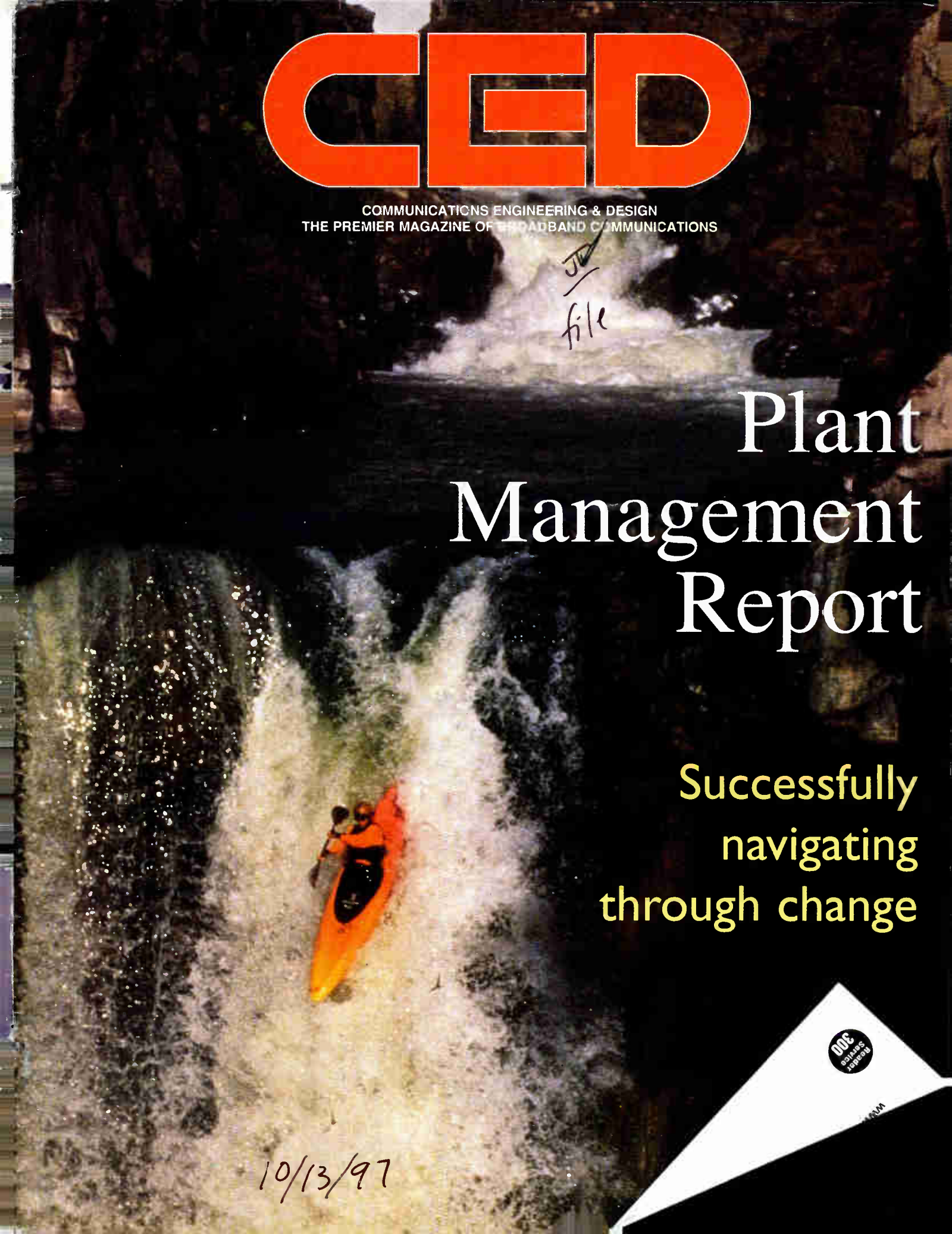
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Plant Management Report
Successfully navigating through change
10/13/97

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Plant management: The task is easy, right?

ROGER BROWN
EDITOR

I've just returned from Phoenix, where 130 or so of the industry's best and brightest technical minds gathered last month to explore how to build high-integrity hybrid fiber/coaxial networks for the next millennium. The conference, jointly sponsored for the second straight year by the IEEE and the SCTE, examined the science behind the mandate of making traditional, one-way entertainment networks into highly reliable, bi-directional networks.

A portion of the program focused on the return plant specifically, and how it can be designed to reliably send signals upstream. Of course, the sub-low return band is filled with noise, making the task more difficult than it would otherwise appear. MSOs that are tackling the problem are taking different tacks to get to the same point–for example, some are using filters, while others aren't.

And then there were the comments of Nick Hamilton-Piercy, the highly capable VP of engineering at Rogers Cablesystems, who summed up the problem this way: "It's not really hard; you just have to be diligent about keeping your plant in good order."

But how does one do that? It's a simple sentence to utter, but a complex task to carry out. This is *CED's* third *Plant Management Report.* In each installment, we've strived to offer our readers practical ideas and tips that simply cannot be found anywhere else. Our goal is to dig deeper; to delve into subject areas no one else is covering. We know plant managers are juggling scores of balls every day. Their job description might be to keep the network up and running, but to do that, they're teaching new employees, working with contractors and construction companies, supervising installers and service techs, and maybe even meeting with the local government.

We offer tips on how to get the funding you need for your network

In each of these Reports, we have offered an eclectic mix of stories. From construction management to practical tips for fending off outages, we have brought new issues to the table, and hopefully given you, the reader, some executable information.

If you're one of the hundreds of plant managers who need a plant upgrade, this month's issue is a must-read. We offer tips on how to get the funding you need to make your network world-class. There's also information on how to successfully navigate your system–and its personnel–through the radical changes that are being brought on by high-speed data services.

And while I think we're doing a pretty good job, I'd like to hear from you. What issues are you tackling today? What's your biggest challenge when it comes to plant management? E-mail me at RBrowner@aol.com and let me know.

CED

VP Group Publisher
William McGorry

Publisher
Robert C. Stuehrk, Rstuehrk@chilton.net

Editor
Roger Brown, Rbrowner@aol.com

Managing Editor
Dana Cervenka, Dcervenk@chilton.net

Associate Editor
Michael Lafferty, McLaffrt@aol.com

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Production Manager
Johanna McGinnis, Jmcginni@chilton.net

Art Director
Don Ruth, Druth@chilton.net

Assistant Art Director
Anney Grossberg, Agrossbe@chilton.net

Address
600 S. Cherry St., Suite 400/Denver, CO 80222
303/393-7449; Fax 303/393-6654

Web site
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Circulation Director
Maria Gottlieb; 212/887-8565

Associate Circulation Manager
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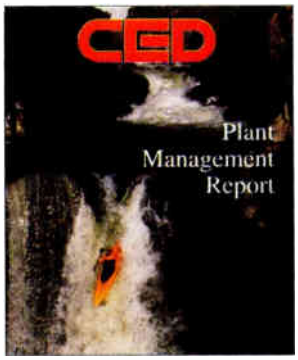

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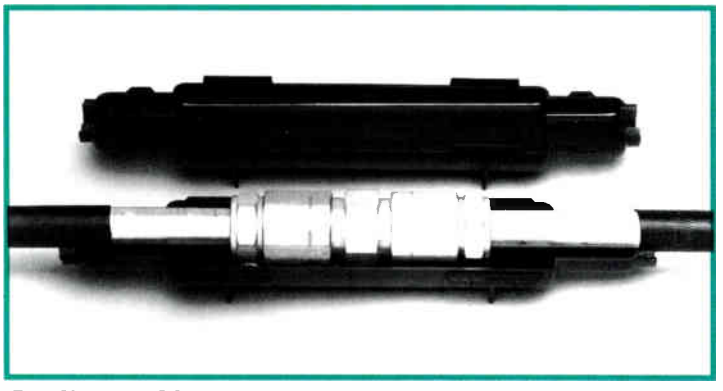

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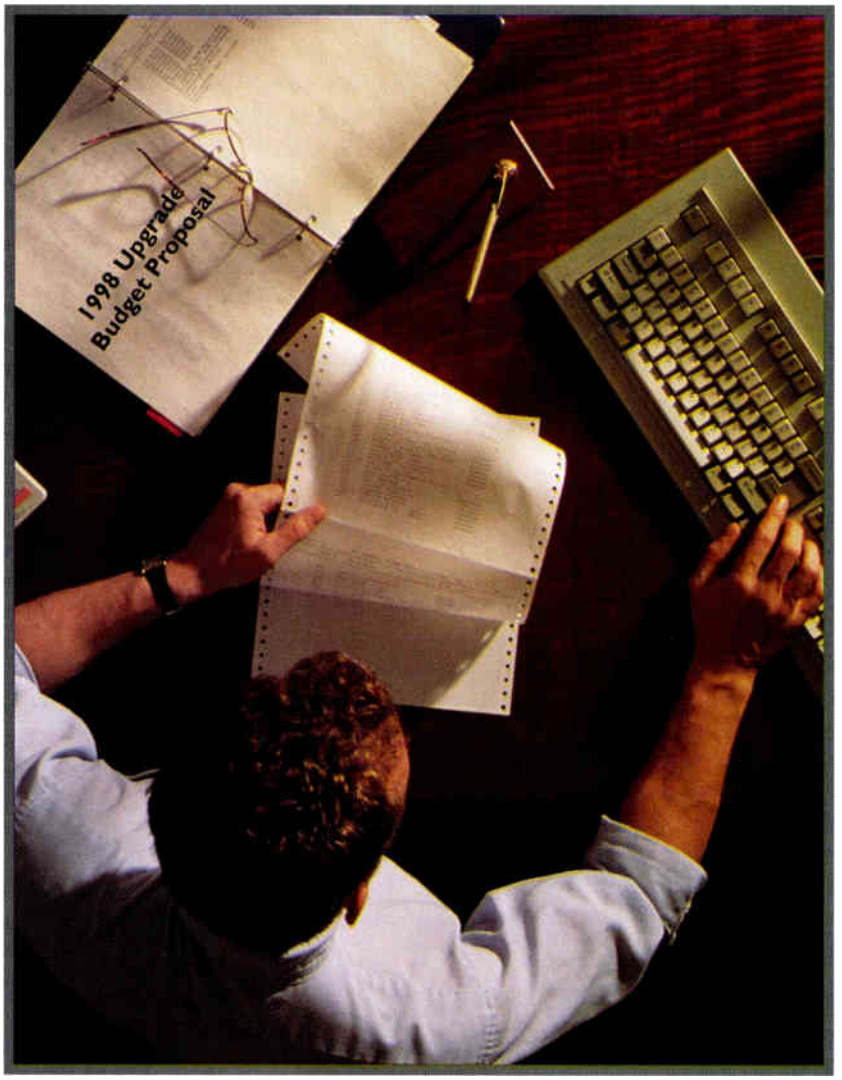
Reader Service 302

Justifying funding for tomorrow's network

Helping management decide where to put their money for tomorrow's systems

By Leo A. Wrobel, President and CEO, Premiere Network Services Inc. premiere@dallas.net

"Competitive, cheap, efficient networks are the reason the U.S. is now number-one in productivity." That's the word according to outgoing FCC Chairman Reed Hundt, quoted at a recent trade show. He went on to add that "private market forces build networks if they work competitively."



In the context of competitive forces, the chairman meant a host of participants including not only "traditional" telecommunications providers, but also myriad new market entrants including cable. Is your system up to par for the new millennium? If not, what should you be preparing for now, and just as importantly, how do you sell it internally in order to garner the capital you will need to be ready? This article offers a few insights.

The trick is showing them in understandable terms what the payback will be

The role of government, in this case the Federal Communications Commission, is to prevent unfair competition and protect the public interest, something the private sector can't always do. The actual innovations, however, must come from us, through a collaborative partnership with business users. Bandwidth is not a coveted commodity absent of applications. Therefore, the much-ballyhooed "Information Highway" must be married with real-life business solutions to produce increased growth and national competitiveness.

When a technologist preaches the gospel of growth and jobs, it is nothing short of surprising what he or she can accomplish with regulators. Nor is it surprising that the same tactics work when prying capital funding from the hands of financial managers in order to position for the changes. Contrary to popular belief, executives are not afraid to spend money. The trick is showing them in understandable terms what the payback will be.

Targeting high-profile corporate users can help

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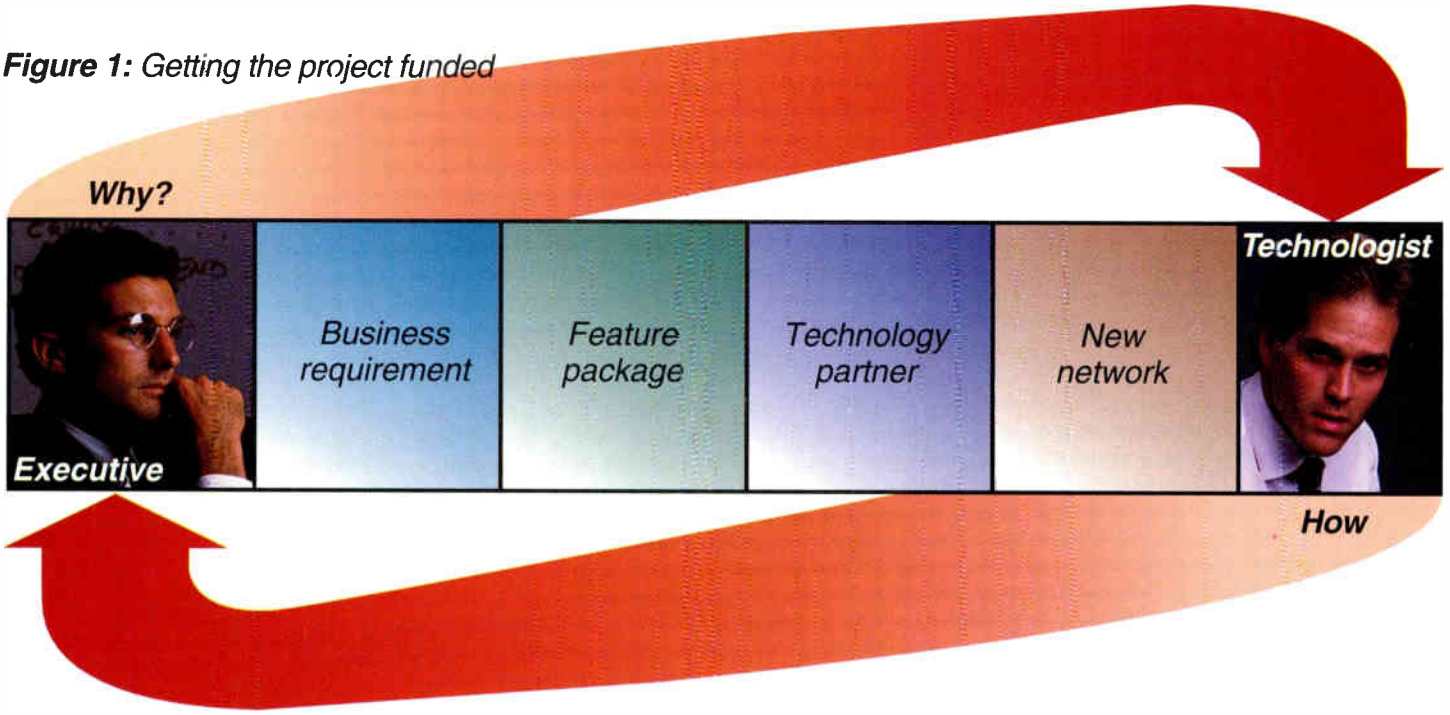
Figure 1: *Getting the project funded*



There is trepidation on their part, however, about second-guessing technology

non-traditional telecommunications service providers, like cable companies, immensely. In addition to pricing flexibility, cable can also give these companies the chance to build advanced custom networks on a one-time custom assembly basis. This means that your company has the opportunity to deploy more than "standard telephone company offerings" and truly "step out of the box" with advanced networking solutions.

For example, many users would like to be able to provide "native LAN" data connections as a replacement to slower T-1. These can be developed in collaboration between the cable company and the business user. Moreover, the recipe for the service can then be shrink-wrapped and resold to other comparable companies. Everyone wins.

We will introduce in this article the concept of "feature packages" of services. A feature package is nothing more than a business requirements profile of a certain class of customer.

For example, an Internet service provider might need incoming dial service capable of providing analog or digital (modem or terminal adapter) connections on a dynamic basis. That would be named a feature package 4. The underlying technology might be an ISDN PRI, which the cable company purchases using its telephone certification from the underlying local telephone company. In the future, when a salesperson elsewhere has a similar requirement, they have a convenient reference available to sell the new service to someone else.

When properly crafted, these profiles can be used to create instant competitive advantages, because they are so difficult to duplicate by your company's competitors. They do, however, require a collaborative effort between telecommunications service providers, users and government. If *business* drives the process, we can be quite sure products will be developed which will be usable to business, and which will help foster productivity and growth. That's the tough part. As previously stated, your management is not bashful about spending money. There is trepidation on their part, however, about second-guessing technology. Logic dictates that the most rational justification for rolling out technology is to sell something that people are actively asking for right now. Therefore, if you have a user lined up for feature package 4 services, it stands to reason someone else will buy them too, making it easier to justify for your management.

To make these dreams a reality, we must sharpen both our business and technical skills and become activists in the technology acquisition process itself. How does one influence a financial executive to fund expensive system upgrades?

Influencing policymakers

In addition to being a technologist, the author is also a former municipal mayor. This presents quite a contrast in jobs, and a very different perspective. Like the old saying goes, anyone who loves laws or sausage should never watch either one being made. As technologists, we look for normal, rational ways of doing business. The executive's world, however, is very different, and on the surface at least, not always rational to an outsider. That's because they don't always understand what you want–and herein lies the problem.

First, a technologist must realize that no executive

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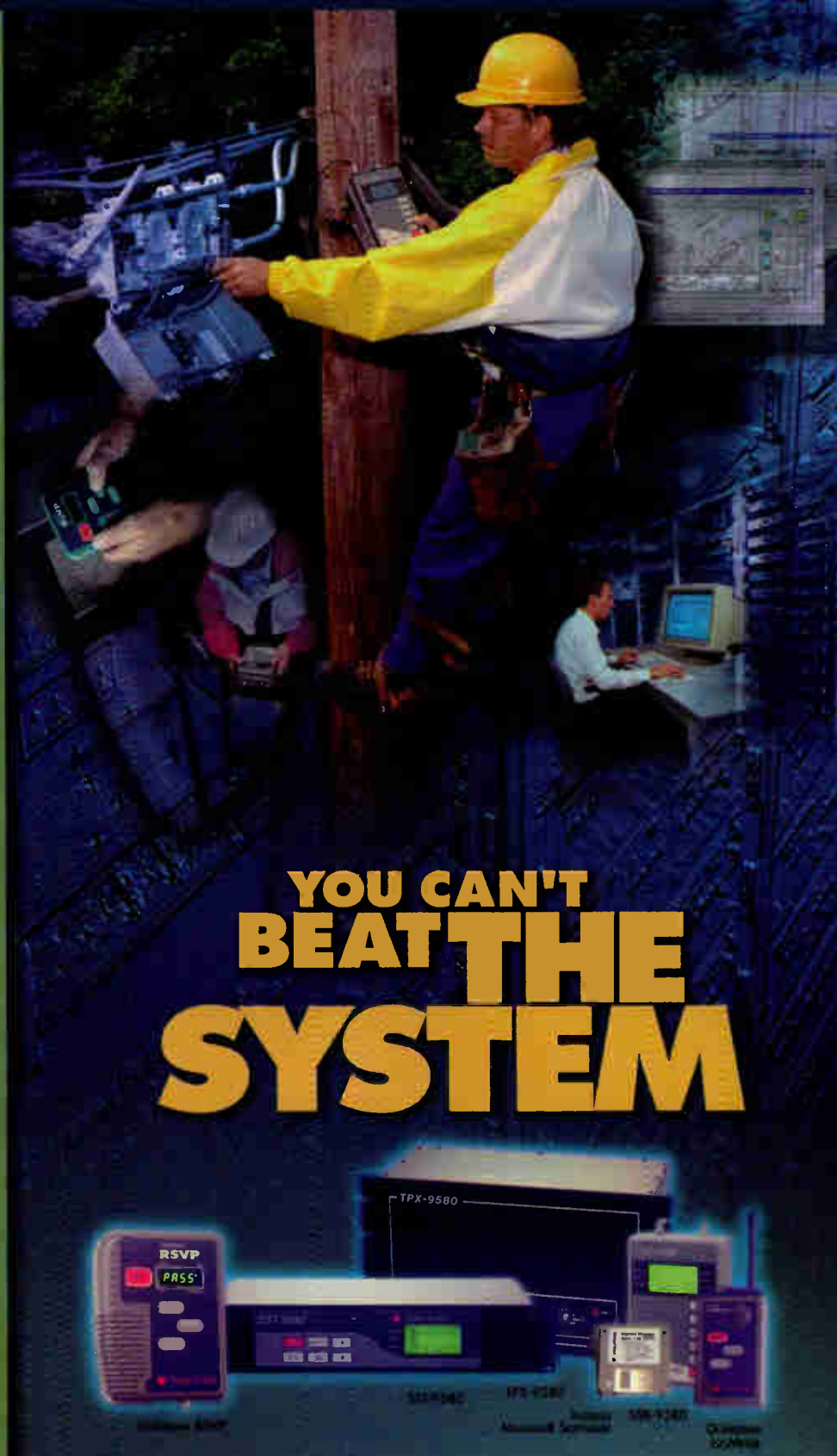

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GUARDIAN SYSTEM
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Getting it funded

Distance learning. Distance medicine. Concurrent engineering. Access to supercomputing. Collaborative work groups. Video. High-speed LAN interconnection. ATM. These are all great subjects to the technologist, but are very abstract concepts to policymakers within companies and telecommunications providers. And herein lies the problem.

Sure, cable has been a successful medium for delivering entertainment. The market makeup is changing, however. Cable does have the fiber and coaxial capacity to enter lots of lucrative new business lines. With that in mind, what's more understandable to an executive, concurrent engineering or the Disney Channel? There will surely be a learning curve.

It's up to you to demonstrate the strategic value of the solutions you propose, in terms which are equally clear to executives, technologists and regulatory policy makers. This new attitude also makes the ultimate win-win situation for service providers as well, because new processes are developed based on direct business input.

Reap the rewards of your ingenuity! You will have the honor of advancing a noble project, based on growth, jobs and national competitiveness, rather than the usual short-sighted approach of "cutting costs." By taking this proactive posture, you also justify your department and yourself as a strategic asset to the company, no small feat in this era of downsizing, rightsizing and capsizing. Your research will also be invaluable to policymaking individuals ultimately responsible for tomorrow's information infrastructure. *–LW*

network participants. In this process, each potential vendor normally submits a corporate capabilities white paper based on its individual competence in the technologies identified.

7. Select an advanced technology partner from RFI responses. Next, review the corporate capability RFI responses and select an advanced technology partner for these emerging technologies. In some cases, a "short list" of potential partners is developed, and the members of the list are personally interviewed. In some instances, more than one partner is selected. The selection criteria is based on your company's comfort level with the vendor, their response to your inquiry, and your experience with the particular vendor on other complex projects.

8. Develop executive level liaison. Take your strategic vendor relationships seriously. Insist on executive liaison with the service provider, or broker such contacts for your boss. Our experience shows implementation goes more smoothly when the commitment comes from the top. Secure conceptual closure on the project, after sharing the white paper, discussing capabilities, and being confident of having support through all organizational levels. Introduce your respective bosses, as it makes for faster closure.

9. Learn about telephone regulation. Every state's Public Utility Commission has its own rules. Some will tell you, for example, whether you will have to have a lawyer certified in the state to represent you, or how many copies of testimony you will have to file, or whether you need to be certified to sell telecommunications (usually you have to be). At an early stage of the planning process, you will have to learn these rules and incorporate them into your attack plan. Hopefully you have maintained contact with the commission staff after the original meeting with the commissioners themselves, and have a good relationship with them. They can probably help you with some of the subtleties.

10. Convert "feature packages" into technology. Here's where the project starts to get fun. Many federal and state regulators are trying to foster innovative partnerships with the corporate community, particularly in the area of advanced technology. They may, for example, be included to grant pricing flexibility on certain services. They are also allowing companies to build advanced custom networks on a one-time custom assembly basis. This means that your company has the opportunity to deploy more than standard offerings and truly step out of the box with advanced networking solutions. Many of these are not capital intensive, because you can acquire them from the underlying telephone company while you build your own. Many cable companies are taking this approach, but the key of course is to know the rules.

Using the feature packages as the basis for your efforts, you can secure custom telecommunications services for your company from the underlying carrier while you decide which of the hottest technologies are worthy of building for yourself. After deciding, use the information you gathered, and the white paper as the underlying justification for the capital you are requesting. If you have done your homework, you might have just become the "godfather" of a new profitable business segment for your company, by making management an offer they can't refuse.

That's why you go through all the trouble. When an executive can see all the steps–business requirement, feature package, technology partner, custom tariff–they see the reasons you need the money and will be more inclined to grant your request. Then your company has new, innovative products, and a competitive advantage no one else does! (See Figure 1.)

Summary

If you look backward at each of the steps listed, you will see a clear path back to what was the primary objective to begin with–meeting a business need. When put in context like this, a non-technical manager, utility regulator, or technical peer can see the mission–the big picture–and endorse it. This is exactly what it will take to bring a complex system, using leading-edge technology, to life. It must be understandable to all of the diverse participants who are nonetheless indispensable to its implementation. **PMR**

About the author

Leo A. Wrobel has more than two decades of experience in emerging network technology, disaster recovery planning and technical training. An active author and lecturer, Wrobel has published nine books and dozens of trade articles on a variety of technical subjects. His achievements have included the design and regulatory approval of a LATA-wide OC-12/ATM network for a $10 billion manufacturing giant, the first of its kind anywhere. www.dallas.net/~premiere

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Optimizing reverse path loss in tree-and-branch architectures

Don't overlook the effects of temperature

By Tim Block, Director of Engineering, Cable System Services
tblock@cablesystemservices.com

Many cable companies, in their search for new revenue sources or simply complying with local franchise agreements, are looking at their reverse spectrum and contemplating the deployment of high-speed data. With the increase in performance being demanded of the return path, what are your concerns as a technician?

Much has been written about ingress. To counter that problem, you use quality installation materials and perform inspections. Your system is tight: you pass the CLI test every year. What else could there be?

Because of the minimal cable losses associated with the sub-band return spectrum, temperature-caused level changes are often overlooked. This is unwise, given the fact that most cable systems are still tree-and-branch with cascades stretching 25 amplifiers or more.

Figure 1: *Without AGC or other thermal control, return path loss may exceed modem specifications at hot or cold weather extremes.*

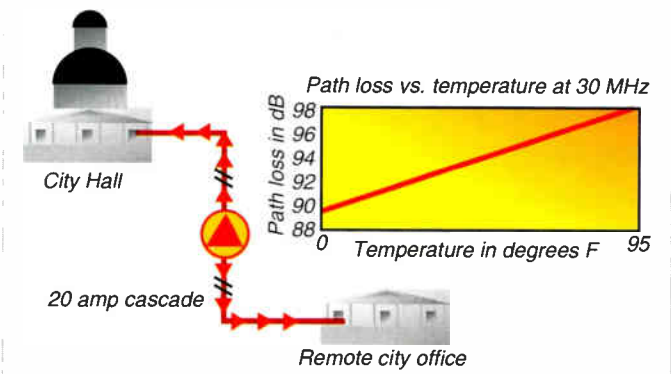
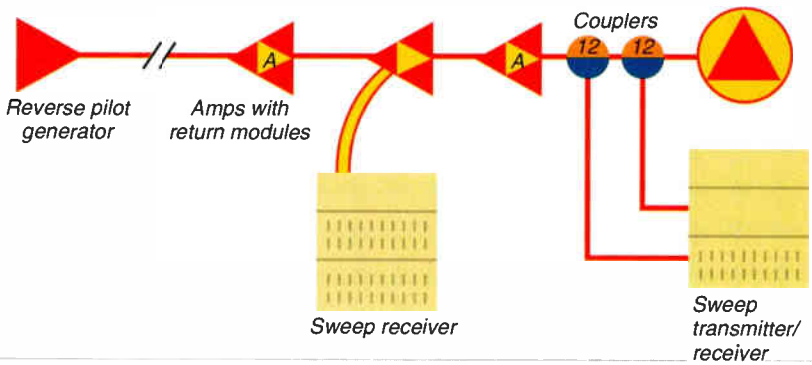


Figure 2: *Reverse level adjustments are compensated for by AGC modules. Any adjustments to reverse levels beyond the first AGC are invisible to the sweep transmitter/receiver located in the headend.*



Making computers sluggish

Companies interested in deploying data services often begin with simple point-to-point data transfer between school buildings, or from city hall to a remote public utilities building. This is a good start and allows the engineering staff to experience the nuances of running a data network. Let's take a look at a practical example.

Figure 1 shows two 20-amplifier cascades, one serving city hall, another a remote office that needs access to a city database. We will assume the cable system is capable of 60 channels and was built traditionally as a tree-and-branch plant with 22 dB spacing, using a popular brand of 0.750 cable. The cable loss at 30 MHz between the headend and the remote office building is 96 dB at 68 degrees F. At 0 degrees F, the loss becomes 89 dB. If this cable system is swept-aligned at 0 degrees (when was the last time you balanced your system at 68 degrees?), levels will drop 7 dB on a cool summer day. On a hot summer day, at say, 95 degrees F, you'll lose 9 dB.

A 9 dB path change will almost certainly cause problems. Computer users will experience a sluggish system or perhaps a total shutdown. System technicians will then need to re-balance the system during these hot or cold weather extremes.

Now imagine the system in Figure 1 is a mid-split I-Net with an upper reverse frequency of 175 MHz. The attenuation of the cable now changes nearly 24 dB over the same temperature swing. Do you think the staff will be balancing the system now? Meanwhile, users are complaining, and the mayor just hired another cable consultant.

Be aware, however, that adding AGC comes at the price of lost productivity during sweep-alignment proce-

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Simply put, you can't adjust levels toward the reverse pilot generators located at the cascade extremes

dures. Because system levels will be held constant after the first AGC unit is aligned, a method other than a simultaneous forward/reverse sweep must be used to set up system levels. Simply put, you can't adjust levels *toward* the reverse pilot generators located at the cascade extremes. (See Figure 2.)

An accurate method to set reverse levels on a system with AGCs is by using two technicians, one measuring input levels at the first amplifier while communicating to the other, who is making adjustments at the previous amplifier.

An alternative to AGC?

Thermal pads in place of active AGCs can compensate for the same temperature swings mentioned above. Thermals have their own shortcomings, however, so care should be used when selecting the amplifiers to place them in. For example: should you place a thermal pad in an amplifier at a riser pole? Depending on the amount of underground cable on the input side of the reverse amp, and whether the amplifier is exposed to full sun, this location may be counter-productive. The cable will not be affected by daily temperature swings, but the amplifier certainly is. The result, in this instance, would be an increase in system levels that is not needed and which may impair system performance.

Conclusions

The examples mentioned above were taken from real-world experiences. Levels do fluctuate, and path losses into and out of modems are often not optimized for the proper "window" of operation. Compounding the problem is a mix of various modems that have different level requirements.

Cascade reduction certainly is a key to minimize level fluctuations. An awareness of the problem is the other key, when faced with long cascades and no upgrade in the budget. **PMR**

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Plant managers walk tightrope: New services, old plant

Methods for managing change

ILLUSTRATION BY LEIF ABJORNSSON, THE IMAGE BANK

By James Careless
careless@magi.com

Internet services, digital television, local telephony: as these new services get up and running, they're going to change the face of traditional cable TV companies–transforming them into bi-directional communication networks. Unfortunately for cable plant managers, it's their job to make these dreams become reality. But experts will tell you that managing change is one of the toughest things to do. So, how do plant managers cope with staffs that are generally already overworked, and in some cases, stretched to the limit?

To get over the hump, managers in cable systems everywhere are now tackling a number of fundamental problems. Without a doubt, the biggest one is actually deploying the networks. "It's an especially big challenge if you're activating two-way capacity in an existing system," says Joe Van Loan, chief operating officer at Mediacom in Middletown, N.Y.

The key is balancing the network properly

Pete Smith agrees. "In an older plant, probably the biggest problem is the reverse path," says the vice president of engineering at Rifkin and Associates, which runs cable systems in Tennessee, West Virginia and Illinois. The key here is balancing the network properly: to date "very few people have ever done it on a massive basis."

"We've done it on a case-by-case basis where we might generate a video signal at a government building and send that back to the headend," Smith explains. "That's been pretty easy to balance, because we just tell people to set it up so that you get a certain level into the input of the first amplifier, and balance it all the way back to the headend. And with one signal in there, it works pretty well. But when you try to balance the entire system, you have to be much more careful about setting your levels. If you get things way off, it can cause you horrendous problems.

And, "in an older plant, you're going to run into a lot of old workmanship problems, and to some extent, some equipment problems where they weren't evident in the forward path, but now, they become plainly evident in the reverse path," says Smith. These problems all have to be remedied, before the reverse path will work properly.

What's that noise?

Another big issue is "ingress noise" cluttering up the reverse path, says Denis Belanger, vice president of engineering and development at Canada's Cogeco Cable. "It's the collection of all the noise picked up by the service drops."

"They all pick up a little bit of noise, and they all add up and combine at the headend," Belanger

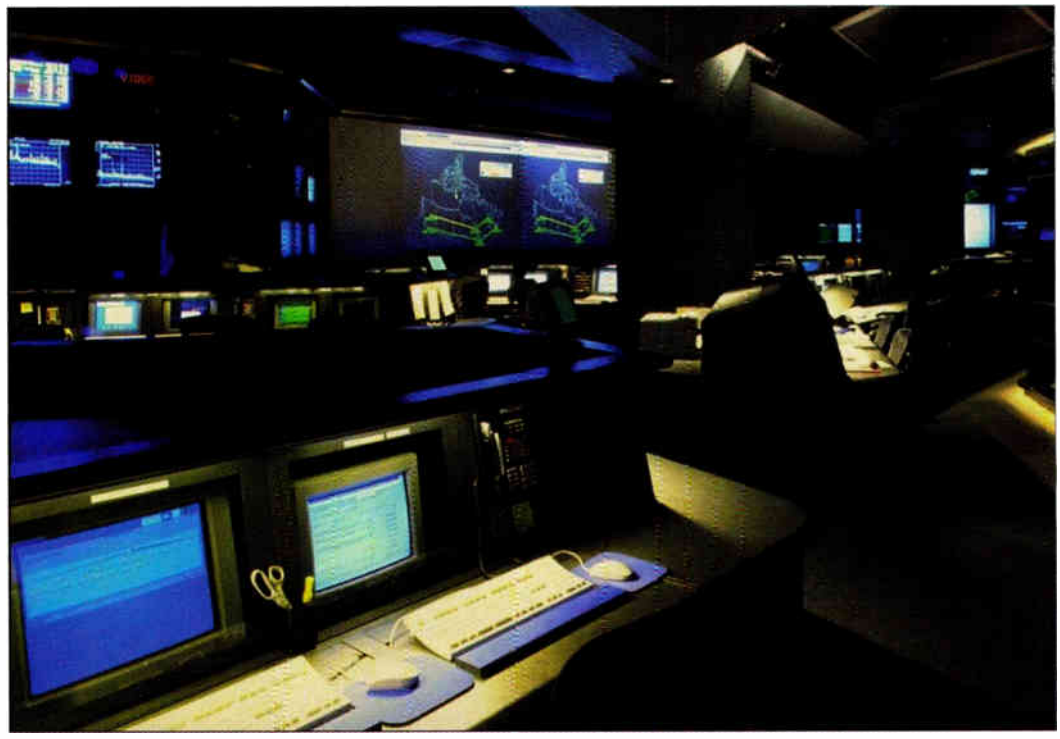
explains. "So you have to keep the combined level of that noise to a level low enough that you can transmit in a backward direction."

There are various ways to deal with this noise. At Rifkin and Associates, "We've chosen to use high pass filters to reduce the amount of ingress," says Smith, "because we believe that penetration of our two-way services (is) going to be fairly low." However, on systems expecting a high level of two-way penetration, the solution is to "find where the sources (of noise) are, and clean that," says Belanger. "That's a pretty big challenge for cable operators."

However, having a two-way network in place is not enough. For cable plant managers to keep their customers happy, they have to provide reliable two-way service: as reliable as the telephone, which has traditionally been more reliable than cable.

To meet telephony standards, cable operators have to reduce the number of outages they experience, and resolve the ones that do occur more quickly than they have in the past. This means that the network has to be better built and maintained, with remote monitoring equipment deployed throughout the system.

In Canada, Rogers Cablesystems has established a round-the-clock national Network Management Centre. "Whether it's in Vancouver, Kitchener, or Toronto, this one location can look at the plant and determine if there is a malfunction," says Nick Hamilton-Piercy, senior vice president of engineering and technology at Rogers Cablesystems in Toronto. "It can also dispatch troops remotely to repair those plants, and advise the various customer groups if it's a prolonged outage, and so forth."



Rogers' Network Management Centre in Toronto manages cellular, CAP and cable operations, as well as the WAVE service. The center was designed and built by Strategic Command Centres International Ltd. (StratCom), Ottawa, Canada.
Photo courtesy of StratCom

New equipment

However, reliability is more than just good maintenance and monitoring. It also requires the right equipment, which is not always easy to come by. For instance, Time Warner is about half-way through upgrading its 44 plants, says Paul Gemme, the company's vice president of plant engineering.

"Our challenges with that have been working with the manufacturers to develop the type of products we need for those architectures," says Gemme. One example: Time Warner wants "a simple but reliable RF amplifier," says Gemme. "Since we're only going five amps in cascade, it really doesn't have to be complex. It can be very simple; it doesn't need lot of internal control for flatness, for instance, as it did when we were cascading long cascades before."

Fortunately, having about 12 million subscribers has made it easier for Time Warner to get the equipment it wants, adds Gemme. As of now, the company has "motivated most of the manufacturers to build the type of amplifiers we need."

Meanwhile. Smith has his own concerns with manufacturers; namely. their "lack of knowledge of how to balance their own equipment." If they can't do it themselves, he asks, how is a cable plant manager supposed to?

Of course, reliability doesn't just encompass electronics, but the people running and repairing them as well. It means training these people to handle the more precise and demanding aspects of two-way network servicing, particularly for digital traffic.

Often. bringing staff up-to-speed isn't easy, because "many of our divisions have not operated a reverse path before," says Gemme. That's why Time Warner has established both a national training center, and regional trainers who are assigned to certain regions of the country, who cover certain divisions.

Look at your resources

But even improved training isn't enough, says Hamilton-Piercy. Because the new two-way cable plants are so much more demanding–and digital service customers equally so–field staff have to be more carefully monitored in their work. Such increased control can be hard for some staff to swallow, he observes. That's because "most of these technicians have had a free hand before, where they use their own initiative. Now they have to do it in a structured and organized way."

In fact, improving management of staff is critical to providing digital two-way services. So too is changing how these people are deployed. "The older, traditional way of how we maintained and looked after our cable

Paul Gemme

plant has to change," says Hamilton-Piercy. "These new services can't survive in what I call the traditional cable operating environment."

For instance, at Rogers, the same field staff used to cover both plant maintenance and customer service. What this meant was that during promotional campaigns, the plant was often neglected as field staff spent all their time hooking up new subscribers.

"That was fine when we had 30, 40, 50 channels of video services, and the pictures got a bit snowy, and the customers were a little bit cranky: you could keep surviving," says Hamilton-Piercy. But "digital can't tolerate that slow deterioration of plant. It's working one day and, as soon as it deteriorates a certain level, it stops working. The customers are paying a lot of money as well, so they're less tolerant. You have to completely reorganize your thinking."

In response to this, Rogers has created separate engineering departments for plant maintenance and customer service. "The telephone and telecommunications world have always been that way," Hamilton-Piercy observes. "It's just (that) the cable industry hasn't."

Finally, there's the simple problem of physically fitting all of this new technology into existing cable plants. With all of this new equipment, space is at a premium, says Time Warner's Gemme. That's why "in many cases, we've had to add buildings, because our architecture calls for hub sites that serve about 20,000 homes passed out of them, whereas existing microwave hub sites served 60,000 to 80,000, and sometimes more."

"So we've certainly had to add hub sites," says Gemme. "Additionally, the hub sites that were existing have had to be made larger. We're saying anywhere from 300 to 600 square feet should be a good size hub site for the present time . . . . However, we do recommend to all of our divisions that first of all, they purchase property to put these hub sites on, and that the buildings that they put up are able to be expanded in the future as the business dictates."

When all of these aspects are combined, it's clear that coping with the digital age presents a wide range of challenges for plant managers. Not only do they have to rebuild their networks, but they also have to ensure that their forward path is clean enough to allow their reverse path to function. Then there are reliability issues to be addressed, plus maintenance, staff training, equipment availability, and just having the physical space to pack this all in.

In short, today's cable plant managers are faced with a mammoth task when it comes to fitting new technologies into their operations. What they're up against isn't as hard as starting from scratch, but it's darn close. **PMR**

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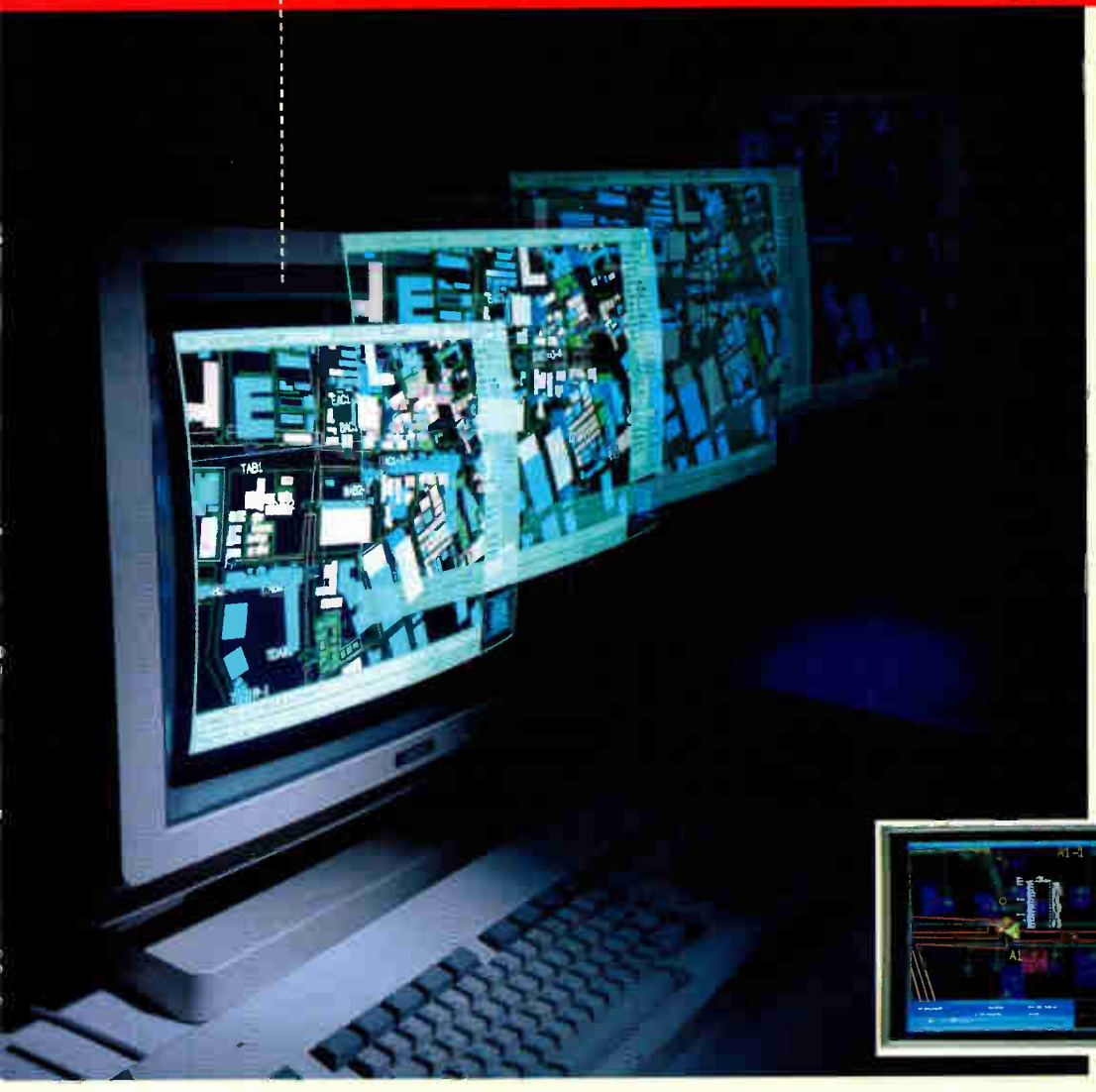

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Fleet management: Weighing the alternatives

By Michael Lafferty

Is cable behind the curve on outsourcing non-core business operations?

As cable company budgets get tighter, more and more company operations are coming under scrutiny. In the same vein, more and more companies in the general economy are tightening their budgets by divesting themselves of direct responsibility and expenses in the non-core businesses they need to achieve their primary business goals.

In '90s business speak, it's called outsourcing.

Whether it's food service, data entry, security or building maintenance, corporations around the country are parceling out these functions to niche companies or contractors who specialize in their respective service fields.

What's the big deal?

In November 1995, the Nynex Telecommunications Group signed one of the most ambitious outsourcing agreements to date. Working with an alliance of four companies—ARI, Butler Fleet Services, Altec and Work Flow Partners—the former baby Bell initiated a five-year agreement to manage and maintain its 18,400-vehicle fleet in six states.

The fleet services Nynex outsourced include: upfitting, vehicle registration and titling, maintenance, driver call management, fleet information management, fuel management, accident management and pool car management (see page 25). Now that the merger of Nynex and Bell Atlantic has been approved and essentially completed, the combined telecommunications behemoth is comparing the outsourced agreement (which was initially projected to save $50 million) with Bell Atlantic's primarily in-house fleet management operation (which oversees 24,000 vehicles).

Getting up to speed

According to some fleet management professionals, the cable industry and other related telecommunications industries are still lagging when it comes to weighing the pros and cons of outsourcing such services.

"They're a little behind the power curve," says Jim Von Bampus, senior vice president and general manager of Butler Fleet Services, "as it relates to outsourcing many of their functions, not just fleet. As far as I can tell, they're not nearly as active as the telecommunications companies who have decided to outsource many of their services that are not core competencies. They've outsourced a lot of their real estate activities, their food services, their guard/security services, even their elevator repairs or whatever else that they are involved with that isn't a direct core competency.

"The cable companies, the gas companies, the electric utility companies are starting to hear the drum beat and are looking at it more seriously. But, they're probably two to three years behind the telecommunications companies who have decided conclusively that they don't want to be in certain types of businesses anymore."

Tom Donato, director of special markets for ARI, concurs and believes outsourcing novices and fleet management companies need to speak the same language before any substantive comparisons can be made. "Now there are some exceptions," says Donato, "where you have some really good fleet people that have outsourced certain portions of their fleet. But by and large, I think the cable companies tend to be making fleet decisions out of the purchasing department. Even the operational decisions tend to be run more by

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To lease or not to lease?

There are no hard and fast rules for making the decision to buy or lease fleet vehicles.

Companies and their individual situations (e.g., whether they're cash rich or poor, are in an aggressive acquisition mode, have other targeted priorities for their money like system rebuilds, new service deployments, etc.) will determine the outcome of that debate on a system-by-system basis.

The advantages of leasing are not universal. But given individual company situations, they may be worth considering. They include:

- **Freeing up working capital**
- **Possibly more advantageous financing rates**
- **May provide faster tax write off**
- **May not appear as liability on company's books**
- **Doesn't disturb present bank credit lines**
- **Provides fixed-rate financing**
- **Provides a buffer against inflation and obsolescence**

Generally, there are two types of lease arrangements for fleet vehicles. They include:

- **Closed-end or net leases–This lease agreement or contract permits the lessee (e.g., cable company) to return vehicles at the end of the lease with no liability, provided that other terms of the lease, such as mileage limits and wear-and-tear standards, are met.**

Generally, this type of lease will cost more than a finance lease (see below) because the leasing company guarantees the value of the vehicle and assumes more risk. As such, the lessee does not participate in the gain or loss on the sale of the used vehicle.

- **Open-end or finance lease–With this type of lease agreement or contract, the lessee pays the difference at the end of the lease between the actual value of the vehicle and the residual value as stated in the lease. In essence, the lessee guarantees the value of the vehicle. Many fleet management companies offer resale/disposal services to reduce or limit this end-of-lease payment.**

people who are (in) purchasing.

"A lot of it's driven by how their budgets are calculated. If they're not really accounting for all of the costs that their fleet generates, then it's really hard to make a comparison between what the alternatives are out there and what they are doing today."

Donato points out that fleet operating costs are both obvious and somewhat obscure to those who don't specialize in fleet management issues. He also notes that the "hidden costs" of fleet management are often tied into areas where money could be saved, but isn't. Fuel and maintenance costs, and even the cost of money used to lease or buy vehicles are no-brainers for most people. Yet, he says decentralized organizations, for example, have to take into account the costs of writing checks.

"Let's say," notes Donato, "you have a totally decentralized fleet where you're having each individual operating area doing their own thing for maintenance. And let's say they're using 100 different shops. There are thousands of checks being cut, probably monthly, to all these different locations to pay those maintenance people. Plus, who's controlling that? Who's going after warranty recovery or making sure that warranty is obtained when it's supposed to be?"

He points out that companies that have already implemented their own fleet management system need to factor in the costs it takes to run and maintain that system as well. Another important issue is down time. "Say you're running a fleet of a couple thousand vehicles," says Donato, "and you have 50 to 100 drivers who can't perform the revenue-generating service they perform, because the vehicles aren't being maintained properly and/or are not coming out soon enough or being replaced by new vehicles. There's a cost to that."

Von Bampus also notes that when installers or technicians don't have vehicles because of poor maintenance, staff shortages in fleet services or whatever reason, another unseen expense is created. "The lack of productivity," says Von Bampus, "creates a situation where companies are usually 'over trucked.' In other words, they have more vehicles than they need because they have to protect themselves against the low productivity of not having a critical piece of equipment available to go out with the core business user group.

"What happens is that they'll take a half a dozen of each type of vehicle and park them along the fence just in case they need them. So they end up being over trucked. They're carrying insurance on those vehicles, along with plates and registrations, and they still have to maintain them as well."

While most companies may have some sort of fleet cost tracking mechanism in place, they may not realize that some of that information could be misleading, says Chris Hoar, executive vice president and co-owner at Fleet Services Inc. "Generally," says Hoar, "the appropriate way to manage or measure the performance of a fleet is on a cents-per-mile basis. If you have a company that runs 100 or 200 trucks, you usually establish certain standards of operating norms. Some may be way above that operating cost norm; others may be below it.

"What's going on? The trucks operating way below it could be bad too. It's just that they're not getting those vehicles properly or regularly serviced. And all of a sudden you'll have a frozen engine, and you'll have a really big expense."

One of the crucial keys, says Hoar, is to get a fix on vehicle lifecycle costs. "It's a combination," says Hoar, "of what a vehicle costs in terms of real depreciation over its lifetime. So, if you buy a truck and keep it for five years, and it costs you $40,000, and at the end of that five-year period it's worth $10,000, then it really cost you $30,000. Then you factor in the mileage and get a cost-per-mile figure. You also have to factor in the cost (i.e, interest) to carry the cost of the vehicle. And then, how well the vehicle is recycled at the end of the period affects the ultimate cost as well."

While the conventional wisdom might conclude outsourcing fleet management services is just an option for large, centralized companies, the fact of the matter is otherwise. "If it's a smaller-sized company," says Hoar, "and they really don't have mechanics or a knowledgeable staff that understands vehicle management, outsourcing could be a viable alternative as well."

And when it comes to far-flung operations, fleet management companies are starting to cover their bases there, too. When it comes to maintenance, for example, some companies have a network of their own facilities. Others establish contracts with national shops (e.g., Goodyear, Firestone, K-Mart). Still others take their show on the road.

"The way we operate in outlying areas," says Von Bampus, "is we maintain a one- or two-man mobile repair unit. This is a unit that is equipped with such things as a brake lathe, a compressor, a generator, floor jacks and holding tanks for new and used oil, grinders, welders–everything you can think of, including parts.

"Obviously, you can't do everything with these units that you can do in a shop. But what we do is we coordinate any outside vending work. We pay that bill and then we make sure to test drive it when it comes back to make sure the work is done, and then bill the client."

It's an education

For those interested in outsourcing, Donato recommends a simple process. First, he suggests that the potential client target companies that can provide the services they think they're looking for and have them make a capabilities presentation. There's no discussion of pricing, just an exchange of information. "Invite them in," says Donato, "and give them as much information as you can about your fleet. Any information about what you're doing today. Let them tell you about their overall capabilities. By the time you do that three, four or five times, you'll end up with a pretty good idea of what's out there and possibly the direction you might want to take."

Once the capability presentations are complete, Donato says it's time to put together a request for proposal. While operators are no strangers to RFPs, they may feel unsure about how to proceed on an outsourc-

Servicing the fleet

Fleet management companies offer a wide array of services. Some of the most common include:

Vehicle acquisition:
This can include vehicle purchases or leasing. Management companies may compile vehicle specification reports that will standardize vehicle specs and options for all vehicle types needed by the client's company.

Accident/safety management:
Management companies may provide call-in service for reporting accidents, assigning/authorizing repair services, as well as coordinate claim payments.

Comprehensive, on-going safety programs (that can include manuals, videos, seminars, tests, newsletters/magazines) can be tailored for drivers and other employees.

Driver call management:
Usually some sort of roadside or emergency assistance service. Can include 24/7 call-in service, fax or e-mail communications between fleet drivers and management company. Service can include the coordination of emergency repair, tire, tow, locksmith and/or jump start services.

Fleet information management:
Management companies will maintain databases containing detailed vehicle and/or driver histories that can serve as a basis for a wide variety of reports that can be used for future purchasing/leasing activities, annual budgeting, cost tracking, productivity and profitability.

Fuel management:
Can include establishing corporate fuel policy, the coordination of purchasing and delivering of bulk fuel to client facilities, fueling vehicles, and coordinating retail purchasing systems/cards for fleet drivers.

Maintenance:
Management companies will coordinate regular and preventive maintenance on fleet vehicles at client facilities, management company facilities, subcontracted shops/facilities and/or mobile maintenance units. Company may also coordinate warranty recovery, parts procurement/replacement, fleet aging analysis, maintenance expense tracking and reporting.

Registration, titling, licensing, plating:
Depending on federal, state and local laws, management company will coordinate all applicable vehicle registration, titling, licensing and plating activities.

Upfitting:
After extensive needs assessment, management company will coordinate all upfitting (either before or after delivery of new vehicles) or retrofitting (of existing vehicles) activities on fleet vehicles. *–ML*

ing request. Donato says it's not uncommon for potential clients to request to see sample proposals. Using these samples and applying them to individual situations will usually result in a proposal that addresses the particular needs of the client.

"We've had companies evaluate outsourcing and decide not to do it," says Donato. "And we've had companies decide to do some of it, and others decide to do all of it. The thing about it is, I've never seen anybody who has properly evaluated it that didn't get something out of it. If nothing else, they get an education."

Different strokes

Different operators take different approaches to outsourcing such services. Steve Gines, director of corporate purchasing at Time Warner Cable, says that given TW's structure, it's a matter for each system to decide. "From a corporate standpoint," says Gines, "it's not something I oppose. I think Time Warner is extremely diverse, and to meet our needs there are several avenues to do that.

"Some of the divisions are strong enough in management and have enough personnel and can do that effectively themselves. Some of these companies are able to provide a service that some of the divisions don't have the personnel to do.

"I endorse that which best serves each division's needs and makes them as profitable as possible. And in some of those cases, outsourcing is probably a very viable alternative.'

Pete Smith, vice president of engineering for Rifkin & Associates, takes a different tack. "We've compared our vehicle repair costs," says Smith, "to some of those folks that want to do things for us. And we find we're very competitive, if not maybe a little lower than they are. We do emphasize taking good care of our vehicles along the way. And we try to buy the right vehicle to begin with, obviously. You don't want to get cheap on that part of it, or you're just asking for a lot of problems."

Smith also notes that because many of his company's systems are in smaller communities, their vehicle acquisition policy has a direct impact on their revenues. "Let me give you my take on that," says Smith. "There are no deals on vehicles. I mean, in reality, once you get to a certain point on vehicles, there isn't anybody out there that on a $20,000 vehicle has got a $2,000 better price for you. They can't cut the prices that much because the margins aren't that gigantic to begin with.

"Some of our biggest advertisers, especially when you get into the smaller towns, are the car dealers that are in town. And we found that in order to make that relationship better and improve our ad sales, if we bought vehicles from those guys, it's one of those 'you scratch my back and I'll scratch yours' (situations). Which is fair. I've always thought what those auto dealers were asking for was very real and legitimate."

Ken Wright, director of technology and chief technical officer for Intermedia Partners, like many of his peers, has adopted a wait-and-see attitude. He reports he and his colleagues were recently approached by a service provider and they invited them to make a presentation.

"In a nutshell," says Wright, "we're really not outsourcing that today. (But) it certainly sounds worth looking into. Actually, we're talking about going to another step which is doing a trial in a limited area. We asked them to go ahead and put together a proposal for us for taking one of our areas, so we could get a look at whether it really does improve finances.

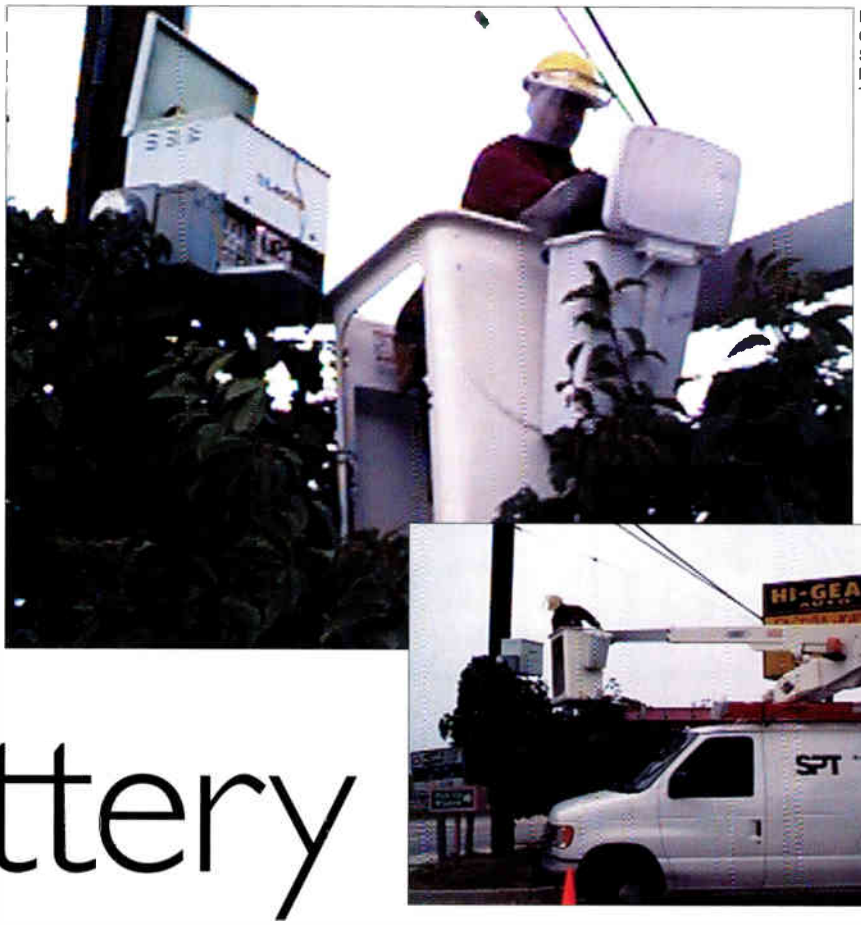
"I know that we as a company, and I suspect we as an industry, aren't doing much of this outsourced fleet management. I think typically what we do is that every system just goes to their local garage. So, you have to have spare trucks around. And maybe we remember to do preventive maintenance, and maybe we only do maintenance when vehicles break down.

"With this kind of management, the benefits are that with preventive maintenance, we would have fewer breakdowns. The maintenance would be done during off hours so that we don't have down-time, and we don't have to have as many spares sitting around. The pitch is that our annual maintenance expense will actually be reduced. If that's true, it's a win all around." **PMR**

Web sources:

- **National Association of Fleet Administrators- www.nafa.org**
- **ARI (Automotive Resources Inc.)- www.arifleet.com**
- **Butler Fleet Services- www.butlerintl.com**
- **Fleet Services, Inc.- www.fleetservices. com**

AN END to battery maintenance?



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Some operators are choosing to outsource the battery maintenance function.

Outsourcing and new monitoring technology

By Dana Cervenka

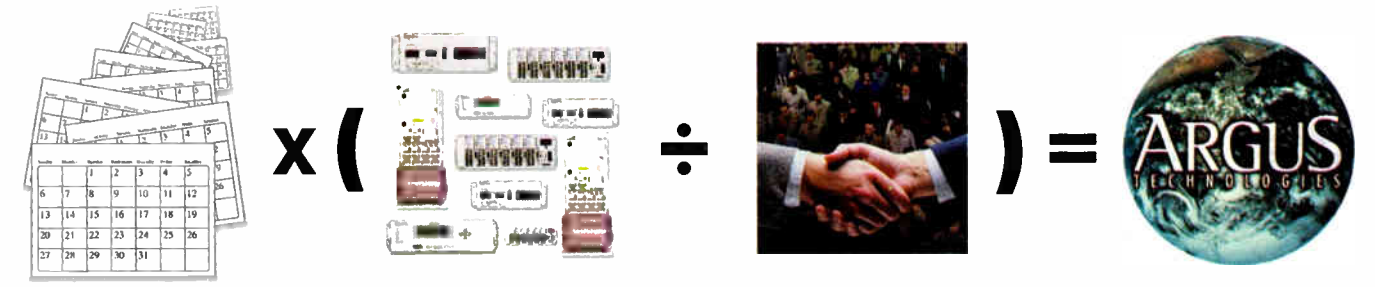
From cellular phone users to cable operators, not too many people are particularly fond of battery maintenance. For cable operators in particular, maintaining the numerous batteries which are providing backup to power supplies throughout the plant is now more than just a pain-in-the-neck; the process is draining already taxed technical personnel, and in addition, is taking that group away from other duties involved in implementing advanced services such as high-speed data and digital video. What's more, new services such as cable telephony require a higher degree of reliability–and that includes power supplies–than ever before.

Why can't the problem just go away?

The answer is, some new advances in maintenance technology, as well as some new services being offered, *can* make it go away, freeing up the technical staff to concentrate on areas which better use their talents.

In one example, some operators have chosen to outsource the battery maintenance function to Supply Performance Testers Inc., a New Holland, Pa.-based firm which offers standby power supply maintenance and management. On a quarterly basis, SPT sends its technicians out to its customers' systems to check each standby power supply, measuring all of the critical voltages, making sure that the power supply will go into standby mode as needed, and checking the batteries as well.

As for the batteries, techs check the open circuit voltage, with no load connected to the battery, then reconnect the charger and set the power into standby mode, to determine where the voltages settle out. When the company's techs find a set of batteries which aren't working, or which can't provide an adequate amount of standby time, they replace them. SPT also provides operators with weekly reports which outline the progress of the system sweep, and at the conclusion of the quarterly sweep, the company generates a comprehensive report which tells the cable operator how many batteries it has



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Reader Service 312

in its system, as well as their age, and outlines the parts that will be needed for the next sweep, data that is gleaned from statistical analysis.

"We provide a just-in-time battery procurement and installation service," says SPT VP of Sales and Marketing Steve Skoufalos. "Our reports detail, in advance, how many batteries a particular cable operator will need and when it will need them. The first benefit is, that the operator doesn't need to buy batteries and store them on its shelves–if the operator purchases them as instructed, we will come out in the next month and put them all in. The second benefit is, by having us do the maintenance and do it quarterly, we will catch a bad charger if there is one, so that the power supply will not overcharge its batteries."

Besides heading off potential outages, the program helps operators extend the life of the batteries that it purchases, says Skoufalos. By eliminating the need to warehouse batteries, operators avoid the risk of plate sulfation, a type of corrosion in lead acid batteries which occurs when batteries are not recharged–sulfates start to build up on the lead plates within the battery, and once that process begins, the life of the battery also starts to decline, he adds.

The program can also extend battery life in another way. Skoufalos often hears cable techs complain that a particular power supply is overcharging their batteries, when in reality, a sulfated battery has been hooked up in series to other good batteries in a particular power supply location. The charger charges to a specific, predetermined voltage; therefore, it will continue to pump out current to all of the batteries, trying to pull the weakest battery up to the proper level. While the good batteries are being overcharged, the sulfated battery will never be pulled up to the proper voltage. The result? Instead of having one bad battery, the tech now has three. "In systems where we have done periodic maintenance over several years, we have seen battery life extended to five years," says Skoufalos.

Because of other priorities, power supply maintenance is often one of the first things that cable operators put on the back-burner. "In some systems that we go into for the first time, the percentage of backup power supplies that are working is as low as 14 percent," he notes. "What does that say about the reliability of that system?"

The Battery Doctor doles out pulses of charge to each battery

Currently, SPT's clients include operators in the mid-Atlantic region such as: Comcast, Jones Communications, Cox Communications, Harron Communications, Time Warner, Cable Television of York, and Raystay Communications. SPT also has plans to expand its service offerings into the southeastern and southwestern states by sometime in 1998.

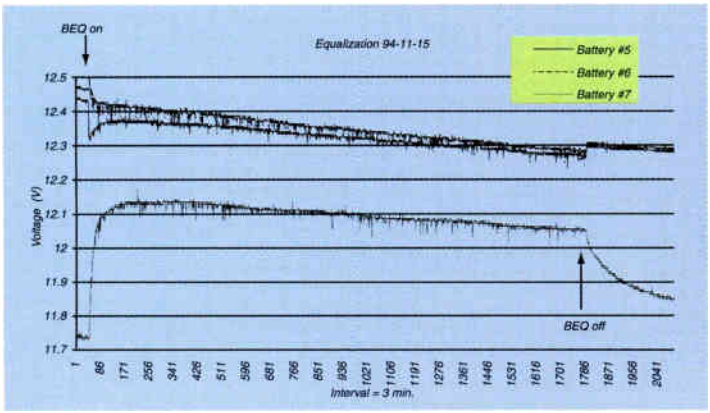
SPT's service, which is not limited to specific brands of power supplies or batteries, is offered on a fixed cost per power supply basis.

The company also offers a maintenance management service for cable operators which have their own in-house maintenance programs. SPT takes data from the operator's own maintenance sweeps and loads it into a proprietary database that tracks the progress of the maintenance program. Reports generated from the program include weekly work orders, weekly and quarterly status reports, and battery trend analysis.

The doctor is in

A promising development in battery monitoring technology coming out of the Canadian Cable Labs Fund may offer cable operators another

The Battery Doctor at work. In this situation, one battery had a much lower charge than the other two. When the Battery Doctor was connected (BEQ on), its voltage increased toward that of the others. When it was disconnected (BEQ off), the voltage dropped off again. Source: Canadian Cable Labs Fund



tool to safeguard their batteries. The Fund, which is formally underwritten by operators Rogers Cablesystems and Shaw, has undertaken a project called the "Battery Doctor" on behalf of Rogers, which spends hundreds of thousands of dollars per year replacing batteries, because of aging and lack of proper battery maintenance.

Normally, most cable companies discharge and recharge their battery strings on a monthly basis in an attempt to prolong battery life; however, as previously noted, the good batteries are often overcharged in an attempt to bring the weakest batteries up to their level. This, of course, shortens battery life. But what if the power supply could be fooled into thinking, for recharge purposes, that its backup batteries are connected not in series, but in parallel?

In essence, that's what the Battery Doctor does. Composed of a small circuit board housed in a three-inch by three-inch by one-inch box, the "doctor" doles out pulses of charge to each battery, depending on the battery's individual needs.

"The circuit takes pulses of charge out of the battery which has the highest voltage," explains Dr. Bill Dunford of the University of British Columbia, who is under contract with the Fund to develop the technology. "The charge is then distributed to the other two batteries. So when the voltages are within a certain range, the circuit doesn't do anything at all. It only starts operating when you get this threshold of difference between the batteries."

Besides extending battery life and eliminating a lot of field maintenance, another hoped-for benefit would be the circuit's ability to generate intelligence about the status of the batteries to the headend.

"We can also use this as a measurement of how the batteries are holding up," adds Dunford. "If the batteries are perfect, we wouldn't expect to see the circuit operating at all. And as they age, we would expect to see something start to happen. And we should be able to eventually match up what's happening in the batteries to what we see. We hope to predict battery failure this way."

While Dunford is confident that the circuit does what it is supposed to do in terms of equalizing battery voltages, further testing is needed before it's known whether or not that process will be effective in lengthening life, or whether the process is indeed effective in predicting a battery failure.

To that end, Dunford and his team are conducting lab tests on 16 batteries, using heat to artificially shorten their lives, hooking up the Battery Doctor to half of them, and using the other half as the control group.

Tips on starting a battery maintenance program

- *Dedicate a technician or technicians to do nothing but maintenance–no installs, no repairs, etc.*
- *Set up a database to handle the management of maintenance information.*
- *Enter battery maintenance data on a regular basis.*
- *Generate meaningful reports from the database to assist in managing the process.*

Source: Supply Performance Testers Inc.

Field tests will also be critical in providing data on the efficacy of the circuit. The Fund is gearing up to conduct some field trials of the Battery Doctor in conjunction with status monitoring system manufacturer AM Communications, slated for a Rogers' system in Ottawa, according to John Madden, executive director of the Fund. The trial will monitor about 80 power supplies, all connected to Battery Doctors, with half of the circuits switched on. In addition, AM has modified one of its transponders to interface with the Battery Doctor in order to determine how the combination could provide cable operators with battery intelligence.

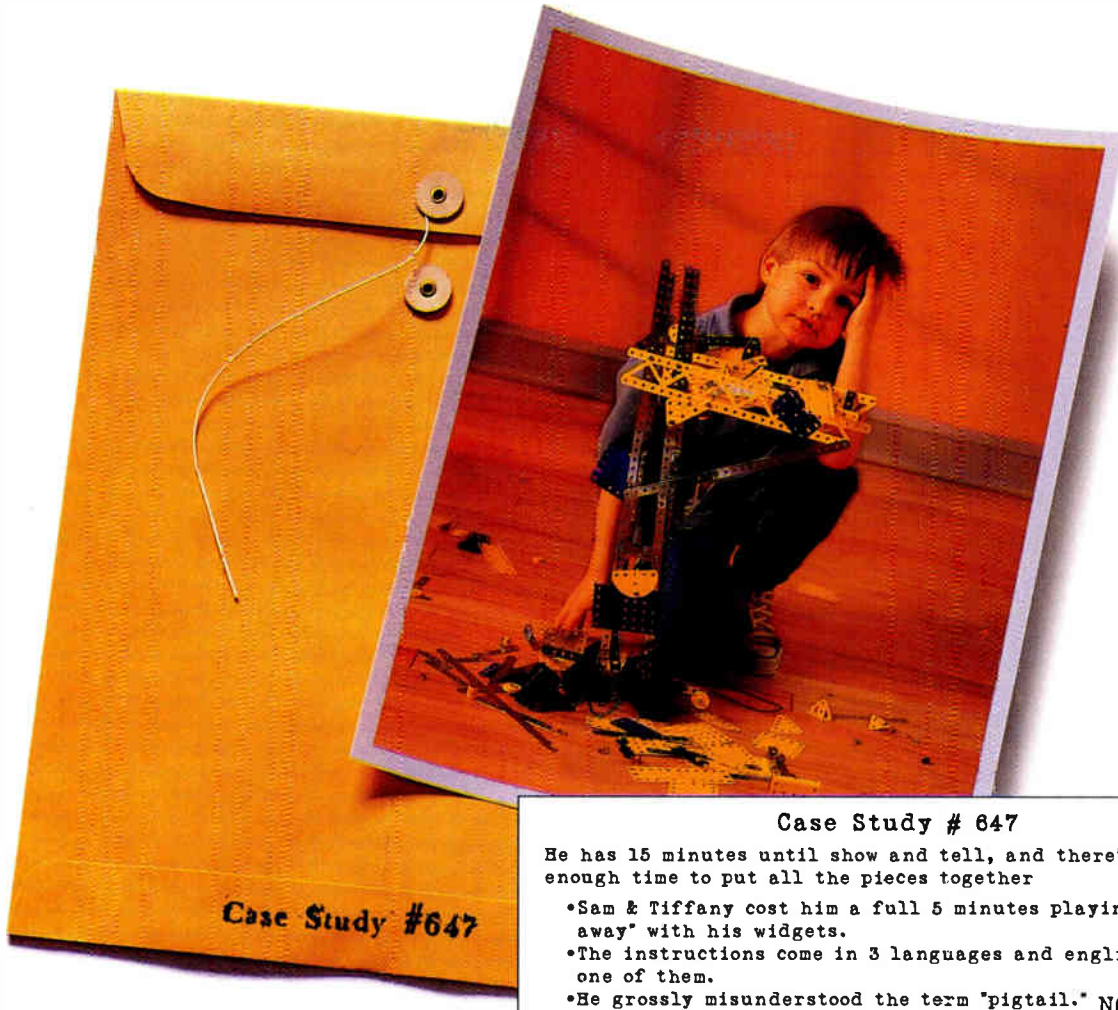
"AM has a licensing option with the University of British Columbia, and if the system proves out, the company will include Battery Doctor circuitry on its telemetry board," says Madden.

The field trial is slated to get underway before the end of the year.

Of course, cable operators currently have numerous power supplies and batteries already deployed in their plant, so to serve that existing equipment, the Battery Doctor could be retrofitted into the battery compartment. "It sits on top of the batteries–all you do is connect it to the battery terminals," adds Dunford.

Batteries a bane no more

From new power supply maintenance services, to advances in battery charging and monitoring technology, to new backup powering options such as flywheel technology, operators can take heart: the days of batteries as the bane of their existence may be numbered, freeing up their technical personnel to deal with other issues in the implementation of advanced services. **PMR**



Case Study # 647

He has 15 minutes until show and tell, and there's not enough time to put all the pieces together

- Sam & Tiffany cost him a full 5 minutes playing "keep away" with his widgets.
- The instructions come in 3 languages and english isn't one of them.
- He grossly misunderstood the term "pigtail." NOw what?

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Reader Service 320

Permanent cable ID markers

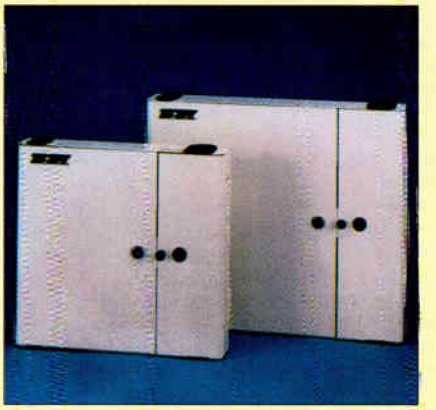
HOUSTON, Texas–VIP Products has announced the availability of its Wrap-Up Wire & Cable Markers, which are designed to provide an inexpensive solution to the problem

VIP's cable markers

of fast and permanent field identification. The markers are available in widths from 1.5 inches to 6 inches to fit virtually any size cable or wire, and in eight colors to meet EIA/TIA606 standards.

Using a marking pen, ball-point pen or typewriter, the field technician writes the appropriate legend on the Wrap-Up. When applied, the clear film of the Wrap-Up completely covers and laminates the written portion, ensuring permanent protection against dirt, oil and water. The product is available in a version for imprinting with laser printers, and in addition, custom Wrap-Ups may be ordered.

Circle Reader Service number 326



TII-Ditel's Customer Premise Enclosures

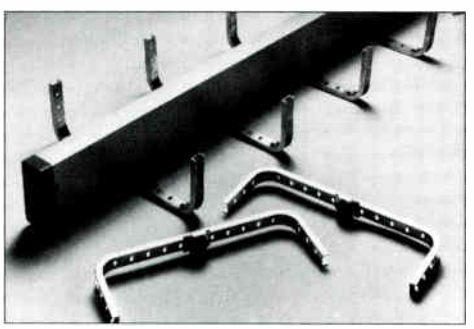
Fiber enclosures

HICKORY, N.C.–TII-Ditel, a division of TII Industries Inc., has introduced its Customer Premise Enclosures for splicing and termination of fiber optic cable. Available in two sizes, the enclosures may be used to directly terminate or splice to outside plant or intrabuilding cable. The CPE-12 accommodates up to 12 fibers, while the CPE-24 accommodates up to 24. The low-profile enclosures provide access in areas where space is at a premium. Plus, their stackable design allows users to add units as fiber counts increase.

Circle Reader Service number 325

Cable tray

MEMPHIS, Tenn.–Thomas & Betts has introduced a center-spine cable tray system which has a simple design innovation that has eliminated many of the job site headaches associated with cable tray installation. The Cen-Tray is modular, and features separate rungs that installers can lock into place on site. The system simplifies field modifications, customization, and work around installation obstacles. The modular assembly "virtually eliminates" shipping damage," says the company, and makes handling, transport and storage more efficient. The tray is available in three primary strut designs to optimize loading requirements–standard spine, deep spine and shallow spine–and is compatible with conventional metal framing accessories.



Thomas & Betts' cable tray system

Circle Reader Service number 327

Ladder caddy

FREMONT, Ind.–Sur-loc Inc. has introduced the new Ladder Caddy, designed for increased mobility and safety when moving ladders. The caddy is made of durable, lightweight steel and features 20-inch inflatable tires which balance the weight of the ladder, thus lightening the load by 75 percent. The caddy can be mounted in five to 10 seconds and remain on the ladder while in use.

The product provides easy movement over tough terrain at worksites, while minimizing back strain and injuries. The caddy also increases efficiency by allowing operators to place various items, such as tool boxes and building materials, on top of the ladder to take to the worksite.

Sur-loc's Ladder Caddy

Available in three models, the caddy was designed for use in various industries, including cable TV, construction and utility.

Circle Reader Service number 328

Tool tote

TACOMA, Wash.–Paktek Inc. has announced a new addition to its line of ToolPak products, the ToolPak Protote, featuring wide-open, one-zipper access to tools. The tote's design allows the user to carry large items, while the tote's tough construction features a rigid bottom wrapped in layers of waterproof Dupont Cordura. Twenty-eight individual pockets, 12 outside and 16 inside, organize a wide variety of tools.

The tote also features padded handles, covered, double-sewn seams and a heavy-duty zipper. An optional shoulder strap attaches to two "D" rings to help carry big loads.

Circle Reader Service number 329

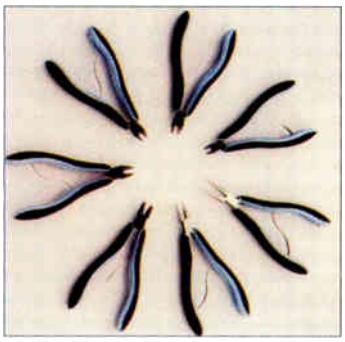
Adapter tool set

PHOENIX, Ariz.–Jensen Tools Inc. is offering a comprehensive selection of precision miniature tools from Moody, which are recommended for use with the optional Utica torque screwdriver, or any other 1/4-inch drive hand/cordless driver application. Blades are hardened, black-finished alloy steel. The set includes an insert bit adapter, a power drive bit adapter and the following six cate-

Precision tools

gories of blades: slotted .025, .040, .055, .070, .080, .100; Phillips #000, #00, #1; Japanese Cross Point #000, #00, #0, #1; Torx/Tamper Torx T3-T6, T8, T10, TT8, TT10; Hex .028, .035, .050, .062, .078, .093; and Nutdriver 5/64, 3/32, 7/64, 1/8, 5/32-inch.

The company is also offering the



Rx Series pliers and cutters

Rx Series pliers and cutters by Sandvik-Lindstrom of Sweden. A five-position adjustable biospring varies the width of the tool opening and the force needed to close it, while the ESD safe grips are long and wide, with firm cushioning for comfort and to minimize user fatigue. The series includes three chain cutters, two tapered cutters, three oval cutters, an oblique cutter and a relieved taper. Sandvik-Lindstrom's cutters are guaranteed to perform one million cutting cycles.

Circle Reader Service number 330

Pull tape

FRANKLIN, Tenn.–Fibertek Inc. has introduced a newly-designed locatable pull tape product called Tracertape II. The three-in-one performance pull tape product incorporates a 24-gauge solid copper wire with an "extruder friendly" polyethylene jacket. The conductors are woven into a choice of high tensile strength Aramid, Aramid/Polyester Blend, or Polyester fiber pull tape, and printed with sequential footage markings for measuring.

Tracertape II evolved from field trials where blown-in Tracertape was to aid in locating a 300-mile fiber optic communications system reaching from San Francisco to Los Angeles. However, the line contained an existing metal jacketed cable, or the duct was buried too near an existing metal line, which caused the tape tone signal to jump to ground and give false readings on locating devices.

The newest version of the tape incorporates a dual wire conductor system that creates a signal loop tone and ground system that virtually eliminates signal jumping situations, and provides accurate readings from

Fibertek Inc.'s Tracertape II

standard locating devices, according to the company. The tape's new design also provides a solution to a frequent cabling problem in locating duct blockages, thus avoiding digging in the wrong place. For example, when tape being blown into a duct hits an obstacle, the Tracertape II dual wire signal loop system allows a locator to ground one wire and transmit a signal on the other to accurately pinpoint the duct blockage and the correct place to dig.

Circle Reader Service number 331

Kramer Electronics' Video Tester

Video signal tester

JERUSALEM, Israel–Kramer Electronics has introduced its new pocket-sized Video Tester that has been designed to eliminate the need to carry an oscilloscope, vectorscope or waveform monitor. The battery-operated device comes in a "beeper" type enclosure with a pocket clip. It can run for three consecutive hours on a 9-volt battery. It features absolute video signal detection and can trace missing signals, distinguish between accepted and jittery (VCR sourced) signals, and identify the presence of good signals.

Circle Reader Service number 334

Optical light source

HICKORY, N.C.–Siecor Corp. has released its OS-300 series of optical light sources that offer three wavelength options in a handheld package. The series includes three models.

Siecor's OS-300 Series Optical Light Source

The OS-301 Optical Source combines an 850/1300 nm LED and 1550 nm laser source for hybrid multimode and singlemode dual wavelength loss testing in LAN applications.

Both the OS-302 (850/1300 nm multimode) and OS-303 (1310/1550 nm singlemode) Optical Sources include a Visual Fault Locator to facilitate troubleshooting. Single output ports provide quick wavelength switching for dual loss tests.

The OS-300 light sources combine with any OTS-100/200 series power meters to create a useful attenuation test kit. They are powered by AC and battery and are available with various industry-standard connector types.

Circle Reader Service number 332

Drop cable

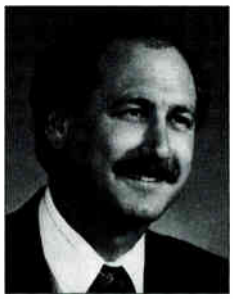
JACKSON, Miss.–Trilogy Communications has introduced its new messengered drop cable with built-in antenna discharge ground wire that eliminates the need to install a separate ground system.

The cable consists of a copper-clad steel center conductor with a low-loss gas expanded polyethylene dielectric.

Circle Reader Service number 333

Christopher named manager of the year

John Christopher, general manager of TCI Cablevision of New Mexico in Las Cruces, N.M., was named Manager of the Year by the New Mexico Cable Communications Association (NMCCA) during the group's annual meeting. The annual award goes to the member who best promotes positive leadership within the industry and community.



Christopher

Christopher, a 24-year industry veteran, has led the Las Cruces system since 1989. During that time, the system has been very involved with the Cable in the Classroom effort. As a result, more than 31 schools in the Las Cruces area receive cable service free-of-charge in the classroom. He was also instrumental in the development of a national award-winning program, High School Game of the Week, which covers local high school sporting events.

The National Cable Television Center and Museum recently designated **David Willis** as its first Industry Fellow. Active in cable television engineering and technology circles for more than 40 years, Willis served as TCI's director of engineering for more than two decades. He retired from TCI in 1992.

The designation acknowledges distinguished service to the cable industry, including individual and volunteer service to the Center. As an Industry Fellow, Willis will serve as the curator of the Technology and Artifacts collection of the Center's Library.

Roger Keating has been appointed to senior vice president at Comcast Cable Communications. As the leader of the company's on-line group, Comcast Online Communications, Keating's group is responsible for rolling out the company's cable modem service–Comcast@Home–around the country.

He joined the company originally in 1993 as the area vice president and general manager for Comcast's West Florida cable properties. A 1983 graduate of the University of Notre Dame with a bachelor's degree in industrial engineering, Keating earned an MBA from the Stanford Graduate School of Business in 1987.

Fanch Communications Inc., the Denver-based operator that currently serves nearly 500,000 customers in 21 states, recently announced several additions to its senior management staff. **Jeffrey Elberson** has been named to the newly-created position of executive vice president, corporate development. In his new position, Elberson, who was formerly vice president at Time Warner Cable Ventures, will have overall responsibility for the company's acquisitions and trades. He will also coordinate the development of new revenue streams such as Internet access and digital television.

Karen Broach, Paul Hoffman and **Larry Scudder** were named vice president-operations. Broach is responsible for the Fanch affiliated systems in Pennsylvania and New York; Hoffman heads the company's Mid-Atlantic region, with systems in West Virginia, Virginia, Maryland and Delaware; Scudder is responsible for the North Central region, with systems in Michigan, Ohio, Indiana and Kentucky.

Fanch also named **Kenneth Gores** as vice president of engineering. He will have overall responsibility for technical operations and a company-wide system upgrade program.

Coogan

Keith Coogan has joined Jones Intercable's Albuquerque, N.M. cable system as director of engineering. An 18-year cable veteran, Coogan comes to Jones from Cox Cable in New Orleans, La., where he most recently served as project manager. In his new position, he will assume responsibility of the day-to-day operations of all technical functions of the cable system, including a 750-MHz upgrade for 115,000 customers.

MediaOne, the broadband services arm of US West Media Group, has announced a number of new hires and promotions. **Bob Kikes** has been named senior vice president and chief financial officer, where he will have responsibility for finance, strategy and business development.

Bobby Zachariah has been appointed MediaOne's vice president–supply management. His responsibilities will include managing the company's purchasing and materials management functions. Most recently, he was vice president of purchasing and materials management at TCI. Meanwhile, **Rob Stoddard** has been promoted to vice president of corporate communications, where he will oversee the company's external and employee communications. He has served as director of corporate communications since February 1995. He previously served as vice president of communications for the Cable Telecommunications Association in Washington, D.C.

MediaOne has also named two others to deal with Internet-related issues. **Kip Compton** has been named to the position of director, systems and services, for the company's Internet Products and Technology Group. He will be responsible for planning, research and development functions for Internet-related products, as well as direct work in the convergence of computer and television technology, and the development of network appliances.

Richard Woundy has been appointed as director of network technology standards at MediaOne. He will represent the company in the development of Internet standards and will be responsible for leading the company's Internet platform development, including support for advanced services such as streaming audio/video, security, directories, dynamic provisioning and standards development.

John Brouse has joined the senior management team at 21st Century Cable TV Inc. The company has been awarded the nation's largest competitive license in industry history and is finalizing the construction of a fiber optic network that will provide broadband services to the business and residential sectors of Chicago's Area 1. The area encompasses approximately 300,000 homes, 500,000 business outlets and 50,000 hotel rooms along the lakeshore, from Hyde Park to Evanston, Ill.

Brouse

Brouse, the recipient of the cable industry's prestigious Polaris Award, comes to 21st Century from Jones Intercable, where he served as operations engineering director. A 29-year high-tech veteran, he has been instrumental in deploying more than 30,000 miles of fiber. **PMR**

The photo that Kuhns references.

This man is breaking one of the cardinal rules of safety

Employee well-being comes first

To the Editor:

I received the July 1997 *Plant Management Report* supplement to *CED* and had it on my desk when a system tech walked into my office to deliver some equipment. While waiting for me, he glanced down at the *PMR*, which was open to page 6. His comment was, "How many customers would we have to have out before you would send me up a pole in that kind of weather?" I looked at the picture, which shows lightning all around, and it even appears to be hitting the amplifier station while the tech goes about his business totally unconcerned. This man is breaking one of the cardinal rules of safety, being in that basket under those conditions.

I realize that sometimes things are done for artistic effect. However, do you really want to leave people with the impression that keeping the system up at all costs, even at the expense of human well-being, is what matters most?

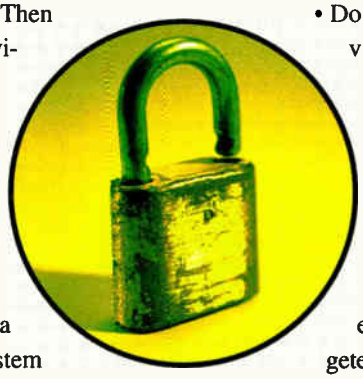
It is a priority of each person within Comcast to deliver the highest level of service possible to each customer. And while I have a strong commitment to give my customers the very best, my highest commitment is to the physical well-being of my staff. Nothing takes precedence over that.

Jim Kuhns
Director of Technical Services
Comcast Midwest Region
SCTE Region 7 Director & Eastern Vice Chairman

UNLOCK THE POWER OF CABLEFILE

The cable industry's most comprehensive database of cable systems and ownership companies will be the key to your sales, marketing or research plan.

Cablefile has all the information you need, all in one place—and better yet, it's information you can really use. Because the data is stored electronically, you can import it into most data management and spreadsheet software programs. Then you are limited only by your creativity. Select any number of criteria to find a group of potential buyers for your product or service—subscriber count, location and build-out plans, for example. The next day, a week later, a month later, six months later, select a different group based on another set of criteria such as channel capacity, billing system vendor or number of coaxial and fiber optic cable miles. There are over 60 fields of data that you can use to select just the right group! Cablefile is such a flexible tool that once you begin using it, you won't know what you did without it.



- Do you market a service to a specific group of decision makers at cable systems—Chief Engineers for example?
- Do you sell a product to the cable television industry?
- Are you conducting research on cable TV?

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PLANT MANAGEMENT REPORT

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CED Plant Management Report's Product/Service Showcase offers the latest equipment and services available in the broadband marketplace. Many of these will be featured at upcoming industry shows. Each showcase features a reader service number. Additional information is available FREE by simply completing the reader service card located between pages 38-39. Make the most of this special service by making your request NOW!

CONSTRUCTION MATERIAL

READER SERVICE # 316

ADVANCED NETWORKING

READER SERVICE # 317

Advanced Networking

C-COR Electronics, Inc. Circle # 317
C-COR's RF amplifiers, AM headend equipment, digital fiber optics, and customized service and maintenance provide global solutions for your network. p. 37

Construction Equipment

Cable Prep® / Ben Hughes Comm. Products Co. Circle # 305
Manufacturer of top quality cable preparation tools, including the new Pocket TerminX® and Light Weight Series, that deliver consistent reliable results. p. 10

Cadix International Incorporated Circle # 310
Develops design and management software solutions for Fiber, RF & Telephony. Our new CX-P21 "LightSpeed Design System" includes an integrated ODBC database and full featured CAD functionality. p. 21

Line-Ward Corp. Circle # 316
Manufacturer of the small, but rugged, L-2 Line Layer, designed for efficient installation of underground CATV/Telephone service drop wires. p. 37

Masterack Circle # 311 p. 23

Telecrafter Products Circle # 301
Supplies drop installation products for CATV, DBS, and wireless operators, single and dual cable fastening products, identification tags, residential enclosures. p. 4

Distribution Equipment

Alpha Technologies Inc. Circle # 313, 314
World leading manufacturer of power conversion products, widely used in cable television, telecommunications, and data networks around the world. Offer a complete line of AC and DC UPS systems, line conditioners, batteries, and accessories. p. 28, 29

Lindsay Electronics Circle # 306
Our revolutionary new technology creates 1 GHz communication amplifiers, passives, taps, and subscriber materials to solve system problems before they become subscriber problems. p. 11

Trilogy Communications, Inc. Circle # 303
ISO-9001 manufacturer of low loss coaxial cable. Full line including air dielectric trunk and feeder, UL listed and corrosion protected drop, radiating and 50 ohm for wireless/RF. p. 7

Distributors

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Sprint North Supply's Materials Management Services include Engineer, Furnish & Install, Vehicle Provisioning, CPE Fulfillment, Project Management, and Model Programs. Reduce your cost to compete. p. 31

TeleWire Supply Company Circle # 319
TeleWire Supply is a leading nationwide distributor of products needed to build and service a broadband communications network. p. 40

Fiber Optic Equipment

Multilink Circle # 302 p. 5

Siecor Corporation Circle # 315
Celebrating its 20th anniversary, Siecor Corporation is a leader in telecommunications technology for voice, data and video applications. Siecor–At Your Service. p. 30

Telecom Equipment

Argus Technologies Circle # 312
Argus Technologies manufactures DC power systems, switchmode rectifiers, DC-DC converters (12, 24, 48, 130r) and various DC power components for telecommunications applications. p. 27

Test Equipment

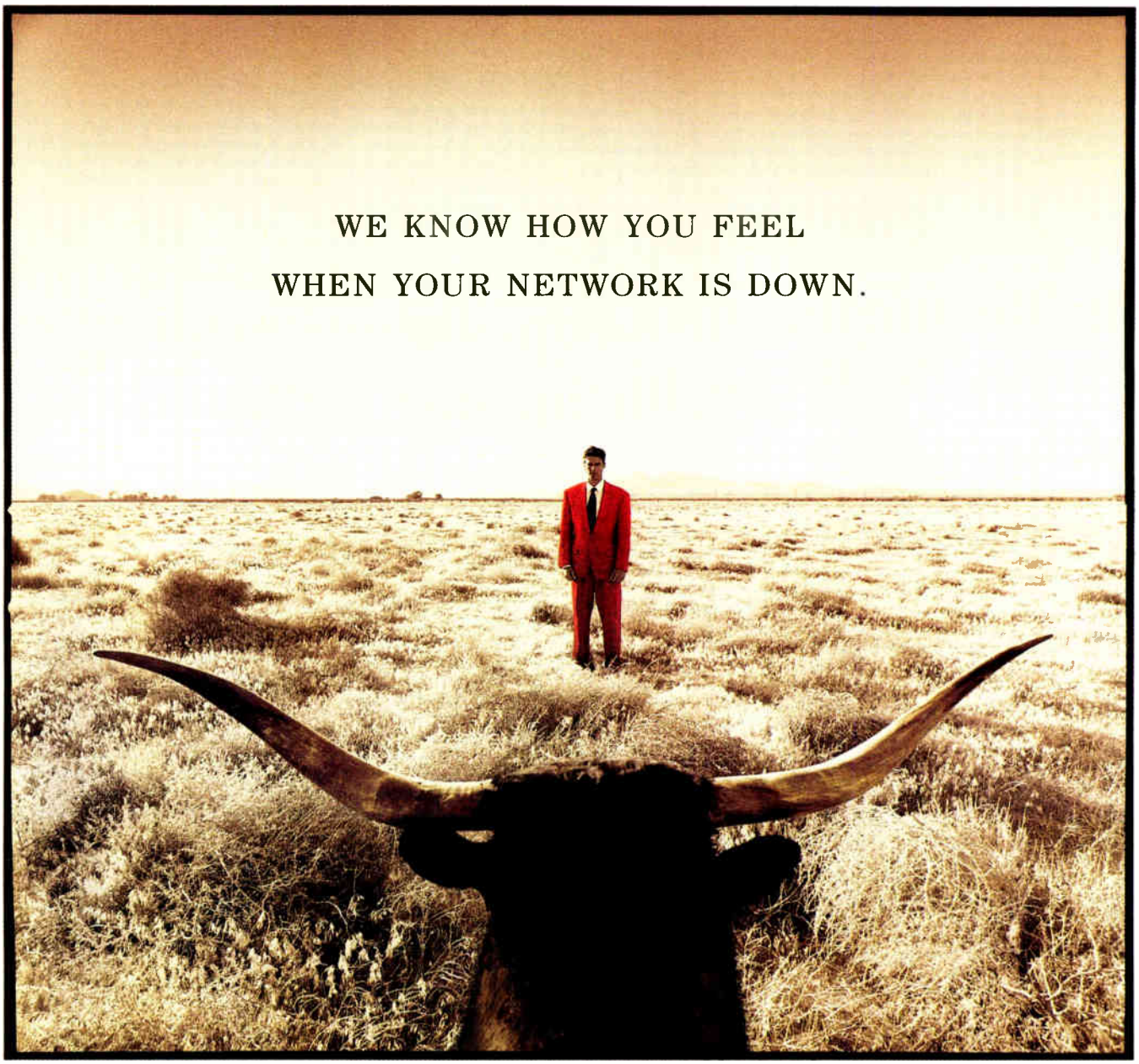
Cable Leakage Technologies Circle # 308
With the FCC imposing stiff fines for leakage, CLT presents operators with the only sure, comprehensive method of locating and documenting the nearest street address of system faults/signal leakage. p. 16

Hewlett-Packard Company Circle # 300, 318
Hewlett-Packard offers a comprehensive range of test equipment to keep your entire broadband system at peak performance–from headend to subscriber drop. p. 2, 39

Photon Kinetics, Inc. Circle # 307 p. 15

Riser-Bond Instruments Circle # 309
Manufacturer of TDRs with unique and exclusive features to locate and identify faults and conditions in metallic two conductor cable. p. 17

Trilithic Circle # 304
Trilithic manufactures test equipment for the CATV and LAN industries and components for aerospace and satellite communications. Key products are SLMs, leakage detectors, and a comprehensive line of return test equipment. p. 9



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