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**Manufacturing's
New Role in CPG**
*U.S. Automakers
Show the Way*



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EXECUTIVE SUMMARY

The Great Recession officially ended in June 2009, but it has had a lasting impact on consumer behavior. To start, consumers are demonstrating much more sensitivity to price. They are looking for ways to reduce expenditures on their favorite items, whether by stocking up during promotions, shifting to warehouse-format retailers, buying private-label substitutes, or just buying less overall. And these behavioral changes appear to be sticky enough that companies won't see a rapid return to pre-recessionary purchasing patterns even after the economy recovers more fully.

Consumer products companies have historically been able to sustain margins through product innovation, which has in turn allowed them to increase prices on a constant-dollar basis and drive revenue growth. As a result, the industry has arguably been under less pressure than others to drive increased manufacturing efficiency. For instance, consumer products manufacturers have lagged behind automotive companies in productivity improvements for some 30 years, a 2009 Booz & Company study shows.

The good news is that consumer products manufacturers now have some well-established examples to learn from, starting, indeed, with the automotive industry. Having spent the last few decades changing the way

they manufacture cars in order to stave off the threat from lower-cost, higher-quality imports, automobile makers have made enormous strides. The quality that runs off a U.S. automobile assembly line is on par with or better than that of foreign competitors, and vehicle prices (on a constant-dollar basis) are nearly unchanged.

With consumers slower to open their wallets, the consumer products industry needs to follow the lead of manufacturing sectors like automotive and drive down costs while maintaining or improving quality. They can best do this by building a true manufacturing operating system—an approach that aligns business strategy with organizational, measurement, and operational discipline to boost productivity.

CPG MANUFACTURING FALLS BEHIND

Over the past 30 years, consumer products companies have pursued a strategy of innovation backed by aggressive advertising—continually introducing “new and improved” versions of existing products. To a remarkable degree, this strategy has worked—consumer products companies have been able to maintain or raise prices. Over the last two decades, the prices of some consumer products have gone up by as much as 3.9 percent annually. In contrast, new vehicle prices have risen a mere 0.8 percent per year, and prices of computers and electronics have fallen 10.5 percent per year (see Exhibit 1).

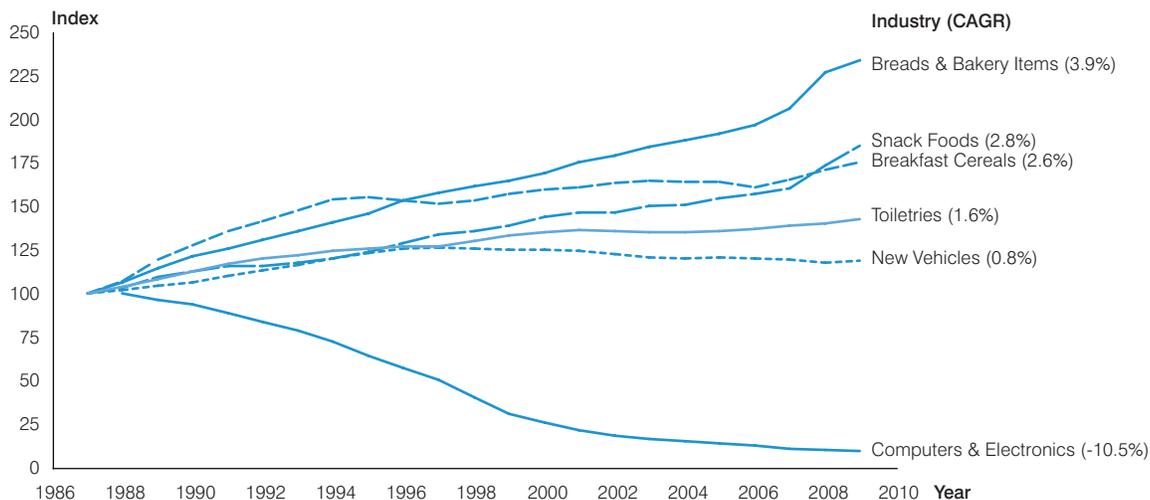
Given their focus on innovation and brand building, and how that has translated into success on the top line, it is no surprise that so few consumer products companies have distinguished themselves in

the manufacturing realm. Most food manufacturing companies, for instance, have shown little improvement in manufacturing productivity over the past couple of decades; breakfast cereal and bakery companies, on average, have shown none. Only snack food and personal care (toiletries) manufacturers have really improved.

Clearly, manufacturing improvement in the form of greater productivity has not been a priority for consumer products companies. The priority has been on the top line, and the industry has largely been able to more than offset increases in cost with higher prices. In our estimation, this has left consumer products manufacturers as much as 30 years behind their counterparts in the auto industry when it comes to continuous improvement and manufacturing productivity.

Exhibit 1
Consumer Price Indexes for Select Industry Sectors

CONSUMER PRICE INDEX
(1987 = 100)



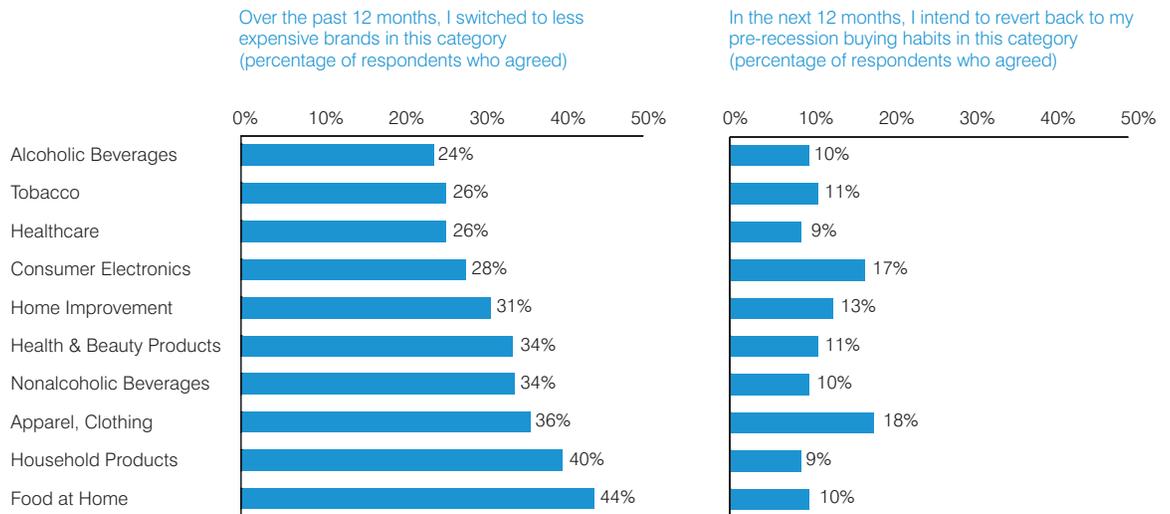
Source: U.S. Bureau of Labor Statistics; Booz & Company analysis

THE IMPERATIVE TO CHANGE

In the wake of the severe global recession and with all signs pointing to a long, drawn-out recovery, consumer products companies have reached a crossroads. Consumer behavior is shifting, with cost becoming a more important factor in purchasing decisions. By the time the 18-month recession ended in the

fall of 2009, consumers were cutting back on spending in 16 major categories, with discretionary categories hit the hardest, according to a 2010 Booz & Company survey. More significantly, less than 20 percent of consumers were saying they intended to revert to their pre-recession spending habits (see Exhibit 2).

Exhibit 2
Consumer Spending in the Previous 12 Months and in the Next 12 Months



Source: Booz & Company Fall 2009 Survey of Consumer Spending (sample size n = 2,010)

A slow economic recovery is likely to make these behavioral shifts in consumer spending stick, at least for the intermediate term. Consumers have adjusted their habits in many categories, and there is no reason to believe that attitudes toward price, brand, convenience, or retail format will reset fully to pre-recession levels. This means the game is changing in a way that will force consumer products companies to pay new attention to manufacturing efficiency. If they are to win on the bottom line, companies must have

the ability to offer products of the same quality at the lowest cost.

This shift toward price-based competition is already being felt in some parts of the consumer products market. Procter & Gamble, widely recognized as a best-in-class manufacturer, has capitalized on this recent shift in consumer preferences to wage an offensive on its competitors. The company has reduced prices by as much as 10 percent on many of its premium brand products, including

toilet paper, paper towels, hair conditioners, fabric softeners, and liquid laundry detergents. This has brought the price curve down for the entire industry. Procter & Gamble's moves have not been without financial consequences—many of the discounted products previously had a 20 percent profit margin—but the tactic is working. The company has gained U.S. market share across the majority of its largest product categories

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TRANSFORMATION OF U.S. AUTO MANUFACTURING

At first blush, it may seem strange to suggest that U.S. consumer products companies could learn from their peers in manufacturing. From the 1970s until very recently, the auto industry was not many people's idea of a success story. In fact, though, the problems of U.S. automakers have almost all been in the areas of ideation and marketing; their manufacturing operations are now models of excellence. Moreover, car companies are similar to consumer products companies in that they deal with high volumes and operate in a mature part of the economy.

The U.S. auto industry did not focus on manufacturing excellence until

changing market dynamics forced it to do so. After the oil crisis of 1973 prompted U.S. auto buyers to start buying fuel-efficient imports, U.S. carmakers realized they had to change their manufacturing approach, with the goal of lowering the cost and improving the quality of their vehicles. They studied their overseas competitors and discovered that completely different management philosophies—Six Sigma, statistical process control, and lean, to name a few—were pervasive on the shop floor. The U.S. automakers soon embarked on a journey to adopt the principles espoused by the likes of W. Edwards Deming and Joseph Juran, who had introduced these ideas to Japanese automakers. Flawless quality and efficient production became a basic requirement to compete in the global marketplace.

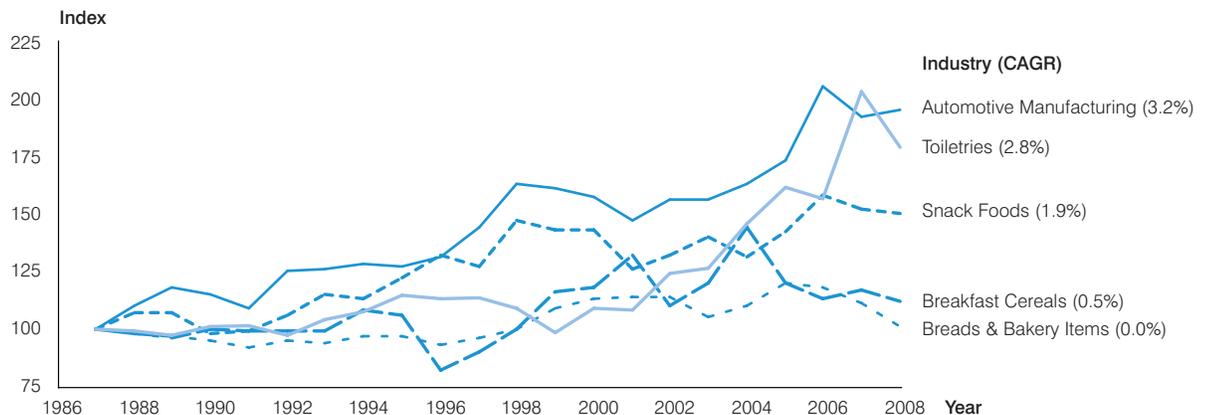
This transformation is well-documented—and is evident in the productivity of the industry. Output per hour of all persons—labor productivity—in automotive manufac-

turing has more than doubled since the late 1980s. In contrast, consumer products manufacturers have fallen far behind, with some segments demonstrating zero improvement in labor productivity over the span of two decades (*see Exhibit 3*).

Although their progress has been steady, automakers' manufacturing improvements have also been a learning process. Many manufacturers searched for a silver bullet, variously trying quality circles, Class A MRP, large-scale factory automation, doctrinal applications of lean or Six Sigma, and wholesale outsourcing to low-cost countries, to name a few. The auto industry learned through trial and error that while each of these approaches had its place, none was a solution in itself and any of them could create a costly drag on the organization if misapplied. What delivered the results was a coherent and measured application of each tool in the context of the overall business strategy—what we call a manufacturing operating system.

Exhibit 3
Labor Productivity in Automotive Manufacturing

LABOR PRODUCTIVITY, OUTPUT PER HOUR
(1987 = 100)



Source: U.S. Bureau of Labor Statistics; Booz & Company analysis

THE MANUFACTURING OPERATING SYSTEM

The time has come for consumer products companies to create manufacturing operating systems of their own. It won't be simple—the manufacturing operations of most consumer companies are relatively immature, and it will take a full-scale transformation to get them where they should be. By accomplishing this, however, companies will get beyond the isolated manufacturing improvements and incremental benefits that most have focused on in the past. Instead, they will have a coordinated approach to

every aspect of their manufacturing operation. Once in place, manufacturing operating systems drive how plants operate on a daily basis, threading together strategy, measurement and accountability, people and organization, and operational excellence (see *Exhibit 4*).

Strategy

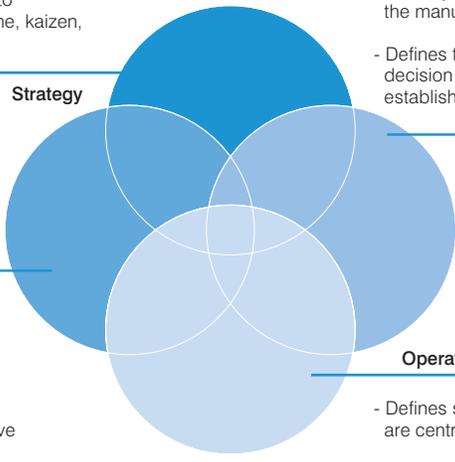
Too often we find manufacturers with a stated strategy of being “the highest-quality, lowest-cost producer.” Aside from being overly simplistic and too focused on cost,

Once in place, manufacturing operating systems drive how plants operate on a daily basis.

Exhibit 4
Holistic Manufacturing Transformation

MANUFACTURING OPERATING SYSTEM COMPONENTS

- Ensures that key strategic decisions (e.g., footprint, make/buy, process technology) support business objectives
- Identifies when the manufacturing strategy must be refined or changed altogether
- Defines the long-term philosophies central to manufacturing performance (e.g., just-in-time, kaizen, heijunka workload leveling)



- Develops leaders who understand the work, live the company's philosophy and approach, and teach them to others
- Develops exceptional people and teams who follow the manufacturing philosophy
- Defines the manufacturing organizational structure, decision points, and linkages to other functions, and establishes conflict resolution mechanisms

- Establishes how plants are measured and compared, defining the appropriate metrics and frequency of measurement
- Defines how performance targets are set
- Ensures that realistic plans are set to achieve performance targets
- Defines performance incentives and ties them to the right metrics

- Defines standardized processes, particularly those that are central to achieving superior performance
- Identifies, defines, and enables execution of continuous improvement as well as step-change initiatives
- Provides proven methodologies and tools to drive improvement (e.g., lean, Six Sigma)

Source: Booz & Company analysis

this self-identity lacks any link to a specific strategy and thus fails to create clarity about the optimal setup of the plant. For instance, with such a generic statement of manufacturing goals, a food company might arrange its plant the same way whether it has a steady and predictable pattern of demand or often launches last-minute trade promotions that lead to big near-term spikes in demand.

This is not the way to drive operational improvement. Instead, business differences should be reflected in the process technologies, resource mix, skill sets, locations, and scale and utilization decisions that manufacturers make—forming the basis of an effective operating strategy and informing front-line improvement efforts.

The manufacturing strategy must also take into account what the company can and should make and what it should source on the outside. A common mistake that companies make is spending time fixing problems in a manufacturing process when the better decision would simply be to outsource the process.

Finally, the strategy provides the current priorities for the plant—quality, service, cost reduction, etc. Improvement efforts, such as lean and Six Sigma, must be aligned with the priorities of the plant to achieve the greatest impact. When priorities are not clear (e.g., focusing on cost reduction when the most pressing issues relate to quality), the company expends valuable resources on the wrong initiatives.

Measurement and Accountability

Measurement and accountability are critical aspects of successful manufacturing transformations. The measures themselves should be aligned with underlying profitability objectives. Even shop floor measures should be tied to financials so that the supervisor and line workers are all aware of the required results. Further, these measures should roll up into plant, product group, and corporate goals.

At companies that have manufacturing operating systems in place, there is no question about who “owns” a process and is accountable for the results. Neither is there any question about performance. Problems are spotted quickly, and so are missed goals. Many companies that

have implemented comprehensive manufacturing operating systems place “paceboards” around the plant. These could be whiteboards, scrolling displays, or even plasma screens that remind a given set of workers of some critical but easy-to-track target—throughput, say, or the number of defects in a certain period of production time. Plants going through transformations also often set up accountability rooms—conference rooms where the initiatives, steps, and progress are taped to the wall, allowing

managers to get a sense of how the larger transformation is proceeding.

Supervisors and employees should be involved in setting the targets and in developing the plans necessary to achieve them. Procter & Gamble is one of the rare consumer products companies that have developed a world-class manufacturing operating system; P&G’s system includes a methodology for making every employee feel invested in the outcome. This encourages ownership of the goal, buy-in of

the transformation approach, and an understanding of how to reach the target.

People and Organization

Successful manufacturers develop employees who are results-oriented and leaders who are capable of facilitating change. Plant employees are trained in problem solving so that they can diagnose root causes. This initiative is based on the belief that the best person to correct a problem is the individual who sees it and lives with it every day. At plants

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that operate according to these principles, the people supervising the lines have responsibility for the performance, but the environment is one of mentoring more than command and control. Some experts, such as Six Sigma Black Belts, are brought in as needed to help solve problems. Still, the results—and the responsibility—remain with those on the shop floor.

Manufacturing, in general, has a history of being hierarchical, and plants are notoriously resistant to change. Plants transforming their manufacturing operations must shed this attitude and encourage workers to challenge past practices. There are a few simple ways to make sure this happens. One is by rewarding employees when they reach their goals—monetarily to be sure, but also with public recognition.

Similarly, when improvement efforts fall short, mentoring should be provided to help teams get back on track. All of these are inexpensive tactics that represent a dramatic contrast with “typical” manufacturing management; as such, they can be extremely effective in changing behavior.

Operational Excellence

The final aspect of a successful manufacturing operating system is an operational excellence program. This involves a systematic approach to continuous improvement, enabling a manufacturer to continue to improve its competitive position. Continuous improvement programs leverage proven methodologies, such as lean and Six Sigma, to drive the improvement, but just as important, they focus on outcomes.

Operational excellence programs emphasize best practices and standardized processes. This makes it possible to establish common standards across a global network of plants.

As part of this process, improvement opportunities are examined, validated with data, and prioritized. The top initiatives are then implemented to drive key improvements in performance. The progress of improvement initiatives is measured regularly and objectively to ensure that results are real and can be measured in financial terms. The plant must be disciplined about repeating the process at regular intervals, reexamining performance to find the next set of opportunities and instilling a culture of continuous improvement.

P&G's MANUFACTURING PROWESS—AN EXCEPTION TO THE RULE

Procter & Gamble is highly advanced in its manufacturing capabilities—and is therefore an exception to the rule of consumer products companies relying primarily on top-line growth for their success. P&G's integrated work system (IWS) was inspired by the Toyota production system and has been in place since the mid-1990s. IWS is an approach to loss elimination that targets improvements in six general areas: productivity, quality, cost, customer service, safety, and employee morale. It uses 10 “pillars,” or operational disciplines, to help P&G plants figure out who owns responsibility for a given outcome, what the improvement goals are, and how to track performance.

Machine operators at IWS plants have improvement targets that are tied to their supervisors' goals and to larger plant objectives. For instance, advancing one level of capability in one of the pillars during the course of a year might be part of their personal development plan. One example of a pillar is *autonomous maintenance*, the ability of an operator to perform maintenance on his or her own machine. Low levels might require that operators be able to read the color-coded gauges on their machines and understand that they need to call a maintenance worker when the pressure gets too high. Higher levels might require the operators to change some filters themselves. As operators continually advance to higher levels, the frequency and magnitude of downtime are reduced, since machines are well-maintained and run within their specification limits. This

initiative has also allowed Procter & Gamble to employ a relatively small full-time maintenance staff, which is focused on the most critical maintenance activities.

IWS is also designed to get managers in manufacturing to care about things outside their immediate domains. To be sure, most P&G plant managers have “vertical” responsibility for an operation—a production line, for instance. But those same managers will have horizontal responsibility for some operational process—perhaps for developing autonomous maintenance across production lines. In a horizontal role, the manager is more a plant-wide mentor and an auditor, deciding whether operators have in fact mastered what they must to move up a level.

Every plant also has an IWS manager, who reports to the plant manager and is responsible for communicating plant goals and shepherding the IWS process across the plant. This is a relatively senior position, an indication of the importance of IWS.

P&G's decision to treat its manufacturing facilities as cost centers—and to create IWS—has stood it in particularly good stead during the last couple of years, giving the company more flexibility than its rivals to lower prices during the recession. P&G has consistently improved its cost position: Cost of goods sold as a percentage of revenue has declined from almost 57 percent in 1998 to about 48 percent in 2010.

CONCLUSION

After many years of accepting continued price increases, consumers are demonstrating much greater price sensitivity and signaling that they will continue to do so well beyond the current period of anemic growth. As a result, after years as a support function focused on reacting effectively to customer demand, the manufacturing departments of consumer products companies need to start making a larger contribution to their organizations' bottom lines.

Those that move quickest to make the necessary transformations—and that reduce costs and increase productivity—may be able to drive differential growth in enterprise value.

One place to look for an example is U.S. automobile companies. Manufacturing operating systems have worked in that industry. They will work in consumer products too.

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