



# Roadmapping for Strategic Automation Development

BOOK 2 OF 5

**IMPROVING ROBOTICS INTEGRATION**

TECH TALKS™ EBOOK SERIES



## ABOUT ANDREWS COOPER

Andrews Cooper (AC) excels at advanced engineering for emerging technologies, specializing in Research & Development, Product Development, Hardware Testing, and Manufacturing Automation. We cater to ambitious, tech-focused companies seeking to innovate and lead their industries. With expertise in multiple engineering disciplines, our engineers function as force multipliers, propelling the development of HardTech solutions. With a focus on rapid development using proven methodologies, we de-risk the development process and integrate validation and testing to ensure high-quality, manufacturable products.

## ABOUT THIS EBOOK SERIES

Through this eBook series on Roadmapping for Strategic Automation Development, we describe how to create a successful automation plan by creating a well-defined blueprint at each stage of development and integration. Whether you're at the start of your automation journey or need help defining ROI to replace your current manual processes, AC builds a custom manufacturing automation roadmap tailored to your specific needs. If you don't have a complete specification, we work with your manufacturing and process engineers to understand and recommend the most beneficial processes for your custom automation.



**Manufacturing  
Automation**

Looking for a snapshot of our Manufacturing Automation services? Watch our [1-Minute Video](#).

# THE AUTOMATION ROADMAP: Improving Robotics Integration



Robotics integration is pivotal in transforming manufacturing operations by automating repetitive and complex tasks with high precision and efficiency. However, selecting the right robotic platforms and types for specific applications can be challenging. An automation roadmap provides a strategic framework for choosing and integrating the appropriate robotic solutions, ensuring maximum performance and value.



Whether building a robot proof-of-concept (POC) cell, preparing for a large-scale implementation of robots, or upgrading an existing cell, having an automation roadmap starts the journey right for a successful outcome. Below are just a few of the key impacts of roadmapping for robotic integration.

## 1 | Select Robotic Systems Strategically

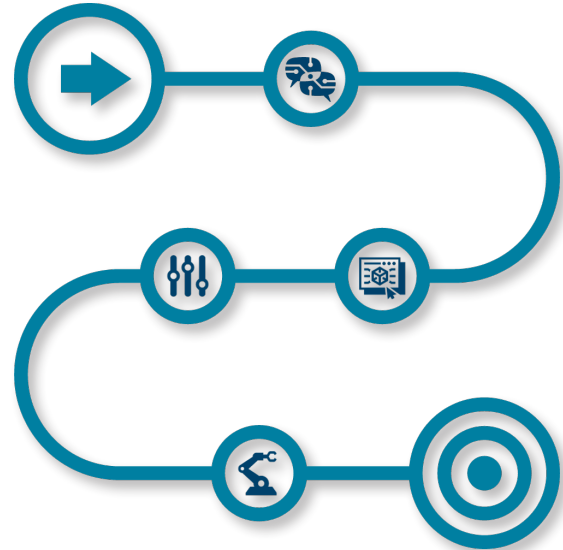
An automation roadmap defines the robotic performance requirements through objectives like these:

- **Develop Targeted Solutions:** Tailor robotic technologies to the unique manufacturing and application requirements, ensuring the right fit and optimal performance for each automated task. Customizing robot configurations and programming for specific production lines enhances manufacturing speed and accuracy.
- **Ensure Scalability and Flexibility:** Include modular robotic designs and adaptable control systems to allow easy upgrades or reconfigurations to meet changing production demands.
- **Align with Business Goals:** Ensure automation technology supports broader organizational objectives, aligning with key performance indicators (KPIs) and business growth targets.

## 2 | Plan for Seamless Integration

Effective planning includes a number of early analyses and planning efforts to integrate automation robotics seamlessly, such as:

- **Plan for Workflow Integration:** Integrate robotic systems into existing manufacturing processes to maximize productivity, reduce downtime, and improve overall operational efficiency.
- **Derisk Integration Challenges:** Address potential integration challenges early in the process. Implement solutions ahead of risks to ensure a smoother and more efficient implementation.
- **Optimize Performance:** Integrate sensors and precision calibration to ensure consistent quality and performance standards across all production runs.
- **Minimize Downtime:** Plan for challenges early in the development process. Include contingency protocols and quick-changeover capabilities to reduce downtime during robot integration, operation, and maintenance.



*"By engaging early with clients to provide automation expertise and support in areas that may be outside their core team's skill set, we foster a collaborative relationship that can adapt to ambiguous scenarios."*

—Harry Richards,  
AC Automation  
Program Director

# Custom Manufacturing Automation: CHARTING A COURSE FOR SUCCESS

To summarize, at AC, we prioritize early engagement to understand your automation needs, operational goals, and manufacturing processes. Working closely with you early and throughout the development process enables us to develop a comprehensive and well-planned roadmap, leading to rapid and successful automation implementation.



Leveraging our diverse success in robotics integration, we identify the robotic solutions and strategies that suit your specific application and ensure seamless manufacturing integration for maximum performance and ROI. Looking for more about the Automation Roadmapping journey? Read our next post in this series, [Part 3, Enhancing Machine Vision](#).

Regardless of where you are in your product lifecycle, improve your speed to market with AC's engineering teams in [Research & Development](#), [Product Development](#), [Hardware Testing](#), and [Manufacturing Automation](#).

Let us know how can we support your current needs and solve your ambitious challenges.



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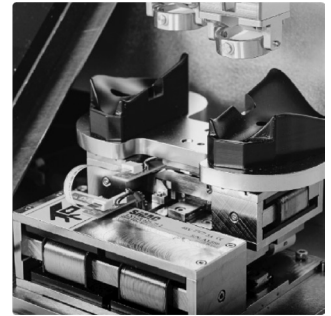
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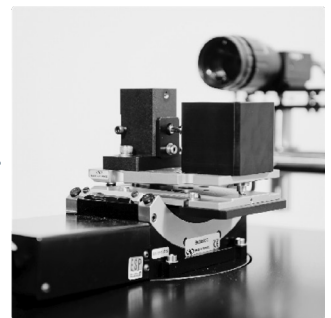
**R&D  
Accelerator**

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**Product  
Development**

A white icon of a circuit board with a cursor arrow, representing hardware testing.

**Hardware  
Testing**

A white icon of a robotic arm, representing manufacturing automation.

**Manufacturing  
Automation**

A white icon of three stylized human figures, representing integrated engineering teams.

**Integrated  
Engineering  
Teams**



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