

## **Automation Thought Leadership Series**

**From the Desk of Honeywell Chairman and CEO Vimal Kapur**

September 15, 2025

Hello,

I hope you had a nice summer. We are excited about the extensive investor engagement planned for this month; it was great seeing many of you at Laguna last week. We are progressing full-steam ahead on our portfolio transformation, both executing the Solstice Advanced Materials and Honeywell Aerospace spins and integrating the bolt-on acquisitions of the past two years. Milestones for both spins are on track, and we continue to make important decisions to high-grade the Honeywell Automation portfolio, acquiring several accretive assets while evaluating strategic alternatives for non-core assets.

As we position new Honeywell for success as a pure-play automation business with a simpler and more cohesive portfolio, I want to share our perspective on the state of automation and what we see ahead. Below is our take on the benefits of automation on industrial productivity over the last few decades, Honeywell's influence on accelerating digital transformations for customers, and the future of automation.

I am immensely proud of our long history of leadership and innovation in automation, which has driven remarkable advancements in productivity, safety, and resiliency and reshaped industries across the globe. Yet there is still so much more value for us to capture, both for our customers as well as our shareholders.

As always, thank you for your interest in Honeywell. We welcome your questions and feedback.

Vimal

Vimal Kapur  
Honeywell Chairman and CEO

## **Reflections on a life spent in automation**

I consider myself fortunate to have started my career in the mid-1980s when the industrial world was experiencing a massive transformation. Over the next few decades, virtually every industry, from manufacturing to aerospace to buildings, achieved significant productivity gains by switching from obsolete pneumatic, analog, and hydraulic systems to increasingly modern digital technologies enabled by microprocessors and software. And yet when I look ahead to the future, I am even more bullish about the opportunities to drive step-changes in productivity and value creation with and for our customers. For both Honeywell and automation, our best days still lie ahead of us.

## Automation has driven significant industrial productivity over the last several decades

Over the last 30 years, automation has delivered **~\$10 trillion in cumulative global productivity gains**, leading to the creation of significant global economic value<sup>1</sup>. Advancements in automation technologies have enabled businesses across multiple domains to streamline operations, reduce labor costs, improve safety in operations, and enhance output quality, thereby allowing organizations to focus more on strategic initiatives and innovation rather than routine tasks.

+0.5%<sup>1</sup>  
~1/3 of total

Estimated **long-term annual contribution** of automation to **productivity growth**

\$350B<sup>1</sup>

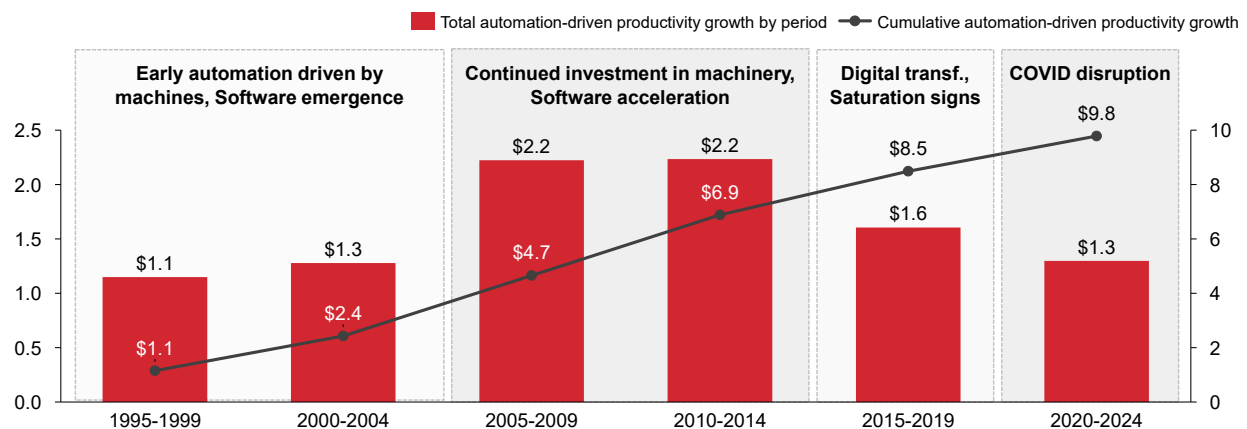
Average annual **productivity benefit** from automation worldwide in recent years

\$10T<sup>1</sup>

**Cumulative global productivity gains** from automation over the last **30 years**

**Figure 1: Automation has driven significant value to the global economy**

**Productivity Gains due to Automation<sup>1</sup> (\$T)**



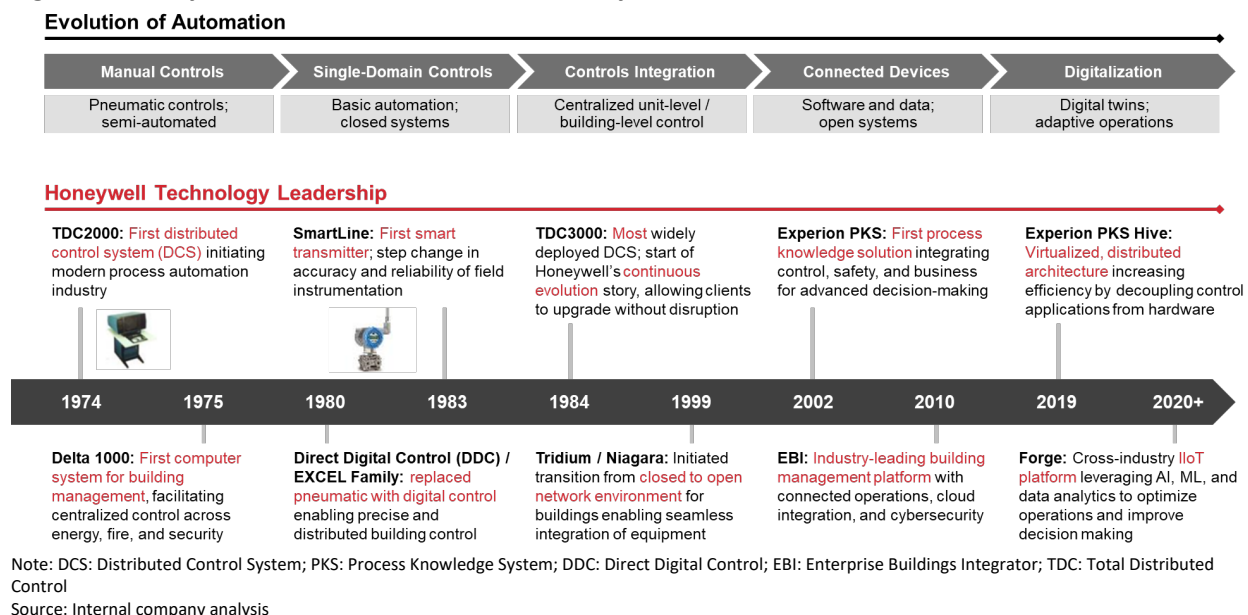
<sup>1</sup>Value estimates based on two complementary analytical approaches: i) attributing a portion of capital intensity's contribution to labor productivity to automation; ii) applying a consistent long-term 0.5% contribution from automation to labor productivity growth.  
Source: US Bureau of Labor Statistics: *Contributions to Labor Productivity* (2025); McKinsey: *A Future That Works: Automation, Employment, and Productivity* (2017); Penn World Table (2023)

## Honeywell's leadership established in mission-critical industries

We have built a decades-long reputation of utmost **reliability** with our unique ability to combine open systems and control technologies in a way that is software-based and hardware-agnostic in mission-critical industries like process, industrial, and buildings. Additionally, we improved the **longevity of customer assets** and enabled continuous evolutions by upgrading systems while minimizing downtime, preserving customer intellectual property (IP), and retaining existing infrastructure.

The arrival of programmable logic controllers and distributed control systems during the 1960s and 1970s enabled more complex and automated operations. As transistors became smaller and cheaper in the 1970s and 1980s, computing power started to become more broadly accessible. The invention of microprocessors dramatically reduced the cost of computer hardware, fueling rapid growth of digital controls. This allowed for the decentralization of intelligence and control throughout factories, led by multiple Honeywell innovations.

**Figure 2: Honeywell has led automation with many first-of-a-kind innovations**



During this time, Honeywell planted the seeds of change, introducing the **first electronic control system** in 1974. This marked **the beginning of modern distributed control systems**, which enabled large complex plants to be controlled by a network of distributed controllers. Concurrently, in the 1970s, the debut of Honeywell's **Alpha 1000 and Delta systems** brought a novel convergence of building management solutions that integrated fire, security, and energy systems into a unified platform.

## Pioneering software integration into controls systems, delivering step-change in performance

We have **embraced technological evolution as a core value** and we are on the leading edge of incorporating software across our diverse product offerings, setting a precedent in traditionally hardware-focused industries. **Through organic innovations as well as numerous strategic acquisitions** like Tridium in 2005 and Matrikon in 2010, Honeywell took a **software-first approach** to increasing customer productivity and operational efficiency with forward-looking technology. This fundamental choice has enabled us to grow a sizable recurring revenue software business that is a solid foundation upon which we can grow with the infusion of AI both today and in the future.

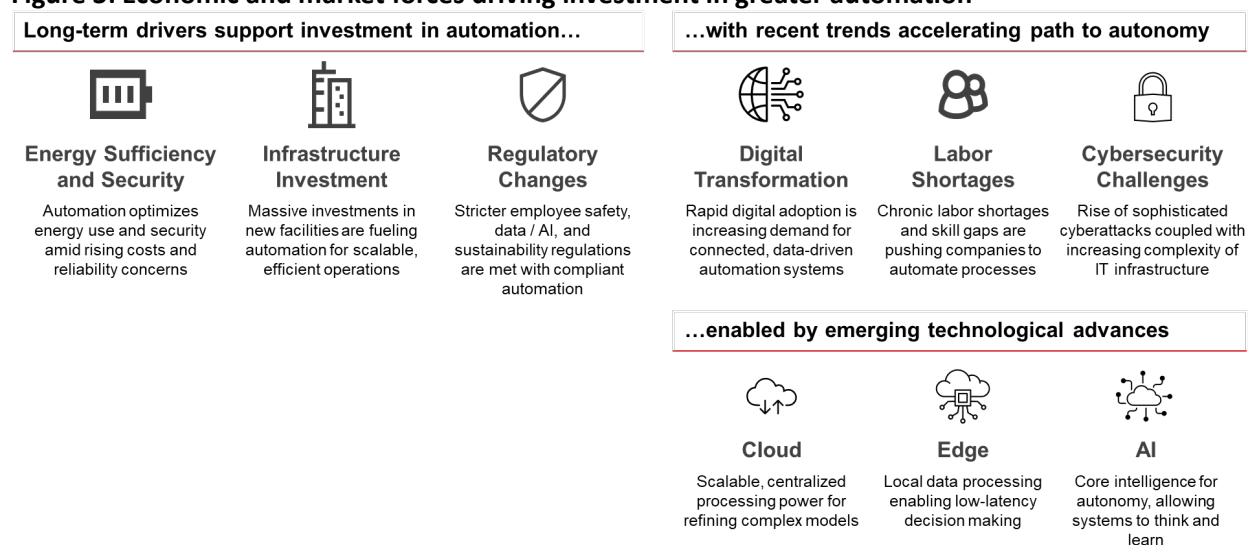
In the 2000s and 2010s, the launch of **Experion Process Knowledge System (PKS)** and **Experion PKS Hive** commercialized integrated process control solutions that virtualized control applications and decoupled them from hardware, exemplifying **our progressive approach** to enhancing operational efficiency and decision-making. In addition, Tridium's 1999 launch of the **Niagara Framework** facilitated the transition from closed to open software architecture, **a game-changer in seamless system integration**, connecting disparate systems and devices across buildings.

Our rich history of innovation and technology leadership has cemented our long-standing reputation for driving significant productivity gains and enabling better outcomes for customers, ultimately making Honeywell instrumental to the future of critical industries like energy and infrastructure.

## Honeywell's solutions leverage emerging technologies to solve today's toughest challenges

In the current environment, many of our customers face **structural challenges** such as **skilled labor shortages, aging infrastructure, operational inefficiencies, and elevated costs** associated with energy and maintenance. These dynamics exacerbate the economic impact of unplanned downtime, inconsistent yield quality, and worker inefficiencies. We are at the forefront of addressing these critical challenges, leveraging our cutting-edge technologies combined with decades of deep domain expertise to offer value-based solutions rather than the product-focused offerings of past generations.

**Figure 3: Economic and market forces driving investment in greater automation**



Source: IEA, US Federal Reserve of St. Louis, European Parliament, McKinsey & Company Technology Trends Outlook 2024, National Association of Manufacturers

## Honeywell Forge IoT platform creates a sustainable competitive advantage

Our dedication to drive high ROI, value-based outcomes for customers is exemplified through our **Honeywell Forge connected offerings**. This **hardware-agnostic, open-architecture platform** leverages our deep domain expertise and large (and growing) installed base and integrates vast amounts of historical data. These innovations utilize internet of things (IoT) technologies to **connect over 100 million assets** and deliver solutions that enhance predictive maintenance, energy management, and occupant comfort.

In fact, in just the past two years, we have **materially advanced our Forge platform to offer more than 30 applications** across all our verticals, **connecting over 20,000 customers** with insights that are based on **more than 450 terabytes of data**. We expect to continue building upon this strong foundation as we usher in an increasingly autonomous future for industrials.

Today, industries rely on geographically distributed assets, such as buildings, infrastructure, and remote plants, where **system-wide connectivity is required to optimize centralized decision-making**. By leveraging Honeywell's cloud-based solutions, customers no longer require extensive on-premises infrastructure (and related investments), while benefiting from enhanced remote accessibility to critical data and applications and rapid scaling across operations.

Honeywell's **edge computing strategy** complements our cloud capabilities and stands out as a pioneering approach to digitizing operations. Edge devices empower real-time data processing and high-frequency calculations directly at operational sites, ensuring instantaneous responsiveness. This capability is critical for the industries we play in where precision and ultra-low latency are paramount, such as refinery operations or building management.

### **Connected solutions addressing common challenges across multiple domains**

Honeywell is at the forefront of digital technologies that are minimizing downtime and optimizing asset efficiency across multiple domains in real time. For instance, we **installed Forge's cloud-based Remote Building Manager solutions, connecting over 600 quick service restaurants using edge devices for a global fast-food chain in the UK** and unifying data from underlying building management systems onto our enterprise-wide Forge platform. This connected technology has helped the restaurant operators mitigate skilled labor shortages at the stores and address energy optimization needs. This was accomplished through real-time status of energy usage, alarm monitoring and remote triaging, while implementing dynamic schedule adjustments, avoiding unnecessary expensive site visits. Enterprise-level views helped regional operation managers analyze trends across the entire portfolio of buildings (approximately 8,600 assets) and take targeted actions towards underperforming restaurants.

Honeywell is enabling businesses to thrive in an increasingly complex and competitive landscape by innovating with solutions that deliver higher degrees of autonomy. We recently executed a successful field trial of **fully autonomous control room operations at one of the world's largest integrated ethylene plants**. We are eliminating the drawbacks that stem from human variation in handling abnormal situations with closed loop action. In this example, the customer realized \$1M of benefit per unit via better throughput and increased uptime by using our cloud-based, enterprise-level systems that monitored 2,000+ sensors and autonomously handled over 100 abnormal situations per unit. As organizations continue to adopt these capabilities, we will help them unlock new levels of efficiency and accuracy, fundamentally reshaping how industries operate.

We are also **combining our UOP process technologies with Honeywell Forge for Industrial solutions** to connect customer plants and drive meaningful gains in production efficiency for our refining and petrochemical customers. Today, a Honeywell expert can view customer plant performance in real time, couple that data with advanced kinetic models that embed decades of Honeywell expertise, and offer proactive solutions and pathways to sustain maximum yield performance dynamically when operating conditions change. With over 4,500 active customer facilities globally (licensed units) and many experiencing reliability, performance, and operability gaps, we have connected over 800 sites in the last two years as adoptions have meaningfully accelerated to overcome these challenges.

**Many of the problems we are solving cut across multiple industries.** In an increasingly digital and interconnected world, the proper handling of sensitive data, regulatory compliance, and operational safeguards are more important than ever. Honeywell leverages decades of experience in industrial and building sectors to provide customers with an **integrated suite of cybersecurity offerings**. This holistic and customized approach ensures that security is embedded at every level - from device to enterprise systems. In fact, Honeywell's OT cybersecurity solutions are deployed in over 100 Honeywell sites, providing both continuous passive and active monitoring of our own operations.

Our outcomes-based strategy is delivering superior value to customers today while we are bending the curve of innovation to enhance productivity by harnessing the power of AI to pave a path to autonomy.

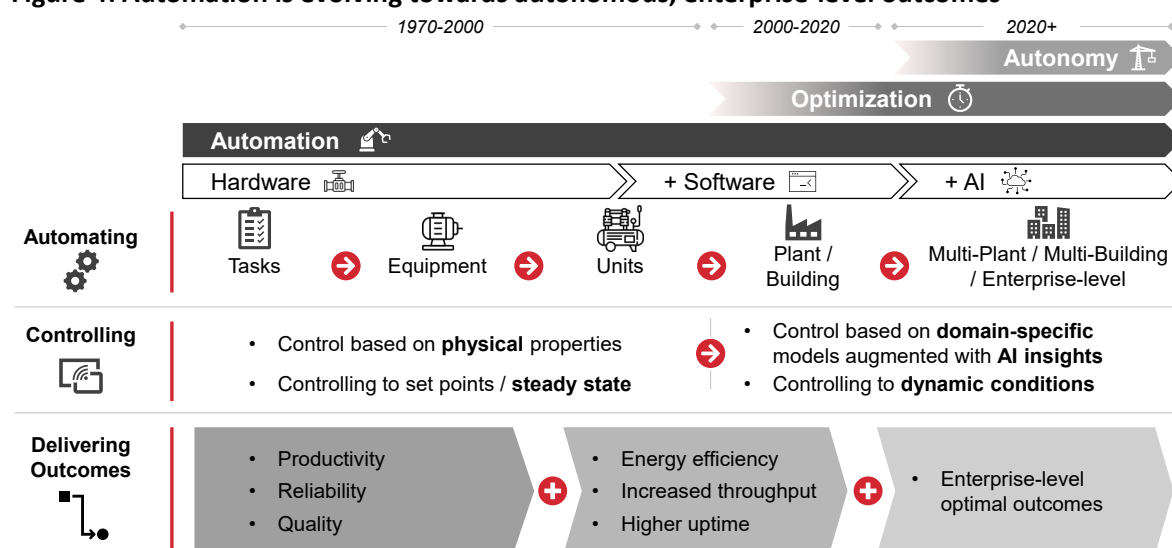
## Leading the journey to industrial autonomy

As organizations strive to remain competitive in an increasingly complex market environment, there is a growing emphasis on achieving higher levels of operational efficiency, safety, and sustainability.

**Automation is no longer simply about enhancing productivity or reducing labor costs. Value creation is shifting towards harnessing the power of data to solve enterprise-scale challenges and achieve new levels of transformation.**

One of the critical aspects of Honeywell's approach is our **unified automation strategy**, which addresses overlapping customer problems across diverse domains. By integrating solutions that span manufacturing, building management, and energy, Honeywell enables organizations to optimize operations across multiple, disparate assets at the enterprise-level.

**Figure 4: Automation is evolving towards autonomous, enterprise-level outcomes**



Source: Internal company analysis

## Digital cognition addressing the scarcity of resources and reducing operational variability

Digital cognition represents a **transformative shift in how organizations leverage technology** to automate complex operations, improve performance, and respond to challenges proactively. This concept integrates advanced technologies with AI, machine learning, data analytics, and IoT to create holistic, intelligent systems capable of mimicking human cognitive processes.

One of the core components of **digital cognition** is our ability to **rapidly analyze immense amounts of data and connect insights to optimized decision-making and action plans**. Traditional automation methods relied on preset rules and manual interventions, which limited responsiveness and adaptability. In contrast, digital cognition utilizes AI algorithms that continuously learn from real-time data inputs.

Within the security domain, we are **enabling a future in which data centers with numerous layers of security restrictions can deploy an autonomous solution** capable of seamlessly monitoring site activities, controlling access for individuals with differing credentials, avoiding breaches via low-touch processes, and eliminating false alarms, which currently represent a manual and cumbersome task for today's security professionals.

## On the road to autonomy (and enterprise-level outcomes)

We believe that we are at the precipice of a new age that transcends the limitations of prior generations of technology, enabling customers to operate more intelligently, make informed decisions swiftly, and respond effectively to the complexities of the future where connection is increasingly frictionless.

We are at the forefront of creating AI-integrated digital technologies that are already seeing meaningful customer adoption, with the **recent launch of our AI-powered building management solution** as an example. We connected over one hundred disparate buildings for Vanderbilt University, integrating software, systems, and edge devices from various building management systems into one easily accessible, hardware-agnostic, enterprise-level interface. Utilizing an AI-enabled installation process, we were able to **connect users to the platform within hours**, dramatically reducing labor time, costs, and disruption, compared to traditional building management systems. This **holistic solution addresses key issues facing building operators at the enterprise-level today**, including advanced encryption to safeguard against cyberthreats, protecting uptime, compliance, and energy management.

We are dramatically reducing the resources required for our customers to run their operations across distributed sites with portfolio-wide visibility and insights. For example, we recently installed an **enterprise-level asset-reliability platform for one of the world's largest energy producers that provides real-time monitoring of thousands of assets and minimizes unplanned downtime via 75,000 predictive AI/ML models**. Using our AI-integrated Centralized Predictive Analytics and Diagnostics (CPAD) program to optimize asset performance, our customer saw a 25% reduction in maintenance costs and a 10% failure reduction, resulting in a \$20M - \$25M annual benefit from the project. This is another clear illustration of the differentiated, enterprise-level automation benefit that Honeywell is delivering today.

## Advanced technologies coupled with deep domain expertise delivering outcomes-based solutions

Each manufacturing site, plant, airport, data center, and school we serve is distinct, but we have the capability to unlock previously siloed data and turn that into intelligence that is actionable, dynamic, and continuously learning. In fact, we are pioneering a structured framework, or ontology, that allows machines and systems to reason and interact with domain-specific knowledge in a methodical way. This understanding uniquely positions us to create tailored solutions that not only address specific customer needs but also integrate smoothly into their broader operational ecosystems to **achieve enterprise-level optimized outcomes**.

## Closing thoughts: looking towards an exciting future

As we look to the future, I am confident that **Honeywell will remain at the forefront of technological innovation as automation evolves into autonomy**. Our journey is not just about delivering short-term solutions but setting new industry standards and anticipating future needs. Our unique position within the automation industry – integrating deep domain expertise with AI, cloud, and edge solutions – will cement our role as a critical enabler of industrial resilience and future-ready autonomous operations. By fostering a culture of relentless innovation, we will ensure that Honeywell not only meets but exceeds the aspirations of our customers, partners, and investors.

## **About Honeywell**

*Honeywell is an integrated operating company serving a broad range of industries and geographies around the world. Our business is aligned with three powerful megatrends – automation, the future of aviation and energy transition – underpinned by our Honeywell Accelerator operating system and Honeywell Forge IoT platform. As a trusted partner, we help organizations solve the world's toughest, most complex challenges, providing actionable solutions and innovations through our Aerospace Technologies, Industrial Automation, Building Automation and Energy and Sustainability Solutions business segments that help make the world smarter, safer, as well as more secure and sustainable. For more news and information on Honeywell, please visit [www.honeywell.com/newsroom](http://www.honeywell.com/newsroom).*

## **Forward Looking Statements**

*We describe many of the trends and other factors that drive our business and future results in this release. Such discussions contain forward-looking statements within the meaning of Section 21E of the Securities Exchange Act of 1934, as amended (the Exchange Act), including statements related to the proposed spin-off of the Company's Advanced Materials business into a standalone, publicly traded company, the proposed separation of Automation and Aerospace, and the sale of the personal protective equipment business. Forward-looking statements are those that address activities, events, or developments that we or our management intend, expect, project, believe, or anticipate will or may occur in the future. They are based on management's assumptions and assessments in light of past experience and trends, current economic and industry conditions, expected future developments, and other relevant factors, many of which are difficult to predict and outside of our control, including Honeywell's current expectations, estimates and projections regarding, among other things, the proposed spin-off of the Company's Advanced Materials business into a standalone, publicly traded company, the proposed separation of Automation and Aerospace, and the sale of the personal protective equipment business. They are not guarantees of future performance, and actual results, developments, and business decisions may differ significantly from those envisaged by our forward-looking statements, including the consummation of the spin-off of the Advanced Materials business, the proposed separation of Automation and Aerospace, and the sale of our personal protective equipment business, and the anticipated benefits of each. We do not undertake to update or revise any of our forward-looking statements, except as required by applicable securities law. Our forward-looking statements are also subject to material risks and uncertainties, including ongoing macroeconomic and geopolitical risks, such as lower GDP growth or recession, supply chain disruptions, capital markets volatility, inflation, and certain regional conflicts, which can affect our performance in both the near and long term. In addition, no assurance can be given that any plan, initiative, projection, goal, commitment, expectation, or prospect set forth in this release can or will be achieved. These forward-looking statements should be considered in light of the information included in this release, our Form 10-K, and our other filings with the Securities and Exchange Commission. Any forward-looking plans described herein are not final and may be modified or abandoned at any time.*