

CAPITAL

Accelerate and Enhance Wire Harness Production with the Power of the Digital Twin

Capital is a unique software solution designed for wire harness manufacturers looking to increase competitiveness and profitability across their fabrication processes.

Developed by industry experts, Capital enables a fully digitalized flow from design to manufacturing engineering, with high levels of automation, simulation, and integration.

Why choose Capital for Wire Harness Manufacturing?

Leverage the Digital Twin to Boost Productivity

With Digital Twin technology, Capital allows harness manufacturers to easily import OEM data, design error-free harnesses, and optimize manufacturing process costs (labor and materials). This helps identify the optimal production strategy right from the start, increasing profitability.

Optimize Processes and Improve Manufacturing Efficiency

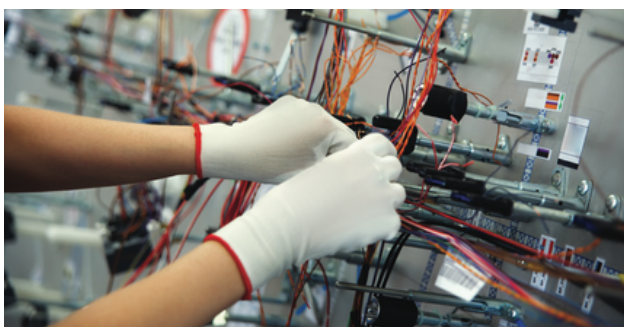
Capital Harness XC helps formboard designers create optimized, ergonomic layouts based on the time required to place each component. Designers can also generate combined formboards for entire production lines, improving space usage on the shop floor.

Enable Planning and Process Optimization

Production engineers can use Capital TVM to apply best practices to process planning and cost estimation. The platform supports "what-if" scenario evaluation to compare options and identify the most efficient manufacturing approach.

Enhance Production Documentation

Given the growing complexity of today's wire harnesses, generating operator instructions and visual aids automatically for each project and plant is essential. Capital Workbooks eliminates manual creation of work instructions, reduces documentation errors, and lowers fabrication costs.



Wire harness manufacturing remains a labor-intensive process based on manual assembly.

Capital automates data exchange between OEMs and harness manufacturers, enabling automated design and production. This helps manufacturers improve harness quality, reduce time-to-market, and increase process efficiency.

The future of wire harness manufacturing

Digitalization and digital data exchange throughout the entire process will significantly improve harness production.

A traditional factory begins with material preparation, including wire cutting, wire prep, splicing, and connector pre-loading. The harness is then assembled on formboards, and operators complete post-assembly tasks.

Advanced solutions like Capital can automate BOM preparation, work instruction creation, and formboard generation.

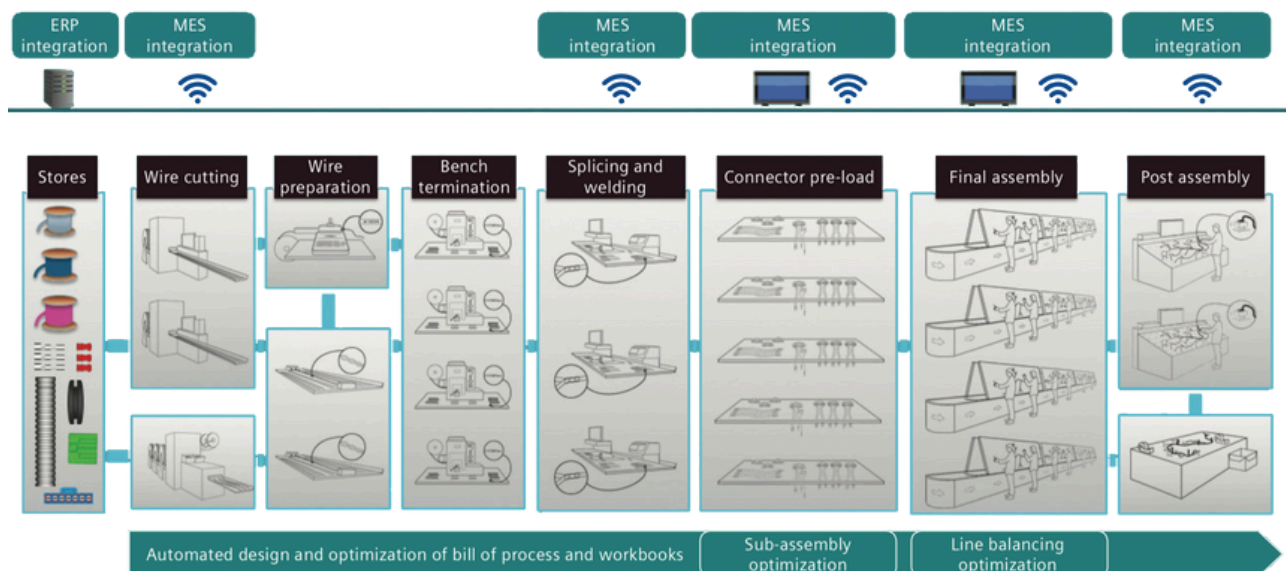
These solutions will integrate with a network of other systems (see diagram). ERP systems manage material inventory, while a Manufacturing Execution System (MES) can provide shop floor workbooks, collect real-time data, and generate feedback to help reduce defects and optimize production.

With a fully digitalized process—from model-based planning and simulation to integrated production systems—harness manufacturers can achieve major gains in efficiency and productivity.

A model-based engineering approach with continuous digital information exchange helps manufacturers:

- Reduce design errors by up to 50%
- Cut the quote-to-build cycle time by 30%
- Decrease formboard design time by up to 85%

Model-based planning, simulation, optimization, integration, and execution



In the future, every system in the factory will be digitally connected.