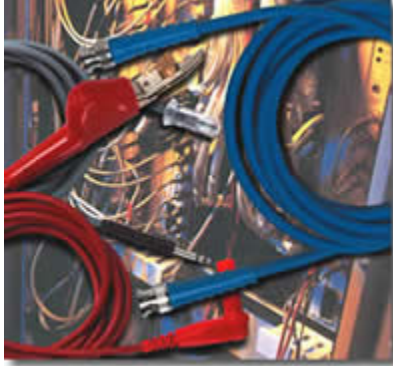


**Trends in Communications and Electrical Installation:
the Shift from Innovation to Commodity**
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Telecommunications and data communications, like many similar technology-based industries, are advancing at an amazingly rapid pace. Sophisticated networks integrating data, voice, and video communications are in high demand and represent major investments for new businesses as well as for established companies expanding their infrastructures. Additionally, the number of people using the internet at home both for business and personal use is growing exponentially each year. Designing and installing the wiring and cabling systems to support these demands represents a lucrative source of revenue for both individuals and companies with the required skills.

Typically, new technologies are initially introduced by a small group of specialists in their field. These individuals are perceived by the general population as an elite group with knowledge and skills that are unfamiliar, and perhaps overwhelming, to most people. The buzzwords and technical aspects of these innovations are usually very specialized and often outside the comfort zone of the average person. A recent example is the dramatic increase in the number of web sites. Initially, the development of these sites demanded specialized services that were only offered by a handful of companies, and were available only at very high prices. Today, web site creation is considered a standard and necessary tool for marketing a company's product or service. Beyond that, development of web sites has become so mainstream that students and families are developing their own personalized sites without the need for assistance from any technical expert.

Network installers, who have traditionally been responsible for integrating and installing complicated voice and data communications cabling, are seen as highly skilled specialists. In effect though, electrical contractors have been doing similar work for years by wiring for lighting, heating and air conditioning. However, the network installers are working with the newer technology and typically bring in the higher salary. Today more and more new homes and businesses are being wired during construction to provide maximum communications performance. Electricians and wiring technicians are becoming skilled at installing these lower voltage communications lines, and companies are beginning to take advantage of this more economical means of installation for existing network upgrades. The former network installation specialist will move on to the next new technology until it too becomes mainstream, or perhaps move into another field. In short, there will always be a specialist type group at the on-set of the

new technology and as it becomes mainstream, these specialists will migrate into other fields.

Each new form of communications technology brings with it a new way of doing business. In the case of voice mail and fax machines, these tools changed workers' habits, the way they communicated, and the speed at which those communications occurred. Today's new technologies are continuing to increase the speed and accuracy of communications. Unfortunately, no new technology is foolproof, and each innovation in technology spurs manufacturers to develop new tools and equipment to test and troubleshoot these new systems. As an example, Pomona Electronics has introduced a line of 75-ohm coaxial cables including True-75-ohm BNC products. These True-75-ohm cables were developed to provide improved bandwidth performance to meet the testing requirements for a wide range of digital video and telecommunication data transmission. Additional new products available from Pomona include a line of BNC, Mini- and Standard WECO in-series and between-series patch cords. Designed specifically to interface with test equipment featuring WECO or BNC connectors, the new patch cords allow for quick and reliable signal patching and network reliability testing.

In addition to changing workforce habits and new products, the rapid growth in demand for new network systems is bringing about even broader, more widespread changes that affect the whole structure of the communications industry, including channels of product distribution. The best distributors quickly realize that they need to carry additional product lines to accommodate these new product requirements. Their customers want to obtain everything they need for an installation at one place rather than making multiple stops for low voltage and high voltage products. The distributors who stay abreast of these changing trends and adapt most quickly are the ones who will retain their customers and attract new ones.

Distributors who currently sell products for electrical contractors are expanding their line to include products for voice/data/video communication installation and test. The modified supply chain thus becomes broader and the expanded availability of these products results in more competitive pricing. In addition to the new items required for installation, related test equipment and accessories will need to be added to the product mix. Formerly specialized communications distributors will either diversify or go out of business as the traditional electrical wholesale distributor expands and broadens into this new market.

As any new technology evolves, the products and experts associated with that technology will remain specialized only until it becomes mainstream. However, there will always be an innovator who is one step ahead of the crowd; and specialization will evolve to encompass these new innovations. The future of communications holds unlimited possibilities, but one thing is certain. More innovations will emerge - the only questions are who will introduce them, and how will they change our way of doing business?