

WERNER
ELECTRIC SUPPLY



NETWORK SOLUTIONS



NETWORK SOLUTIONS



Connecting
with you
Since 1948.

At Werner Electric Supply, we have grown to serve the needs of our loyal customers and valued partners since our modest beginnings in 1948. We provide diverse, high quality products, and services from our locations throughout Wisconsin, Michigan's Upper Peninsula, and North Dakota.

Today, we offer convenient access to over \$30-million in inventory made up of 24,000 SKUs in our state-of-the-art, 250,000-square-foot warehouse and headquarters. As a key partner to our customers in all areas of business, Werner Electric strives to provide service that goes above and beyond expectations. Our engineers and product specialists are able to provide services such as network solution design and implementation, technical support, training, inventory management, engraving, custom assemblies, modified enclosures, lighting design, and much more!

Network Solutions

The Journey

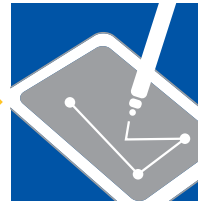
Plant wide automation solution guidance at any step of the journey.

No matter where you are in your journey, our Network Solutions group can help you arrive at your destination!



Analyze/Plan

- Current state of network
- Security needs
- Component costs/budgeting
- Wireless needs
- Online assessment



Design

- Network migration/turnkey solution
- Physical infrastructure/network topology
- Security policy
- Wireless/cellular design



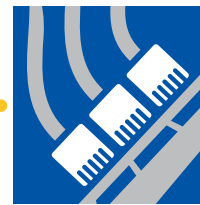
Manage/Monitor

- Troubleshooting
- Track uptime
- Track network issues
- Disaster recovery/incident response



Audit

- Security standards
- Network standards
- Infrastructure standards



Implement

- Project management
- Deploy security policies
- Systems configuration

Network Solutions Partners



Network Solutions

At a Glance



Analyze/Plan

Proper planning is crucial to ensuring an available and highly performing network which will result in reduced costs. It will also enhance business operations for your organization. To deploy Ethernet and Internet Protocol (IP) plant wide at your facility, you need a design methodology for your industrial network. One which can help you build a structure and hierarchy to maintain real-time network performance. A well thought out plan will enable the convergence of multiple control and information practices, including data collection, configuration, diagnostics, discrete, process, batch, safety, time synchronization, drive, motion, energy management, voice, and video. Werner Electric Supply's Network Solutions team can help you analyze and plan your network infrastructure.

Our Network Solutions team can:

- Analyze the current state of your network, including an assessment of network security
- Assist in the gathering and assimilation of your budgetary needs for infrastructure and network costs
- Plan which physical hardware components are needed for the network infrastructure you want to implement
- Determine the software components needed for the network infrastructure
- Decide the specific location, installation, and configuration for your hardware and software components
- Suggest software prediction models for wireless based technologies



Companies today are challenged to connect their enterprise network to the factory floor. This demand for integrated communications requires careful planning and product selection. Improper or inadequate planning can lead to "network sprawl", where network architectures grow out of control as a result of adding devices and connections haphazardly. This limits the ability to manage or diagnose issues when trouble arises.

Network Solutions

At a Glance

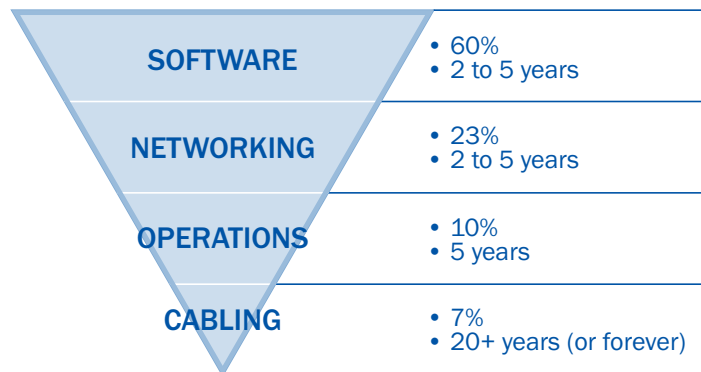


Design

Whether updating existing Industrial Automation Control Systems (IACS) to meet growing information demands or planning plant expansions, the amount of rework time for development and implementation can be costly. Implementing validated solutions in the physical and logical design of a network system can reduce your deployment time by up to 75%. This ensures optimum performance and reliability of your network's design. Werner Electric's Network Solutions team can help maximize uptime and reduce costs associated with problem solving and network downtime. Our Network Solution team's design and implementation considerations can help you:

- Choose a topology that meets the performance, cost, and spatial requirements of the IACS application
- Recommend designs and implementation for a technical network in respect to maximizing resiliency, eliminating redundancy, and managing the IACS
- Deliver end-to-end architecture with consistent technology, management tools, a common feature set, and software base allowing stream-lined deployments and ongoing management
- Provide network security for the IACS including security policies, Demilitarized Zones (DMZ), firewalls, intrusion protection, endpoint security, security monitoring, analysis, and response
- Enable remote access for engineers, partners, and IACS equipment vendors, for diagnostics and maintenance
- Furnish on-site testing and validation of wireless and cellular networks for optimal wireless component implementation

Infrastructure Investment Compared to Longevity



Network Solutions

At a Glance



Implement

Werner Electric's Network Solutions team can help you navigate the entire implementation process, from meeting your time and budget goals, to simplifying vendor procurement.

By utilizing our vendor, contractor, and system integrator partnerships, the Network Solution's team can provide **project management** for a robust, secure network that helps increase your system's availability. We offer a range of implementation services including turnkey projects, pre-engineered, and customized solutions.



Audit

Whether you have modified or installed a new network infrastructure, validation by independent third-party professionals is crucial. With expertise in both the

IT and operations spaces, we can help confirm that your network meets your installation, security, and performance requirements. This also includes expertise in 802.11a/b/g/n, Bluetooth, 900 MHz, licensed frequency, and 3G/4G cellular technologies. We use state-of-the-art diagnostic tools to conduct installation and operational tests to ensure your specifications are met and performance is in compliance with governing standards such as ODVA, IEEE, ANSI, TIA, ISA-95, and ISA-99.



Network Solutions

At a Glance

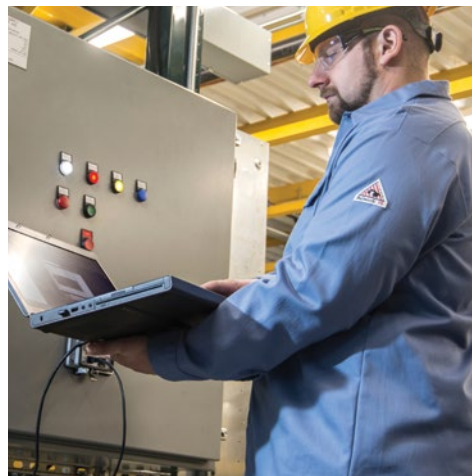


Manage/Monitor

Your industrial network is complex to maintain. If not properly managed with the right mix of talent and ongoing monitoring, it can lead to network and production downtime. Our Network Solutions team understands the challenges unique to industrial environments.

We can help provide visibility into all levels of devices and connectivity, troubleshoot, and enable operational field technicians to efficiently communicate with IT resources. Our tools and expertise can help to speed documentation and deployment, and provide advanced analytics to optimize ongoing performance. Benefits include:

- Empowering controls professionals to shift from a reactive response approach, for example responding only when a disruption occurs, to a pro-active approach
- Improving the uptime and performance of critical, real-time networks
- Providing incident response, troubleshooting and disaster recovery
- Auditing company security programs in comparison to governing bodies (NERC CIP, ISA 99, NIST 800-53, NIST 800-82)
- Auditing current company architecture in relation to governing bodies (ODVA, IEEE, TIA/EIA)
- Viewing status, uptime, alarms, and running reports from one platform
- Providing valuable insight into how well assets are working and alerting you when performance falls outside of acceptable performance standards
- Programming alarms to deliver emails or text messages if problems arise



*Additional content for pp. 3-6 contributed by Panduit Corporation (www.panduit.com/en/home), Rockwell Automation (www.rockwellautomation.com), Cisco (www.cisco.com), and Tech-FAQ.com

Convergence

IoT and Converged Plantwide Ethernet (CPwE)

It is estimated that more than 50 billion devices will be connected to the Internet within the next ten years. This presents an enormous economic opportunity for manufacturers.

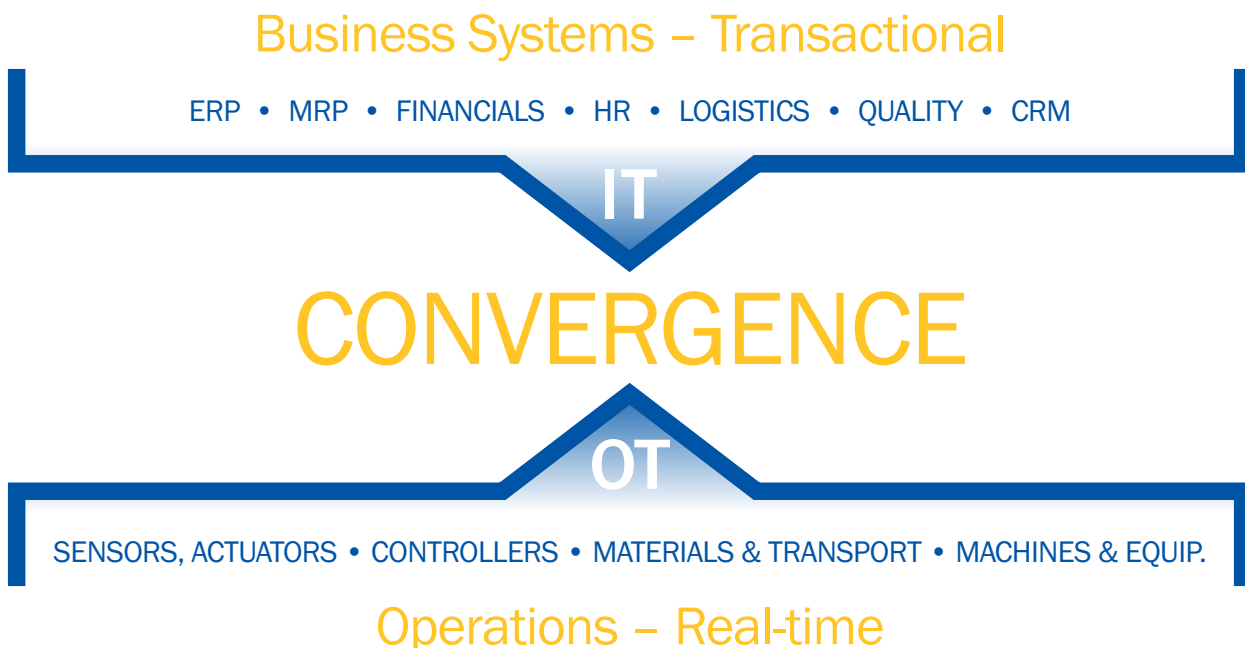
Converged Plantwide Ethernet (CPwE) is the connection of information technology (IT) and operations technology (OT) with a unified infrastructure. In this Internet of Things (IoT) era, an endless number of devices communicate on different networks and this segregation of IT and OT systems can be a handicap.

As a result, manufacturers are converging their IT and OT systems into a single, common network architecture, providing them access to valuable production data.

Plantwide convergence streamlines data collection on the plant floor and provides real-time decision-making information to the right people at the enterprise level. The result is an increase in efficiency, productivity, as well as the ability to more quickly adapt to market shifts.

Are you ready to speak with someone regarding your connected enterprise and convergence options? Werner Electric's Network Solutions team can help your company take advantage of these streamlining opportunities. Werner Electric has assisted customers like you every step of the way from getting started to the implementation of a secure solution to cost savings justification.

Werner Electric Supply's Network Solutions team can help you analyze your current network, plan and design customized solutions, help implement the design, and then guide the monitoring and management of the newly implemented solution.



True Cost Benefits

Properly Designed Networks



Benefit: Integrate communications from the enterprise network to the factory floor

Cost: Inability to maintain real-time network communication and performance

Benefit: Plan a vastly accessible, high performance network infrastructure

Cost: “Network sprawl” by adding devices and connections haphazardly

Benefit: Implement a logical design

Cost: Avoid adding up to 75% to infrastructure deployment time

Benefit: Design an infrastructure to meet future information growth demands and plant expansions

Cost: Expensive development and implementation rework time, company downtime

Benefit: Integrate an appropriate foundation for structured cabling

Cost: Bandwidth limitations, additional hardware costs, unforeseen cabling costs

Benefit: Properly manage and utilize ongoing monitoring

Cost: Expensive network rework and production downtime

Benefit: Empower operational field technicians to efficiently and pro-actively communicate with IT resources

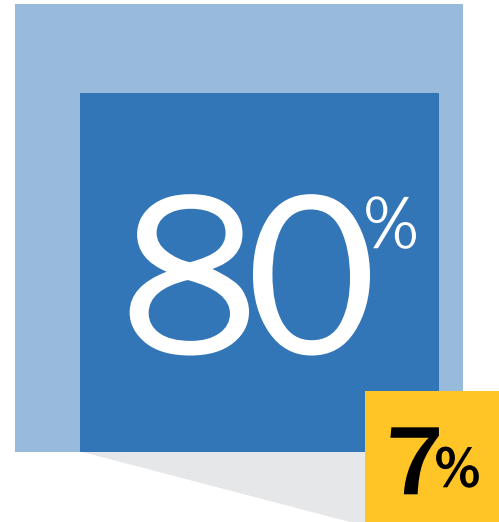
Cost: Solely reactive responses by controls professionals

Benefit: Maximize industrial operations communications throughout the enterprise

Cost: Reduced report access and limited insight into analytics of the connected enterprise

Benefit: Audit your network infrastructure through an independent, third-party professional

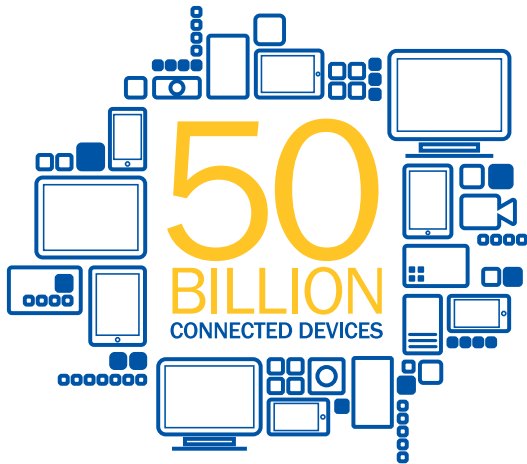
Cost: Non-conformity and compliance with governmental standards



80% of network problems are caused by 7% of the budget.

Convergence

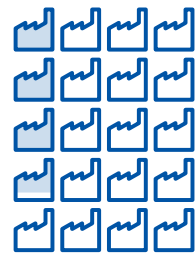
Statistics



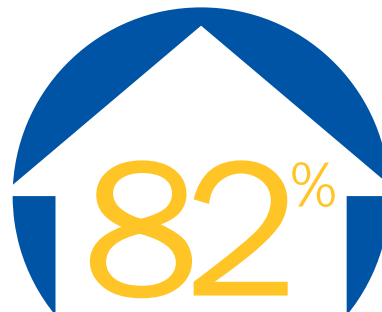
50 billion connected devices by 2022 – a REAL opportunity for efficiency and accessibility.



Early adopters of IoT have seen 48% reduction in downtime.



More than 80% of manufacturing is still running separate networks.



82% of companies using smart manufacturing experienced increased efficiency.

Locations



Northwest, Northeast, and Southwest WI Region Branches

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