

Foreword

By: Marina Bill, Chairperson IFR Industrial Robot Suppliers Committee



Dear Reader,

Dear Robotics Community,

We are living through an era of historic transformation. While the way we live and work has changed more in the past year than in the previous 30, the underlying trends driving that transformation haven't changed – they've simply accelerated with the pandemic. Industries and organizations are realizing the role of automation in boosting productivity, enhancing business continuity, and enabling the flexibility required to maintain and grow revenue during the pandemic.

In 2021, we are seeing the potential for recovery and investment after the crisis, despite headwinds, including surging demand, supply chain disruptions, chip shortages, and trade friction which all continue to create challenges. In the longer-term the growing importance of a carbon neutral society and the transition to electric vehicles present significant opportunities for industry.

Looking back on 2020, the initial recovery in China was followed by North America in the second half of the year, with Europe starting its recovery at the end of the period:

- Annual unit sales volume grew +0.5% compared to 2019 with approximately 383,545 units sold in 2020.
- The Asian market grew by +7% with solid growth seen in China (+20%) and Chinese Taipei (+14%). The markets in Europe declined by -8% and by -17% in the Americas. China remained the largest market accounting for 44% of total worldwide installations followed by Japan with 10% and the United States with 8%.
- The electronics industry experienced the strongest growth (+23%), surpassing Automotive as the largest customer segment for the first time.
- By the end of 2020, approximately 3 million industrial robots (+10% compared to 2020) were in operation worldwide.

Looking ahead, the global economy is projected to grow +6%¹ in 2021 and +4.5% in 2022. This edition of WR forecasts that global robot installations will rebound strongly by +13% to 435,000 units in 2021 driven by deferred investments from 2020, the growing need for resilient supply chains and in order to support capacity expansions. The “boom after the crisis” is expected to moderate in 2022 on a global level. From 2021 to 2024, we can expect average annual growth rates in the medium single-digit range. The mark

¹ International Monetary Fund (IMF): World Economic Outlook July 2021.

of 500,000 units installed per year worldwide is expected to be reached in 2024. For more details kindly refer to chapter four.

We are seeing a long-term transformation across all sectors. Robots continue to move beyond traditional manufacturing into logistics and warehouses, laboratories, workshops, and small production environments. New sectors of the economy, including small and medium size enterprises (SMEs), are embracing automation for the first time and new customer segments (including healthcare, fast moving consumer goods, retail, construction, logistics) are accelerating. There is growing recognition that the scalability of robots and their potential to reduce costs and waste, while enhancing productivity and quality, is helping support job creation in SMEs.

The 'new normal' in many industries is mass customization, producing smaller lots of greater variety in shorter product life cycles. The shift towards high mix, low volume production in shorter cycles raises the importance of manufacturing flexibility and agility. Additionally, sustainability is increasingly important for customers, their consumers, and employees. Sustainability and the environment are expected to be major catalysts for accelerating investment in robotics. Automation has a clear role supporting the development of a smarter, better world, enabling sustainable profit, people, and planet.

Technology developments such as the Internet of Things, AI, machine learning and the expanded possibilities offered by 5G are transforming manufacturing, with a growing number of companies embracing them. Through machine learning and AI we see opportunities to further develop human-robot collaboration and to make robots more autonomous, within set parameters. In the future, machine learning and AI will enable robots to self-learn and self-adjust, enabling improved performance with less need for human intervention.

This is the decade where robotics and automation will enable the transformation businesses need. This is the decade where robotics and automation will change the way we work and create a world where people work side-by-side with advanced robots, collaborating on complex tasks, improving the nature of work and helping to advance society. This is the decade when we will fully harness the power of robotics, to unlock growth in new sectors of the economy and when we make work more rewarding, safer, healthier – and more productive for people.

This is an exciting time to be in our industry!

Best Wishes,

A handwritten signature in black ink that reads "Marina Bill". The signature is written in a cursive, flowing style with a large initial 'M' and 'B'.

Marina Bill