

Wireless: An Easier Way to Connect Your Remote Devices



The convenience of being able to connect devices without the use of wires has led to the unprecedented success of wireless technologies in the consumer goods industry. Based on this success, applications using the same technologies are beginning to appear in various other settings as well, including in industrial environments. Wireless technologies offer a number of key benefits to businesses, including mobility, flexibility, wider coverage, and cost savings.

In a factory setting, for example, the benefits of using wireless technologies are numerous. The cost and time for cable installation and maintenance can be substantially reduced by using wireless solutions, making plant setup and reconfiguration easier. This is especially true for harsh environments where cables can be easily damaged by chemicals, vibration, or equipment in motion. Wireless solutions provide enhanced flexibility with device connections, and can help establish connections to stationary or mobile devices that would otherwise be impossible to connect. Plant machinery can be made much easier and simpler to access for diagnostic or programming purposes.

Top 5 Reasons to Go Wireless

- 1 Device mobility
- 2 Better flexibility, easier expansion or migration
- 3 Wide coverage
- 4 Ease of installation
- 5 Lower installation costs

■ Mobility and Increased Efficiency

Improved data communication leads to faster and more efficient transfer of information among people in your organization and between you and your customers. Members of your sales team, for example, can remotely check stock levels and prices while on a sales call.

■ Flexibility and Ease of Relocation or Expansion

In a factory setting, stationary systems can be wirelessly connected to mobile subsystems or robots to achieve a connectivity that would otherwise be impossible. Furthermore, wireless technology can make it much simpler to gain temporary access to plant machinery for diagnostic or programming purposes.

■ Wider Coverage

Because wireless technology enables you to communicate wherever you are, you can send and receive information at any time without being limited by physical wires.

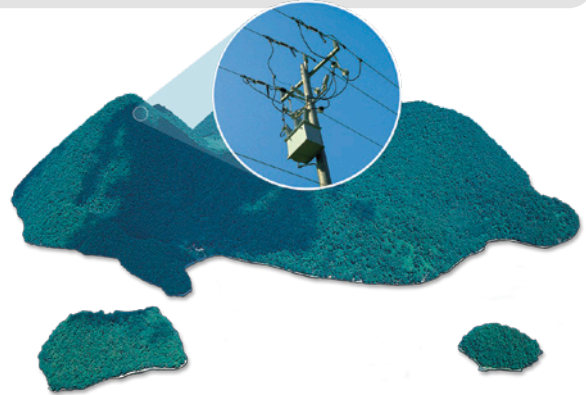
■ Cost and Time Savings

Wireless networks can be easier and cheaper to install and implement than wired networks. There is no need to purchase lengthy wires or to pay additional installation costs to wire your environment. The time required to deploy a wireless solution is also typically significantly shorter than for a wired solution.



Lower Total Cost of Ownership

Traditional wired connections suffer from a significant drawback: the cost and effort of cabling. As distances increase, cabling costs can grow exponentially higher. Running long lengths of cable to new or relocated equipment can delay or halt production. For example, suppose your project is to automate data collection from a feeder terminal unit (FTU) located on a mountain one kilometer away. Three technologies could be used to establish communication with the FTU: ADSL PSTN, fiber Ethernet, or wireless. You could do a side-by-side comparison between the three technologies to determine the most cost-effective approach.



■ Initial Infrastructure Costs

The following table shows an estimate of the initial infrastructure costs for the three possible solutions.

	Infrastructure Costs	Monthly Fees	Maximum Bandwidth
ADSL PSTN	ADSL operator	\$50 USD / month \$30 USD / month	8 Mbps (download) 56 Kbps (upload)
Fiber Ethernet	1 km fiber cable Construction costs Licensing costs	None	100/1000 Mbps
Cellular	Cellular carrier	Charged by packet sent, usually with basic monthly payment	GSM: 9.6 Kbps GPRS: 20 to 40 Kbps EDGE: 80 to 160 Kbps HSPA: 2 Mbps

■ Cellular vs. Fiber Optic Solution

The following table breaks down the communication costs over five years for wired and wireless communication.

	Cellular Solution	Fiber Optic Solution	
Initial Costs	None	1 km fiber patch cords	\$2,000
		Construction	\$5,000
Communication Costs	\$44.99 x 12 (months) x 5 (years)	None	
Total	\$2,699	\$7,000	

Saves up to **250%!**

Note: Licensing costs for fiber optic solution not included