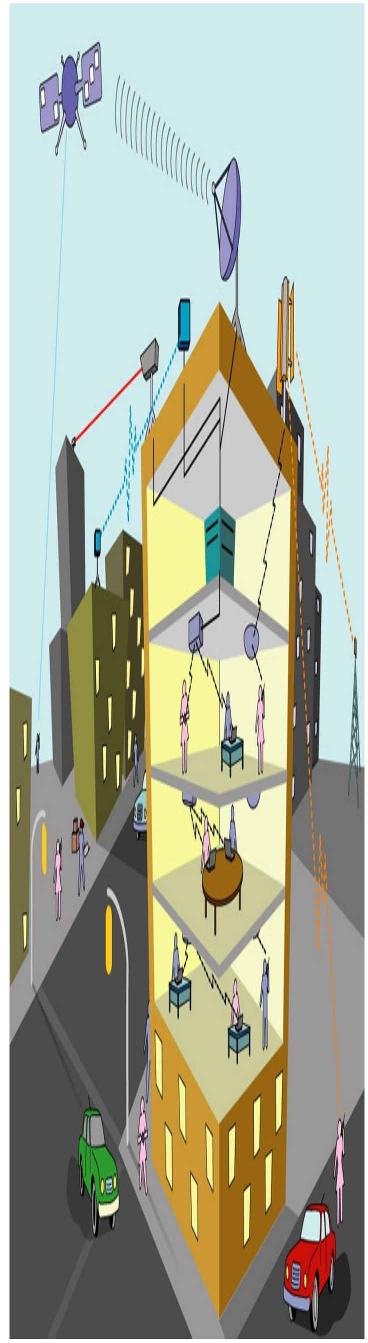
Supply Chain Management and Telecom Components: Construction, Electronic Equipment Packaging, Power Systems, and Wire & Cable 2001-2006 a market research report



The telecom industry's radical shift this year from a supply-driven marketplace to a demand-driven model has significantly impacted not only how carriers market and sell their products, but how they purchase their own network equipment. In the current economic climate, achieving operational efficiencies and reducing cost has taken on paramount importance.

Insight's research suggests that the only way operators and their suppliers will be able to succeed in the new demand-driven marketplace is by practicing effective supply chain management, streamlining purchasing processes and reducing time-to-market. Successful functional core component firms will address oversupply problems, meet demands for new construction and operator buildouts, follow key industry standards, and improve available technology in often-neglected areas such as power plant operations. Leaders will also take advantage of a key shift in the supply chain infrastructure: large equipment vendors outsourcing manufacturing operations.

Supply Chain Management and Telecom Componentsexamines the structural and strategic changes in telco equipment purchasing and the impact of industry slowdown on component firms. Insight forecasts revenue in the four major functional core component sectors and uncovers opportunities specific to each segment:

- Integrated electronic enclosure packaging,
- Power plants and systems,
- Wire and cable, and
- Telecommunications construction.

This report is your best tool to help navigate the evolving equipment marketplace, conquer key challenges, and sustain revenue growth in an increasingly uncertain market. Order your report today and gain an immediate competitive advantage over the more than 1,000 manufacturers, distributors and wholesalers vying for telco equipment dollars.

Background

The US telecommunications industry is currently experiencing one of the worst slumps in its history. Order terminations, build out cancellations, bankruptcies, collapsing stock prices, and deteriorating margins have left the euphoria felt by the industry little more than a year ago in tatters. Major companies now expect low growth throughout the remainder of 2001, and an inventory write-off to the tune of billions of dollars. Insight Research expects that the decline will continue into early 2002.

How did this happen? What further ripple effects could occur throughout the industry? Most importantly, what can firms do to navigate safely through these rough waters? This report examines these issues and others from the perspective of the key support services—what we call the functional common core components—that underpin the entire telecommunications industry.

In this report, the term “functional common core components” broadly describes a group of business services and equipment used by the network operator to provide telecom and data communications services. The functional common core components sectors fall under the following broad categories:

- Integrated Electronic Enclosure Packaging (IEEP);
- Telecommunications Construction and Professional Services;
- Power Plants and Systems;
- Wire and Cable.

Functional common core components are used when building and upgrading telephone equipment facilities, such as central offices (COs), or installing enclosures, racks, and frames required to house communications products in a given location. The term “professional services” covers a spectrum of fee-based services for engineering and planning, installation, and support.

The Telecom Industry & Its Supply Chain

The Crash of 2000-2001

Telecommunications has become a highly dynamic sector which has been undergoing profound structural changes of a magnitude having few parallels with other industries in the US or the rest of the world.

It is important to understand that for decades the telecommunications industry was anything but dynamic. It has a long history of very stable and predictable growth—predictable in the sense that growth has been largely dependent on the plans of the incumbent network operator to expand its embedded infrastructure. In the US, telecommunications companies were regulated by the Federal Communications Commission (FCC) and individual state public utility agencies, who determined prices and the rate of technology deployment. Although the basic telephone system was continuously being improved, such as through the transition from analog to digital switching, or the shift from pulse to touch-tone dialing, few major innovations could create new markets or replace existing ones.

For the most part, the industry's newfound dynamism has been due to market deregulation, as well as a supply push created by new technologies entering the marketplace. The introduction of local services competition, new broadband access methods, computer/telephony convergence, and the explosion of wireless technologies led to heightened interest from inventors, entrepreneurs, and investors. As a result, the telecommunications industry has shown an economic growth rate in the mid-to-late 1990s which few other industries could match.

Beginning in the third quarter of 2000, the optimistic outlook of the e-business and communications sectors abruptly changed. There was a realization that Wall Street expectations for communications companies were becoming extravagant, and that credit and capital financing were a bit too easy to find. In addition, booked orders were excessive, business practices were lax, and inventories were allowed to grow to unacceptable levels. The failure of many dot coms, Internet service providers (ISPs), competitive local exchange carriers (CLECs), and data local exchange carriers (DLECs) led to declining demand for computers and networking infrastructure. The cutbacks forced established carriers like AT&T and MCI WorldCom to limit their own spending plans and set the stage for the current downturn.

Structural Change in the Purchasing Process

The current market perturbations are unmasking a profound structural change at the very core of the industry. Network deployment and service introduction strategies are determined by a number of factors, including subscriber demand, cost structure, economic environment, and the need for network modernization. Two general models exist for the deployment of services and technology infrastructure:

- The **supply-push** model; and
- The **demand-pull** model

In the supply-push scenario, technology is deployed in advance of high levels of market demand. The technology is made available in an attempt to stimulate market demand. This model assumes that end-users will find new and innovative uses for technology after it is deployed, and it supports a more rapid deployment of network technology based on the supplier's vision. The supply-push model, however, also creates risk for both the network operator and its stockholders.

In the demand-pull scenario, technology is deployed only if it enables services that have proven demand, provides efficiencies, and/or reduces overall network operating costs. The demand-pull model results in slower deployment of technology and creates less risk for the network operator and its stockholders. In the long-run, however, dependence on the demand-pull scenario invites the entry of multiple competitors and leads to a loss of market share by the incumbent operators.

Over the past year, the telecommunications industry has seen a radical shift from the supply-push financing model to the demand-pull financing model. In short, we are currently in a global communications marketplace that is demand-driven, not supply-driven.

Common Core Components and Supply Chain Management

The shift to a demand-driven procurement model will have a considerable impact on how network operators purchase products. In this market environment, achieving operational efficiencies and cost reductions has taken on new importance. There still is a great deal of complexity in the purchasing processes that service providers use. For example, a single purchasing agent within one of the operators may purchase telecom equipment from hundreds of suppliers. In the US alone, Insight estimates that telecom products and functional common components are supplied by over 1,000 manufacturers, distributors, and wholesalers.

The supply chain encompasses all the activities associated with moving goods from the raw materials stage through to the end user. The supply chain includes a variety of companies, ranging from firms that process raw materials to firms engaged in retailing and wholesaling products. Functions of these firms include procurement, production scheduling, manufacturing, order processing, inventory management, warehousing, and customer service.

Supply chain management (SCM) enables telecom equipment purchasers in fragmented markets to reduce procurement process inefficiencies. Purchasers can reduce their time-to-market pressures, improve their purchasing processes, and easily access current product specifications and information. Suppliers are able to post updated product data on bulletin boards, cost-effectively access global markets, and streamline their sales, marketing, and distribution channel operations.

Key Success Factors

A large number of products and services are currently being produced, continually expanding oversupply for many offerings. A gray market for products is becoming quite pervasive as providers unload excessive inventories of cable modems, set-top boxes, digital subscriber line access multiplexers (DSLAMs), servers, routers, and data cabinets. Operators are selling these products to other operators at discounts below current list prices posted by vendors. Gray market sales will have a direct effect on the original manufacturers' inventories, which are already at record levels. Successful companies will be able to manage inventory levels efficiently as demand changes.

The introduction of new operators and services often requires the new construction of telecom buildings, the refurbishment of non-CO facilities, and substantial re-configuration of existing COs. These facilities are required to house digital switches, transmission systems (copper, fiber-optic, and coax), DSL equipment, Internet protocol (IP) equipment, Web servers, and cable headends. New construction, while tempered by the slowdown, still exerts a positive effect on demand in the functional common core components sector. The investments required for constructing and maintaining the existing plant and infrastructure, as well as superimposing new technologies, amount to billions every year.

Successful vendors will pay close attention to product standards and how to integrate new technologies within the network. Standards have played a key role in increasing the use and acceptance of telecom infrastructure products and core components. Network operators often struggle to implement numerous new infrastructure products with less-than-stable specifications and standards. Vendors also need to understand the true nature of the installed base of equipment. Despite the many advantages of new and improved standardized products, ample quantities of legacy copper, fiber-optic, and coax cables are already buried under cities, laid along highways and railroads, and strung over poles and towers. This infrastructure will continue to be used for decades.

More and more equipment suppliers (such as Lucent Technologies, Motorola, Cisco Systems, and Nortel Networks) are outsourcing basic manufacturing to third-party electronic manufacturing suppliers (EMSes). The EMS firms (such as Flextronics International, Sanmina, and C-MAC) now form strategic relationships directly with the network operators and equipment suppliers to coordinate logistics, installations, manufacturing, and e-commerce interactions. The products and services that EMSes offer include:

- Manufacturing;
- Integration of enclosures;
- Power supplies;
- Wire and cable;
- Customer service; and
- Online customer help desks.

In short, many of the EMSes offer services provided previously solely by the equipment suppliers.

Leaders in the functional common core component sectors will also be technology innovators. For decades, functional common core components have not been considered high-tech products, at least when compared to next-generation equipment, such as optical switches. Even though such components are crucial, they have tended to be ignored. For example, power plants are traditionally the last items to be ordered by an operator, but the first items needed. Many improvements can still be made for these products in terms of cost, performance, and functionality. Power plants are presently being upgraded to:

- Provide distributed power for various pieces of equipment and apparatus;
- Offer monitoring and management functions; and
- Tolerate rolling blackouts, brownouts, and large voltage swings that can still occur in rural areas.

Only by learning the lessons of effective supply chain management will the operators and their suppliers be able to navigate safely through the current rough waters that have already swamped so many in the industry.