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The Essentials Series: Enhancing Retail  
Operations with Unified Communications

# Framing the Retail Communications Problem

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by Ken Camp

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# Framing the Retail Communications Problem

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As we study the impact unified communications is having, and will continue to have, on the retail sales segment of global business, we'll begin by exploring some of the problems of the past. Past challenges were based on the best available telecommunications technologies at the time, but due to the telecommunications industry focus on enterprise business for large sales and the consumer market for a high volume of customers, the small and mid-tier business customers (what we now refer to as SMBs) were often left without the most cost-effective service options. This problem also has a dramatic impact on large retail enterprises that frequently have a number of smaller stores or outlets spread throughout a geographic territory.

This article will identify some of the technologies that provided a solution but also limited the capabilities of the retail sector in the past. More importantly, we'll touch on why those tools are ineffective today and should be replaced with more adaptable unified communications solutions.

## The Legacy of Retail Telecommunications Technologies

Retail covers a wide array of business sizes. Certainly there are major retail chains that encircle the globe and constitute major enterprise businesses. Retail is also filled with innumerable small businesses, family-owned businesses, and operations that employ fewer than 20 people.

[Hoover's](#) defines the retail industry as "Companies that sell consumer goods such as apparel, footwear, food, home furnishings, building supplies, books and videos, toys, housewares, pools and spas, and other items," and identifies the following retail sectors:

Apparel & Accessories Retail	Grocery Retail
Auto Parts Retail	Hobby & Craft Retail
Automobile Dealers	Home Furnishings & Housewares Retail
Building Materials Retail & Distribution	Home Improvement & Hardware Retail
Camera & Optical Goods Retail	Jewelry & Watch Retail
Computer & Software Retail	Military & Government Exchange Retail
Consumer Electronics & Appliances Retail	Music, Video, Book & Entertainment Retail
Convenience Stores & Truck Stops	Musical Equipment Retail
Cosmetics, Beauty Supply & Perfume Retail	Nonstore Retail
Department Stores	Office Products Retail & Distribution
Discount & Variety Retail	Party & Holiday Accessories Retail
Drug Stores & Pharmacies	Recreational Vehicle, Motorcycle & Boat Retail
Floor & Window Coverings Retail	Sporting & Recreational Equipment Retail
Floral & Gifts Retail	Tobacco Retail
Gasoline Retailers	Toys & Games Retail

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Reviewing the list of retail sectors, it's clear that the market has a place for both large and small businesses; it's also apparent that many of these sectors are, by their nature, amenable to small and family-operated business endeavors. As of the 2002 Census, there were 1,240,860 retail establishments in the US with sales exceeding \$3B and employing more than 15.5 million people. Perhaps the most interesting fact from this detailed analysis of the retail sector is the average of 13 employees per company.

Large retail operations, especially those with a major online operation, such as Amazon, easily fit into the Fortune 500. Many of these companies, such as Apple and AT&T, fall into broad categories of enterprise sectors, but they operate countless small retail storefronts as both stores and kiosks in shopping malls. One key differentiator is that these operations carry the weight of a global enterprise behind them when deploying a telecommunications solution.

One thing is clear in the retail segment—the vast majority of companies are smaller and well outside the Fortune 500. These companies operate on tight budgets and require competitive tools to remain viable in business as a crucial part of the global economy.

### Trunking Issues and Costs

Telephone trunks have typically been used in two areas: the phone companies and large businesses. T1 trunk circuits were used to interconnect telephone company exchanges; in enterprise businesses, they've been used to link Private Branch Exchange (PBX) systems to create a cohesive enterprise telephone network. Major retailers such as Wal-Mart, Sears, Macy's, and the like have always been good candidates for large telephone systems tying many stores together and connecting them all to the corporate headquarters.

T1 tie lines may have proven cost effective in this large retail environment, but in the past, a T1 circuit was very expensive. T1 circuits often encompass a mileage component, so a circuit that connected to a store a mile or two away cost a fraction of the circuit to a store farther away. This disparity in pricing made the expensive T1 circuit even more expensive based on geography. Some stores were simply more expensive to support with telecommunications services. Thus, although the large retail chain had leverage in terms of purchasing power, the technology used to deliver services was expensive. In many cases, it was cost prohibitive. And for some large retail operations, the cost of the communications network was a major contributing factor in their demise. As they tried to stay current with advancing technology, sales declined and the revenue stream failed to support the cost of doing business in many areas.

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## Key System Integration

For small and mid-sized retailers in the SMB space, a PBX was often a far larger investment than was possible. Although a major retail enterprise might be able to invest in telecommunications tools with an expected lifetime of 10 or more years, the cash flow in a smaller business precluded even considering such solutions. Besides, the PBX was typically designed to provide telephone services to 100 or more people. For a retail operation employing 40 people, the PBX was overkill. For a small business, the idea was preposterous.

For many businesses, the electronic key system provided an alternative solution to installing numerous single telephone lines. Also called a key telephone system (KTS), these multi-line telephone systems proved quite popular in small office and retail environments. The KTS provided expansion capability for businesses as they grew. They also offered individual line buttons for every phone line connected. They allowed users to select a phone line, yet they included some PBX features, such as interoffice intercom.

Although some key systems were affordable, as the technology developed, certain key systems were quite expensive and never achieved measurable penetration in the customer market. In some cases, these systems provided common user services, with access to intercom, paging, and multiple telephone lines—even richer features included voicemail systems and an operator or receptionist.

For many large retail operations, the key system provided a perfect integration for smaller retail locations. Key systems were widely deployed and connected back to the retail headquarters via fractional T1 circuits or individual telephone lines.

For smaller businesses, even the KTS presented a challenge in both cost and technical complexity. For many retail operations, this technology required hiring a contractor to install, configure, and maintain the telephone system. This often meant that when a change was required, the service vendor had to be called and a technician routed to the store for reprogramming or repair work.

Key systems are still in use today and still sold, but for most businesses, these systems are being phased out of operation. The cost of making additions, moving telephones, and programming changes to the system, coupled with the cost of traditional telecommunications lines has rendered these systems obsolete.

Although the systems may be outdated, hundreds of thousands of these systems remain in operation. Because the latest generation of key systems was all electronic, the failure rate was always rather low. Many of these systems were deployed in the 1980s and continue to serve their owners today. The question is whether they have become a liability in operation, as they cannot compete with the kinds of services current unified communications solutions can deliver at a greatly reduced cost.

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## Hosted Services Issues (i.e. Centrex)

Not all business could or wanted to install, manage, and maintain their own telephone system hardware, so the telecommunications companies created a range of hosted services. The most prevalent of these was called Centrex, for centralized exchange. Centrex service provided PBX-like services at the customer site while leaving the equipment housed in the telephone company central office. Essentially, this service emulated a PBX, delivering features to the customer that many businesses would never have been able to deploy themselves. Originally developed in the mid-1960s at New York Telephone, this service expanded to many different countries and was used to deliver telephone services to countless business operations.

Centrex brought with it two major issues—service and cost. To service the system required an order to be placed with the phone company. This often meant that to add a new line, move a telephone, or change a feature required a week or more in order-processing delay. As Internet technologies grew quickly, for many retail and business operations, the time to process a change simply presented a business problem. Centrex systems weren't dynamic enough to support the rapidly evolving retail business model.

The cost of Centrex services was often high. The legacy telephone providers often used contract strategies to lock customers into a monthly price rate. As the telecommunications and Internet technologies advanced, the cost of delivering services dropped dramatically. Customers remained locked into Centrex contracts, often for as long as 10 years, while the technology used to deliver the service became cheaper and more efficient on the back end. Centrex services were widely referred to within the telecommunications industry as the *cash cow*. These services were highly profitable, as the telcos implemented cheaper infrastructure yet held customers locked in contractually to higher telephone rates. As the Internet industry saw VoIP come into operations, many of the legacy telco providers resisted VoIP, not because of the cost of shifting technology. Rather, they saw erosion of revenue as the *cash cow* could easily be replaced by emerging VoIP services.

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## Data in the Retail Environment—Point of Sale Systems

Point of sale or point of service (POS) refers to the checkout counter in a store or retail location where the actual payment transaction is accomplished. We've seen POS technologies evolve in parallel with other telecommunications services over the past 20 years.

### The Evolution from Dial-Up to IP

Early POS systems involved a dedicated telephone—another expense—and some form of credit card processing system. In the early days of POS systems, these were dedicated networks provided by a credit card processing vendor who installed phone lines and modems to accompany the POS terminal.

This added hardware turned the checkout counter into a virtual electronic cash register. Variations of POS systems to support hospitality services in restaurants and hotels, a retail variant, were also widely deployed and are still in use.

There are still proprietary systems in use that don't interoperate, leading to inefficient and unduly expensive solutions. Thus, POS vendors and the retail industry continue to work on standardization of electronic POS systems. Two standardization initiatives are OPOS (short for OLE for POS) and JavaPOS, both of which conform to the UnifiedPOS standard led by The National Retail Foundation.

OPOS was the first widely adopted standard and was introduced by Microsoft, NCR Corporation, Epson, and Fujitsu-ICL. It is compatible with all COM-enabled programming languages for Microsoft Windows. JavaPOS was developed and introduced by Sun Microsystems, IBM, and NCR Corporation. It's a Java-based approach, and can easily operate in non-Windows environments.

Today Web-based POS systems can operate on any Internet-connected system. This approach is supported with secure servers located in data centers anywhere in the world.

### Inventory Management

Inventory in retail is simply a list of goods and materials held in stock by a retailer. From a business perspective, it's vital to remember that the inventory is considered a business asset.



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Anyone involved in the retail sector knows that if you don't have it in stock, you can't sell it without some delay. Inventory management is a crucial part of the retail business. There are three basic reasons to maintain inventory:

- **Time**—There is a time lag in the supply chain from manufacturer to retailer. Delivery to customers requires “lead time” if a high enough inventory level isn't maintained.
- **Uncertainty**—The laws of supply and demand can easily create a shortage of products from any manufacturer in any sector. Inventories provide a buffer against this uncertainty.
- **Economy of scale**—Although manufacturing may work to achieve “just in time delivery” of component parts in the process of building a product, the concept doesn't correlate to the retail segment. Replacing each unit sold from inventory with another based on purchases made is expensive and creates a logistics nightmare. For retailers buying in bulk, the storing and moving of inventory as needed brings in the economy of scale.

In the second article of this series, we'll look specifically at how Wal-Mart integrated comprehensive inventory management technologies into their unified communications suite to compete effectively, using inventory management as a business differentiator.

## Why Technology of the Past No Longer Works in Retail

Although the telecommunications technologies of the past kept the retail segment alive, these tools no longer serve the needs of the industry. Retail is highly competitive, with businesses that flourish or flounder overnight based on how quickly and efficiently they can respond to customers' needs.

The legacy of telecommunications solutions, many of which are still in widespread use, has become a liability to many retail operations. They are expensive to implement, manage, and support. Although they might still be in use from a bygone era, they cost more today than comparable unified communications tools cost. In addition, legacy telecommunications solutions do not integrate effectively with current technologies. POS systems are more cheaply and effectively delivered over the Web than via proprietary solutions.

Legacy customer service simply doesn't serve the consumer or customer of today or tomorrow. Customers are the lifeblood of the retail sector, and dynamic, competitive customer service requires state-of-the-industry telecommunications to compete.

With the widespread adoption of mobile telephone technology, customers expect to use their cell phones for everything. In the third article of this Essentials Series, we'll explore how unified communications tools can and will bring the customer closer to the retailer through increased integration with mobility.

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## Summary

The expensive, inefficient, and cumbersome telecommunications solutions of the past no longer provide the level of service required to thrive in the retail business sector. Success requires responsiveness to customer demand on many levels. Whether it's speedy checkout, stellar customer service, or up-to-the-minute control of inventory management, only current unified communications technologies can deliver the kind of converged solution that gives the retail business a competitive edge to thrive in the marketplace today.