

Operations Practice

Automation and the talent challenge in US consumer packaged goods

US consumer products companies are facing a manufacturing-labor crisis. It's time they took a fresh look at their automation options.

by Luis Benavides, Julian Salguero, Jonathan Tilley, and Miyu Toyoshima



Across the US, consumer packaged goods (CPG) companies are struggling to find enough personnel to make, pack, and ship their products. Since 2010, there have been more job openings in the sector than people available to fill them. The gap is growing larger every year: by 2017 job opportunities outnumbered unemployed personnel by eight to one (Exhibit 1).

This environment doesn't just create headaches for human-resources departments. Talent shortages have a range of unsavory knock-on effects. Turnover rates, traditionally high among low-skilled manufacturing jobs, have reached 41.5 percent on average in the food-and-beverage sector, for example. That increases training and supervision costs, and makes it more challenging to achieve consistent levels of quality and productivity. Labor is getting costlier, too. Low-skilled labor rates had been rising steadily since the beginning of the decade, and the pace of labor cost inflation has picked up significantly in the years since 2016 (Exhibit 2).

Time for an automation reboot

The CPG sector is no stranger to automation in manufacturing operations, but historically, few consumer-products players have used the approach to target labor shortages. Instead, companies tend to look at automation as a way to improve quality, or to address specific health and safety issues.

We believe that attitude needs to change. A smarter, more flexible and more holistic approach to automation could be a powerful way to address talent challenges. As research from the McKinsey Global Institute has found, when applied at scale, modern automation has two distinct effects on labor and skill requirements. On one hand, it can significantly reduce the number of the low-skill roles that companies find hardest to fill, while eliminating many of the tedious, repetitive and strenuous tasks that drive high labor-turnover rates. And on the other, extensive automation can change the nature of the workplace, easing

Exhibit 1

Demand for CPG manufacturing labor in US far exceeds supply.

Labor supply vs demand curve 2008 – 2017

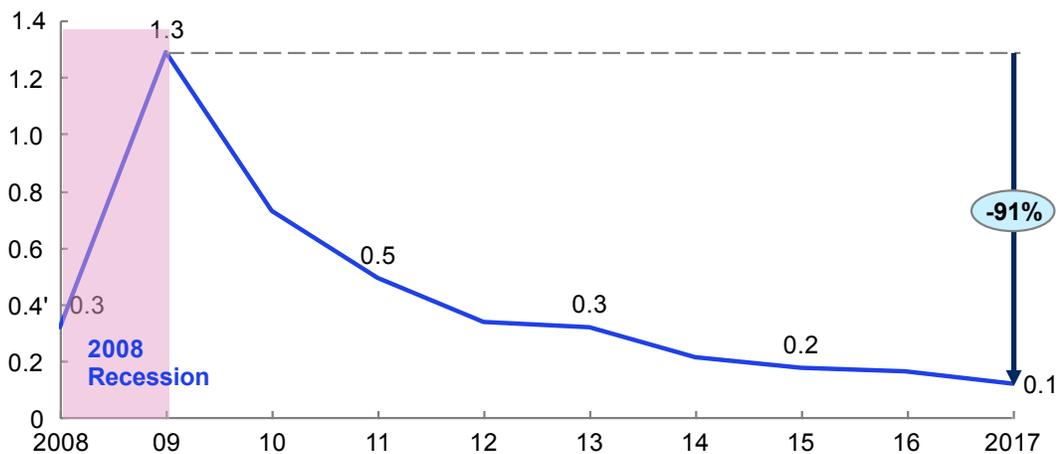
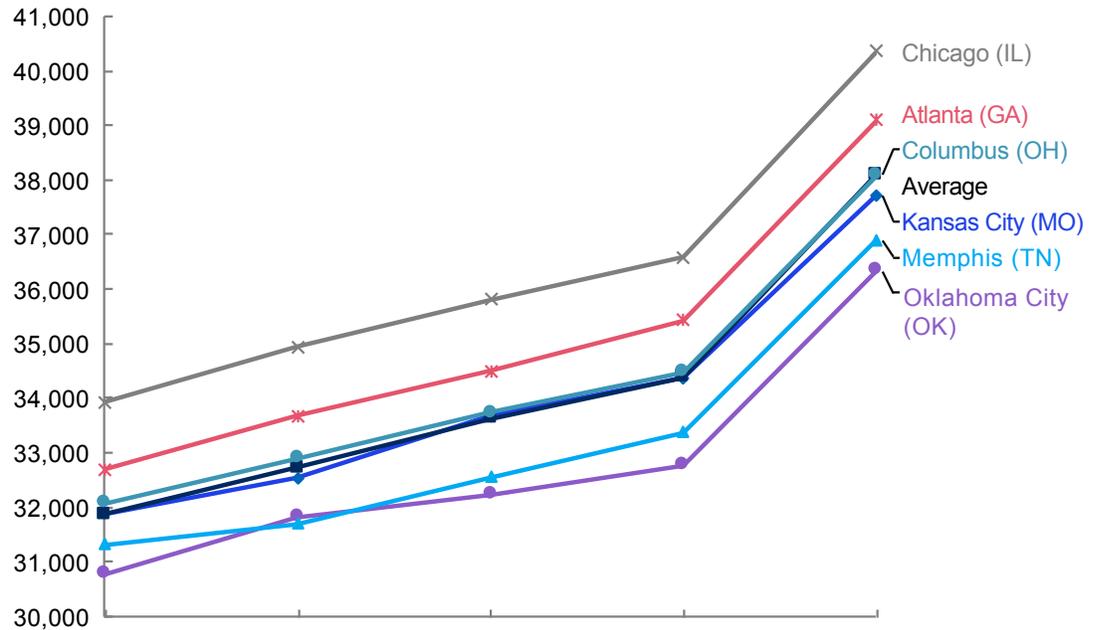


Exhibit 2

US wage increases are accelerating nationwide.

Annual salary trends for low-skilled¹ labor in the US
USD



¹ Includes laborers who do manual work, such as stacking, loading, packing, etc.

recruitment and retention by creating new technical roles with pay, opportunities, and working conditions that compare favorably with options in other sectors.

A new approach to automation is now possible thanks to technological advances. Modern robotics systems and automated machines are cheaper, more capable, and easier to integrate than the systems of the past. Robots have decreased in cost by more than 80 percent over the past 30 years, for example (Exhibit 3). Meanwhile, the development of “cobots” means companies can now introduce robotic systems safely alongside human workers on the same production lines. Together, these and other

developments make it possible for companies to automate more tasks, while investing less time and money in the purchase and integration of new equipment.

Automation for the people

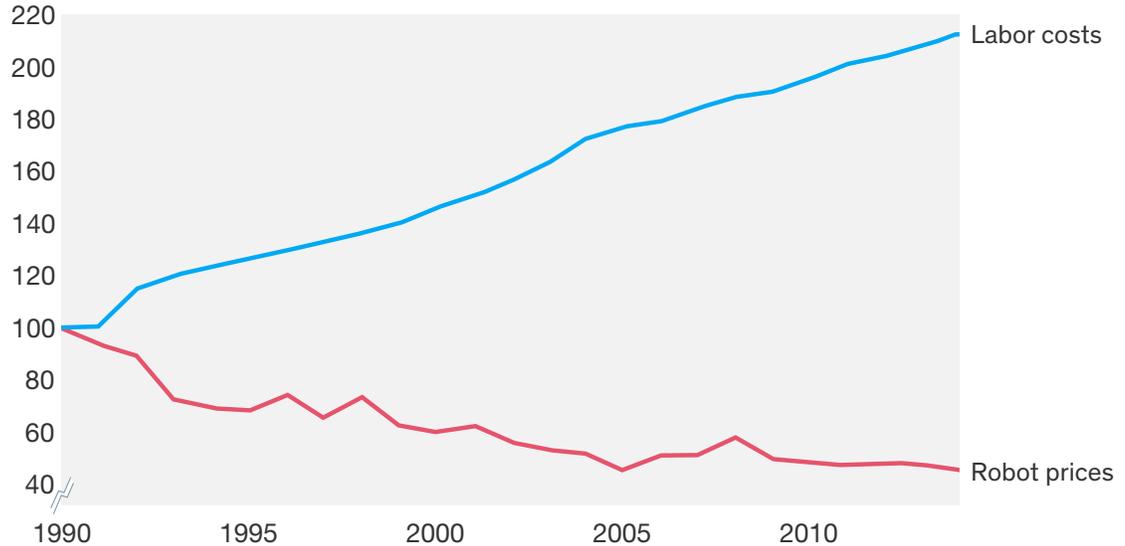
Long-running recruitment challenges were a major motivator for one global CPG firm’s decision to invest in seven high-speed, automated food-processing and packaging lines. The new system improved productivity—measured as volume produced per employee—by more than 70 percent in the processing areas of the plant, and by almost 280 percent in filling and packaging. The change

Exhibit 3

Robot prices have fallen in comparison with labor costs.

Cost of automation

Index of average robot prices and labor compensation in manufacturing in United States, 1990 = 100%



Source: Economist Intelligence Unit; IMB; Institut für Arbeitsmarkt- und Berufsforschung; International Robot Federation; US Social Security data; McKinsey analysis

also allowed the company to consolidate production of a major product range from four separate plants into one.

Equally important, the new manufacturing system was the key to a transformation in the company's talent-management approach. It worked closely with government authorities, media, and the local community college to recruit and train a new cohort of staff with the technical skills required to operate and maintain its new high-tech production lines.

Success factors

Given the benefits, why aren't more CPG companies ramping up their automation efforts? That's

because automation at scale is never simple.

Beyond the technical challenges, companies also need to overcome significant economic and cultural hurdles. Our observation of companies that have taken this journey already has revealed a number of factors that can be decisive in determining the success of automation efforts.

In particular, successful companies do three things well: they develop a robust, holistic business case for their automation investments; they adopt agile methods to accelerate technology development and implementation; and they invest in their people to nurture the right capabilities and culture.

The business case

With margins under pressure, CPG players need to be confident that investments in new technologies will pay back. The business case for automation projects needs to be carefully constructed and rigorously tested. A robust business case should consider the full range of benefits expected from the project, including improvements in productivity, throughput, and quality—as well as potential impact related to health and safety, staff training costs, maintenance, and employee turnover. One significant hidden benefit of automation, for example, is its ability to bake in productivity gains that are otherwise dependent on the specialized skills of individual employees, and therefore vulnerable to loss if key personnel leave their roles.

Companies need to be smart about their cost assumptions too. A zero-based approach can help to ensure they are squeezing the maximum possible value from their automation decisions, not simply accepting a solution that provides savings over existing manual methods.

Agile implementation

Companies sometimes fall into the trap of seeing automation as a single big-hit project. They expect projects to be long in the planning, disruptive in implementation, and to deliver all their benefits from the moment the system is switched on. In practice, many modern automation applications are smaller, faster, and more flexible. They work best when companies treat them as an ongoing process, with equipment installed quickly and then evolved and adapted to deliver increasing value over time.

Targeting a process bottleneck or specific issue with automation can be highly effective. At one food producer, a manual inspection process was limiting attempts to boost production speed at a bottling plant. To address the issue, the company installed machine-vision technology that could check labels and fill levels on every bottle. As well as addressing the throughput issue, the new system also increased quality: problems are now identified as soon as they

occur, allowing operations and maintenance staff to take immediate action.

This agile approach requires a different way of working, with automation teams and frontline operators working closely together to optimize new systems. But it also delivers bigger benefits over the long run, helping to build people's skills while revealing additional opportunities to improve manufacturing performance over time, as familiarity with equipment capabilities and limitations grows.

Change management

It is a well-established, but still underappreciated, maxim that people are the most important part of any automation system. Even where labor shortages are a primary driver for automation investments, CPG companies need to address the skills implications of new equipment and processes in a systematic way. Automation will create new roles, but it will also have significant implications for existing personnel.

Frontline jobs will change, perhaps beyond recognition, and staff will need training and support through the transition. Experienced production personnel have a wealth of knowledge that the organization needs to retain as new equipment and processes are introduced. A comprehensive change-management program is essential to help employees adapt to new, highly automated manufacturing environments. The most successful organizations take a highly structured approach to change management, incorporating four core elements: role modelling by front line leaders and senior managers; consistent communication to develop understanding and conviction; tailored training and capability building; and measurement and reinforcement through appropriate KPIs and incentives.

To see if automation could be a solution to their own manufacturing labor recruitment and retention

challenges, consumer goods companies should begin by asking a few simple questions:

- Where in my manufacturing operations are vacancies and staff turnover rates the highest?
- Where do labor shortages and high staff turnover rates create additional costs and risks for our manufacturing operations, for example through additional training costs or the loss of critical process knowledge?
- How many of those tasks could be automated using currently available technologies?
- How would automation change the roles of manufacturing personnel? What impact would those changes have on skills, job desirability and potential labor pools?

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