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Recently appointed as general manager for Mobitex at Ericsson, Anders will also take over as publisher of Mobile Data Magazine. In this profile, he describes the Mobitex business strategy and gives his view of the opportunities ahead.



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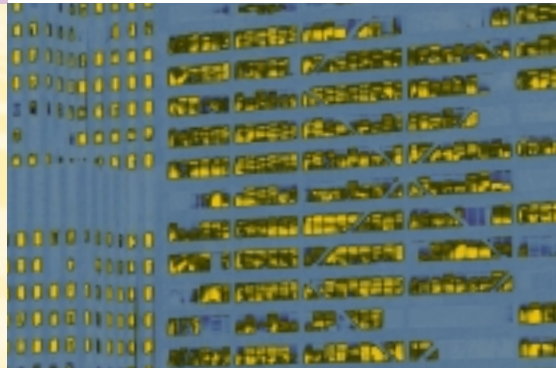
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Building on the success of its Application Developer Program, which was initially designed for Mobitex and now has more than 6,000 members, Cingular Wireless has launched the Application Storefront. This innovative approach to marketing wireless data allows Cingular Wireless customers to buy mobile applications on the web and provides developers with a convenient marketplace for their applications.



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Arriving safe but somewhat wet after a perilous journey, Wanda learns that wireless devices may not work so well in boats.

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Mobitex operators featured in this issue:

Cingular Wireless, US: www.cingular.com

Intec, Korea: www.intectelecom.co.kr

MobiLink, Chile: www.interexpo.cl

Mowic, Sweden: www.mowic.se

RAM Mobile Data, Netherlands: www.ram.nl

Sky Networks Comm Group Co, China: www.skyfol.com

ST Mobile Data, Singapore: www.stmobiledata.com/

Transcomm, UK: www.transcomm.uk.com

UNT, Brazil: www.unt.com.br

Companies and organizations featured in this issue:

ATR, UK: www.atr-group.com

CNI, Korea: www.cni.co.kr

CML Microcircuits, UK: www.cmlmicro.com

Discrete Wireless, US: www.discretewireless.com

Good Technologies, US: www.goodlink.com

Initial City Link, UK: www.city-link.co.uk

Mobitex Operators Association: www.mobitex.org

Nuon, Netherlands: www.nuon.nl

Palm, US: www.palm.net

Progenie, UK: www.progenie.co.uk

Research In Motion RIM, Canada: www.rim.net

Romesq, Netherlands: www.romesq.nl

S1, Korea: www.secom.co.kr

ADVANTAGES BECOMING CLEARER



I am honored to be given the opportunity, in this issue to replace our traditional Publisher's Note with my own Editor's Note and to introduce our new publisher, Anders Baaz, who was recently appointed as general manager for Mobitex. Instead of introducing this issue of Mobile Data Magazine, Anders agreed to be interviewed for our Guest Profile section.

Anders has been working with Mobitex for many years. As our Guest Profile shows, Anders will be an excellent ambassador for Mobitex with a dedication to his job and a knowledge of the product that will impress you. Our new manager for Mobitex promises that it will be business as usual, while vowing to take Mobitex to even greater heights.

In these turbulent times, investors, analysts, journalists and other industry observers are taking a more cautious view and becoming even more critical in their evaluation of operators and their business model. For those of us working with Mobitex, this trend changes our view of the market in some respects.

In more and more markets around the world, there is new interest in Mobitex. Many of the people outside the Mobitex community that I talk to are starting to realize that applications and how they solve business needs are driving the market and that Mobitex really has some key advantages.

The telemetry theme that we have chosen for this issue provides an excellent illustration of this point. It is one thing to envision that a wireless device can be used in thousands of ways for remote control and monitoring. Providing the end-to-end solutions that customers want and that operators need to generate revenues is an entirely different proposition.

It is also gratifying to note that activity all around the

world is very high. Everyone in the Mobitex community is working very hard on various types of telemetry applications, which promise to be a new growth market. Unlike many applications that require special market prerequisites, telemetry applications, whether for regulating water or electricity supplies or security or surveillance services, have a universal appeal and can often be introduced in new markets with few modifications.

As this issue of Mobile Data Magazine goes to press, the Mobitex Operators Association is gathering in Korea for its annual meeting and conference. As always, the MOA meeting promises to be both informative and rewarding and feature many new Mobitex solutions. Korean Mobitex operator Intec Telecom, which will be hosting the meeting, has pioneered several innovative Mobitex applications and services, including interactive gaming, mobile wagering and a new security and surveillance service that you can read about in this issue. Its parent company CNI is also launching a new generation of wireless handhelds that will be featured at the MOA meeting. We look forward to a conference that will be filled with brand new Seoulutions for Mobitex.

Ingrid Wallgren

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FOCUS ON SOLUTIONS, NOT TECHNOLOGY

How long have you been working with Mobitex?

I have been working with Mobitex for nine years. I started in 1993 at the Technical Assistance Center, and from 1994 to 1999 I was manager for customer support. In 2000, I became vice manager for Mobitex and assumed greater responsibility for the division's internal operations. Last year, as a member of the management team, I also assumed responsibility for Network Technology.

How will this change in management affect Ericsson's strategy for Mobitex?

Our business is well managed and does not require any radical changes. We will continue to follow the course that we have set. The roadmap previously established for network enhancements is retained.

What changes do you want to make?

Apart from internal changes intended to increase efficiency, my most important priority is to further increase our customer focus by moving down the value chain and trying to identify customer value at every step. Customer requirements must be foremost in everything we do.

What are Ericsson's goals for Mobitex going forward?

The primary goal for Ericsson is naturally to continue pursuing the Mobitex business strategy that has been so successful in recent years during which we have been able to combine market growth with good profitability. We also want to retain close relationships with existing customers and to help them reduce operational expenses, while at the same time improving and growing their business. Mobitex is an attractive technology in today's industry, and we also believe that several new markets can be opened. To broaden our customer base we are currently working to increase support for regional semi-private networks. This strategy is well anchored among management.

How is Mobitex positioned in Ericsson's product portfolio?

Mobitex is Ericsson's narrowband technology for dedicated mobile data networks. As a messaging technology and a technology for mobile Internet

access, Mobitex has broad appeal, but there will always be important niche markets that require highly reliable communications and in which Mobitex will be the most cost-effective solution.

How has Mobitex been affected by the telecom crisis?

The difficult conditions in the telecom industry have naturally had an effect on Mobitex, although this has been less than might be expected. The Mobitex organization is intact, and we have retained our expertise. We have somewhat less resources, but more competence. Mobitex remains a bright spot in the telecom industry. Over the past few years, the threats to Mobitex have become less formidable, and a vacuum has arisen that we intend to fill.

What strengths do Mobitex operators have?

There are many successful Mobitex operators today, and they all have one thing in common. They have very well-conceived business plans that are well matched to market requirements. Mobitex operators understand wireless data and the importance of offering end-to-end solutions. Mobitex networks are not only growing in terms of the number of subscribers. What is more important is that traffic volume is growing even faster and that the networks themselves are able to support this growth.

What is required of Mobitex and the companies working with Mobitex for continued growth?

Everyone working with Mobitex needs to make sure that they are focused on solutions and not technology. Success and continued growth can only be achieved by offering end-to-end solutions that deliver real business value. The Mobitex community is unique in this respect, because this is a lesson that many people learned long ago, but we can certainly become even better at delivering value to the customer.

Mobitex networks have been in commercial operation for more than 15 years. What will Mobitex be like in 10 years' time?

No one has a crystal ball, so we naturally don't know what kinds of applications there might be in ten years' time. Mobitex will definitely remain a viable technology for at least ten more

years, however. There are networks in which equipment installed ten or more years ago is still operating and using the latest system software. Many operators have business plans that extend as much as ten years into the future, and Ericsson's own roadmap for Mobitex has nearly the same perspective.

What has surprised you the most in the development of Mobitex over recent years?

The commitment and excitement that people throughout the Mobitex community feel about Mobitex is in many ways the most remarkable development. The recent transfer of ownership of the Dutch Mobitex network to the management of RAM Mobile Data is yet another example of the commitment and enthusiasm that Mobitex instills in people.

How will Ericsson work with MOA?

The Mobitex Operators Association is an important forum that Ericsson has always supported. MOA has a very important role to play in promoting awareness of Mobitex while handling technical issues and administering the Mobitex Interface Specification. MOA has to provide value for the operators by providing guidance and expertise that will help them to develop their business. At the same time, operators must influence MOA by showing what is needed for business development and how Mobitex can be promoted in the marketplace. Ericsson sees MOA as an important partner for its business and technology development and takes as active a role in MOA as its status as an associate member allows.

What types of partnerships are important?

All types of partnership that deliver value to the customer are important. However, these do not have to be formal partnerships. As everyone working with Mobitex recognizes, wireless data applications and end-to-end solutions present a very complex value chain in which no single supplier can provide all of the components. Delivering successful Mobitex applications requires working together. Ericsson works closely with a number of companies in the Mobitex community and always welcomes opportunities to deepen relationships, particularly with developers and modem suppliers. ■

MOBILE BUSINESS NEWS

If you have a truly tremendous product, what better a way to spread the news than to put the word out on the Grapevine? That's exactly what Mobitex operator Transcomm UK is doing with its new Grapevine service for mobile workers and professionals running on the 400 MHz version of CNI's TWM3.

"Email has become an integral part of daily life, and we believe that all businesses deserve easy mobile access to their email and company information. You really do suffer if you cannot access your email while on the move," says Adrian Noad, business development director at Transcomm UK, adding that the first orders in advance of the official launch have already been received from the emergency services and public transport sectors based on an extremely successful market trial.

The market trial included a beta test earlier this year with 100 users who showed an overwhelming 88-percent acceptance of the service. Apart from helping Transcomm to refine the applications, documentation and packaging of the new service, the market trial produced some surprising results. Among these was that the WML micro-browser and WAP push service being bundled with Grapevine were nearly as popular as the email service.

"There is no question that users also want to access other

GRAPEVINE TO SPREAD THE WORD



information while on the move. With a wireless PDA that has a screen that is much larger than a phone and displays WML pages more attractively and with greater information content, it now becomes convenient to do so," observes Jason Railton, software development engineer at Transcomm who has been working with application developers for the UK version of the TWM3. (See separate article on page 18.)

POWERFUL SERVICE AND FEATURE-PACKED WIRELESS PDA

As offered with the Grapevine service, the TWM3 wireless handheld is small enough to fit in

a pocket, yet powerful enough to keep users in touch wherever they are. Standard PIM applications include Memo, Today, Date Book, Address Book, Schedule and To Do. There are also various utilities, such as currency and measurement converters, and several games. Most important, of course, are the wireless communication applications, which are a POP3 email client, a WML micro-browser and a Push Box for WAP messages.

Security, which is intrinsically high in the Mobitex network, has been enhanced in several ways for Grapevine. The wireless PDA itself is protected by a PIN code and can be configured so that the code must be entered each time it is switched on or awoken from sleep mode.

The wireless PDA has no SIM card that can be stolen and no hacker-accessible public IP address, since the Mobitex MAN number is used for addressing. All Grapevine users are a closed user group (CUG) on the network and CUGs can be used to further restrict access to members of an emergency service, for example.

Grapevine has generated considerable excitement even before its official public launch, which is scheduled for October. Priced at GBP 249.95 for the TWM3 and GBP 29.95 per month for the Grapevine service, Grapevine will surely be an immediate success as satisfied users begin spreading the word. ■



BUILDING A WIRELESS ECO-SYSTEM

WAVE 2002
ORLANDO
FLORIDA

WAVE 2002, the annual Wireless Alliances and Vision Exchange arranged by US Mobitex operator Cingular Wireless, was held this year in Orlando, Florida from May 14 to 16. Once again a tremendous success, the conference provided ample evidence that Mobitex remains a premier technology for wireless data communications.

Ericsson, as at all previous events, was a premier sponsor. Sponsors and exhibitors included Aether Systems, Discrete Wireless, Good Technology, IBM, Itronix, MDSI, Melard Technologies, Neomar, Oracle, Palm, Panasonic, Psion Teklogix, RIM, Siebel Systems, and Sun. At this year's event, the Mobitex Operators Association (MOA) was an executive sponsor for the first time.

"Our technology is a proven performer in wireless data," noted MOA executive director Jack Barse in his presentation of the global Mobitex market at WAVE. "There is no other technology that can approach the robustness and reliability of our platform or our resourcefulness at putting that platform and our skills to work for our customers.

Barse went on to describe the tremendous growth that Mobitex has experienced recently. The subscriber base has grown from about 300,000 to over one million users worldwide in about 30 months. During that same period there has been a fivefold increase in network traffic worldwide.

In describing his vision for a wireless eco-system, Cingular Wireless CEO Stephen Carter pointed out that WAVE began as a Mobitex conference and that Mobitex remains the preferred solution for business customers.

"Mobitex is a packet data network that is our 'here and now'. It supports both custom and off-the-shelf solutions for enterprises. But the wireless data world is evolving into the future, and the solutions will shift in response. There will be certain customers and situations where the Mobitex network is the optimum network in terms of functionality, economics and applications. And we will have it. Other customers may need a different type of solution – one that involves GPRS and EDGE – and we will have that as well. This ability to provide the best network for a particular need, will be unique to Cingular and will be a significant advantage to us," noted Carter.

Major announcements at Wave 2002 included Cingular's new Application Storefront, Xpress Mail GoodLink Edition and a new handheld from Good Technology, a Cingular Best Solution award for Discrete Wireless and a number of innovative new applications from Korean operator Intec Telecom, all of which are described elsewhere in this issue. ■

MOA was an executive sponsor of WAVE 2002.



UNT BRAZIL SETS NEW COURSE

UNT, which is jointly owned by paging operator Conectel Brazil and a US private equity firm, is refocusing the Mobitex operator's business strategy and expanding operations in Sao Paulo. In the next phase of business development, UNT will significantly expand coverage and move into new application areas.

POS (point-of-sale) and telemetry applications will continue to play an important role in UNT's operations, but new applications for the security and logistics sectors and new devices will open new markets. In addition, UNT will market applications for mobile sales forces and mobile professionals using handheld devices.

Wireless POS applications are already a major source of revenue for UNT. These include wireless payment terminals for Visa cards, as well as wireless sales terminals for which the Sao Paulo Chamber of Commerce is a major customer and which are used by retailers throughout the city. UNT is also conducting several pilot projects. One such project is for public parking meters



Julio Figueroa, CEO at UNT, intends to make Mobitex the first choice.

in cooperation with Schlumberger. In another project, UNT is working with an electrical power supplier to monitor industrial electricity meters. In addition, UNT is devoting considerable effort to developing applications for monitoring vehicle fleets, including the public bus system.

UNT has completed coverage of greater São Paulo and is working on network installation in the city of Rio de Janeiro and the outlying areas of the Flamengo, Botafogo, Barra da Tijuca and Copacabana districts. With this expanded coverage, UNT will be more able to offer logistics and security applications, which are considered to be markets with significant potential. "We are a determined to increase investment and marketing efforts to make the dedicated Mobitex network the first choice in wireless data communications for commercial and industrial customers", says Julio Figueroa, CEO at UNT. ■



PARKING PAYMENT MADE EASIER



Like most large cities, Rotterdam in the Netherlands has a parking problem. For shoppers, visitors or people carrying out their business, finding a parking space is often difficult. Parking in the city center can also be expensive, but the Rotterdam authorities are at least making it easier to pay for parking.

Since January 1st, Pay and Display parking machines in Rotterdam accept payment from special chipknip cards. To offer users more alternatives, the City Surveillance department also wants to enable payment by credit card. For this reason, a pilot project has been started involving 250 parking machines.

As part of this pilot project, the department also wanted to simplify collection. Previously, parking inspectors were forced to empty each machine manually by using a special card and performing a lengthy series of oper-

ations. Instead, the authorities wanted an alternative that would computerize electronic collection and monitoring.

The Mobitex network operated by RAM Mobile Data was selected for the project. As a result, parking machines have a wireless connection with the City Surveillance department's computer system. This has several benefits. Staff can empty a machine remotely via computer, spot breakdowns and implement parking rate changes. If the project is a success, credit-card payment will be accepted and Mobitex will be used in parking machines throughout the city. ■

NETWORK UPGRADE IN CHILE

In August 2001, the Mobitex network in Chile formerly operated by CTC Startel was taken over by Interexport Telecommunications. Mobilink S.A., the company formed in January the same year to operate the network, retained operational responsibility. Now the new owners are upgrading and expanding the network for new applications.

The first step will be upgrading the software in the NCC (Network Control Center) and the main switch. In parallel,

Mobilink will work with Ericsson to duplicate the connections between the base stations and the switch in order to improve the reliability of the system and to optimize the distribution of coverage. A study will also be conducted to evaluate extending network coverage to cities of Concepcion – Talcahuano.

Applications currently running on the Mobilink network include telemetry and database applications for the police. Once the upgrade is complete, the

Chilean operator will begin marketing AVL (automatic vehicle location) applications for the public sector and telemetry and database applications for utility companies. "Our company's business strategy is based on developing deep relationships within specific niche and vertical markets. Based on our model, we have identified several customers that have been forced to postpone projects due to the lack of a secure wireless data network. There is currently no other wireless net-

*Hans Hüper at
Interexport Telecommunications.*



work in Chile that is sufficiently robust to support professional, mission-critical applications. This means that there are many opportunities and that a wireless data network with high availability and reliability provides a real competitive advantage." concludes Hans Hüper, utilities business manager at Interexport Telecommunications. ■

NEW DUTCH OWNERS ARE OLD HANDS

Earlier this summer, RAM Mobile Data was acquired by management. Ownership of the Dutch Mobitex network, which was acquired in 2000 by KPN Mobile, has now been transferred in full to Joachim Kaarsgaren and Dirk Fabels, who are both the new managing directors of the company. The company will also retain the name RAM Mobile Data Nederlands NV.

KPN Mobile and RAM Mobile Data are facing new business conditions as a result of the dramatic changes that have occurred in the telecom and IT industries over the past two years. In making this divestment, KPN Mobile expressed great confidence in management and staff and a firm belief in the Mobitex operator's expertise and market opportunities.

"This transfer of ownership gives us the opportunity, as an independent company, to contin-

ue pursuing our established business strategy and to provide even better service to customers. At the same time, RAM Mobile Data will continue to work closely with KPN Mobile with regard to GPRS and the forthcoming UMTS services. The RAM Mobile Data name will continue to distinguish us as a supplier of professional services that give us a

Joachim Kaarsgaren and Dirk Fabels at RAM Mobile Data Nederlands NV



unique position in the market for business-critical wireless applications," say Joachim Kaarsgaren and Dirk Fabels.

For these old hands, running RAM Mobile Data will thus be business as usual as they pursue their successful strategy and work even harder to provide professional service for both new and established customers. ■



THE MOA ANNUAL MEETING & CONFERENCE IN SEOUL

The agenda for the MOA meeting taking place as this magazine goes to print is shaping up to be one of the most diverse and interesting that MOA has ever presented. Topics will range from new product introductions, insight into successful Mobitex applications, examination of new business plans and marketing strategies as well as specific information about forthcoming Mobitex terminal products. A full report from the meeting will be provided in the next issue of Mobile Data Magazine. ■

CUTTING EDGE IN PARCEL DELIVERY

Initial City Link, a high-tech deadline delivery company with a fleet of 1,500 delivery vehicles and 70 locations throughout the UK, has selected Transcomm's Mobitex network as the preferred wireless data network for tracking parcel deliveries. Under the agreement, City Link's entire vehicle fleet, already fitted with handheld scanner products, will use real time wireless data to track parcels. As the parcel market has matured, City Link has continued to invest heavily in

technology to give it the cutting edge in parcel delivery.

"Wireless data is of increasing importance to the parcel delivery sector and Transcomm's Mobitex network empowers Initial City Link to make available up-to-the-minute parcel delivery information to its customers due to its inherent reliability," says Transcomm's managing director Rich Pullin.

Customers can easily track parcels and access an image of the Proof of Delivery receipt on City

Link's website. The parcel delivery information, which is continuously updated as City Link's personnel scan the bar codes on each parcel handled, contains complete information about the job status, including scheduled time of delivery.

"In the face of rapidly escalating competition, we are delighted to be working with Transcomm to provide us with the upper hand for customer service. We are expecting customer satisfaction to reach new heights throughout the chain due to service levels being driven up with the introduction of Mobitex," says Alec Cormack, IT director of Initial City Link.

"The Mobitex network proved to be far closer to our requirements than other wireless technologies, such as GPRS, because in a business such as ours, where time and reliability are of the essence, it makes sense to use a reliable and real-time network. The relationship with Transcomm fits with our overall simple philosophy of providing a fast, easy-to-use service with the maximum flexibility and the highest standards of customer service. We are confident that Transcomm will be able to support our philosophy based on its track record with other customers," concludes Alec Cormack. ■

MOMENTUM WILL BE MASSIVE

Are you satisfied with the service provided by the vending machine in your office? Have you checked the power consumption in your home on the web and adjusted your appliances to take advantage of non-peak electricity prices? Would the wireless device in your pocket notify you if your car was being stolen? Could the heat in your country house be automatically switched on earlier if you manage to beat the rush-hour traffic out of the city?

Welcome to the strange world of wireless telemetry where machines can talk to each other and seem to have a mind of their own. Confusing as it is complex, wireless telemetry can be defined as automatic transfer of data between two machines over a wireless network for the purpose of monitoring or control. As can be understood from this definition and the examples above, wireless telemetry is a technology that can be applied in many areas.

MOMENTUM CONTINUES TO BUILD

When the Yankee Group surveyed the wireless telemetry field in 2000, it was characterized as "moving faster than a speeding glacier." If growth in this field has been glacially slow, then this is more than offset by the momentum that has been built up and continues to build. Over the coming years, the AMR market is expected to grow by as much as 50 percent each year. In many applications, such as automatic meter reading (AMR), the customer base is not only potentially vast. Once a wireless telemetry application has been installed, customers are essentially captive and churn is negligible.

There are probably as many segmentations of the wireless telemetry market as there are industry analysts. For the purposes of this article, we will therefore focus on the applications for which Mobitex has been proven to be a cost-effective technology or for which the potential for Mobitex is considered significant. To date, the most common wireless telemetry applications for Mobitex have been AMR applications for electricity, heating and water companies and applications for various types of vending machines (e.g. beverage machines, parking meters and ATMs). Although there are fewer applications for asset tracking, security and SCADA (supervisory control and data acquisition), these are application areas in which Mobitex has significant potential.

WIDE-SCALE DEPLOYMENT

Meter reading is an ideal telemetry application. Without remote data collection, a water, electricity or heating supplier must send out a person to read each meter to collect billing information meaning that readings can only be taken infrequently.

Telemetry solves this problem by employing what is essentially a wireless LAN (local

area network) using unlicensed radio spectrum and a data concentrator. Meter readings are transmitted wirelessly to the concentrator and forwarded to a central processing system. The final link to the central system may be a fixed connection, such as a telephone line, but increasingly wireless WANs (wide-area network) are being used for this connection, as well.

Mobitex is particularly suitable for this application because it is a highly reliable packet-switched network for which users pay only for the volume of data transmitted, not connection time, and because it guarantees error-free

"Once a wireless telemetry application has been installed, churn is negligible."



delivery of data. While these are significant advantages for Mobitex operators and solution providers, wireless telemetry has some disadvantages that must be taken into consideration. AMR applications, which are the most common in terms of installed units, generate little traffic, with revenues typically on the order of USD 10 to 20 per month per meter and expected to decline further. On the other hand traffic can often be handled at night when traffic would otherwise be light.

The cost of communication equipment for a wireless telemetry application also remains high, meaning that many applications are difficult to cost-justify. Although equipment costs are coming down rapidly, it remains imperative to seek applications that deliver added value and involve not just monitoring, but also control. To be cost-justified, a wireless telemetry application also needs to be deployed over a very large customer base. This is exactly what Korean Mobitex operator Intec Telecom intends to do with its security and surveillance service by leveraging Samsung's huge customer base. ►

"Profitable wireless telemetry applications must add value."

precisely, thus conserving precious resources and maximizing operational efficiency. SCADA (Supervisory Control and Data Acquisition) applications used for monitoring, analyzing and/or controlling systems and processes also incorporate this control dimension.

CREATING A NEW VALUE CHAIN

In addition to the applications featured in this section, there are a large number of applications in other areas in which wireless telemetry can be leveraged to create a new value chain. Remote monitoring and control of vending machines is one example of a type of application that has been featured often in Mobile Data Magazine. Although wireless telemetry can be used with almost any type of vending machine, Mobitex is most commonly used in applications for parking meters where its low communication costs and two-way data capability are important benefits. Not only is monitoring of parking meters inexpensive and efficient. Tourist and traffic information can be sent to the parking meters and parking rates can be adjusted remotely. One such application in Rotterdam is featured in the Business News section of this issue.

Asset tracking is another important wireless telemetry application. Perhaps the most well-known example of a Mobitex application for asset tracking is the system used by FedEx in the US and other countries, which uses Mobitex at strategic points along the delivery chain to track the progress of a package from the sender to its destination. As noted in our Business

News section, Mobitex is also helping City Link in the UK to gain the upper hand in deadline delivery. Although wireless telemetry is just one component in parcel tracking systems, it has been a key factor in revolutionizing the industry.

Korean Mobitex operator Intec Telecom is currently planning the deployment of a system that will provide traffic information to motorists. Mobitex and GPS (Global Positioning System) will be used to gather traffic information from selected vehicles, while the operator's paging network will be used to broadcast this information to all motorists. This application, which is being developed with such partners as Hyundai, will undoubtedly be featured in a future issue of Mobile Data Magazine. A somewhat similar Mobitex application is already being used in Singapore, where local authorities have realized that deploying intelligent traffic systems can be cheaper than building new roads.

VAST POTENTIAL

Innovative and imaginative applications of wireless telemetry are possible today. Whether it is a more mundane application like automatic meter reading or a sophisticated system for monitoring and control of intelligent homes, Mobitex has a key role to play in the growing wireless telemetry market. In many application areas, Mobitex is already the leading technology and has pioneered new applications for wireless telemetry. Although it may be both confusing and complex, wireless telemetry is a market with vast opportunities. ■

CONTROL ADDS VALUE

In many cases, savings from a telemetry application can be considerable, meaning that an AMR application is often cost-justified from the utility's perspective. However, profitable wireless telemetry applications from the perspective of the network operator or solution provider must add value that will result in higher revenues. A fruitful approach is to take advantage of two-way communications to include control functions.

Since utility meters typically only need to be read, not controlled, AMR applications would seem to offer little opportunity in this regard. Distribution networks for water, heating, gas and electricity, however, require constant monitoring and supervision. Continuous monitoring of the network allows Dutch utility Nuon, for example, to adjust power production



MAKING THE MOST OF WATER

Substantial loss of water through leakage and general waste has become a high profile environmental issue. Not only does this result in a significant loss of revenue. It has become increasingly difficult to deliver an acceptable level of service. Advanced Technology RAMAR (ATR), a company that has long delivered telemetry applications based on Mobitex, has a solution through which companies can implement a scheme to enable the remote monitoring of their water delivery system.

The ATR system will isolate both leakage and system tampering at the source and alert the water company of the situation, allowing them to take immediate action. Because data from meters can be obtained on-demand, constant and accurate consumption data will be available to facilitate regu-

lar, detailed customer bills. The system will also give the ability to compile load profiles and demand forecasts.

ATR's system works by installing a water meter with an electronic wireless encoder (EWE) fitted. The TranceiveIT transmits data from the meter to a locally positioned concentrator device (ConcentraIT). Each ConcentraIT can receive and transmit data from hundreds of meters. The ConcentraIT in turn transmits the data via a Mobitex network to the water company's host computer at head office.

The ATR system features a scalable architecture that allows it to be expanded to serve a large customer base, as well as powerful diagnostic tools for system management. Meter data can be accessed directly or received via email. ATR supports

metering equipment from all major manufacturers, meaning that the system is easily installed and that expensive modifications to existing equipment are unnecessary.

"ATR's automatic meter reading portfolio is among the broadest in the industry and offers a sophisticated and highly efficient system for water, gas and electric companies. As an Ericsson business partner, ATR is able to offer Mobitex for wireless wide-area communications. This successful water metering concept has already been tested in a pilot project and will soon be implemented on a private Mobitex network for a new customer. This concept will undoubtedly open new Mobitex markets," says Tomas Lundkvist, marketing and sales director at Mobitex, Ericsson. ■

WIRELESS ENHANCES SECURITY

Korean Mobitex operator Intec Telecom recently won a very major order from S1, a Samsung subsidiary and Korea's largest total security provider. With more than 250,000 customers and a market share of about 70 percent, S1 offers everything from crime and fire prevention to information and communication services. As of October, Mobitex will become an important component in these services.



S1 customers, which include both companies with industrial and office premises and private homes, typically sign a three-year contract for security services, which include remote surveillance and control. Thus far, S1 has relied on fixed lines and the PSTN for communications. Now, however, Mobitex will become the new standard.

The leased line provided by Korea Telecom (KT) for the S1 security service costs about USD 10 per month. To maintain its annual growth rate of 18 percent, S1 knew that this cost needed to be reduced. At the same time, KT was phasing out its slower leased lines, which it wanted to replace with an ADSL connection costing a minimum of USD 15 per month. Intec Telecom was quick to realize that this was a major opportunity for Mobitex. "By replacing leased lines with Mobitex, we knew that we could reduce the monthly communication fee from USD 10 to about USD 2, while leveraging S1's huge customer base. This was an opportunity that we could not afford to miss," says Intec Telecom CEO Won Baek.

FLAWLESS PERFORMANCE

S1 naturally wanted to evaluate several alternatives, including Mobitex and CDMA2000 1xEV-DO. There was also the minor problem that Intec did not have a suitable device for the S1 application. These were not the kind of obstacles that were going to stop the ambitious Korean operator, however.

"Our parent company CNI (Communication Network Interface) developed the LinkBox for S1's security services in record time," says Won Baek proudly. Although simple in principle, the LinkBox contains a wireless and two wireline modems, a processor and a variety of interfaces for connecting to external equipment.

At the same time, S1 was planning field tests, which for Mobitex included 60 test installations. During the tests, Mobitex performed flawlessly, providing 100-percent reliable and error free data transmission. This reliability, in combination with native support for true push functionality, were major factors in S1's selection of Mobitex over CDMA.

FAST RAMP-UP

The LinkBox is connected to a master control unit within a security system. This unit monitors the detectors at a given site, forwards alarm

signals and transports monitoring signals to and from the central operation center. Mobitex is the primary communications channel, while the wireline modem is used solely as a back-up.

Following the successful field test, S1 placed an order for 30,000 units, delivery of which is scheduled to begin in mid-October and to be completed by the end of the year. Over the next 12 months, S1 expects to equip as many as 100,000 of its customers with CNI's LinkBox. Although some production resources had to be re-allocated, CNI was able to ramp up production quickly and expects to be able to meet this ambitious delivery schedule.

"The S1 security and surveillance services are an ideal application for us at this time, since most of the traffic will be generated at night when network loads are low," reveals Won Baek, adding that the operator expects to derive additional revenue by taking advantage of two-way data communications. For residential customers, this will include various remote control functions, such as regulating heating, opening or locking doors and activating household appliances.

"Mobitex also offers important benefits that significantly enhance customer satisfaction," notes Won Baek. "In addition to 100-percent reliable data communications, Mobitex is naturally a wireless system, meaning that there are no wires that thieves can cut. For this application, we can also take advantage of the closed user group (CUG) feature in Mobitex to guarantee that unauthorized persons are not able to access the security system."

"Various remote control functions such as regulating heating, opening and locking doors and activating equipment will be included."

RAPID ROI

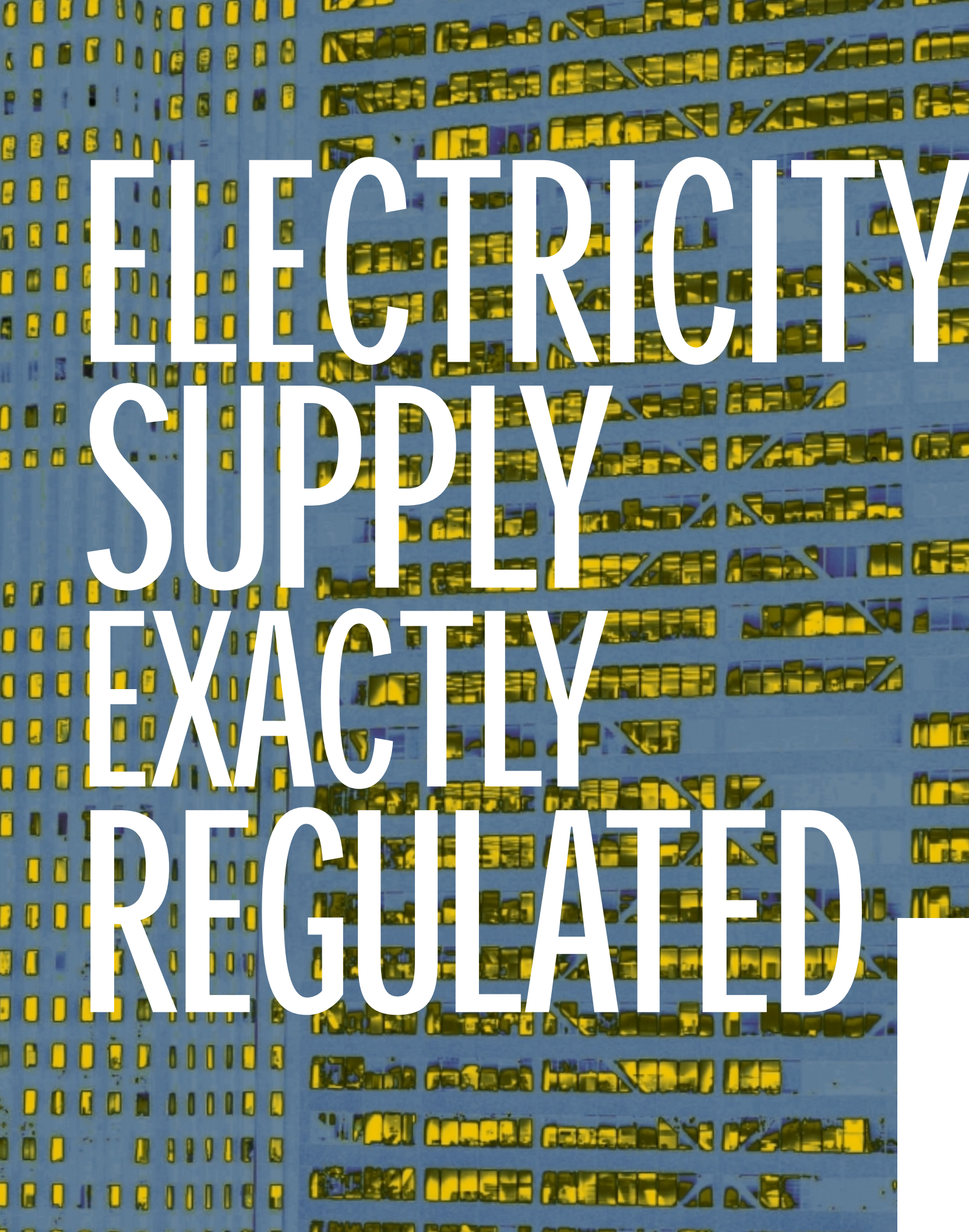
This major order from Korea's largest security company represents a huge vote of confidence in Mobitex. S1 is obviously confident that Intec Telecom's Mobitex network and CNI's LinkBox will significantly improve service for end customers. Equally important, however, is that S1's own calculations reveal that the reduction of communication costs from USD 10 to USD 2 per month will allow the company to reach the break-even point with respect to hardware costs during the second year of operation, thus making the company more competitive and increasing profitability.

"We are very pleased to be working with S1 and to be able to contribute to helping them achieve their goal of being the number one company in the digital security industry," concludes Won Baek. ■

CNI LinkBox

SIZE	120mm(W) x 250mm(H) X 38mm(D)
WEIGHT	300g
INTEGRATED MODEMS	One Mobitex radio modem and two wireline modems
- Radio modem	CNI RPM3 modem complying with the Mobitex standard
- Wireline modems	Supports V.22, V.21, Bell212A, and Bell103
SERIAL PORT	RS-232C interface for checking and maintenance
I/O CONNECTORS	PSTN and Telephone. Control Terminal
INDICATOR CONTROL	LED for communications traffic and system status External: Function switch, Internal: Reset button
POWER SUPPLY	5VDC, 3A (7VDC, 180mA rechargeable battery for radio modem)
TYPICAL CURRENT	< 180mA
MAX CURRENT (TRANSMIT)	< 220mA





ELECTRICITY SUPPLY EXACTLY REGULATED

"Operation personnel can respond appropriately to avoid surplus production of electricity."

The Energy Systems and Services (ESS) division of Nuon, one of the Netherlands largest energy and water companies, recently installed a wireless telemetry solution in its nationwide electricity network. Some 500 co-generation plants distributed throughout the country are now connected to the Mobitex network operated by RAM Mobile Data. For a relatively modest investment, the utility company is now able to regulate energy production exactly. This not only makes energy management more efficient. For Nuon, which is a green energy company that prioritizes renewable energy sources, the new application is an important part of its profile.

The 500 WKK installations control the operation of plants driven by natural gas or biogas that can be started automatically and remotely to produce heating, cooling, steam or electricity. Electricity not consumed locally is returned to the network. Some 45 percent of all WKK installations are at this type of plant, while the remainder are installed at other locations, such as hospitals and swimming pools. Plants are naturally equipped with flue-gas filters to reduce the emission of carbon dioxide and other greenhouse gases.

Paul Marquering from Nuon's ESS business unit is responsible for the project. He explains why it is so important to know exactly how much electricity is delivered. "We always have to work with our colleagues in other business units and take their requirements into consideration. The other units trade in energy and naturally want to have an optimal grasp of total electricity production so that they know how much power they need to buy. To provide them with this information, we produce forecasts every 15 minutes," says Marquering.

In addition, the wireless telemetry application provides Nuon with a tool to determine if forecast amounts need to be raised or lowered. Because Nuon is able to quickly increase or decrease production, operations personnel can respond appropriately to avoid surplus production of electricity.

EFFICIENT POWER MANAGEMENT

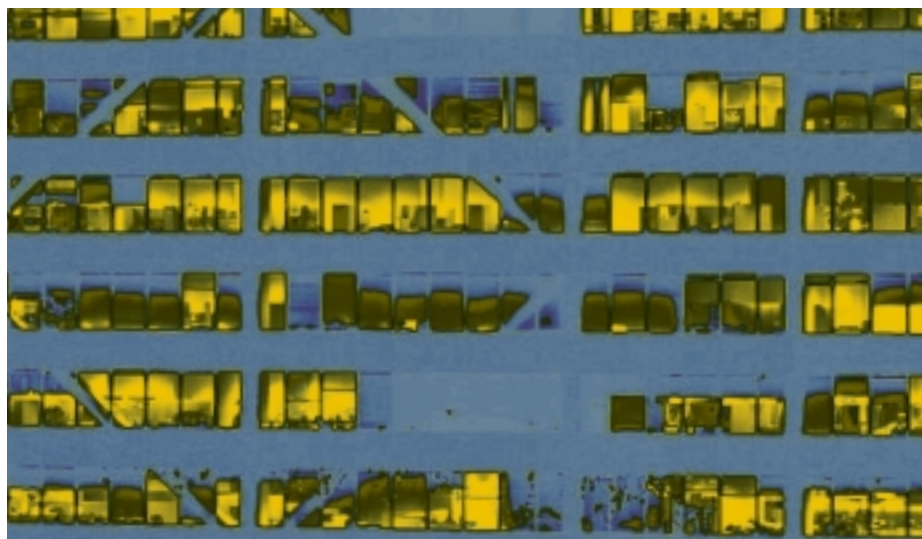
Continuous monitoring is essential to achieve these benefits. Prior to the introduction of the wireless telemetry application, plant availability and maximum output power could only be determined on a daily basis. There was also little uniformity in this information. Today the WKK application makes information available instantly, thus increasing the efficiency of power management. The wireless telemetry application also facilitates settlements, since changes in power output can be metered up until five minutes prior to final settlement.

Paul Marquering and his project team evaluated several options for data communications. "We quickly realized the benefits of true

wireless data communication over the Mobitex network operated by RAM Mobile Data. A fixed connection was too expensive. GSM, on the other hand, was not sufficiently reliable, while GPRS was not available. RAM Mobile Data was able to guarantee reliable data transmission," says Marquering.

Nuon worked with Romesq, a Dutch supplier of telemetry and monitoring applications for utility companies. Romesq provided the hardware and software and worked closely with Paul Marquering and his project members to develop the WKK application.

"This was crucial for us, since we do not have our own IT department," notes Marquering. "We had to ensure that the WKK units in the power plants worked correctly against Nuon's central systems and that remote monitoring and control could take place without operator intervention. Romesq delivered a system that gives us tremendous flexibility." ■



LEVERAGING THE POWER OF WIRELESS HANDHELDS



The TWM3 wireless handheld from CNI (Communication Network Interface) is one of the most interesting of a new generation of Mobitex devices.

Originally developed for Intec Telecom's 900 MHz Mobitex network in Korea, the TWM3 is now available in 800 MHz and 400 MHz versions, meaning that it can be used in all Mobitex markets around the world. UK Mobitex operator Transcomm and Hong-Kong operator TDL are the latest customers to begin offering the TWM3 to customers and will promote it heavily in their service launches.

The TWM3 has been featured previously in Mobile Data Magazine (no. 2, 2001), which contained a detailed article on the technical features of the device. This article will instead focus on the TWM3 as a platform for application developers and the tools available for creating applications. The TWM3 is an excellent application platform, not least because it includes support for WAP (Wireless Application Protocol) and POP3 e-mail and is supported by a software development kit (SDK) produced by CNI.

The TWM3 SDK includes all libraries and files required for building an application, a development environment that includes a simulator for testing applications and more than 800 pages of documentation divided into an installation guide, a programming guide and a reference manual. Applications are compiled for the testing in the development environment using Microsoft Visual C++, while an ARM compiler and linker are used to produce the debugged code that will be loaded into the TWM3.

EXTENSIVE APIs

"The TWM3 SDK provides a rich set of APIs (Application Programming Interfaces)," notes Niclas Cahlin, manager for end-to-end solutions at Mobitex, Ericsson. In addition to the APIs for Mobitex and serial communication, there are Windows, Control and Graphics interfaces for creating windows and populating them with buttons and other controls and for drawing on the screen, which is a 160 x 240 display with four levels of gray. There is also an API for the flash memory file system, as well as APIs for task and event management.

The programming model for the TWM3 will be familiar to Windows programmers. A TWM3 application creates windows, registers tasks and events and enters a message loop in which it waits for user input or other events, such as data being received over the Mobitex network. Although CNI-specific identifiers are used, most of the messages are very similar to their Windows equivalents. Although the TWM3 is a very small device, it includes a 32-

"These tiny devices provide a powerful platform for third-party applications."



bit RISC processor, up to 8 MB of memory (RAM plus flash ROM) and a multitasking real-time operating system (RTOS).

The TWM3 has a default screen in which the first six positions are reserved for built-in PIM (personal information manager) functions, while the others are available for displaying the icons of other applications. Once the user has selected an application by tapping on an icon, the application can take control of the entire display and receive all user input.

CNI has developed a number of applications that Transcomm will include in the devices sold in the UK. Communications applications include a POP3 e-mail client, a WML (Wireless Markup Language) micro-browser and an application called PushBox for WAP push pages. PIM applications include address, schedule, to-do and date book applications. There are also games, such as Reversi, Puzzle and Block, and a musical composer for creating new alert melodies plus device configuration tools.

THIN-CLIENT APPLICATIONS

"We are targeting the TWM3 handheld on the Transcomm network at both our existing customer channels and new ones, including SME (small-to-medium enterprise) business users and field workers and fleets. The primary application that we have identified is POP3 e-mail access, with the WML micro-browser a close second," reveals Jason Railton, software development engineer at Transcomm.

As a network service provider, Transcomm does not intend to develop applications on its own, but is instead working closely with its business partners and customers to promote application development. Several customers are developing "thick client" applications that will run on the TWM3, but no applications based on the TWM3 SDK are available yet. ►



"We have come up with a 'thin-client' strategy that drastically reduces development costs for our customers," says Jason Railton. "The TWM3 SDK requires two compilers, one to compile the application for the emulator and another to produce the final code. If the developer does not have experience of mobile devices, then it can take a long time to learn how to get the most out of the SDK. As an alternative, we therefore investigated provisioning applications through the WML micro-browser. We found that interactive WML pages could be produced with very little effort and no software licensing costs."

The tools required for producing micro browser-based applications are an Apache HTTP server, the page scripting language PHP and the MySQL database, all of which are open-source applications that can be downloaded with no licensing fees. Most developers will undoubtedly run these tools under Windows, but open-source versions are available for Linux, Mac OS and other popular operating systems.

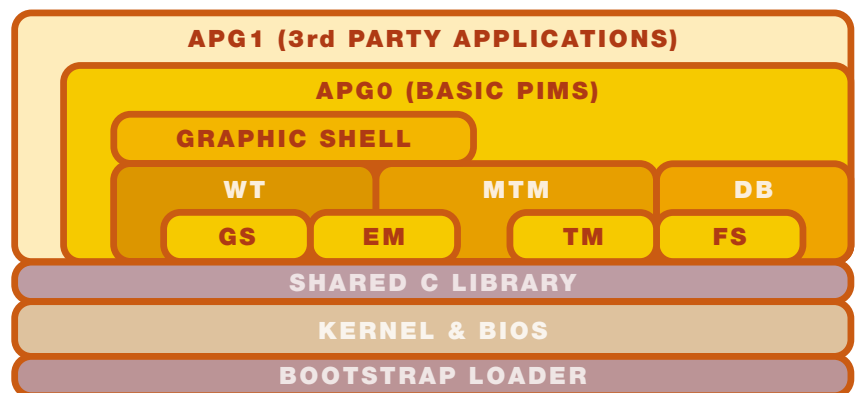
RAPID APPLICATION DEVELOPMENT

Using these tools, Jason Railton developed a sample application that demonstrates how a control center can use the TWM3 to pass work on to field service personnel. The application allows a new job to be entered on a web page and includes buttons to send the job and to update the job list. When the mobile worker has received the job order and completed the form, it is returned so that the control center can view the response.

"The entire application was developed by one person within two weeks with no cost for training or software licenses."

"The entire application was developed by one person within two weeks with no cost to the company for external training or software licenses. Clearly this adds value to the micro-browser over and above the day-to-day browsing of web sites. The larger screen size compared with a mobile phone improves the appearance of WML pages, and there is always the cross-platform compatibility gained by using HTML and WML standards", notes Railton.

As developers become more familiar with the new generation of wireless handhelds, new applications can only increase their popularity. Already extremely useful straight out of the box as PDAs and for wireless e-mail and messaging, these tiny devices provide a very powerful platform for applications that are only limited by the imagination. ■



The TWM3 supports two application groups for built-in (APG0) and third-party (APG1) applications with the following run-time environment: Windows Toolkit (WT), Message Transaction Manager (MTM), Database (DB), Graphics System (GS), Event Manager (EM), Task Manager (TM) and File System (FS).

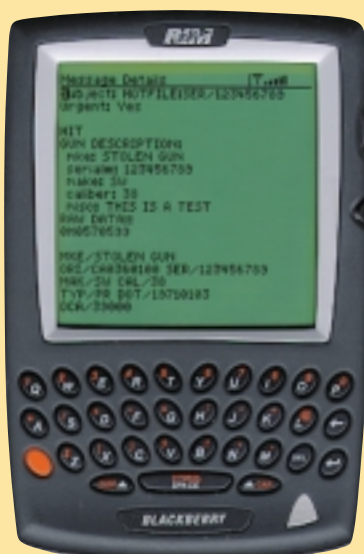


Palm i705

The Palm i705 for 900 MHz Mobitex networks offers two alternatives for developers that are somewhat similar to the alternatives for the TWM3 described in the main article. One approach is to develop a native application for Palm OS using the Palm OS 5 SDK. The other alternative is to develop a web clipping application that accesses special web sites.

Developing a native application for the Palm OS is a relatively complex undertaking and requires in-depth knowledge of programming and the Palm OS. The Palm OS 5 SDK, however, may be downloaded free-of-charge from the Palm website after accepting a license agreement. As is the case for most handheld devices, the Palm OS SDK includes an emulator in which an application can be tested and debugged before the final code for the handheld is produced. The Palm OS SDK uses a single C compiler (Code Warrior) for producing both versions.

Web clipping offers a faster method for developing applications with more limited functionality. Web clipping applications are created by compiling standard HTML pages using Palm's Clipping Application Builder tool, which generates a PQA-file that is installed on the Palm device. When the user invokes the clipping application, a Web Clipping Viewer application opens a website and renders its contents. Behind the scenes, the clipping application is communicating with a Palm.net proxy server that handles Internet communication. ■

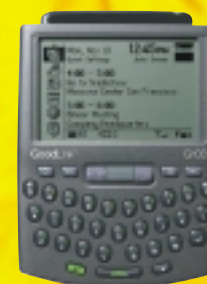


RIM WIRELESS HANDHELDS

RIM currently offers two families of wireless handheld devices. One family consists of RIM 950 and RIM 957 handhelds for Mobitex (and their counterparts the RIM 850 and RIM 857 for DataTAC), while the other family is the Blackberry 5800 series of wireless handhelds for GPRS networks. There is a different development environment and a separate SDK for each family. Both SDKs can be downloaded from the Blackberry website after accepting a license agreement.

The Blackberry SDK version 2.1 for Mobitex devices (RIM 950 and 957) contains a full PC-based emulation environment, all the APIs and libraries required to build an application and extensive documentation. Microsoft Visual Studio 6.0 is required for building applications, but because the RIM devices employ an Intel 386 processor, the same Visual C++ compiler can be used to produce applications for the emulator, as well as the handheld device.

The Blackberry 5800 handhelds for GPRS introduce a completely new programming paradigm based on the Java 2 Micro Edition (J2ME). The runtime environment for the application includes a special version of the Java Virtual Machine (JVM) called the KVM and supports both CLDC (Connected Limited Device Configuration) and MIDP (Mobile Information Device Profile) options. ■



GOODLINK G-100

The Good G100 is a new wireless hand held being introduced in the North American market this autumn. Developer tools and support for third-party applications are expected to be released shortly, but no details are available at this time. ■

MOBILE MARKET NEWS

Wireless email and messaging have driven the market in the US and loaded Cingular's Mobitex network with nearly one million subscribers. Working on the premise that no technology is so good that it cannot be made better, Good Technology has developed new software and a new wireless handheld that are sure to increase the popularity of Mobitex and drive growth further.

GoodLink™ is a wireless corporate messaging system that provides corporate customers with an end-to-end system for continuous synchronization, meaning that information on the handheld is always the same as what is on the desktop.

This is a cradleless system for wirelessly connecting mobile workers with valuable enterprise data and e-mail.

With GoodLink the device can read attachments, and it takes about 10 seconds to download a one-page attachment containing a Microsoft Word, Excel or PowerPoint document, for example, over the Mobitex network.

To further enable corporate customers to extend valuable data sources wirelessly to mobile users, GoodInfo™ wireless information system gives users

GOOD DOES IT BETTER



access to web-enabled applications from SAP or Siebel, as well as corporate applications, intranets and public websites – even when wireless coverage is intermittent. GoodInfo is optimized for delivering data over today's wireless networks: it uses a query and response delivery model to make information available both offline and online.

"We interviewed many CIOs who told us they wanted one vendor to provide an end-to-end, wirelessly synchronized connection to corporate information that works on a variety of devices," said Danny Shader, chief executive officer of Good Technology, Inc., adding that the GoodLink and GoodInfo solutions improve on other wireless corporate services in several areas, including zero desktop install, wireless two-way synchronization, attachment viewing and an improved user interface.

PURPOSE-BUILT FOR E-MAIL AND DATA ACCESS

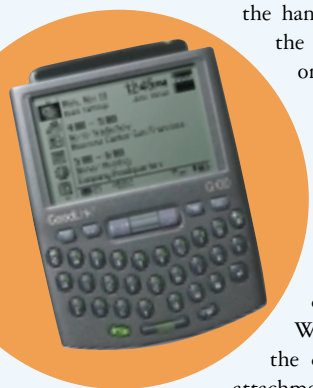
Good states that its wireless service will work on a variety of devices. To fully leverage the power of this innovative software and provide an end-to-end solution, Good has also developed the Good G100 wireless handheld, which will be available in October. This is a powerful, compact and sophisticated handheld that pioneers a new category of synchronized messaging devices -- continuously synchronized wireless handhelds with large screens that are purpose-built for composing and reading large amounts of email and accessing data.

Both the GoodLink and GoodInfo software and the Good G100 wireless handheld are being made available in Cingular

Xpress Mail GoodLink Edition, which will be Cingular's premier wireless corporate e-mail application for enterprises. Deployed behind the firewall, Cingular Xpress Mail GoodLink Edition is an end-to-end wireless system that gives employees of companies the ability to securely access their Microsoft Exchange corporate e-mail, calendar, contacts, notes and tasks, as well as attachments.

"Cingular Xpress Mail GoodLink Edition epitomizes simplicity," says Virginia L. Vann, chief marketing officer for Cingular Wireless. "It is an end-to-end system that simplifies the experience both for the IT department when installing the service and for the end-user when managing his or her e-mail and other desktop functions when away from the office."

Good has already signed up a number of customers for its new service. "Silicon Valley Bank strives to provide the best possible customer service to clients so we deployed GoodLink to our managers to improve customer response time. For these users, instant access to email is a necessity, so they love the completely synchronized wireless connection to corporate email and information – especially the attachments – with no cradling required," said Rebekah Westlake, information technology manager at Silicon Valley Bank. ■





CML EV9000 EVALUATION KIT

The modems inside many of the Mobitex PDAs that are available are all based on the CMX909B modem chip from CML Microcircuits. The CMX909B, which is CML's latest GMSK packet data modem, contains all of the baseband signal processing and Medium Access Control (MAC) protocol functions required for a high performance GMSK wireless packet data modem.

Not content with this success, CML is exploring the next phase of development to ensure not only that CML remains at the forefront of Mobitex modem development, but that its customers are able to achieve the smallest size, lowest cost and best performance in wireless modems for Mobitex.

CML has launched the EV9000 Evaluation Kit consisting of hardware and software intended to help designers experiment, develop and evaluate

designs based upon the CMX909B. New releases of the software, firmware and manuals, as well as support for other devices, are available via CML's web site.

CML Microsystems Plc has undergone a name change within its holding companies. The US operation will be known as CML Microcircuits USA (Inc.) the Singapore office as CML Microcircuits (Singapore) Pte Ltd and the UK office as CML Microcircuits (UK) Ltd in England. ■

WANTED: MDs WHO ARE BIKERS



Biker and doctor Anders Lindberg



When they see a flashing blue light on a motorcycle approaching rapidly from behind, Stockholm motorists may be surprised to see not a police officer, but a doctor flashing past. Equipped with a wireless application running on Swedish Mobitex operator Mowic's network, the doctor on his way to the scene of an accident already has a head start on the ambulance and can easily weave through heavy traffic.

"I receive the first alarm via the earphones in my helmet. At the same time, a red light starts flashing here until I accept the assignment," says Dr. Anders Lindberg, pointing to the wireless

doctor's location and communicate with him at all times.

"As a doctor on a motorcycle responding to an emergency, my main concern is quickly reaching the person who needs medical help and assessing the situation. In some cases, an ambulance is not needed, and I can notify the alarm operator so that unnecessary responses are avoided. If an ambulance is needed, however, I can provide the first treatment on the scene and then assist the paramedics. Valuable time is saved and sometimes also lives," says Anders Lindberg.

This application has been used on a trial basis between 6:00 a.m. and 6 p.m. when traffic is heaviest and a motorcycle can get to an accident scene more quickly than an ambulance. Anders Lindberg, who has been riding motorcycles for many years received emergency driving instruction from Stockholm's motorcycle police.

"Mobitex is highly suitable for emergency services because of the high reliability and robustness," says Michael Palmlöf, business area manager at Mowic. "The tests here in Stockholm are an excellent example of how mobile data services can help to save both resources and time for ambulance services. Emergency doctors on motorcycles should be an attractive alternative in many large cities," concludes Michael Palmlöf. ■



terminal on his bike. Lindberg, who is a specialist in anesthesiology at the ambulance unit of Södersjukhuset, one of Stockholm's largest emergency hospitals, has been testing the new application which includes a motorcycle with medical equipment, a blue light and a siren and communication equipment consisting of a Mobitex terminal and a GPS receiver that allows alarm operators to track the

KEEPING AN EYE ON CHEMICAL SAFETY



Safety, always an important concern when hazardous chemicals are being handled, has been significantly enhanced in an industrial area on Jurong Island in Singapore. The requirement came after September 11th. With the new system, alerts are forwarded instantly to all parties, allowing them to take action quickly and appropriately.

Sixteen chemical industry companies are participants in the project. All of these companies produce or handle chemicals on Jurong Island, which Singapore is transforming into a world-class hub for the chemicals industry. For these customers, local Mobitex operator ST Mobile Data created an Alert Messaging System that links all companies together wirelessly. This software allows personnel at each company to enter an alert that is instantly transmitted to all participating companies and shown on special LED displays in strategic locations, thus ensuring that critical real-time information is automatically disseminated. Mobitex's high reliability will ensure that the transmission of the message never fails.

"The Mobitex Alert Messaging System allows everyone handling hazardous or sensitive chemicals in these companies to keep their eyes open and to alert all parties to take preventative measures, should an emergency arise," notes Wong Kang Jer, account manager at STMD. ■



User types the message to be broadcasted in the PC software.

The radio modem sends the message via the network to the display.

The display unit receives the message, deciphers and displays it on the LED.

DISCRETE WIRELESS WILL FIND THE FLEET ANYWHERE



Discrete Wireless, a 2-year old company that is a wireless application service provider (WASP) based in Atlanta, Georgia in the US, received a Cingular Best Solution award earlier this year at WAVE 2002 for its Marcus™ wireless tracking solution. Discrete won the award for the originality, creativity, usability and robustness of its application in the field force automation industry.

Discrete's low cost Internet-based solution enables small and medium-size organizations to quickly and easily deploy an effective fleet management application. An average customer has 10 users but the application can also be scaled to several hundred users. With the Marcus wireless tracking system, fleet managers have the map information and reports that they need to increase driver productivity, accurately report sales calls and monitor a wide range of vehicle and driver performance parameters.

Discrete uses GPS (Global Positioning System) satellites to provide a live vehicle tracking service. A device in the vehicle that includes a radio modem col-

lects vehicle operational data and transmits it over the Mobitex network to the Discrete Wireless gateway. The web-based Marcus application uses mapping software and GIS data to provide products and technologies for the consumer and professional markets. Discrete Wireless will be adding satellite service worldwide next year. With Discrete Wireless, users are able to view vehicle position and status input data on the Internet and produce reports via a standard web brows-

er. The complex task of tracking the activity of a fleet of vehicles and monitoring driver behavior is critical to customer service, security and efficiency.

Marcus is not only useful in field force automation. Government authorities in Atlanta and the Southeastern United States have begun tracking school buses with Discrete Wireless, performing such tasks as finding buses in any location, logging arrivals at given destinations, and generating alerts if a bus deviates from its route. Marcus thus not only increases efficiency of school bus services, it provides an extra margin of security for children traveling to and from school.

Discrete Wireless recently became an associate member of the Mobitex Operators Association (MOA) and will be participating in the upcoming MOA meeting in Seoul, Korea as both a presenter and an exhibitor. ■



PROGENIE 5000

AT HAND AND FULLY CONNECTED



The ProGenie range of mobile computers are designed to meet the exacting needs of commercial and business users. The ProGenie range is now approved on the UK Mobitex network, and an order for 175 units has already been received for the first application.

The ProGenie 5000 uses an integrated CNI modem and complements a range of devices using other communication technologies. The ProGenie device is specifically marketed into the same markets as Mobitex where the product meets the working

requirements of vehicle based and handheld users in one fully integrated package.

The terminal has a wide-screen color VGA (852 x 480) display and runs Windows CE (version 3.0). Data storage is available with 32MB RAM as standard and expansion with compact flash capable of adding an additional 2GB. The unit is powered by a high capacity, rechargeable Lithium Ion battery, capable of operating for a full eight-hour workday. Integrated options for the range comprise bar code scanning (including the latest PDF417 2D bar code) and GPS reception.

A powerful vehicle cradle is supplied for charging the terminal and connection to multiple external devices, including printers and other equipment. The

cradle can also be switched to an external antenna and GPS receiver when the terminal is used in a vehicle to comply with European CE regulations. The cradle has been specifically designed to be mounted and used in a wide range of vehicles.

Additionally, the ProGenie 2000 batch terminal is currently being used successfully with externally connected Mobitex modems in two UK projects. The cradle has two serial ports to allow connection of the modem and other devices. The first application is used for field service and cash collection in the gaming industry. The second, which is based on a PG-2010 with an integrated GPS receiver, is being used at London's Heathrow airport for managing a shuttle bus fleet.

The ProGenie's manufactur-

ers are now considering developing versions of the ProGenie 5000 to support Mobitex in markets outside of the UK via its network of international distributors. Any interested parties should contact Colin Pike (colin.pike@progenie.co.uk). Further information can be found for the ProGenie at www.progenie.co.uk ■



MOBILE MESSENGER ARRIVES



Korean manufacturer CNI (Communication Network Interactive) recently introduced the TWMK Mobile Messenger, which is designed to work with Mobitex operator Intec Telecom's new Mobitalk messaging service.

Measuring just 88 x 66 x 195 mm, this tiny yet powerful device is actually slightly smaller than the familiar RIM 950 handheld yet offers a QWERTY keyboard plus a thumbwheel and home key for access to messaging functions. In addition to its messaging functions, the TWMK supports address book synchro-

nization with Microsoft Outlook, data synchronization with a PC, downloadable icons and melodies, several games and a calculator.

The TWMK's messaging functions are exceptionally powerful. Up to three POP3 email accounts are supported with true push functionality fully implemented in the Mobitalk messaging service to ensure that messages are always received instantly. The TWMK also supports interactive messaging, multiple chat sessions and wireless chat sessions for the Mobitalk user community. The Mobitalk service offered by Intec Telecom also includes gateways for email, SMS and fax messages.

The TWMK will initially be available in 900 MHz version for Korea. Because it is

based on CNI's TWM3 OEM radio modem for Mobitex, 400 MHz and 800 MHz versions for other Mobitex markets can be expected shortly.

"The TWM is a new product that will give us the possibility to reach new target groups, thereby further accelerating Mobitex growth" says Iris Ödman, after-sales director for Mobitex at Ericsson.

Simultaneous with the announcement of TWMK, CNI

also announced the TWM3 Plus, an enhanced version of the wireless PDA that is already available in 400 MHz, 800 MHz and 900 MHz versions. The new TWM3 Plus is identical in all respects to the TWM3 but features enhanced software and a larger capacity of 8 MB flash and 8 MB RAM memory. ■



APPLICATION STOREFRONT FOR WIRELESS SHOPPERS

Building on the success of its Application Developer Program, which was initially designed for Mobitex and now has more than 6,000 members, Cingular Wireless has launched the Application Storefront. This initiative provides a venue for developers both large and small to market their applications to millions of Cingular Wireless subscribers. Mobile Data Magazine talked to Roy Tarantino, Director, Application Development Environment, to find out more about this innovative approach to marketing wireless data.

What is the applications storefront and how was it conceived?

Cingular's Applications Storefront is an extension of our wireless developers portal that provides a means for developers to sell applications to the Cingular subscriber base.

The original Cingular Application Developer Program was established early in Cingular Interactive's history to support wireless data developers working in the Mobitex environment. The current program and portal evolved from the original to support not only Mobitex developers, but also those developing wireless applications for all of Cingular's technologies including WAP, messaging and wireless Java.

What benefits does the applications storefront have for developers?

On the Developers Portal, developers can find the latest documentation on the various network interfaces, third-party Software Development Kits (SDKs), white papers, and FAQs. Application code samples, as well as developer discounts on airtime and devices are available, and the portal also provides support via community discussion forums moderated by Cingular engineering and outside experts. In addition, there is also a trouble ticketing system.

Application developers can submit applications from the portal for inclusion in one of Cingular's Application Storefronts. The storefronts are well placed on the top deck consumer and business portals and are integrated with the Cingular billing system so that customer purchases are charged to their phone bill. The Cingular Application Developer portal features an extranet that developers can log into and track the progress and sales results of their applications.

How is interest among developers?

Interest is very high. We currently have nearly 6000 members, with several hundred new members being added each month.

How many applications are available through the Application Storefronts?

There are close to 2000 applications available from the Cingular Application Storefronts.

How has the response been among customers?

Interest has been high. We get over 19,000 visits per day on the storefronts. Purchases are beginning to ramp up.

What are the most popular applications?

The most popular applications are games, branded portals (MSN, Yahoo, etc), news and weather services.

What is the application mix in terms of technologies?

Because Java phones are just being launched, there are currently no Java applications on the storefronts. Mobitex applications represent a sizable proportion of the mix, but messaging and WAP-based applications currently dominate, since there are many more mobile phones than Mobitex users on Cingular Wireless' networks.

Mobitex applications are also complete end-to-end solutions and applications are thus limited to those that use messaging and email interfaces on RIM handhelds. With the launch of new devices for Mobitex and Java phones, however, the mix will change.

Does the Applications Storefront target any particular customer segments?

No, the intention is to establish an eco-system. Developers are free to submit any type of application (except for obscene material). The marketplace will determine which applications are valued by consumers. That will spur the growth of creative, innovative and useful wireless applications.

What requirements must developers meet to have their application included on an Application Storefront?

There are very well defined requirements that applications must meet. The application must be stable and reliable. It must run well on the devices and phones that Cingular sells. There are also subjective criteria, i.e. will customers



feel good about spending money on the application? Each application is given a rating from 1 to 5 stars before it is listed on the storefront.

Are developers typically individuals and small companies or do larger companies also find Applications Storefront useful?

There are really no typical submissions. There is a mix ranging from one-man shops to large companies submitting applications.

What is the revenue-sharing model for application storefronts?

Developers receive 70 percent of each sale, while Cingular receives 30 percent to cover costs for administering the storefronts, testing applications and customer billing.

Does selling an application via the Application Storefront preclude the use of other channels?

No, application developers are free to sell their applications via any other channel. There is no exclusivity of any kind.

In what ways can Application Storefronts contribute to greater use of wireless data?

Application development is encouraged by helping developers to monetize their efforts. The portal contributes to greater use of wire-

"We have over 19,000 visitors per day on the storefronts. Purchases are beginning to ramp up."

less data by providing incentive to developers to produce applications that deliver value to the consumer.

Are Mobitex applications a model for developers targeting phone-based devices?

Given the popularity of WAP, Mobitex is not currently a model that many developers target. With the launch of Java phones, however, there will be a shift to intelligent client-side applications that use a packet interface. Such client based applications more closely resemble the Mobitex client / server model, as opposed to the browser model that WAP uses. When phones provide a sophisticated, standards-based environment, the Mobitex client / server model becomes very relevant to developers.

How is the Applications Storefront marketed to end-users?

The Application Storefronts are prominently featured on Cingular's consumer portal, My Wireless Window. On the Cingular WAP deck, there is a direct link to the storefront. This allows customers to purchase applications from the phone or from the desktop. The storefront is also integrated with the book-marking system on the portal, allowing easy access to purchased applications with minimal clicks.

What are the plans for the future?

With our upcoming launch of Java phones, developers can make available very compelling wireless applications with excellent user experiences and off-line operation. We are also enhancing our billing system to support subscription billing. Other plans include launching MMS (Multimedia Messaging Service), and opening up MMS-SMS access to developers. ■

Wireless wipeout

Wireless devices are usually pretty reliable. What I found out recently, however, is that they may not work so well in boats.

To start at the beginning, it was one of those rare evenings when friends get together to relax and the weather gods seemed to have blessed them. The night air was warm with a gentle breeze that seemed to wash away all worldly concerns. We were at an amusement park where imaginations were allowed to run free and fantasies suddenly became real.

Water was to be the theme for the evening. Although the bays and islands were artificial, we seemed to be living in a tropical paradise in which all kinds of adventures were possible. Naturally, many of the attractions featured boat rides.

Perhaps communicating with the outside world should not be a concern at times like these, but the wireless revolution had apparently transformed paradise, too. Jaded as I was by my work as a roaming reporter and consultant, I could not help noticing how many people seemed to be afraid to let go and insisted on using their cell phones and wireless messaging devices.

My first thought when I saw a man answering his cell phone just as he was starting a boat ride that would be attacked by pirates was that perhaps it was the almighty and omnipresent supreme being calling to remind him that he did not have to be reachable anywhere and anytime and that there was nothing sinful about a little relaxation. When I later saw him sending off an email on yet another wireless device as he got off the boat, I realized that the man had a direct line to the devil.

My boat ride was to be attacked by sharks. Naturally, my handbag was waterproof, and I had turned off my wireless handheld and stowed it securely in an inner pocket. Following my natural instincts, I headed for a safe seat in the stern of the boat. Perhaps I would not experience the full effect of the shark attack, but at least I wouldn't get wet.

"What's the matter with you guys? Are you chickens?" called a friend in our party, who clearly intended to sit at the bow and take command of this voyage. Grimacing, I realized that I would be forced to take a more exposed seat at the front of the boat together with my friends. Reluctantly, I let my friend guide me to a seat that was clearly labeled with the words "Splash zone."

Immersion in the water world began almost immediately. Realizing that I was going to get soaked and that this would ruin my hair, my friend gallantly offered to change places with me so that he would be sitting on the outside and shoulder the brunt of the splashes that would occur on the ensuing voyage. That was when the boat careened.

"Man overboard!" cried all hands in unison. With the pitching of the boat, my friend had fallen off and was now holding on to the side for dear life. Although I am sure that he valued his life, he was also holding up his shirt pocket above the surface of the water in an attempt to protect his wireless handheld.

I reacted instantly by leaping up and grabbing my friend's hand to help him climb aboard the boat again. We were entering a perilous passage of the voyage, and holding on to my friend required an almost superhuman effort. The sharks would be attacking soon, and my friend realized that I was putting myself in danger to rescue him. In yet another demonstration of gallantry, my friend let go of my hand and forcefully pushed me back on the boat. Then the sharks were attacking, and I saw my friend disappearing beneath the waves.

When the ride ended and I climbed off the boat, I was surprised to see my friend standing at the exit and furiously punching the keys of his wireless handheld.

"Wow! That was a close one! I'm just sending a message to my wife to tell her that I saved you from drowning," said my friend as I approached. Unfortunately, as he quickly discovered, waterlogged wireless devices don't work very well. I started to take out my own handheld when I saw his wife approaching from behind. Apparently, she had been coming to meet him and witnessed the entire incident as he had fallen backwards while pushing me back on to the boat, gotten thoroughly soaked, stood up in what turned out to be knee-deep water and then waded to the exit just before our boat returned.

"Yes, I know, honey," said my friend's wife, coming up to him and giving him a big hug. "I was just coming to meet you when I saw your wireless wipeout."



Wanda Wave