inventory and brought inventory back to its due focus. The situation was improved in a relatively short period of time to meet organizational requirements and/or beat specific stretched goals.

- In a big box retail environment, it is revealing how some employees "fly under the radar" without full understanding of their job requirements. Management should not assume things. Management should inspect what they expect, trust but verify, and follow up diligently.
- Humans, let alone team members, usually want to collaborate; it is up to leaders to facilitate collaboration.
- Although leaders should be focused on the big picture, building strategy, executing strategy, and should not micro-manage situations, it is critical that management observes and improves operations at its micro-levels. In inventory, at SKU level, associate-associate level, associate-process level, and/or associate-customer interaction level.
- People, processes, and polices are three critical components of business. When it comes to inventory in a retail envirnoment, it is vital to focus on "controllable factors" within these components and not be "bothered" and/or "distracted" by what store teams cannot control such as weather, logistics, and technology.

In this inquiry there seemed to be a relationship between reflection in action and reflection on action. As we reflected on things (with people) while trying to change a situation, it was beneficial to step back and reflect on action (alone and/or with people) to assess things. One of the constraints of thinking in action was the pressure of the situation, its variables, and time vs result demands. Thinking in action became almost intuitive, especially to experienced members, which deprived the "thinking" from deep analysis and/or creativity. This does not mean that every situation needs deep thinking and analysis, but changing a situation necessitates deep thinking.

In this collaborative inquiry and over the years, I noticed that world class retail leaders artfully master the elements of thinking, knowledge, and leadership. Whether retail leaders encounter merchandising issues, operational issues, and/or human resources issues; it is about critically thinking to create appropriate actions in retail outlets, and motivating teams to shape the situation into success. Every failure I encountered had to do with the wrong decision, the wrong execution, and/or the wrong attitude towards people.

This collaborative inquiry focused on "people" and management success within inventory scope but as GAO study, and other research, inventory optimization is a major challenge for both government and business. It goes beyond people to include processes, systems, logistics, technologies, and policies. It seems that businesses, universities, and governments are working independently to understand the issue and improve the situation. There is a significant opportunity for universities, governments, and businesses to come together to leverage resources and create new technologies, systems, processes, and improvements to save customers and taxpayers time and money while increasing profits and quality of life.

For an engineer who shifted his career from structural design to business and people management, I must admit that I, once, "admired fanatically" the "unbiased"

"controlled and measured" and "laboratory" aspects of scientific research; and in my career and personal journey, it amazed me how people often resisted "science" and "facts". This inquiry brought "life" to "laboratory" and "realism" to "idealism". Truly, such a dual and balanced approach opens the doors not only for involvement, teamwork, and improvements but also for an educational revolution in organizations and communities.

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