DEVELOP LLC

BOOSTING THE BOTTOM LINE:

THE TRANSFORMATIVE IMPACT OF AUTOMATION FOR MANUFACTURERS

A GUIDE FOR THE YEAR 2024

The manufacturing industry is transforming profoundly. Automation is rapidly reshaping the factory floor, redefining how products are made, and delivering far-reaching benefits to those who embrace it. No longer a futuristic concept, automation is a proven, tangible solution addressing critical challenges manufacturers face:

ENHANCED AGILITY

Quickly adapt to market demands and changing customer needs.

SKYROCKETING PRODUCTIVITY

Boost output and reduce cycle times without sacrificing quality.

CATALYZING BUSINESS GROWTH

Beyond saving costs, automation drives your business forward by opening up new opportunities for market expansion and revenue generation, placing you ahead in the competitive curve.

ADDRESSING LABOR SHORTAGES

Combat the growing challenge of finding and retaining skilled manufacturing labor. Automation fills this gap and redeploys resources more strategically, enhancing the value of every task performed.

This guide will explore the transformative benefits of automation for manufacturing companies. You'll see how it enhances flexibility, efficiency, and quality and plays a key role in opening new revenue streams and expanding market presence.

With automation, you're not just saving costs; you're investing in a strategic advantage that catalyzes business expansion and solidifies your competitive edge.

Are you ready to explore how automation can propel your manufacturing operations to new heights?

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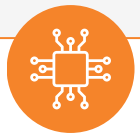
CHAPTER 1

INCREASED FLEXIBILITY AND SCALABILITY — THE KEY TO THRIVING IN UNCERTAIN TIMES

For years, the mantra of manufacturing has focused on maximizing productivity and minimizing costs. While these remain critically important, the unpredictability of recent years has highlighted a new priority: **agility.**

Manufacturers are increasingly placing agility and product customization at the forefront of their strategic initiatives — part of what McKinsey called the " great re-make" in their analysis of modern manufacturing.

In the report, some key statistics highlight the importance of automation in modern manufacturing:



WIDESPREAD AUTOMATION POTENTIAL

Today's technologies can automate 64% of manufacturing hours globally, signaling a massive shift in how work is done.

VARIED POTENTIAL ACROSS SUBSECTORS

Automation's impact ranges widely, with potential reaching up to 82% in apparel and 52% in aerospace, emphasizing the need for sector-specific strategies.

SIGNIFICANT IMPACT IN DEVELOPING COUNTRIES

With 81% of automatable hours in developing regions, automation stands to dramatically affect employment and growth, especially in India and China.

LABOR AND AUTOMATION

Automation is a necessity when skilled workers are scarce. It ensures your operations stay agile and growth-focused, even with hiring challenges.

With that automation comes the potential to evolve at pace — and the ability to adapt and scale operations rapidly has become a key factor in survival and success. **The good news? This is where automation truly excels.**

RAPID RECONFIGURATION

Automation, particularly with advancements in robotics, empowers manufacturers to pivot quickly. Of course, it's no secret that traditional fixed production lines can be a bottleneck when adapting to market changes. Automation removes those bottlenecks, offering unparalleled flexibility and allowing for swift reconfiguration to accommodate new product variants, slashing changeover and lead times.

FASTER ADAPTATION TO CUSTOMER DEMANDS

Respond quickly to shifts in market preferences or the need to introduce new products. When demand shifts, you simply increase or decrease the utilization of specific machines. That means reduced training costs, plus increased flexibility with the existing team.

REDUCED DOWNTIME DURING CHANGEOVERS

Seamlessly transition between product runs, maximizing equipment utilization.

SCALING TO MEET DEMAND

Automation gives manufacturers the power to scale production seamlessly in response to demand fluctuations without the delays and costs involved in hiring and training.

PREVENT MISSED OPPORTUNITIES

Avoid lost sales due to an inability to ramp up production quickly in response to increased demand.

MINIMIZE OVERPRODUCTION

Reduce inventory costs and waste by scaling down production according to market conditions.

> ***"We've spent 68 years doing this kind of work, we're pretty good at it, we don't want to change everything we're doing. We can't afford the downtime and financial burden of redesigning our entire assembly line. [DEVELOP LLC] did a great job of breaking down the entire assembly line and looking at portions that could be redone for ROI versus 'let's change everything.'"***
>
> *- Andrew Walker, IKI*

YOUR ROADMAP TO RESULTS

1 AUDIT PROCESSES

Identify bottlenecks, long lead times, and repetitive tasks ripe for automation.

2 STREAMLINE

Address bottlenecks to enhance efficiency and reduce lead times.

3 AUTOMATE

Implement automation for repetitive tasks, saving time and costs.

4 TECH INVESTMENT

Explore technology to boost flexibility and scalability.

5 CONTINUOUS IMPROVEMENT

Establish a culture of innovation and adaptability.

6 MONITOR AND ADAPT

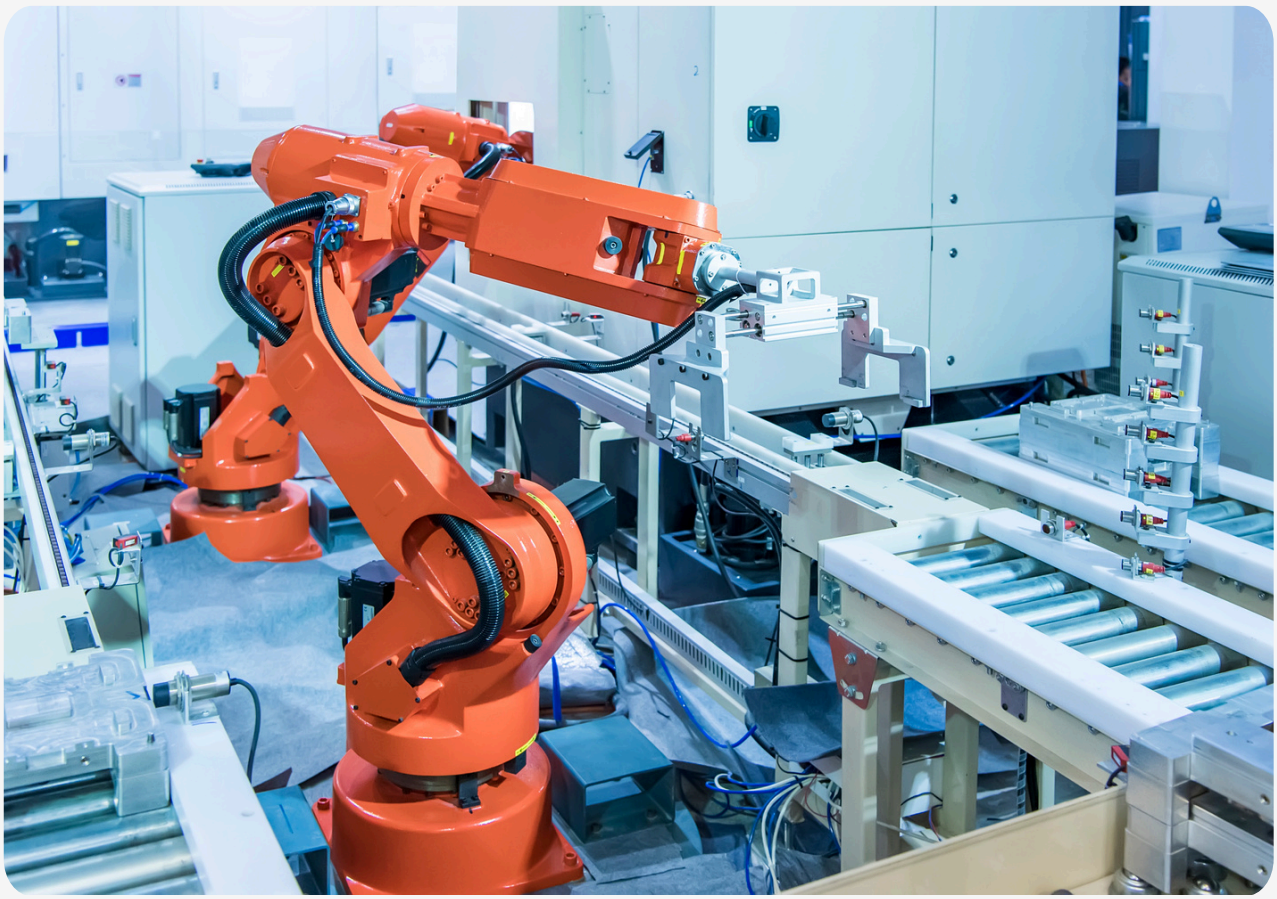
Track KPIs and adjust strategies accordingly for ongoing success.

FLEXIBLE AUTOMATION FOR LONG-TERM SUCCESS

The ability to adapt is key in a constantly changing manufacturing landscape. For optimal flexibility, turnkey automation solutions streamline implementation. Choose automation experts who understand the importance of flexible solutions.

Seek automation partners who will design systems that address your immediate challenges and provide the scalability and customization capabilities needed to ensure long-term competitiveness.

In a world of constant change, automation delivers the flexibility and scalability needed to seize new opportunities, respond to customer demands, and future-proof your manufacturing operations.



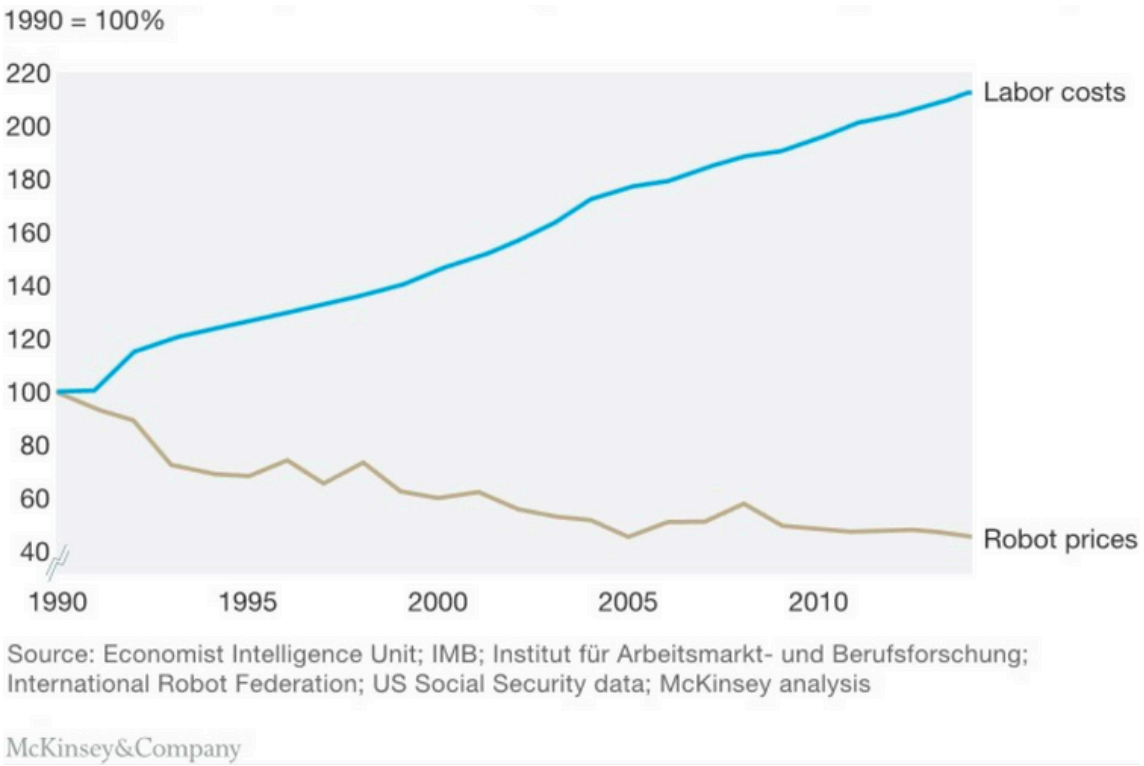
CHAPTER 2

REDUCED COSTS — AUTOMATING YOUR WAY TO GREATER PROFITABILITY

In an era of severe labor shortages, rising costs, and unpredictable market shifts, optimizing your bottom line is more important than ever. Automation provides a powerful solution, delivering tangible cost reductions across multiple operational areas.

Cost of Automation

Index of average robot prices and labor compensation in manufacturing in the United States.



Source: European Commission

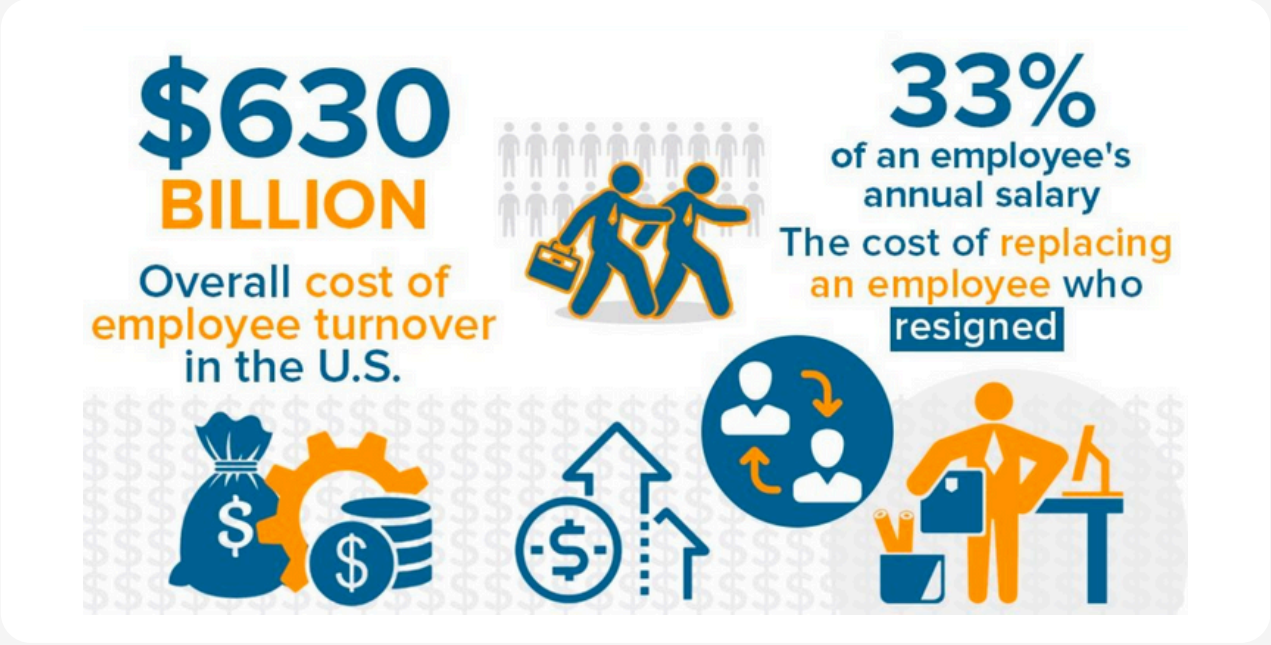
THE VANISHING WORKFORCE

The manufacturing industry faces a severe labor crisis. With an aging population, a shrinking global birthrate, and manufacturing executives struggling to find qualified workers, labor costs are skyrocketing. Automation mitigates this challenge by reducing reliance on human labor for repetitive or dangerous tasks.

THE TRUE COST OF UNFILLED POSITIONS

The manufacturing industry has more than half a million open jobs, with projections indicating that 2.1 million manufacturing jobs will remain unfilled by 2030.

The high cost of turnover further exacerbates this issue. Across various industries, studies indicate that the cost of replacing workers earning less than $50,000 a year is typically 20% of their salary. As you can see from the image below, that's 33% of the average employee's salary. Either figure translates to significant and ongoing financial losses for manufacturers facing unfilled positions.



Source: Work Institue, 2020; Emplify , 2020

These vacancies lead to lost production, missed growth opportunities, and damage to your bottom line. **Automation minimizes these losses by ensuring consistent output, even in the face of labor shortages.**

BEYOND JUST LABOR SAVINGS

Automation delivers cost benefits across multiple areas, positively impacting your profitability.

- **Reduced Waste and Downtime:** Errors, inconsistencies, and equipment failures lead to waste and costly production delays. Automation minimizes these through precision and reliability.

- **Improved Inventory Management:** Automation enables better demand forecasting and optimized inventory control, reducing carrying costs.

- **Energy and Material Savings**: Automated processes are designed for maximum efficiency, leading to reduced resource consumption.

Pick and place robotics are a prime example of the cost-saving potential of automation in manufacturing. By automating the repetitive task of moving components between processes, these robots minimize labor costs, speed up production, and reduce the risk of injury, contributing significantly to overall profitability.

ACCELERATING YOUR ROI

While automation requires investment, manufacturers often see a significant return within a short timeframe. Unlike the lengthy and costly process of recruiting and training new employees, which takes an

average of 42 days but can be as long as two months!), automation can quickly offset expenses by increasing productivity and reducing operational costs. Calculating your potential automation technology ROI is essential to informed decision-making.

> ***"When we do have an opportunity, Matt [President of DEVELOP LLC] is the first guy I go to engage with. DEVELOP does a great job of introducing customers and finding out what their challenges are and work to solve their problems and finding a solution that improves their throughput."***
>
> *- Brett Hirsh, Tapecase*

YOUR ROADMAP TO RESULTS

1 CALCULATE TRUE COSTS

Assess the full impact of unfilled positions, including lost production, recruitment, training, and onboarding expenses.

2 ROI ANALYSIS

Compare these costs with the projected return on investment (ROI) of automating the vacant positions.

3 IDENTIFY AREAS FOR AUTOMATION

Evaluate tasks prone to errors, inconsistencies, or high labor intensity. These are prime candidates for automation to enhance efficiency and reduce costs.

4 PILOT AUTOMATION

Start with small-scale automation projects to test feasibility and ROI before implementing larger initiatives.

5 EMPLOYEE UPSKILLING

Invest in training programs to equip existing employees with the skills to work alongside automated systems effectively.

6 MONITOR AND ADJUST

Continuously track the performance of automated processes, making adjustments as needed to optimize efficiency and maximize cost savings.

> ***Automation isn't about simply replacing workers; it's about future-proofing your business with sustainable, cost-effective operations that boost your profitability.***

- Matt Moseman, Develop LLC

CHAPTER 3

IMPROVED PRODUCTIVITY AND EFFICIENCY

Maximizing productivity and efficiency is critical for success in the continuously competitive manufacturing sector. Automation provides a powerful solution, streamlining processes, increasing output, and reducing the strain on your workforce. Let's look at how automation acts as a productivity multiplier for your operations.

> ***"The first rule of any technology used in a business is that automation applied to an efficient operation will magnify the efficiency. The second is that automation applied to an inefficient operation will magnify the inefficiency."***
>
> *- Bill Gates*

BEYOND JUST LABOR SAVINGS

Here's how automation unlocks increased production speeds, ensures unmatched precision, and delivers reliable, round-the-clock operational capability.

BEYOND HUMAN LIMITS

Automated systems are designed to operate at high speeds and with precision. They tirelessly perform repetitive tasks, leading to significantly increased production output compared to manual labor.

24/7 OPERATIONS

Unlike human workers, machines don't require breaks, sick days, or vacations. Automation enables continuous production, maximizes asset utilization, and increases overall output potential. Advancements in robotic safety features ensure seamless and safe collaboration between humans and robots.

HUGE PRODUCTIVITY GAINS

According to a report by McKinsey, automation has the potential to increase global productivity growth by 0.8% to 1.4% annually. Consider the impact this level of productivity gain could have on your operations, boosting efficiency and driving profitability.

Beyond boosting production speeds and ensuring consistency, automation revolutionizes packaging and palletizing processes. Advanced robotics systems streamline the packaging of finished goods and their organization onto pallets for shipping, transforming efficiency and reducing manual labor requirements.

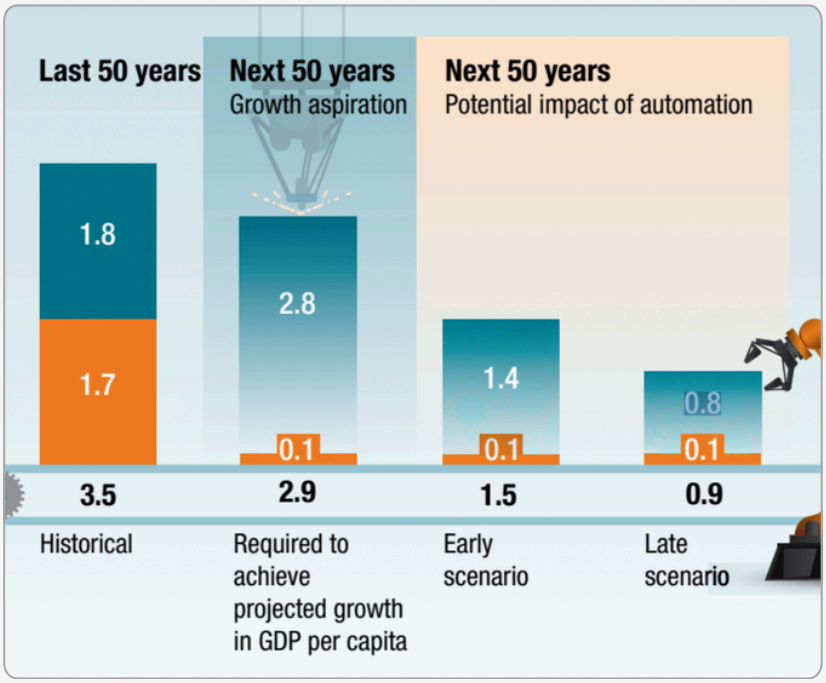
AUTOMATION WILL BOOST GLOBAL PRODUCTIVITY AND RAISE GDP

PRODUCTIVITY GROWTH, %

Automation can help provide some of the productivity needed to achieve future economic growth.

EMPLOYMENT GROWTH, %

will slow drastically because of aging.



Source: McKinsey Global Institute

ELIMINATING COSTLY DOWNTIME

You already know how much downtime directly impacts your bottom line. Here's how automation can help minimize production disruptions and protect your bottom line.

UNPLANNED DOWNTIME IS THE ENEMY

Equipment malfunctions, human errors, and production delays can lead to significant financial losses. Automation minimizes these disruptions, improving machine uptime and ensuring consistent output.

PREDICTIVE MAINTENANCE

Automation paired with advanced sensors and analytics can enable predictive automation maintenance and upgrades, helping identify potential failures before they occur — and preventing unplanned downtime and costly repairs.

TACKLING TURNOVER AND ITS IMPACT ON PRODUCTION

High employee turnover disrupts your production schedules and leads to expensive training cycles. Reduce your vulnerability to labor shortages with automation, ensuring stable production and minimizing the impact of market fluctuations.

THE CHURN FACTOR

High employee turnover, especially in the crucial early months, disrupts workflows and slows productivity. A staggering 43.98% of employee turnovers occur within the first six months of employment. Automation lessens your reliance on a constantly shifting workforce, ensuring production stability.

TRAINING COSTS

The continuous cycle of onboarding and training new workers drains resources. Automation reduces these costs by simplifying processes and requiring less specialized training for operators.

UNLOCKING THE POTENTIAL OF YOUR WORKFORCE

Automation can transform your workforce by enabling them to shift their focus from mundane tasks to innovation and strategic improvement initiatives. According to the International Federation of Robotics, fewer than 10% of jobs are fully automatable. That means automation unlocks enormous potential for your workforce to reach new levels of productivity and create new opportunities.

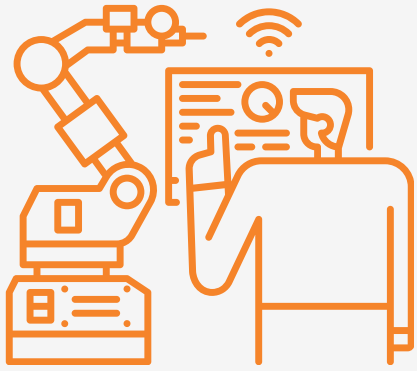
FROM REPETITIVE TO STRATEGIC

By automating mundane tasks, your existing employees can focus on higher-value activities such as innovation, process improvement, and quality control, improving productivity and increasing employee satisfaction.

DATA-DRIVEN DECISIONS

Automation systems generate valuable data on production processes, helping identify bottlenecks, optimize workflows, and make data-driven decisions to enhance efficiency further.

Robotics systems are at the heart of modern automation, transforming production floors with capabilities that extend far beyond human limitations. These systems drive productivity and efficiency, allowing human workers to focus on strategic and innovative tasks that add greater value.



YOUR ROADMAP TO RESULTS

1 ANALYZE PRODUCTION DATA

Dive deep into your production data to uncover patterns related to downtime, waste, and bottlenecks. This analysis will highlight areas where automation and process optimization can significantly enhance productivity and efficiency.

2 IDENTIFY OPPORTUNITIES

Based on your data analysis, pinpoint specific areas within your production processes that are ripe for improvement.

3 PRIORITIZE IMPROVEMENTS

Develop a prioritized list of improvement initiatives based on their potential to increase productivity and efficiency.

4 IMPLEMENT AUTOMATION

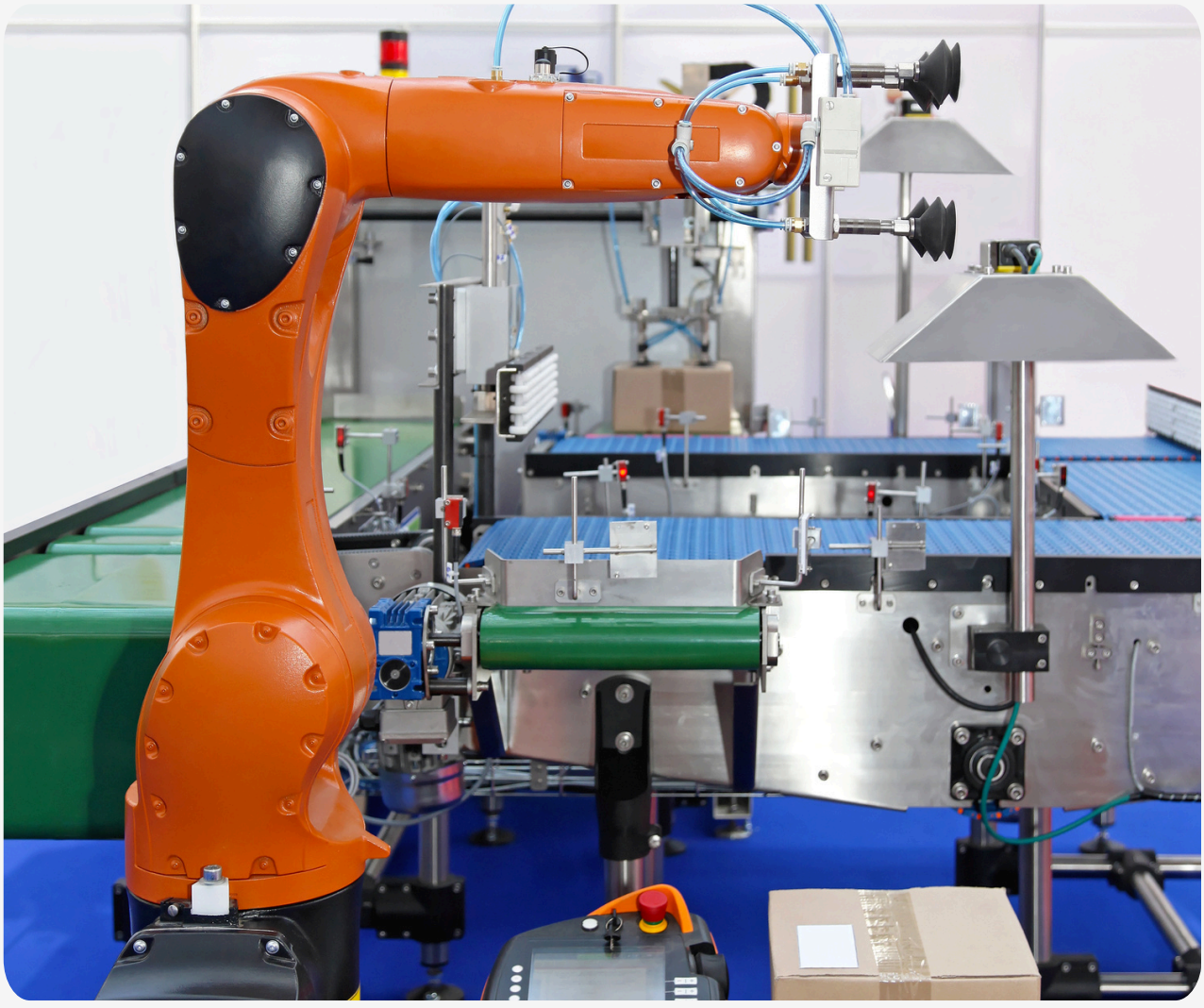
Deploy automation solutions to address identified areas of improvement. Whether it's implementing robotics, upgrading machinery, or integrating smart sensors, automation can streamline processes and boost productivity.

5 OPTIMIZE WORKFLOWS

Review and redesign workflows to eliminate inefficiencies and optimize resource utilization. Streamline production sequences, minimize handoffs, and standardize processes to improve overall efficiency.

By automating repetitive tasks and maximizing machine uptime, you unlock greater speed, efficiency, and profitability. Automation also empowers your workforce to drive innovation and deliver strategic value. Adopt the transformative power of automation and position your manufacturing operations for long-term success.

> ***"Automation fundamentally transforms manufacturing. Census data shows automated plants operate with a smaller production workforce yet achieve significantly higher productivity. This translates to greater output with reduced operational costs."***
>
> *Economics of Innovation and New Technology*



CHAPTER 4

IMPROVED QUALITY AND RELIABILITY

Product quality and reliability are essential for customer satisfaction, brand loyalty, and market competitiveness. Automation gives manufacturers a powerful tool to drive excellence in these critical areas and exceed customer expectations.

> ***"Rather than wringing our hands about robots taking over the world, smart organizations will embrace strategic automation use cases. Strategic decisions will be based on how the technology will free up time to do the types of tasks that humans are uniquely positioned to perform."*** *Clara Shih, CEO of Salesforce AI.*

THE ENEMY OF QUALITY: VARIABILITY

Human-centric processes are susceptible to variations, inconsistencies, and errors — that's just human nature. The various types and applications of industrial automation offer solutions for diverse manufacturing challenges, including those related to quality control. Automation delivers standardized processes with unmatched precision, ensuring that each product meets or exceeds your high-quality standards.

REDUCED HUMAN ERROR

Minimize mistakes caused by fatigue, distraction, or limited physical capabilities. A study by the International Journal of Production Research found that human errors cause 80% of product defects in manufacturing processes. Automation can help avoid those human errors.

CONSISTENT REPLICATION

Automated systems flawlessly replicate processes, ensuring every product adheres to exact specifications.

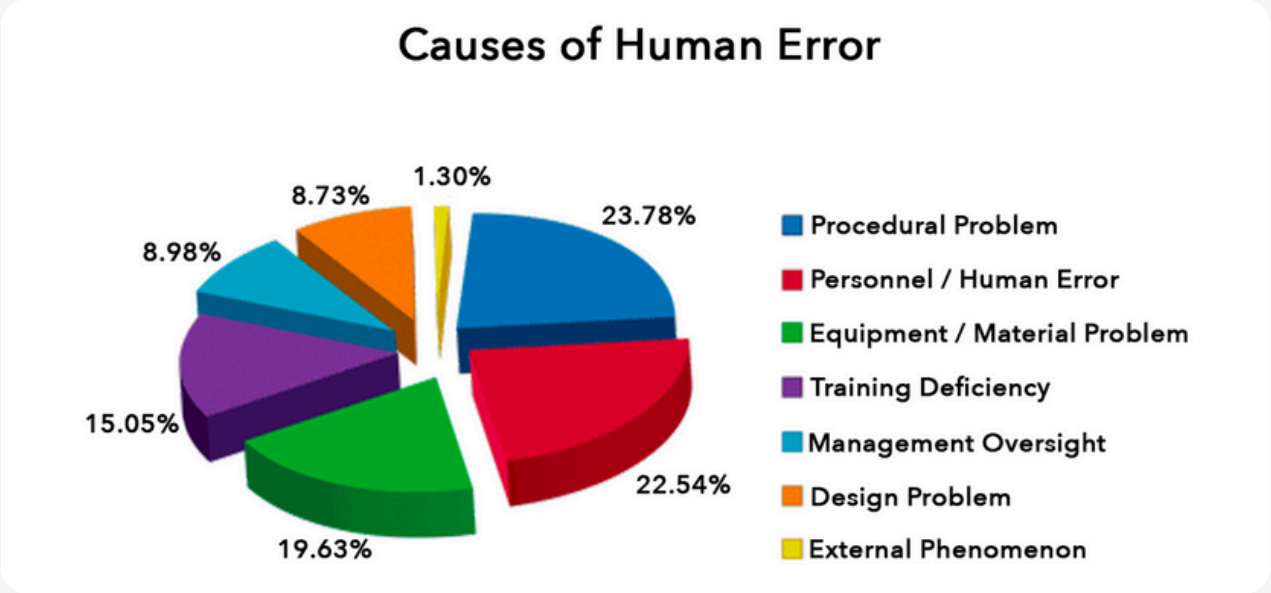


Image source: Dozuki

REDUCING DEFECTS, MAXIMIZING CUSTOMER SATISFACTION

Product defects directly erode customer trust and can lead to costly recalls. Automation enables precise control over production processes, resulting in a significant reduction in manufacturing defects.

MINIMIZED REWORK AND SCRAP

Lower waste and production costs associated with defective products.

ENHANCED BRAND REPUTATION

Deliver consistently high-quality products that customers can rely on.

DATA-DRIVEN QUALITY CONTROL

Automation enables real-time data collection and analysis, providing insights that further optimize processes and ensure quality standards.

PREDICTIVE QUALITY ANALYTICS

It's already clear that predictive quality analytics, powered by data-driven insights, can substantially reduce quality-related costs. So, leverage automation, AI, and machine learning to identify potential quality issues before they occur.

REAL-TIME MONITORING

Track quality metrics throughout production, enabling immediate corrective action.

In today's zero-defect manufacturing environments, automated quality inspection systems are proving invaluable. These systems tirelessly monitor production and instantly identify any deviations from quality standards. This allows manufacturers to address issues proactively rather than react to defects later in the process, saving time, resources, and reputation.

Automation plays a critical role in facilities where precision and consistency are critical, such as extrusion processing. Automated control systems in extrusion processes ensure uniform quality and reliability across production batches, demonstrating the technology's indispensable value in maintaining high standards.

COMPLIANCE CONFIDENCE

Automation, coupled with rigorous quality control systems, ensures adherence to regulatory standards and industry certifications.

STREAMLINED DOCUMENTATION

Automated systems can generate detailed records for audits and compliance reporting.

REDUCTION IN NON-COMPLIANCE RISK

Minimize the potential for costly fines or product recalls due to regulatory violations.

YOUR ROADMAP TO RESULTS

1 ANALYZE QUALITY INSPECTION DATA

Dive into your quality inspection data to identify patterns related to defects and their root causes.

2 ROOT CAUSE ANALYSIS

Conduct a thorough root cause analysis to determine why defects are occurring. Look beyond surface-level symptoms to uncover underlying issues within your processes, materials, or equipment.

3 CONSIDER AUTOMATION

Evaluate whether automated inspection technologies could help address quality issues more effectively than manual inspection processes.

4 FEEDBACK LOOP

Establish a feedback loop to gather insights from frontline employees, customers, and suppliers regarding quality issues and potential improvement opportunities.

> ***In a competitive marketplace, automation delivers the quality and reliability that set you apart. Embrace the power of automation to build a reputation for exceptional products and unwavering customer trust.***
>
> *- Matt Moseman, Develop LLC*

CHAPTER 5

REDUCE WORKERS' COMPENSATION

Worker safety is paramount within the manufacturing industry. Unfortunately, workplace injuries remain a costly and disruptive concern. Automation offers a transformative solution, significantly reducing the risk of accidents and creating a safer work environment for your employees.

THE HIGH COST OF WORKPLACE INJURIES

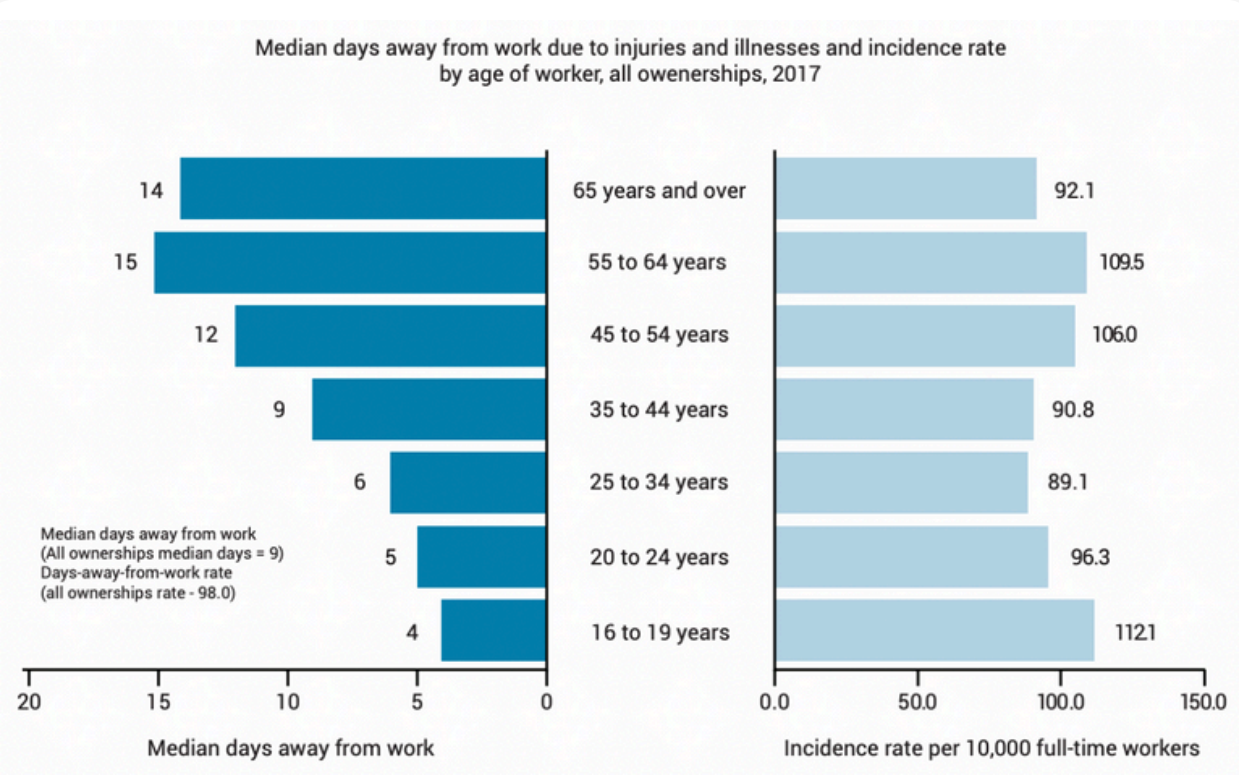
Workplace injuries have a cascading impact on manufacturing operations, leading to increased costs, lost productivity, and potential damage to your company's reputation.

STAGGERING COSTS

The manufacturing industry loses billions of dollars annually in direct and indirect costs due to workplace injuries, with an average cost estimated at $39,000 per injury.

INCREASED WORKERS' COMPENSATION PREMIUMS

A history of frequent workplace injuries can lead to significantly higher worker's compensation insurance premiums, further impacting your bottom line.



Source: ASSEMBLY Magazine

AUTOMATION: PROTECTING YOUR WORKFORCE

Automating dangerous or repetitive tasks minimizes your employees' exposure to workplace hazards.

REDUCED CONTACT WITH HAZARDOUS MATERIALS AND MACHINERY

Automation allows machines to handle tasks involving dangerous materials, cutting tools, or heavy equipment, significantly reducing the risk of injury to workers.

ELIMINATING OVEREXERTION AND REPETITIVE STRAIN

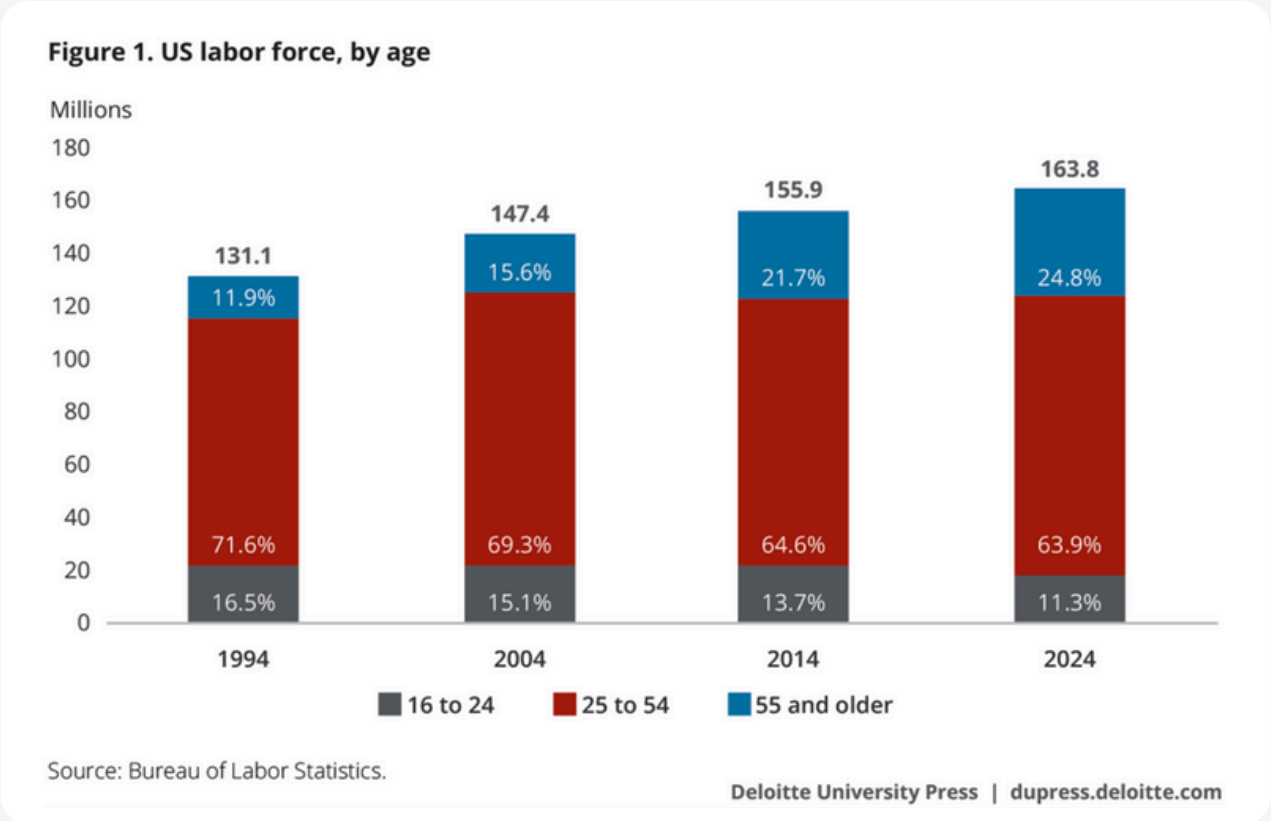
Automation takes over tasks that require repetitive motions or heavy lifting, reducing fatigue-related injuries and long-term musculoskeletal disorders.

ENHANCED ERGONOMIC CONDITIONS

Automation can lead to redesigned workstations and processes that prioritize worker safety and comfort.

Going beyond a one-size-fits-all approach, custom machines can address specific operational hazards, reducing the risk of workplace injuries. By designing machines with ergonomics and safety in mind, manufacturers can significantly lower their workers' compensation costs and build that all-important culture of safety.

AUTOMATION: PROTECTING YOUR WORKFORCE



Source: Deloitte University Press

The world is facing the challenge of an aging workforce, and the manufacturing sector is no exception. Automation plays a vital role in protecting your experienced workers while enhancing productivity.

REDUCED PHYSICAL STRAIN

Automation allows older workers to continue contributing their expertise in less physically demanding roles.

FASTER RECOVERY TIMES

Older workers typically require longer recovery times for workplace injuries. Automation minimizes the risk of these injuries, helping to maintain a productive workforce.

DEVELOP: SAFETY-FOCUSED AUTOMATION SOLUTIONS

At DEVELOP, worker safety is a core priority in our automation designs. We implement robust safety features and work closely with you to identify and mitigate potential hazards, ensuring a safer environment for your employees.

YOUR ROADMAP TO RESULTS

1 REVIEW WORKPLACE INJURY HISTORY

Thoroughly examine your workplace injury records to identify trends and patterns. Pay special attention to repetitive tasks, hazardous conditions, and processes involving heavy lifting that have contributed to injuries in the past.

2 IDENTIFY HIGH-RISK AREAS

Pinpoint specific areas within your operations where the risk of work-related injuries is most significant.

3 ASSESS AUTOMATION POTENTIAL

Evaluate the potential for automation to reduce or eliminate risks associated with high-risk tasks and processes.

4 IMPLEMENT ERGONOMIC IMPROVEMENTS

Prioritize ergonomic enhancements to minimize the risk of musculoskeletal injuries and repetitive strain injuries.

5 IMPROVE SAFETY PROTOCOLS

Strengthen your safety protocols and procedures to reduce the risk of workplace injuries. Implement rigorous safety training programs and encourage employees to report hazards and near-misses promptly.

6 PROMOTE A SAFETY CULTURE

Create a culture of safety throughout your organization, where all employees are actively engaged in identifying and addressing safety hazards.

By prioritizing worker safety, automation reduces costs, demonstrates your commitment to employee well-being, and builds a positive workplace culture.

THE TIME FOR AUTOMATION IS NOW

Throughout this eBook, we've explored the many ways automation transforms manufacturing operations. From enhanced flexibility and scalability to quality improvements, safety enhancements, and significant cost savings, the benefits are undeniable.

While automation requires upfront investment, the returns are swift and long-lasting. You'll see increased productivity, reduced downtime, higher quality output, and a safer work environment. These translate directly to improved profitability and a significant advantage over your competitors.

In a marketplace that’s evolving faster than ever, those who hesitate to embrace automation risk falling behind.

The time to act is now.

By investing in automation today, you position your manufacturing operations for sustained success, scalability, and a competitive edge that will define your future.

UNLOCK YOUR MANUFACTURING POTENTIAL WITH DEVELOP'S AUTOMATION EXPERTISE

Imagine effortless scalability, skyrocketing productivity, reduced costs, and an undeniable advantage over your competitors.
Automation makes this possible, and DEVELOP is your expert guide.

With over ten years of experience, DEVELOP delivers innovative, future-ready automation solutions customized to your unique challenges and goals.
Our team offers everything from custom machines and advanced robotics to turnkey solutions – all with a relentless focus on maximizing your ROI.

Let's transform your manufacturing operations. Benefit from our in-house expertise and vertical integration for seamless project execution.
Experience the power of tailored solutions expertly designed to optimize your processes and propel your business forward.

Take the first step and unleash the potential of automation. Want to see the numbers behind the transformation?
Access DEVELOP's ROI calculator and visualize the potential savings and rapid payback period customized automation can bring your business.

Ready to explore the possibilities?

Contact DEVELOP today to schedule a personalized consultation and discover how our expertise can revolutionize your bottom line and secure your manufacturing success.

Let's Discuss Your Future

BOOSTING THE BOTTOM LINE:

THE TRANSFORMATIVE IMPACT OF AUTOMATION FOR MANUFACTURERS

DEVELOP LLC®