TelcoNEWS

Facts and Visions from the World of Telecommunications. Information from Hewlett-Packard for Decision-makers

The TelcoMagazine from HP Software

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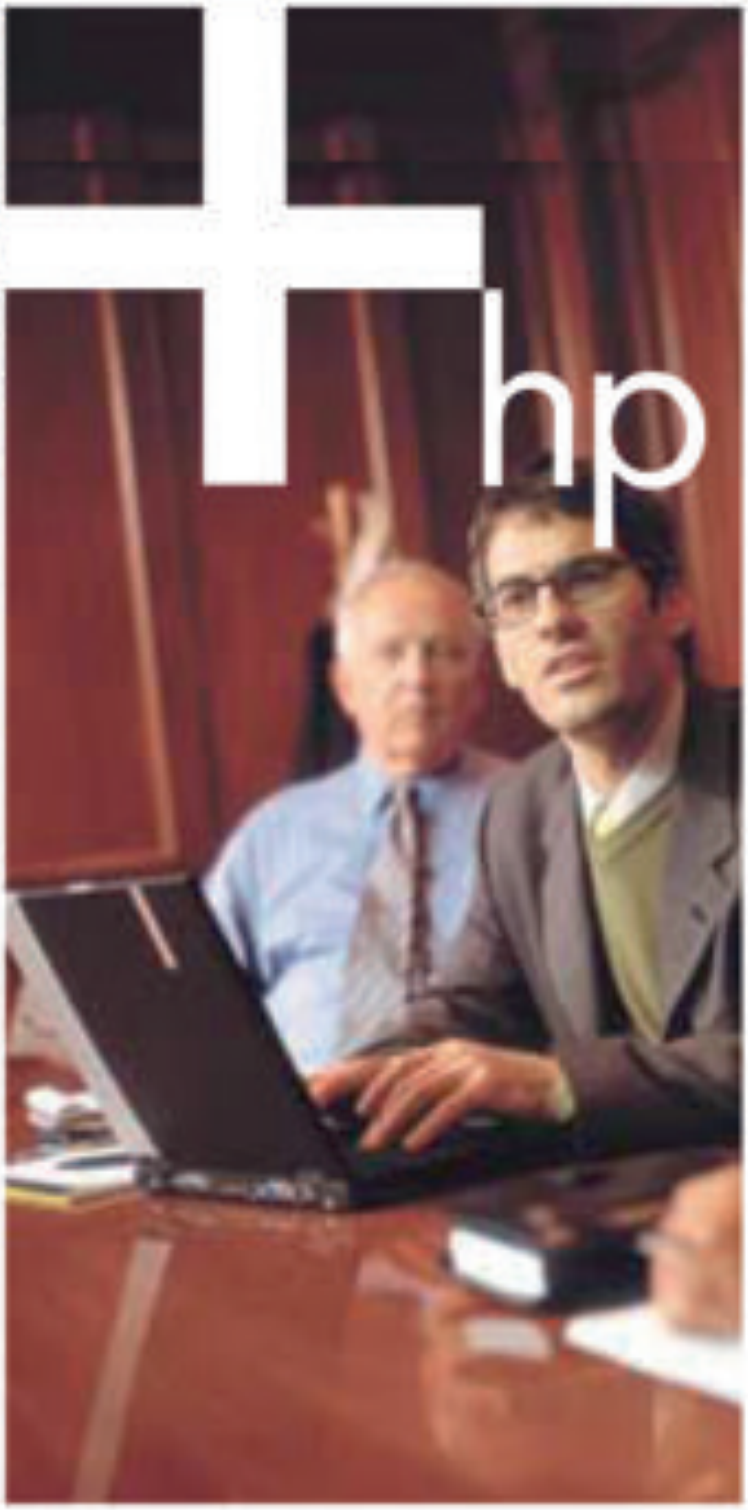

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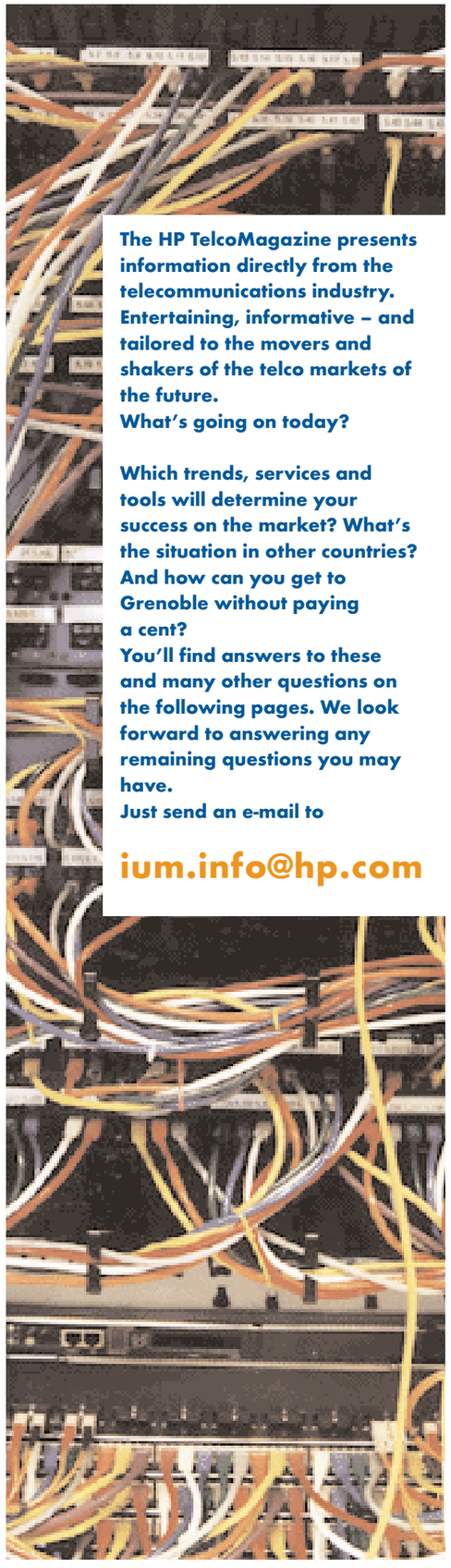

The HP TelcoMagazine presents information directly from the telecommunications industry. Entertaining, informative – and tailored to the movers and shakers of the telco markets of the future.
What's going on today?

Which trends, services and tools will determine your success on the market? What's the situation in other countries? And how can you get to Grenoble without paying a cent?
You'll find answers to these and many other questions on the following pages. We look forward to answering any remaining questions you may have.
Just send an e-mail to

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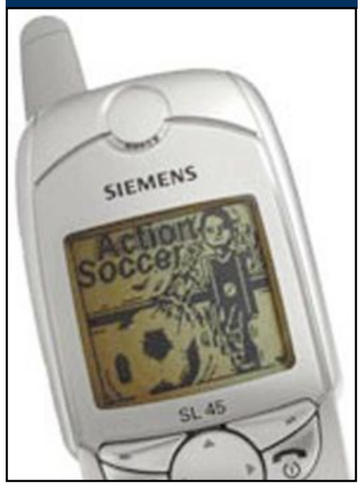
Popular Mobile Games

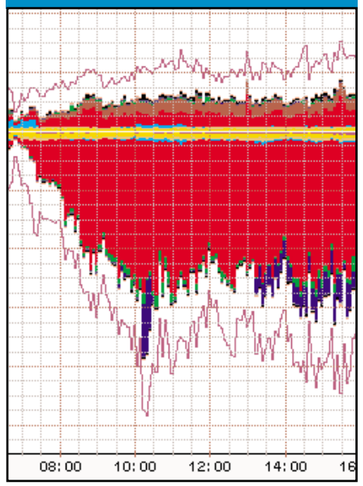


It may be a Formula 1 race simulation or an adventure with a fantasy figure facing tribulation at the hands of elves and witches: games that can be directly installed on a mobile phone via mobile services are tempting more and more people. A lucrative prospect for providers. According to a study conducted by market researchers at The Research Room, revenues generated worldwide by mobile games are to climb from 561 million US dollars in 2002 to more than 41 billion US dollars in 2007. The main reason for this explosive increase in revenue, according to The Research Room, is primarily that wireless carriers are recognizing the potential of this (still) young market to an ever greater degree. Another quite surprising result of the study: the providers are said to earn slightly more with the transmission of game data than the manufacturers with the sale of the games themselves.

Customers Uneasy About Pricing

The expectations of German mobile services providers have not yet become a reality: a large number of mobile phone owners in Germany are still skeptical of new multi-media services, such as the transmission of animated MMS messages with photos or video sequences. The consulting company A.T. Kearney researched the causes in a recent study. The main results of the study: the current reserve vis-à-vis multi-media services is mainly a reaction to exorbitant charges and confusing pricing models. Martin Sonnenschein, Vice President of A.T. Kearney, points out that it's not just a matter of price for customers. The upcoming breakthrough of new mobile services will depend much more on the ability of the providers to implement transparent price structures fast, in addition to communicating these structures clearly and simply. The key challenge in this regard is to introduce a price awareness for multi-media services into the minds of consumers. Mobile users may generally have a well-honed feeling as to how much a phone call of a certain length should cost. But this instinctive „pricing knowledge" has not yet been established for data transmission via mobile phone, according to Sonnenschein. A.T. Kearney cites the simple and transparent price structure of the i-Mode service, successful in Japan, as an example of a functioning model.

IP Traffic on the Rise



The Internet Protocol (IP) is again on the up and up. Global IP traffic is to increase by approx. 67 percent in the current year compared to 2002. IP infrastructure specialists at Telegeography include this daring prognosis in their report entitled „Global Internet Geography 2004". Their forecast is based on statistics from the first quarter of this year obtained from large carriers. The IP experts are particularly pleased that, in the meantime, there is once again more reality orientation among the guild of large carriers: the tangible increase in global IP traffic and the implemented broadband extension would currently go well together. The report indicates that the investment decisions of the carriers are no longer marked by unrealistic optimism, as was the case in boom years past. Instead, these decisions showing good sense. according to Telegeography, the total capacity of the transatlantic routes is currently 388 Gbit/s; the average IP traffic underway is approx. 70 Gbit/s. IP experts forecast a total bandwidth between Europe and North America of 648 Gbit/s for 2004. IP traffic is then to average 117 Gbit/s.

Burning the Candle at the Wrong End

IT security in many companies leaves much to be desired. A study conducted of a total of 1,400 enterprises in 66 countries by the auditors at Ernst & Young came to this sobering conclusion: a third of the surveyed companies had to admit that they were insufficiently prepared to respond to an attack on their computer systems. Approx. 55 percent of the enterprises explained that budget limitations were the most common reason for this reticence in IT investment decisions. According to Marcus Rubenschu, IT security expert at Ernst & Young, corporate objectives and security strategies are often at odds. Many companies are prepared for large-scale disasters. But they are vulnerable to everyday risks, such as viruses and worms or the theft of confidential information.

Realtime Billing from Fujitsu Invia

Profitable business is based on loyal customers. A home truth. But how do telcos go about positively influencing the satisfaction of their customers and generating reliable revenues in this age of cut-throat competition? Fujitsu Invia has a convincing solution. The IT company, headquartered in Finland, offers enterprises an rtBilling system that facilitates the implementation of target-oriented promotional activities and individual payment models.
On the basis the Invia solution developed with HP technologies, mobile services providers can implement activities conducive to customer loyalty that induce contract partners to opt for a particularly efficient billing or payment system. This means, for example that those agreeing to settle charges by direct debit or e-mail invoice can send 20 MMS messages free of charge. A WIN-WIN situation: the provider reduces his administration costs and at the same time advertises the new service.
Not only that. On the basis of Fujitsu Invia's rtBilling, futuristic payment models are possible which overcome the limits of prepaid and postpaid billing systems. One example: a corporate customer uses the postpaid variation between 9 and 5 o'clock and crosses over to the prepaid variation outside of office hours. It is also conceivable that consumers may opt to settle larger transactions, such as on-line shopping via mobile phone, through monthly invoices and pay charges for cheap voice or SMS services immediately via prepaid card.
There is another reason why rtBilling is proving to be an effective tool for mobile services providers to secure revenues: as a realtime solution, the system prevents the misuse of data services and reduces the risk of unsettled customer invoices. rtBilling is able to determine in less than 100 milliseconds whether to permit a transaction and which charges it is subject to for billing.

Preferential Treatment as Growth Catalyst

Telcos have a lot to learn when it comes to the treatment of key customers. The answer is effective Service Quality Management.

Dirk Stadler is quite annoyed. With the various telecommunications service providers he deals with. „As a result of my business and personal activities, I often spend thousands of euros every month on phone, mobile and Web services," says the self-employed commercial graphic designer: „You'd think that, given those figures, I'd be what is known as a premium customer."
And he is used to being treated like one in his interactions with companies of other service sectors. The hotels he regularly chooses reserve him a room with one of the nicest views and clean his suit at no extra charge. As a frequent flier, he enjoys particularly attractive perks. When he calls his repro service, he knows that his job has top priority and won't be left as occupational therapy for a bored trainee. Since he is self-employed with private health insurance, he has access to a number of special benefits and can be sure of preferential treatment at the hands of doctors and nurses should anything befall him.
Even the railway has now come up with ways of making regular customers like Stadler feel special. The sorry exception remains: providers of telecommunications services.
„In the case of projects with rapidly approaching deadlines that require the transmission of graphics files with several hundred Megabytes, it is unacceptable that the transmission is disrupted half way through. But this kind of thing happens all the time. When I participate in a video conference, I must be able to rely on having sufficient bandwidth. But the reality is quite different: distorted images and sound," complains Stadler: „With telco companies, I have the same chances of good service as someone whose monthly phone bill is 20 euros. The enterprises in this industry should take a moment to think about whether it is wise to treat all customers equally."

N.N. can understand why Dirk Stadler is annoyed all too well. The telco expert from Hewlett-Packard has also recognized the lack of focus on customers' individual wishes and requirements. He sees it as being one of the major shortcomings that unites almost all service providers. And their chance to return to a profitable growth curve after the drastic decrease in the prices of many communications services. „Many private and corporate customers with special requirements would most likely be willing to pay a few euros more if this would ensure reliable quality. So far these customers haven't had much of a choice: if they switch providers, they jump out of the frying pan and into the fire. Throughout the industry, convincing business models that are based on preferential treatment of key customers are still lacking. The first to launch this kind of offering on the market should count a rapid rush of lucrative new customers."
The industry's biggest dilemma is probably that the profitability of the individual customer relationship has dropped considerably. Since liberalization, actual prices have decreased by up to 90 percent – for the Internet as well as for telephone charges. At the same time, the transit costs for forwarding data and voice have increased. A difficult situation in which to turn a profit. N.N.'s conclusion: „It will soon have to become priority number one for network and service providers to ensure that the prerequisites for effective Yield Management are given. This means: providers have to come up with a controlling and management tool package that allows them to concentrate more strongly and more systematically on lucrative business relationships."

A fundamental component of this kind of strategy is customer segmentation based on how much revenue the individual contract partners generate. On this basis, it is possible to define specific service levels for each customer group, service levels that reflect their requirements in terms of communications service quality. Dirk Stadler would likely be assigned to the customer segment generating considerable revenue and requiring a large amount of bandwidth, with little tolerance of transmission disruptions.
But simply defining and negotiating service levels is not enough. „In order to focus more on the individual requirements of the contract partners through consistent Yield Management on the basis of customer segmentation, carriers and service providers mainly need tools for monitoring the agreed service levels. Solutions like our HP OpenView Service Quality Manager (SQM). With this software, it is possible to define individual specifications for the service quality for every single customer. For instance, in the form of the assured availability of bandwidth. The solution then provides automatic realtime monitoring and long-term reporting of all current service levels agreements," explains N.N.
In order to complete this task, HP OpenView SQM continuously aggregates the monitoring and usage data from numerous sources distributed across the network. The software compares these values in realtime against specifications and various key indicators. The network technicians responsible can follow the developments in service quality around the clock on their PC screens. And as soon as a service experiences a slight reduction in quality or a service level agreement is jeopardized, a warning is issued in realtime. „But HP OpenView SQM is more than an effective early warning system for service level agreements. More importantly, monitoring data can be analyzed at a mouse click so that the causes of any lapses in performance can be recognized and remedied," emphasizes N.N. and points out that the solution reports also serve as a valuable basis for decision-making in areas such as capacity planning and resource allocation. „The SQM tool's reports provide telcos with the necessary knowledge to systematically optimize and extend their infrastructures precisely as needed to be profitable."

However, one aspect is of particular interest to Dirk Stadler: „If my provider were to have a system that guaranteed the required service quality, I would finally rest easy that all problems will be reliably solved before they can damage my business. And if another company with such an offering approached me, I wouldn't hesitate to switch providers."

Take to the Open Broadband

The Parlay/OSA interface standard, supported by a broad alliance, makes a major contribution to the breakthrough of broadband mobile networks.

„I like to compare the telco industry to German tennis," explains N.N. from HP: „After Boris Becker and Steffi Graf ended their careers, the boom quickly came to a close. Since then, we've all been waiting for a new star that can bring about that kind of euphoria again. For the new model that can generate revenues for sports event sponsors as well as for racket manufacturers. The same applies to the mobile market too: everyone is hoping for a new killer application to come along that will put an end to the reticence, one that consumers and companies can use to exploit the opportunities presented by the new broadband networks."

But how is the telco industry to go about finding this kind of killer application for GPRS and UTMS networks, one that can transform the mobile phone into a pocket-sized multimedia terminal? N.N. once again draws a comparison to the athletes in white. „It isn't a matter of infrastructure. The German tennis industry has plenty of courts and associations. But young talent is lacking. The telco industry has plenty of technology. It's applications that are rare. GPRS has been available for some time; UMTS is on the up. From a technological perspective, there are no problems. However, the industry's structures are too often counterproductive. So far, not one third-party provider has been inclined to bring the opportunities of broadband mobile networks to life with innovative applications."

N.N. knows what kind of systematic, young support is called for: „The type of quality that gets people excited is always the result of variety and competition. If the broad spectrum at the bottom of the pyramid is all right, chances are that the pinnacle is world-class. Therefore, carriers have to ensure that they open their networks. The objective is to develop and operate applications and services for as many different companies as possible. Key players have luckily come to the realization that openness and cooperation are what's currently needed in the telco industry."

N.N.'s hopes are nourished by what lies behind the name of the Parlay Group. The industry consortium, founded in 1998, has taken it upon itself to develop APIs (Application Programming Interfaces) for third-generation networks based on open standards: consistent and easy-to-use interfaces that make it possible for smaller providers with attractive, commercially viable services and applications to log onto future broadband infrastructures. In the meantime, the list of group members reads like a „Who's who" of the telco industry and their technology vendors. Large carriers such as Alcatel, British Telecom, NTT, Vodafone and T-Mobile are included, as are many of the established hardware, software and mobile phone manufacturers: Sun and Cisco, Siemens and Fujitsu, Oracle and HP. In addition, the standardization committees 3GPP and ETSI support the work of the Parlay Group.

In view of this kind of concentrated competence and industry experience, it doesn't come as a surprise that the consortium has long since delivered results: Parlay/OSA has created an API (Application Programming Interface) that allows third party providers to directly use existing basic functions in the carriers' networks, such as the transmission of calls or MMS, and develop these further into proprietary applications and services. In the past, only a few specialized developers were able to program telco applications. The Parlay Group's open programming interface now makes it possible for countless software to create new applications for third generation mobile communications. This releases an enormous creative potential.

N.N. explains: „For a long time, the situation was such that every operator had to create its own many recipes from scratch. Those wishing to develop and operate their own services as third party vendors had to fight through a jungle of proprietary protocols. The standard procedure was to implement a special interface for every single network resource. Parlay/OSA brought an end to this highly complex, susceptible and time-consuming chaos: in future, operators with the corresponding equipment will be able to access all finished functions in the networks via an interface."

Experts agree: in the meantime, Parlay/OSA is mature enough to support commercial applications. Extensive test series have proven that the interface is compatible with the large operators' networks. The initial security qualms have also been alleviated – a particularly important aspect since the interface offers independent companies external access to functions in the carriers' networks. Just as important for the success of the jointly developed API: the first Parlay/OSA-compatible products are also now available on the market. For example, HP OpenCall: Hewlett-Packard now ships its platform for managing services with an optional Parlay/OSA gateway developed in collaboration with a partner.

As a result, the collaborative efforts of the industry leaders should soon pay off: „The Parlay/OSA architecture gives mobile services providers the competence they need to transform their existing infrastructures into additional revenue flows – simply by making it possible for numerous service providers to offer services through their networks. Via a gateway, all service providers can make efficient use of the components of their own infrastructure," explains N.N. and adds: „With Parlay/OSA, carriers can therefore leverage an immense potential in terms of creativity and revenue. An endless number of broadband services will come into being, which will considerably boost the usage value of the basis services. For special purpose providers, it will now make business sense to show what they're capable of. And best of all: each can contribute its core competencies – be it infrastructure, service delivery or application and content development. Everyone stands to profit. The customers included: at long last, an infinite selection. At long last, variety which facilitates the development of killer applications that will awaken an interest in the opportunities of GPRS and UMTS across a broad spectrum of the population."

It is also beneficial that Parlay/OSA has contributed to lowering the costs for broadband services. On the one hand, this kind of intensified competition between significantly more service providers should be conducive to open pricing competition. On the other hand, Parlay/OSA has created a basis upon which the development costs for new applications and services should be considerably lower: a multitude of existing network functions can be used quickly and easily via consistent interfaces. And application modules created for Parlay/OSA are potentially portable beyond network borders – and therefore recyclable.

In addition, significantly more software developers will be in a position to create telecommunications applications, thanks to the dedication of the Parlay Group. Since Parlay X now makes a simplified, Web service-enabled variation of the API available. According to N.N.: „At Parlay/OSA as well, developers were still bound to a programming model that was unfamiliar to many. Parlay X puts all of those developers versed in .NET or J2EE in one boat. Each of the approx. 20 million Web service developers around the globe will soon be able to deliver components for broadband services."

The leading corporate consulting firm in the mobile industry, Northstream from Sweden, has long been convinced of the success of the new standard API: according to a recent study, 300 operators will have opened their networks via Parlay/OSA by 2007. Total revenues are expected to reach the 500 million-dollar mark. The German tennis scene would be delighted at such a prognosis.

Who Does the Customer Belong to?

Hardly any other industry knows value chain processes that involve such closely intertwined links between different companies as the mobile industry. N.N., [Position] at Hewlett-Packard, explains causes, trends and technical challenges.

Mr. N., the world over people are talking about value chains that need to be optimized in order to remain competitive. But you feel that the term value chain has long become obsolete in the telco industry.

Absolutely. Chains are simple, well ordered, linear figures. With one link always precisely following the other. I've recognized this in the automotive industry, for example, where obviously distributed roles build on one another: numerous suppliers produce the various vehicle components just-in-time. The manufacturer assembles the individual parts, in addition to taking care of research and development as well as the design of the products and brands. At the end of the chain, you have the car dealer, who brings cars and customers together and provides the service. For a long time, it was a very similar scenario in the telecommunications industry: when it was still a matter of pure voice transmission, the value chain was simply structured: carriers offered complete service from a single source and under a single brand. The convergence of mobile telephony and IP networks has radically changed all of that. Revenues will soon be generated primarily with value added services based on fundamental services, such as voice and data transmission, and with a multitude of partners involved in their „production". This is anything but linear.

Could you be more precise?

In future, network operation and network access in the mobile industry will only account for 50 percent of profits at most. The rest will be generated through services that use this basis to bring multi-media content to the displays of mobile phone customers or to process on-line transactions: through services that exploit the fact that mobile phones with third generation functionality have direct access to the complete spectrum of Web offerings. The result is a considerably larger and more complex supply chain. Even simple info services involve many other companies in addition to the carriers: from those supplying the on-line editorial staff at a newspaper with individual content, through content bundlers, for instance Internet portals, through service providers as resellers of services all the way to operators of subnetworks. In the case of more complex services, additional players are involved: developers of mobile games and other multi-media services for mobile phones. Enterprises that are responsible for billing, debt collection or credit card verification. Companies that take over the distribution of goods ordered via mobile phone.

It sounds as if distribution battles are inevitable?

Of course: the various players will be sharpening their blades when it comes to sharing revenues. The distribution battles have long since begun. It'll become especially tricky when the time comes to answer the question of who the mobile value added services customer actually belongs to. The service provider, with whom the consumer has the mobile phone contract? Or the provider operating a service on his servers? One thing is clear: it is impossible for each the players involved to bill the end customer separately for their partial contribution to the whole jointly provided service. Mobile phone owners wouldn't stand for it. Customers aren't interested in the complexity of the business relationships in the mobile industry. Therefore, it will come down to just one of the involved players for each service „owning" the customer. That, of course, is the most sought after role in the mobile value network. On the one hand, it offers the best position from which to build up loyal customer relationships and, on the other hand, to profit overproportionally from the market success of new services.

In spite of all the conflicting interests, all the companies involved know that success will be mutual or not at all, don't they?

An important point. The mutual dependency of the players in the telco industry is growing rapidly. Even when there are no direct agreements that bind them. The collaboration between carriers, device manufacturers and content providers is increasingly becoming a factor affecting market success: an offering is only attractive if all of the links in the value chain can deliver promptly with the appropriate quantity and quality. That's what users are interested in.

Given this background, how can the companies in the industry succeed in finding the optimum arrangement in the new value network?

First of all, they have to recognize and accept the new realities of the mobile market. Carriers and service providers in particular have to redefine their business models. With openness and cooperation as central guidelines. And they also have to adapt their technical infrastructures to accommodate the fact that market success in the third generation mobile industry is based on a constant give and take that goes beyond company borders. Carriers who say „It's my resource and I'm the only one that should profit from it" are digging their own graves.

Does that mean consistently opening up technical systems so that different partners can access them?

That's just one aspect. The technical infrastructures themselves also have to be developed further so that they function reliably within the cross-company value networks. This challenge can be described with the triple A formula: authentication, authorization, accounting. The relevance of the first two points is obvious: if business partners are able to access their own infrastructures and can spread services across the infrastructures of different companies, then seamless control is a top priority. Otherwise the door is wide open to misuse. However, I see competence in billing for jointly provided value added services quickly, accurately and completely as being even more crucial to success in the opening value networks in the mobile market.

Because the cash flow in mobile value added services is just as complex as the content flow?

Exactly. What service providers will need most of all is a powerful mediation system, such as our HP Internet Usage Manager. IUM is namely able to gather billions of individual usage data details every second from beyond the borders of the individual networks and translate these into billing-relevant information in realtime. This competency is of course basic if I, as a provider, insist that the customers of a mobile value added service „belong" to me. And not to other providers with whom I may have to collaborate as a partner, but who nevertheless remain my competition.

The Right Place at the Right Time

Thanks to location-based services,
mobile services providers can now pinpoint our location.
Not at all to our disadvantage.

There are more pleasant ways to spend an evening than reclining in your car in Belgium. With smoke rising off the engine and not a soul in sight that could provide assistance. This was the fate of Erich Meier. Meier, who works for a German company and is often away on business in Germany, Belgium and the Netherlands, had actually planned to drive home after his last appointment with a customer. But his vehicle dashed those plans. And he is still quite a distance from the border. Meier is not very familiar with this part of Belgium. He doesn't know where he'll be able to find a mechanic and, if worse comes to worst, accommodations. But Erich Meier isn't anxious. He has a GPS-enabled (Global Positioning System) mobile phone capable of receiving so-called location-based services (LBS).

Meier has subscribed to the corresponding services from his provider. Since the new mobile technology is able to determine his location, he immediately receives the information that he needs. First, the contact information on the closest mechanic is displayed on his mobile phone. Meier calls the number right away and describes the exact damage via SMS so that the garage get ready for the necessary repair work. Then he informs his wife, his employer and his insurance company of the situation. Since his wife now has his precise location, she lets him know that she unfortunately cannot pick him up. Too far from home. Luckily, his boss is more helpful: he gives Meier the go ahead by phone that the company will foot the bill for a hotel on account of the damage to the company car. Next

Meier queries the LBS info service for details on accommodations in the area. He opts for an economically priced hotel that, according to the info service, is known far and wide for its fish specialties. Meier loves fish. A taxi, which thanks to LBS can determine his exact location, takes him straight to a meal fit for Neptune. The rest is up to the garage.

Erich Meier's car problems are fiction. But the described scenario is not utopic in the least. In London, for example, there is already a taxi company that uses location-based services to route customers. The customer's location is determined directly when the taxi is ordered via mobile phone, with the exact coordinates compared against the location and load data of nearby taxis. Shortly before the taxi arrives, the customer receives an SMS. The result: customers can get lost in London to their heart's content. And the time spent waiting for a taxi is drastically reduced.

Location-based services work via the localization of cells, with which the mobile phone is constantly connected – or through direct localization via GPS chip. On this basis, carriers can provide all mobile phone users with services and information that is appropriate to their current location and route. The analysts in the industry agree that there is a large and lucrative demand for these types of services. A study conducted by the market research institute Ovum forecasts, for instance, that by 2005 mobile operators in Western Europe will be achieving revenues of approx. six billion euros with location-based services – a tempting figure for a crisis-ridden industry.

Current LBS studies arrive at the same general conclusion: technologies for the ever more precise localization of mobile phone users open up practically unlimited sources of potential income, mainly because the range of applications is so varied. The market researchers have come up with four main areas: info services, billing, emergency calls and tracking.

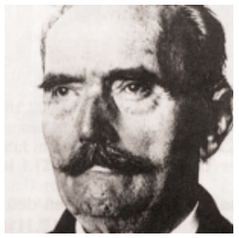
Until now, commercial LBS offerings have concentrated primarily on subscribed info services: providers or their partners sent owners of GPS-enabled mobile phones either automatically or on request useful information on their current surroundings – from traffic reports and weather conditions to route descriptions with precise background information on the nearest restaurant, hotel or train station. Location-specific billing models – as the basis for personalized customer relationships – are also gaining popularity: providers and carriers can considerably improve their competence in implementing customized pricing if their billing systems can also process localized usage data. Customers can benefit from special terms whenever they are in a particular zone – for example, at the workplace or in the vicinity of the home. Location-based emergency call services help save lives: emergency service personnel can get help to people in need much faster if the location of the incident can be routed precisely thanks to mobile phone localization. In the USA the routing of wireless emergency type calls is already required by law, and in the European Union there is now the E 112 directive, which will soon make this kind of routing mandatory. Tracking, the fourth significant LBS application area, is reserved predominantly for corporate use. These localization technologies make it possible for companies to seamlessly track the routes of their goods and mobile assets in realtime. Freight forwarders can thus monitor the exact location of their vehicles and implement centralized route planning that allows for rapid and intelligent reactions to changing traffic and business conditions.

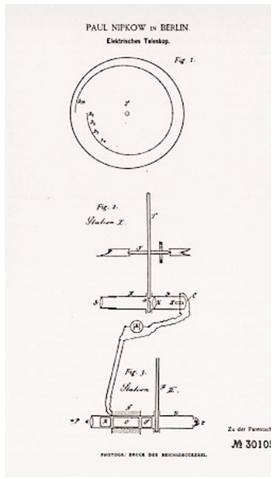
However, service providers and carriers also require the appropriate technical infrastructure and software applications in order to consistently leverage the potential of LBS. „Our powerful product suite, HP OpenCall, provides you with everything you need to launch and operate numerous multimedia value added services," explains N.N., a telecommunications expert from Hewlett Packard: „The integrated Short Message Service Center plays a major role. Providers can use this center to process various data services, such as SMS

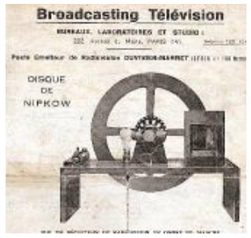
and MMS, and to make location-based services available to their customers – in collaboration with the HP OpenCall Position Determination Entity (PDE), which identifies and routes the location of any GPS-enabled mobile phone.“ But HP does more than just provide mature products for the LBS growth market: the enterprise also supports mobile operators with proven consulting expertise. For example, HP developed a solution within the scope of the E 911 directive in the USA that was the first to satisfy the legislative requirements on the routing of wireless emergency type calls. A valuable head start in terms of know-how that the telcos and emergency call centers in Europe can profit from. And indirectly, even that seafood restaurant in Belgium.

Tele-Vision Takes Shape

Television is a thing of the past. The screen of the future serves as an interactive information and communication platform thanks to digitalization.







In 1884 Paul Nipkow couldn’t possibly have imagined how his invention would one day change the world. He developed the electric telescope – and thus the basis for the medium that is found in practically every living room of the 21st century. In the meantime, the television has become as commonplace a household item as beds and pictures.

When the first devices were launched on the market in the 50s, the reality was quite a different one. A television was an unaffordable luxury for most; the screen was a mere 22 x 22 cm. In Germany in 1955 there were approx. 200,000 registered devices; in 2003, almost 98 percent of all German homes have a TV.

The television sets of the 50s can barely hold a candle to those of today. Color, high-resolution pictures, channel selection at the press of a button or top-class stereo sound were the stuff dreams were made of for years. It wasn’t until 1959 that television viewers were delighted with the first cordless ultrasound remote control, which replaced the cable control common until then. In 1967 color television began to compete with black-and-white TV. And since 1981, analog devices have been able to provide stereo sound.

But if you believe the beginning of the 21st century has witnessed the end of the development potential of television, you are mistaken. Manufacturers and market observers all believe that the television of the future will combine various forms information and communication, like a computer: using the PC as an example, the TV of the future will be able to much more than simply show a TV program.

The magic word is digitalization. No matter whether it is text, static pictures or audio and video sequences: any content can be sent without a hitch in digital form from device to device. Imagination knows no bounds when it comes to describing the networked home of the near future: cameras, televisions, computers and video cameras exchange data with each other by radio around the clock. Thanks to digital hard drive recorders. Music files are downloaded from the Web to the stereo system. E-mail and video messages can be sent conveniently via the TV. Convergence not only for the media, but also for the entertainment electronics markets: mobile phones used as cameras; televisions imitating PCs.

If we are to believe the experts, television is soon to experience a Renaissance phase as an entertainment all-rounder, the center point around which the entire household of the future revolves: the TV is already established as the central platform of future home media centers. Internet, interactive television and even home appliances can be networked via a server. Audio and video sources, phone and computer accessories can be plugged into the system via interfaces – the remote control acts as the switchboard for all entertainment channels.

Although this kind of scenario presently appears to be a vision from the future, potential customers are already interested. According to a study conducted by the market researchers at Forrester, nine percent of all households indicated interest in such wireless entertainment networks. And experience with other innovative media has shown that once an innovation has a breakthrough, more customers quickly develop an interest.

The present had already become the future at the most recent entertainment electronics fairs. Plasma and LCD screens are taking on greater and greater dimensions and are literally bringing cinema into the home. Thanks to exemplary resolution and refresh rates, Web pages can be displayed in legible form and without annoying flickers on the screen. The demand is high: the sale of flat monitors has increased six-fold in Europe over a very short period of time. The industry is booming.

By 2010, the world of digitalized television is to be a reality. Broadband networks will allow for the combination of television, telecommunications and information technology and will open the doors to individual access of an enormous offering of programs and services. One particular attraction: thanks to digitalization, television will improve considerably in terms of interactivity, losing its stigma of being a one-way media for passive consumers. Convergence of TV and the Internet will make it possible for audiences to access background information on the current show at the push of a button. Or to chat with other viewers – be it a matter of politics, soccer or the affairs and intrigues arising in a favorite TV series.

The first of such offerings are to arrive on the market as early as autumn 2003. Parallel to digitally broadcast TV shows, viewers will be able to query additional information on the subject of the program, receive e-mail and access specially designed Web pages by means of a special software installed on the set-top box. Paul Nipkow would be amazed ...

Cut Charges, Boost Revenues

The telco industry is following the example set by pubs: with „happy hour". An exemplary promotion.

The telco industry is picking up on a trend that has long been popular among bars: in order to boost business at times of weak capacity, the first providers have begun to offer time-limited special rates. For example: all summer long, customers can take advantage of drastically reduced mobile phone rates during one hour of the evening. Once registration is complete, the charge meter ticks only half as fast as usual for the mobile calls placed during the specified 60 minutes. Throughout Europe. Happy hour is no longer just a promotion for connoisseurs of exotic cocktails, but also for many mobile phone owners.

Customers will be delighted at the chance to considerably augment their vacation budgets through this kind of promotion. But the providers as well should stand to benefit from this type of promotion initiative. The reasoning behind offers like happy hour is based on pure economic calculation: the objective of special rates offered for a limited period of time is to lure existing and new customers into one's own network and boost revenues. And that at times when the infrastructure, so far, has only been used to a fraction of its capacity. What applies to energy suppliers also applies to the telcos: the networks are dimensioned in such a way that allows them to cope with the demand at peak times of the day and year. In other words, any means is acceptable for viable business when it comes to flattening the demand curve, which can resemble a tidal wave in its peaks and lows over the course of a day. Ideally at a high level.
„Telcos would do well to learn what many restaurants, bars and pubs have been doing successfully," emphasizes N.N., [Position] at Hewlett-Packard: „The food and drink service industry has come up with a few excellent ideas to even out business. A good proportion of the costs remains the same whether there are five guests or a hundred to be served: the rent still needs to be paid for Mondays. A snack bar must have its kitchen open at noon, even though considerably fewer guest stop by than in the evenings. The situation among providers of telecommunications services is very similar: in addition to revenue-dependent costs, such as forwarding charges, there are many fixed costs. The cost of maintaining a mobile or wired network at midnight is insignificantly less than at 9 o'clock in the morning, when everyone is back at the desk in the office. With this background, tempting rates for non-peak periods also make sense in the telco industry."
N.N. points out more advantages of intelligently designed promotions to lure consumers. Telcos can justifiably hope that such special offerings will continue to have the desired affect even after they come to an end. „Humans are creatures of habit. Once they have been calling their sweethearts after nine o'clock in the evening for three months, chances are that they will continue to do so even if they no longer save money," explains N.N. Successful special rate promotional efforts have lasting affects on marketing and image. He continues: „It is always a matter of distinguishing yourself from the competition with innovations. Especially in the mobile sector, providers can leverage successful promotional activities to gain the most valuable resources to be had in today's world overloaded with appeal and information: sensation and attention. Reduced rates will always increase awareness of the corresponding services as well."

Ideas and innovative marketing are crucial. The happy hour concept with its time-limited special rate promotions is an opportunity to set effective target group-specific accents. Such opportunities have yet to be exploited to the fullest. The gastronomical trade has other proven approaches which could be adapted: „You just have to open your eyes and you'll see countless examples. Restaurant chains advertise with 'All you can eat', giving guests free choice of everything at the buffet and bar for a set price. Pizzerias work with bonus systems: if you have five pizzas delivered within three months, you get the sixth one free. Hotels devise weekend packages: outside of the peak season, the price of a double room for two nights includes a candlelight dinner and a fango massage. This fills empty beds and increases awareness of unknown offerings," reports N.N. and adds: „This kind of thing is also possible in telecommunications: for five euros, mobile customers can use their phones to their heart's content for two hours at night. Users running up phone charges of more than ten euros on a prepaid card in a single month are rewarded with a five-euro top up for the upcoming month. Providers can create cheap packages out of mobile minutes and new multi-media services."
The imagination knows no bounds. However, telcos face several hurdles on the road to successful implementation of special rate promotions; hurdles that imaginative pizza chefs and hotel managers don't have. In the restaurant business, it's sufficient to have a convincing idea and to formulate and communicate it effectively. The initial investment is limited to printing costs for fliers and posters. Not so in the telco industry: to set new accents and get ahead of the competition with special rate promotions, advertising alone is not enough. There is quite a lot of preparatory work involved and the infrastructure has to be able to cope. „The technical platforms for managing and operating communications services have to provide a considerable degree of flexibility," as N.N. knows. He reports: „There are two central aspects. First, providers need software solutions that allow service packages with special rates to be created and implemented quickly. Second, they have to be able to bill everything accurately."
Communications services providers that rely on HP technologies are equipped with the necessary tools. With HP's OpenView ServiceActivator, enterprises in the industry have a software solution that provides almost complete automation of all the individual processes for activating new service offerings. An infinite number of components can be configured optimally with just a mouse click or two

– be it servers, data storage and network devices or Service Management applications. In short: providers require a lot less time to reliably implement a promotional offering. An automatic activation solution is also much less prone to errors.
In addition, Hewlett-Packard offers a proven mediation system in the form of the HP Internet Usage Manager (IUM) that can rapidly adapt to changing requirements; a kind of high-performance, continuous flow processor for usage data that insures accurate billing: the software gathers all relevant information on the usage of all services, continuously and across the network, and prepares the data within a fraction of a second so that it can be forwarded to the billing system in a form that can be immediately used. According to N.N.: „In collaboration with the HP Service Access Controller, HP IUM provides the basis for realtime billing, which is fundamental to special rates. The providers as well as the customers have to be able to react to changing charges, literally from one second to the next."

Knowledge Comes from Data. Revenue from Knowledge.

Knowledge is a strategic asset when it comes to competition. But where can market-oriented knowledge be found? Business Intelligence solutions are the answer.

„I know nothing except the fact of my ignorance."

This sentence, originating from the philosopher Socrates of Antiquity, was one Peer Schmidt often used to contemplate to no avail. He often discussed the meaning of „Knowledge is power" with his peers. Back then, while he pursued a degree in philosophy. Today, Peer Schmidt works as a manager for a service provider that specializes in telecommunications and Web services. He doesn't remember much about his philosophy studies. But the insights that his economics professor tried to impart are still clear in his mind. These include the significance of knowledge as a central resource in an information society. Knowledge management and the knowledge transfer in companies given an increasingly globalized world. And last but not least, insights as to how the knowledge relevant to corporate decisions is not primarily based on the know-how of experts, but mainly on knowledge of the market – knowledge of customer behavior.

Theory is one thing, says Peer Schmidt to himself, practice is another altogether. And his day-to-day practice holds complex questions: how can knowledge of the behavior of our customers be gathered and prepared? How can we optimize customer loyalty and make our offerings more attractive to new customers? How can we analyze customer behavior so that it can be used as a basis for implementing new pricing systems, etc.?

Peer Schmidt is not alone with these questions. Business Intelligence is what the current situation dictates. Business Intelligence takes on the task of converging all relevant business data in an enterprise in realtime. In the form of analyses available at a mouse click and regularly prepared reports that serve as a valuable basis for decision-making. This kind of transparent business data doesn't just appear out of thin air. Different software vendors have developed special Business Intelligence solutions to link and prepare all existing data flows in a company. These are evaluated and the results displayed on the monitors of the staff to support them in their decisions. Experts attest to the enormous market potential of these solutions. IDC, for example, forecasts an expansion of the worldwide market for Business Intelligence software from two billion dollars in 2001 to almost twelve billion dollars in 2006. And according to the Meta Group, approx. 60 percent of the world's 3,000 largest corporations are expected to have implemented such tools by the end of 2004.

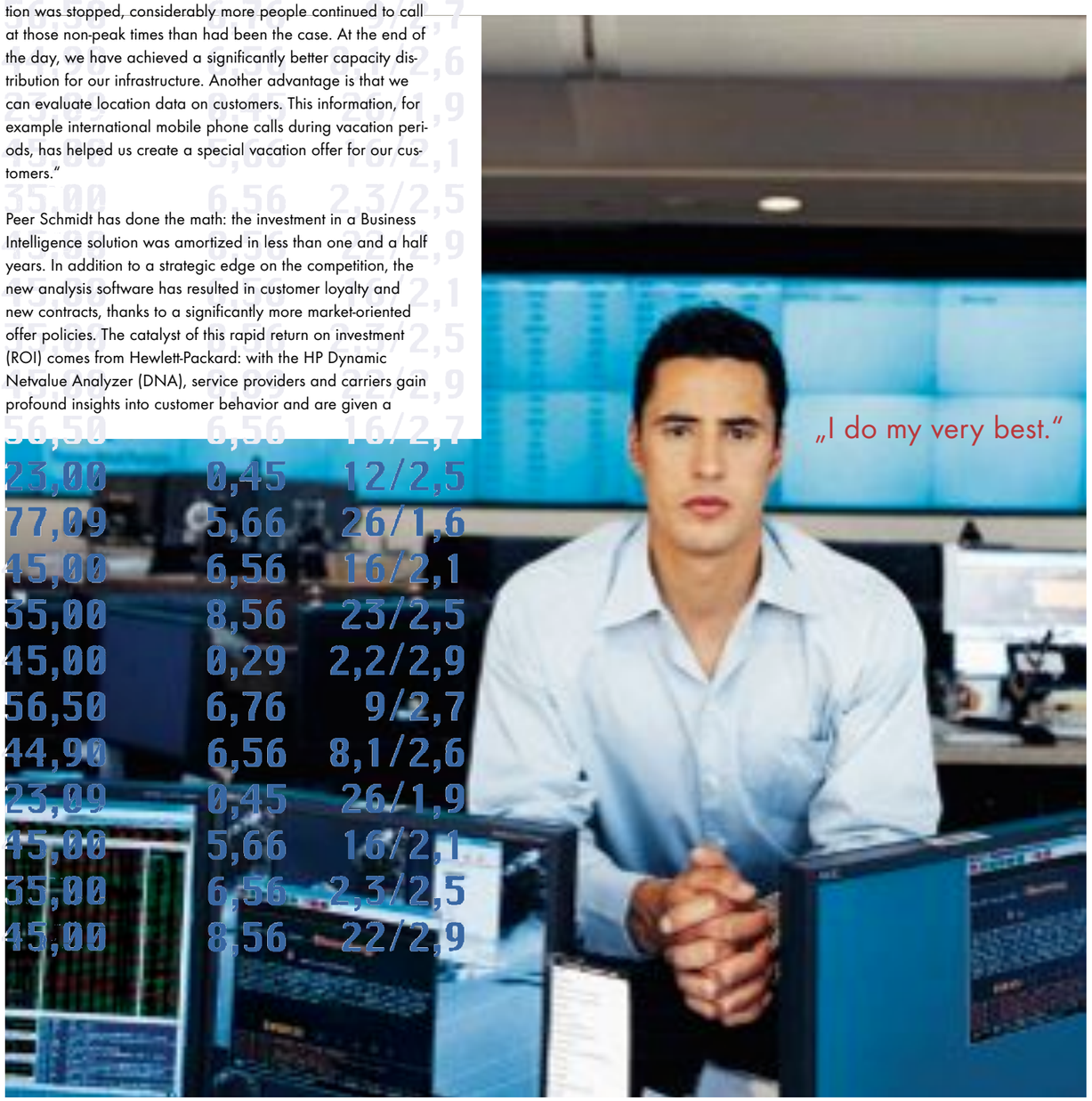
Companies of the telco industry will likely be among these, as forerunners and particularly intensive users. In these times of cut-throat markets, low budgets and high cost pressure, the only hope for many providers and carriers is to comprehend the behavior and wishes of their clientele as completely as possible. „The convergence of mobile services and the Internet has brought the industry the anguish of free choice. Today, mobile customers theoretically have an infinite number of different services to choose from. And there are endless ways of presenting and combining these services. The devil is also in the 'nuts and bolts'," says Peer Schmidt and continues: „With this background, it is the top corporate priority to understand what our customers really want in which special situations. We have to comprehend what triggers satisfaction and dissatisfaction. That's the only way we can extend our portfolio in a target group-oriented manner and further develop our capacities to the fullest."

Peer Schmidt's company stands to benefit: not only is the telco industry blessed with complex business relationships with a multitude of customers, but also with considerably more data on their behavior compared to companies of other industries. Take, for example, the usage data generated as a result of various network components around the clock. This data has an immense potential. So far, many providers and carriers have only started to scratch the surface. Telcos process millions of details with every passing second, data which is mainly used as fodder for billing systems. This data indicates when which customer takes advantage of which services with which intensity and which content. The systematic analysis of this enormous trove of information provides companies, such as Peer Schmidt's, with accurate and complete answers to central questions affecting Management, Sales and Distribution, Marketing and Network Planning: do prepaid and postpaid customers make use of different mobile services in a specific way? How profitable are individual services at different times of day? How do customers behave when their contracts are about to run out?

Peer Schmidt was very much an advocate of the introduction of a Business Intelligence solution in his company. A wise choice. „As a result of the detailed analysis of the customer data, we have discovered in the meantime that our mobile network wasn't being used to capacity at certain times," explains Schmidt. „We then offered our customers a special rate for these times to relieve the network at peak periods. It's been our experience that customers can be effectively influenced with measures of this kind: even after the special rate promotion was stopped, considerably more people continued to call at those non-peak times than had been the case. At the end of the day, we have achieved a significantly better capacity distribution for our infrastructure. Another advantage is that we can evaluate location data on customers. This information, for example international mobile phone calls during vacation periods, has helped us create a special vacation offer for our customers."

Peer Schmidt has done the math: the investment in a Business Intelligence solution was amortized in less than one and a half years. In addition to a strategic edge on the competition, the new analysis software has resulted in customer loyalty and new contracts, thanks to a significantly more market-oriented offer policies. The catalyst of this rapid return on investment (ROI) comes from Hewlett-Packard: with the HP Dynamic Netvalue Analyzer (DNA), service providers and carriers gain profound insights into customer behavior and are given a clear picture of costs, profits or losses and revenues in connection with the offered services..

The system is especially fast and easy to implement. All it takes is a simple mouse click to transform all usage data practically in realtime into detailed analyses – into graphically prepared evaluations whose main messages are apparent at a glance. „We were able to configure HP DNA without a hitch in such a way that it identifies and quantifies the individual growth and profit opportunities of our enterprise. Today, it effectively supports the development of new service offerings and thus facilitates the decision-making process," elucidates Peer Schmidt and points out a particular feature that, for his work, has dramatically increased the solution's level of user convenience: „The off-line modeling option lets me use the many evaluation functions any time, even from my notebook when I'm out of the office."



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