

**From innovation to
the cutting edge**





From innovation to the cutting edge

Consultative selling

Rapid changes in the marketplace and new legislation are making it difficult for KPN Telecom's business customers to formulate effective information and communication policy for the coming years.

KPN Telecom has therefore joined forces with customers to find ways in which ICT can be used to achieve business objectives. KPN Research plays an important part in this process by translating technological, social and business developments into innovative products and services.

Below, you will find a brief description of this result-oriented form of cooperation which we call consultative selling. The influence of ICT practices on business processes before, during and after the implementation of systems is an important factor in consultative selling. Consultative selling begins with a Communication Needs Analysis in which short-term and long-term communication needs are evaluated. Next, solutions are developed. This may involve modifying existing technologies or devising new ones. The solutions must be tested, presented and demonstrated before they can be implemented.

The choice of consultative selling package will depend on the situation. For example, if a company already knows what its ICT requirements are, a Communication Needs Analysis will not be necessary. Consultative Selling is synonymous with flexible, customised and affordable service.



"Telecommunication is becoming increasingly vital for both consumers and businesses. Developments are occurring in leaps and bounds, with the Netherlands more and more often playing a leading role.

KPN Research plays a crucial role in this process by applying proven methods or newly acquired scientific know-how in innovative projects. Our researchers are keen to develop new technologies with our international partners. But because they are reluctant to keep reinventing the wheel, they use their creativity to modify and combine techniques developed elsewhere to devise new products and services.

For fifty years now, KPN Telecom and TPG (TNT/Post) have drawn on the innovative strength of KPN Research to stay ahead of their global competitors. Thanks to the wealth of international research experience we have accumulated, consumers and business customers can benefit from a growing range of convenient products and services, and our business partners and associates can reap the fruits of our unmatched expertise in the fields of information and communication technology (ICT).

KPN Research seeks solutions for specific problems in these fields by combining the most sophisticated telephony, Internet and database technologies. Solutions are devised in line with a company's corporate vision and strategy, thus enabling KPN Telecom's customers to remain at the cutting edge in today's dynamic information society and the digital age that will continue far into the new millennium."

W. Dik
Chairman of the Board of Management
of KPN NV and CEO



Doing business electronically

E-Commerce

KPN Research is continually developing new technologies to improve and simplify business processes that rely on electronic communication. To this end, we have set up an Internet Protocol (IP) lab to devise and test IP-oriented products and services. Our lab activities include the development of ATM applications for voice, video and data communication via PABXs and other networks.

ICT technology opens up and increases the flexibility of existing networks like traditional telephone lines, ISDN and GSM, most notably by integration with the Internet.

Customer-friendly communication through the World Wide Web and e-mail provides countless opportunities for building databases for Direct Mail purposes. Transactions can be conducted and products and services distributed and paid for over the Internet. The TAPS system, which was co-developed by KPN Research, enables the automatic and flexible processing of transaction data.

Traditional methods of communication slow down business processes. The Internet, PABXs and The Net - developed by KPN Research in collaboration with Microsoft - provide organizations with opportunities that were previously inconceivable.

Electronic Commerce - doing business by electronic communication - will have a growing impact in the future and bring about far-reaching changes to production, distribution, marketing and business processes.

Today, companies use efficient internal business processes and advanced production and distribution methods, which offer the added bonus of significant savings. Your virtual shop in customers' homes, 24-hour information facilities, and services-on-demand will mean a great leap forward for your company in the future.



Thanks to KPN Research, KPN has access to state-of-the-art in-house hardware and software which organizations can use to operate E-Commerce for internal and external purposes.

Prof. R.W. Wagenaar,
KPN Research



The success of E-Commerce depends not only on financial-economic, social and legal factors but also on a sound infrastructure. System speed, customer-friendliness and reliability are inextricably linked with the quality of the infrastructure, as are security of information and communication.

KPN Research and KPN are specialists in building and maintaining infrastructures. The Dutch business community has been reaping the benefits of our expertise for many years.

"Electronic Commerce will radically change the way that business chains are organized. Electronic sales and distribution demand new interactive and integrated customer care concepts and a high level of flexibility in back office management. Our challenge is to make the change-over as painless as possible for our customers."





Your word is our command

Voice recognition systems

Personal Call Assistant is a new service that will be introduced shortly. PCA will enable customers to access a wide range of services through a single telephone number. Its convenience and accessibility will increase the efficiency of call centres.

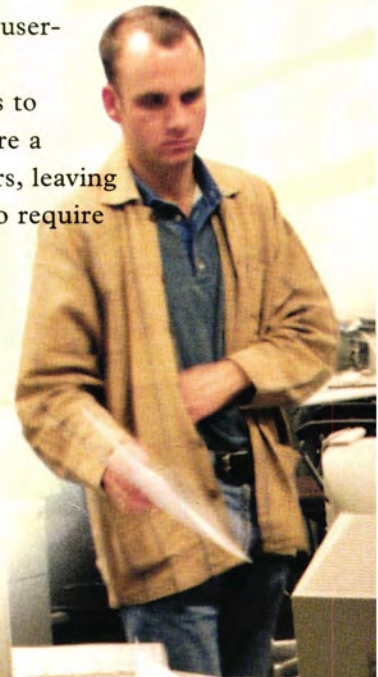
Thanks to the Demonstrating Multimedia Services (DMS) facilities of KPN Research, user interfaces like Personal Call Assistant can easily be tried out. Users of the DMS prototype can access information in any form they like (pictures, sound and/or text) through various terminals (fixed or mobile telephone terminals, information kiosks, Internet-PC).

In the future, voice recognition systems will not only respond to natural language but also to vocal features and emotional components of language.

Customer service has become a crucial factor in determining a company's competitive position. That is why KPN Research is working on innovative technologies to transform KPN Telecom's telephone services.

One of these promising technologies is voice recognition. Customer Care Services based on telecom systems that use voice recognition can offer customers round-the-clock availability. They do away with waiting times and the necessity of keying in digits, hatches and stars, and are extremely user-friendly.

Our organization can also benefit from the user-friendliness of voice recognition systems. Such systems are easy to manage, enable us to provide a wider range of services and require a minimum amount of support from operators, leaving them free to concentrate on services that do require the personal touch.



C.N.A. Molenaar, Managing Director
of Ogilvy & Mather Dataconsult bv

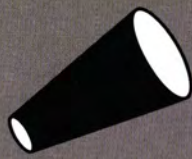


Security and risk of fraudulent usage are important aspects of voice recognition in telephone information services and transaction systems. KPN Research has developed various methods for detecting and preventing misuse.

KPN already uses systems that can interpret simple sentences. In the future, this capability will extend to natural language. And if telecommunication systems with voice recognition capabilities are linked up to the Internet, we will have even more scope to stay ahead of the competition. In short, when it comes to customer service, we say 'Your word is our command!'

"Voice-driven telecommunications services will improve the reachability of companies and supply customers with the information they require in a user-friendly manner. Banks, public utilities and other large service providers can benefit from voice recognition technology to improve their relationship with customers."





The world as an office

Information & Communication

KPN Research is collaborating with other European countries to develop the World-wide Distribution Management System (WDMS), an application which participating organizational units can use to register their networks and logistical services worldwide.

One component of WDMS is the Transport Capacity Manager, which plans services and reserves capacity for specific shipments. Another component, the Intelligent Mobile Management System (IMMS), was designed for the shipping industry. IMMS pinpoints the location of vessels like oil tankers in each ocean region and enables effective communication with crew members. It is also ideal for communication with oil rigs.

To ensure that telecom facilities can actually be used the world over, KPN Research has developed Radio in the Local Loop (RLL), a fast and flexible means of gaining access to foreign markets. A special version of RLL can also be implemented in fixed networks to provide extra capacity.

The world is shrinking, organizations are expanding and communication is becoming more complex. Fortunately, the number of ways in which we can communicate is also growing. As well as by radio and telephone, we can communicate by fiber optic cable and satellite. KPN Telecom controls the most sophisticated technologies and can combine them effectively.

As a result, companies can create mobile offices and integrate them seamlessly with their head office. By combining GSM with a notebook and PC card, representatives have direct access to the latest data and engineers can consult warehouses to order parts and have them delivered by EMS courier, if necessary. Intelligent applications like these yield significant savings in operating costs.

Intelligent communication systems are also available for the distribution and transport sector. Ships and trucks equipped with mobile terminals have continuous access to information on locations and progress. Such information can be sent from place to place across the globe to be deployed intelligently.



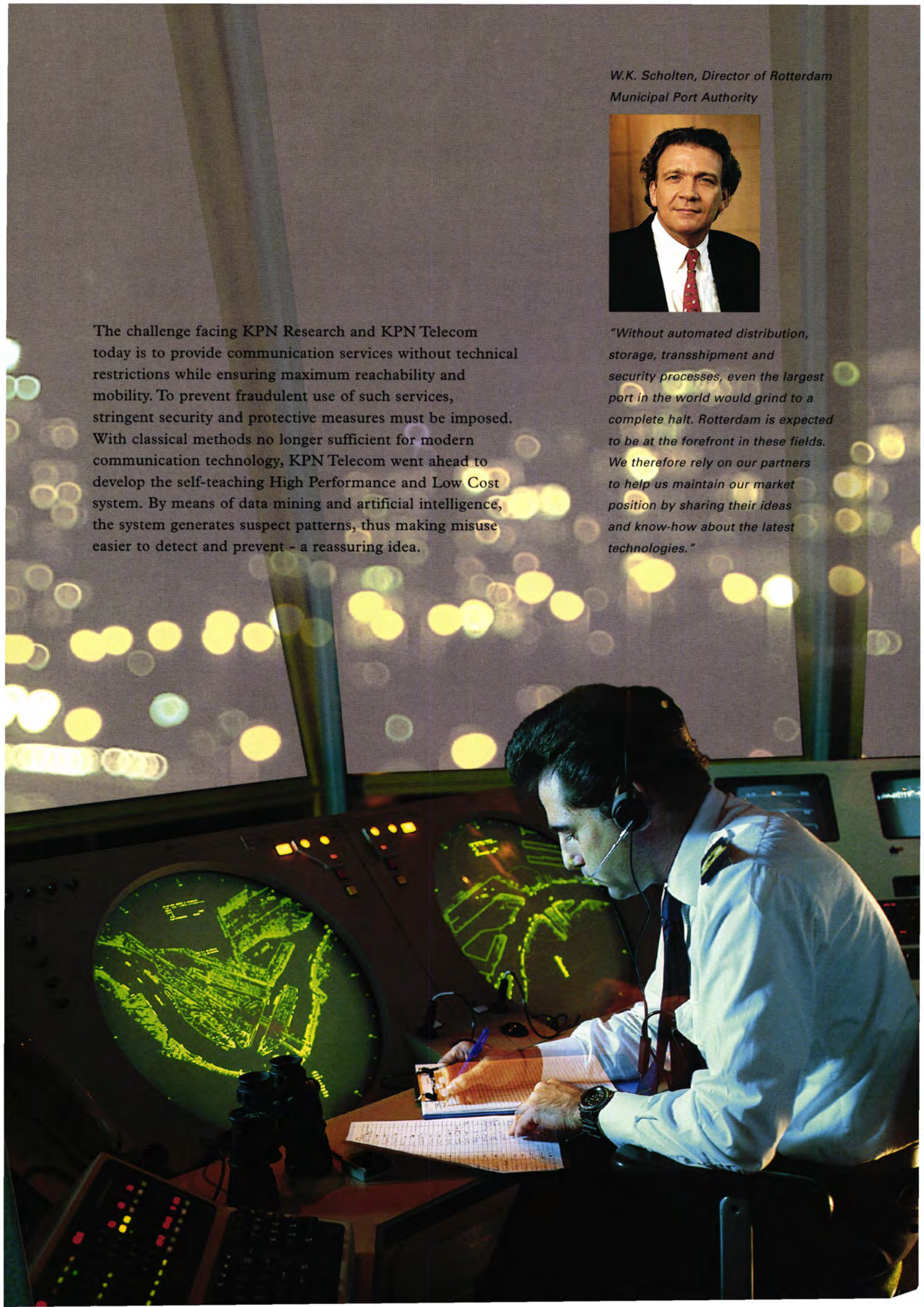
KPN Research has developed the Private Mobile Radio for fast, secure communication over short distances. PMR offers advanced, digital applications based on the traditional walkie-talkie. With its wide range of communication services, KPN provides solutions for long-distance and short-distance communication.

W.K. Scholten, Director of Rotterdam
Municipal Port Authority



The challenge facing KPN Research and KPN Telecom today is to provide communication services without technical restrictions while ensuring maximum reachability and mobility. To prevent fraudulent use of such services, stringent security and protective measures must be imposed. With classical methods no longer sufficient for modern communication technology, KPN Telecom went ahead to develop the self-teaching High Performance and Low Cost system. By means of data mining and artificial intelligence, the system generates suspect patterns, thus making misuse easier to detect and prevent - a reassuring idea.

"Without automated distribution, storage, transshipment and security processes, even the largest port in the world would grind to a complete halt. Rotterdam is expected to be at the forefront in these fields. We therefore rely on our partners to help us maintain our market position by sharing their ideas and know-how about the latest technologies."





Reality scaled down

Impressions

KPN Research is the international pioneer when it comes to new ICT applications. The information provided here merely serves to highlight some of the most interesting products and services in our extensive range.

KPN Telecom successfully uses the consultative selling method to implement customized state-of-the-art technologies developed by KPN Research to achieve short-term and long-term business objectives.

For more information or to make an appointment with a KPN Telecom Business Consultant, please call the

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Investing in new information and communication technologies will prove to be highly profitable in the long run. But before such systems can be implemented, they must be tested to establish whether they meet the needs identified by the Communication Needs Analysis. KPN Telecom offers unique methods for doing this.

In the draft phase, interactive animation can be used to visualize products and services, bringing them to life and helping KPN Research and our customers to come up with ideas for improvement.

In our test laboratories, we have constructed parts of the Dutch network as we expect them to look in a few years (traditional lines, ISDN, DECT, cable, ATM and satellite links). Prototypes of products and services are built in the test environment so that customers can see exactly how they work.

Representatives sent by our customers or specially hired test persons are observed in our Usability Lab while tests are performed, and interviewed afterwards. We use the results to improve the quality and user-friendliness of applications.

The next stage often involves building a pilot version which customers can use in their organization.

We then do the final work on the application so that it can be implemented.



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