

Mobil Oil Speeds Up its Service with Satellite Communications

Founded more than 130 years ago, Mobil Oil is a multinational energy company with more than 43,000 employees in over 140 countries. Its worldwide exploration, production, refining and marketing operations make Mobil a leader in fuels, lubricants, and chemicals. Whether it's the gas in your car, grease on your commuter train's axles, or the wrapper on your candy bar, Mobil's reach into all our lives is extensive. Mobil has maintained its market leadership over the years through a proactive and progressive adoption of new techniques, technologies, and trends. As it faces the challenges of the information age, Mobil has again looked to a dynamic technology to help maintain its market leadership.

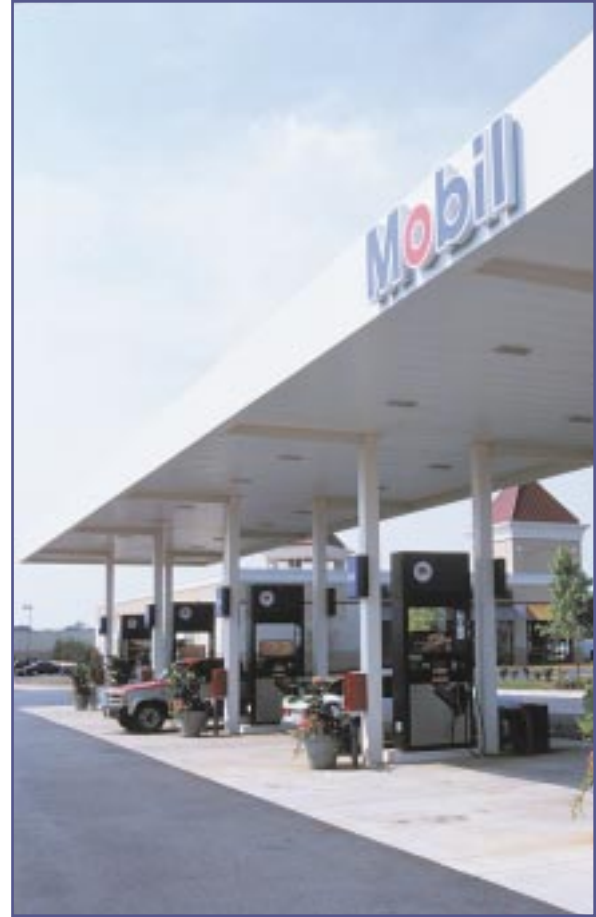
In the United States alone, Mobil has nearly 8,000 gas stations and the competition for customers is fierce. Gas stations must ensure that a customer's buying experience at the pump is a good one and, above all, quick. To accommodate growing customer demands, the nature of these stations has changed over the past 15 years from stations that sell just gas, cigarettes, and candy to multi-faceted facilities that operate car washes, convenience stores, and a host of services such as ATMs and lottery outlets. However, increased services is not the only factor in customer retention, speed is the key element. To replace its old terrestrial network, Mobil needed new technology that could support its growing operations and provide dealers with a fast, reliable, and adaptable system.

"Superior customer service is how Mobil differentiates itself

against its competitors, and as needs in the industry began to change it became necessary for us to update our network," said Bill Pragman, computer and network operations manager for POS. "We had an aging, but cost-effective, analog system that used leased lines from multiple phone companies across the nation. However, to accommodate the business system that we envisaged, we knew we needed a modern and adaptable network that was less susceptible to outages and easier to manage from the data center."

Mobil underwent a thorough evaluation of the way it communicated with dealers and concluded that any new technology adopted must satisfy three goals:

- Improve network performance by both reducing transaction time as well as



- increasing the network availability.

- Improve operating costs.
- Expand the network so that it could take advantage of more than one operating protocol, as well as offer growth for future business opportunities that were not currently being pursued or not yet available.

Different alternatives including frame relay, cellular, ISDN, and digital circuits were all evaluated as Mobil searched for a solution, but after a formal study and cost analysis, it eventually chose PES™, a very small aperture terminal (VSAT) network, from Hughes Network Systems (HNS). PES is low-cost, high-capability VSAT that supports two-way data, voice, multimedia, and one-way broadcast video and data communications between a

company's headquarters/data center and its remote sites or branch offices. "Not only did the VSAT technology offered by HNS meet the three criteria that we had set for ourselves, but we decided it was the one best suited to our applications. HNS' proven ability to provide this type of star-topology network, demonstrated technical expertise, and competitive cost really sold us on HNS," said Pragman.

HNS' technical expertise was much in demand during the design phase of the project. Under the previous network, Mobil had to deal with multiple telephone companies that offered varying standards of equipment and quality — all of which affected performance and reliability. Mobil wanted to take advantage of faster transaction times and a more reliable network, but they also wanted to avoid a costly, universal upgrade to all the remote point-of-sales (POS) equipment in gas stations, while ensuring that future modernization could be accommodated. The network was running TINET, a proprietary asynchronous protocol, on their Tandem POS host system. To avoid a costly upgrade, HNS engineered a protocol conver-

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sion scheme whereby the PES located at the gas stations encapsulated the data in IP packets that were then forwarded to the hub, which in turn forwarded them to the Tandem host in Mobil's Lenexa, Kansas, data center. In addition to protocol conversion, the HNS solution included an interface conversion to simplify the connections into the host. Where literally hundreds of TINET ports had previously resided, now just six Ethernet ports are connected to the data center and when Mobil chooses to upgrade its POS equipment, the remote PES terminals can

easily be upgraded with plug-in LAN interface cards.

After a short three-month pilot phase in selected sites, it took just 18 months to install the entire network nationwide — six months less than Mobil had anticipated. HNS installed approximately 300-350 sites per month and during one month managed to install a record 500 sites.

Is Mobil happy with the results? "We gained a 1- to 2-second improvement over the old polled network and we increased our reliability from 99.6 percent to 99.8 percent," stated Terry Kueker, project engineer, Mobil Oil

Corporation. "That .2 percent of a difference may not seem like much, but when you consider that Mobil has 8,000 dealers open 24 hours a day, 365 days a year, that number adds up. On average, there are approximately 1,200,000 transactions per day so that .2 percent adds up to 876,000 transactions lost per

Fixed monthly fees ensure accurate cost assumptions.





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year. If the average transaction is just \$10, you can see why we invested in VSATs.”

One of the ways HNS achieves this reliability is through using a sophisticated backhaul configuration that employs automatic switchover in the event of a failure or fault. The PES VSAT system automatically detects problems and switches over to the standby within seconds, not hours, thus minimizing downtime and increasing reliability.

As Terry Kueker notes, “The network is easier to run and is so reliable that we just have a lot less trouble,” adds Bill Pragman, “Now we have time to be proactive. We often know before the dealers if there is a problem in their operations and can call them up and fix it before they log any downtime and disrupt their operations.” In fact, Mobil makes approximately 150 calls each month to inform dealers of impending problems. This offers the dealers an increased level of service and improves the credibility of the network system supplied by the corporate office. Mobil is also taking advantage of VSATs’ reliability

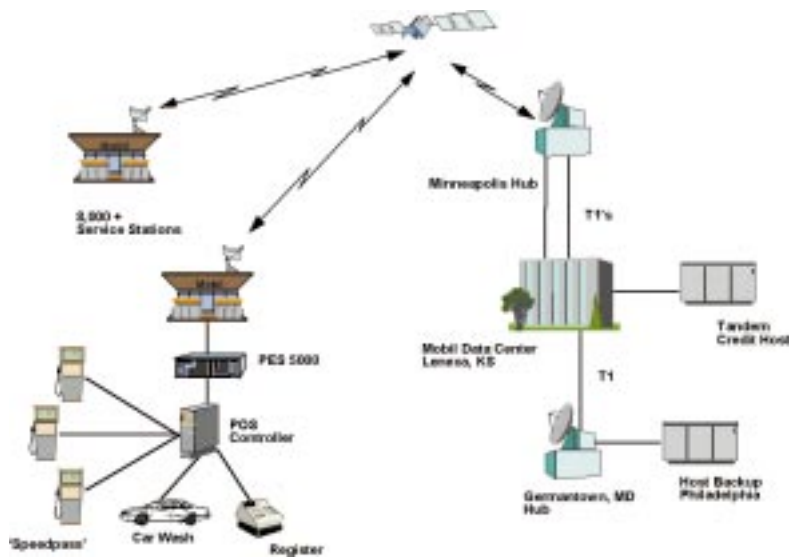
to offer a number of unique, timesaving conveniences for customers such as the pay-at-the-pump Speedpass program.

What lies in the future for Mobil and its PES system? Satellite communications unique ability to offer broadcast transmissions will have tremendous benefits for both the central data center and the dealerships. The ability to provide software upgrades to dealerships that are automatically downloaded onto the back office machines via the VSAT network, will save Mobil time and money. Dealerships are now assured of worry-free upgrades and the central office can be confident that everyone is operating on the same platform at the same time. Mobil can also ensure that new opportunities are quickly and

uniformly delivered to all dealerships, whatever their locations. If, for example, Mobil negotiates a new agreement to accept a particular credit, debit, or bank card at the gas pump, the information necessary to activate the new card can be sent to all stations immediately and simultaneously.

A new terminal product is currently being introduced that uses Windows NT and TCP/IP. In the future this new product could provide a client server platform allowing dealers to integrate their back-room applications, scanners, pump and tank monitoring, email, inter-company communications, and a host of other applications. All of this in-store automation contributes to both faster customer service and improved decision-support systems for

The Mobil Network



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Mobil's category managers, the latter being particularly important as items carried in stores have expanded threefold. The PES network has the potential for carrying all of this traffic.

Concludes Terry Kueker, "We realize that our customers' time is valuable, and have designed our gas stations so that customers spend less time at the pump, and can conveniently pick up a gallon of milk, all at the same time. VSAT technology provides us with the speed, reliability, and network adaptability to do all of this and more."

Hughes Network Systems

A world leader in satellite products and network systems for more than 25 years, HNS is the global VSAT market leader and has shipped more than 300,000 terminals. Headquartered in Germantown, MD, near Washington, DC, the company has sales and support offices worldwide. HNS offers commu-

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nications network solutions that include a complete line of integrated satellite, enterprise networking products, and fixed and mobile wireless networks. HNS is a Hughes Electronics Corporation company and an ISO-9001-certified manufacturer. The earnings of Hughes Electronics are used to calculate the earnings per share attributable to GMH (NYSE symbol) common stock. HNS can be found at www.hns.com.



NETWORK SYSTEMS

www.hns.com