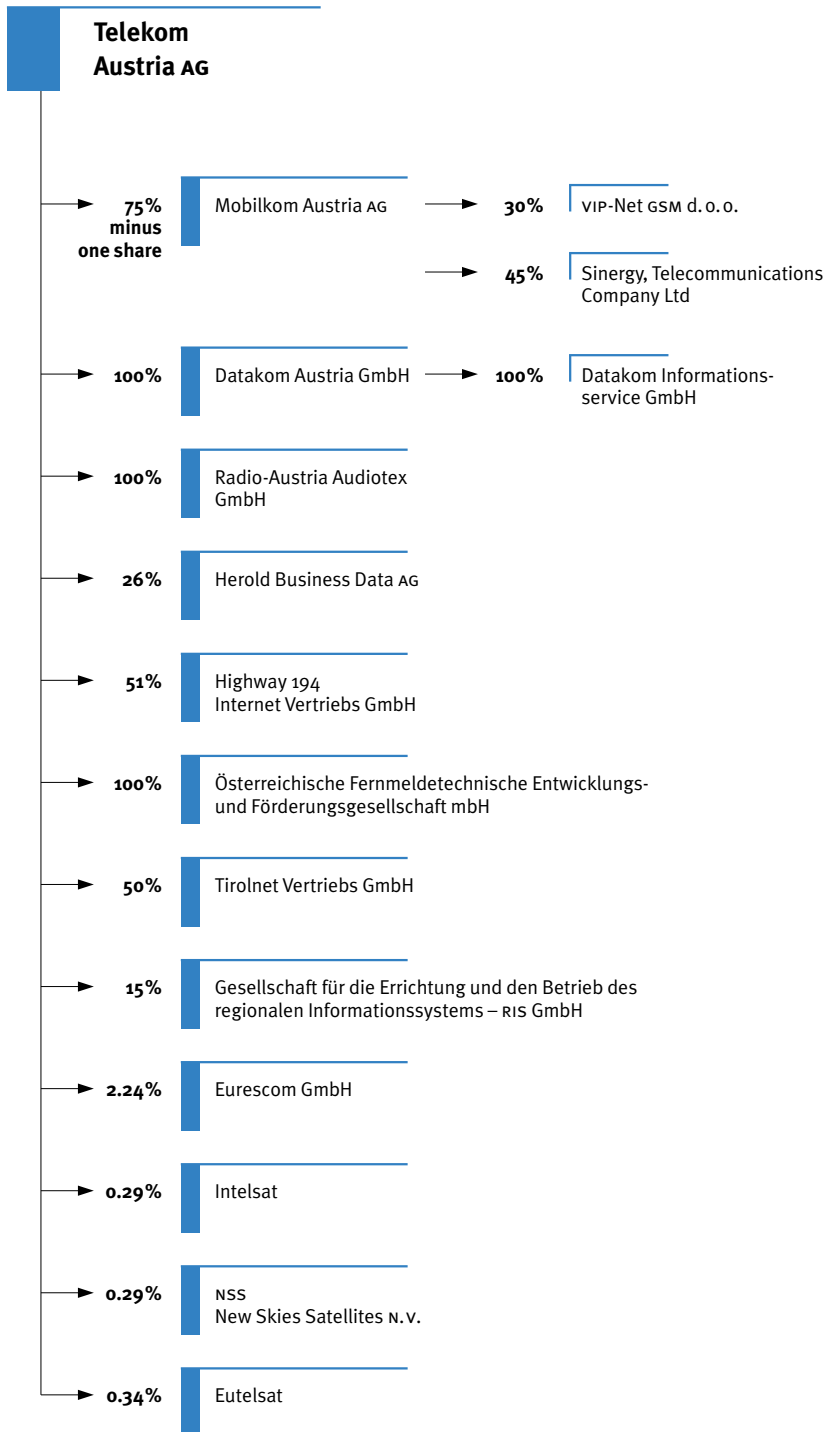


A graphic consisting of a blue square frame with a white center. The text "Statement of Change" is centered within the white area.

Statement
of Change

Structure of Telekom Austria AG



4	Foreword of Sen h. c. KR Ing Werner Kasztler CEO Chairman of the Management Board
5	Foreword of Ing Dr Josef Sindelka CEO Chairman of the Supervisory Board
6–7	The Supervisory Board and the Management Board of Telekom Austria AG
8–21	Telekom
22–29	Mobilkom
30–37	Datakom
38–43	Research and Development
44	Imprint
Front flap	Structure of Telekom Austria AG
Back flap	Glossary of Telecommunications

Ladies and Gentlemen,

In the past business year, we have set the essential course for a successful future of our enterprise. We have increased our competitiveness, among others by taking in a potent, international partner, so that I am confident that we will secure, on a long-term basis, our market position as the leading full-service provider in all telecommunications matters with the competency and know-how of both enterprises.

In less than three business years we have succeeded in turning Telekom Austria into a customer and market-oriented enterprise, facing the challenges of liberalized competition with the highest commitment. The enterprise has adopted a commercial orientation, has increased its economic efficiency quickly to internationally comparable standards, and has oriented the range of products and services even stronger to customer wishes and market requirements. Thereby, Telekom Austria, in its first year of independence, has been able to fully bring to bear its advantages as the leading Austrian full-service provider. The nationwide network which maintains a high standard of technical quality even by international standards, the proven reliability of our services, the committed

and competent personnel as well as the large number of established customer contacts will continue to be our strongest assets for future success in competition.

Much has already been achieved, of which the personnel as well as the management of Telekom Austria are entitled to be proud. Some matters, however, still are before us: we will further increase customer satisfaction, and orient our enterprise toward growth on the Austrian and international market – with the aim of increasing the attractiveness of Telekom Austria for our customers and for potential domestic and international investors.

At this point I may – also in the name of the other management board members – express my thanks to all personnel of Telekom Austria AG for their efforts and their willingness to participate in the necessary changes. The successful account of the last three years is based on their commitment. I also wish to thank the personnel representatives for a constructive cooperation. Above all, however, I want to thank our customers for their confidence.

I am convinced that we will successfully continue our way on the basis of what we have already achieved, and that we will be able to assert our position in the increasingly tough competition.



Ladies and Gentlemen,

With the present annual report, Telekom Austria AG presents to you an "Statement of Change". A positive change which you can not only feel in all divisions, but which above all is visible to our customers through the increased customer and market orientation. With the reorganization of the enterprise into Post and Telekom Austria AG in the year 1996, a deep-reaching process of change has begun. The past business year has been the most important one in the history of the enterprise: since the liberalization of the Austrian Telecommunications market as of January 1, 1998, the enterprise stands in open competition with all divisions. Not only domestic telecom enterprises, but also strong competitors from abroad are increasingly pushing onto the market. And Telekom Austria has accepted the challenge: in preparation for the planned initial public offer, the Telecom Division of Post and Telekom Austria AG has been reorganized as an independent legal entity, namely Telekom Austria AG. At the end of the year 1998, Telekom Austria, as a strong, attractive enterprise, has gained with Telecom Italia a potent, internationally experienced partner.

The management board of Telekom Austria AG now has the task to secure on a long-term basis the market success of the leading domestic full-service provider and to make the enterprise fit for the planned initial public offering. Strategic farsightedness is demanded more than ever: market conditions changing ever faster require the appropriate dynamism.

In general, the competitiveness of Telekom Austria has been further improved in 1998. The outstanding expertise of personnel, the strengthened customer orientation and the reliability of the services provided, already have proven themselves outstandingly in competition. However, Telekom Austria will also in future orient its efforts according toward the requirements of customers and the market. Investments are only an external sign in this regard; the significant factor is the committed and customer-oriented personnel of Telekom Austria.

The personnel, the management and the management board of Telekom Austria AG have proven in the past business year that they face the challenges and that they are on the right way toward a customer-oriented and competitive enterprise. At this point, I would like to express my thanks for this, and extend my best wishes for future success.



Supervisory Board of Telekom Austria AG

KR Dkfm Karl Hollweger¹⁾
(Chairman of the Supervisory Board)
Ing Dr jur Josef Sindelka²⁾
(Chairman of the Supervisory Board)
KR Dkfm Dr Erich Becker
(Deputy Chairman of the Supervisory Board)
Prof DI Dr Ernst Bonek³⁾
Ing Oscare Cicchetti⁴⁾
Dkfm Helmuth Hamming³⁾
DI Dr Günther Hillebrand³⁾
Dr Peter Kamp³⁾
KR Kurt Kaun³⁾
Mag Werner Muhm

Dr Claus J. Raidl
Dr Günther Scholz³⁾
Ing Maurizio Stecco⁴⁾
Dr Josef Taus
Gerhard Zeiler
Hans Billeth
Hans Georg Dörfler³⁾
Franz Hnatusko³⁾
Helmut Hospodar⁵⁾
Ing Karl-Heinz Muik
Herbert Podany³⁾
Robert Sulzbacher⁴⁾
Robert Wurm³⁾

1) until October 31, 1998
2) since November 1, 1998
3) until July 23, 1998
4) since December 22, 1998
5) since July 23, 1998

Dr Claudio Albanese
Chief Marketing Officer

Senator h. c. KR Ing Werner Kasztler
Chief Executive Officer

Dr Alberto Mazzarelli
Deputy CEO and
Chief Financial Officer

Ing Mag Rudolf Fischer
Chief Technical Officer

Management Board of Telekom Austria AG

Ing Dr jur Josef Sindelka ¹⁾

(Chief Executive Officer)

Dr Johannes Ditz ¹⁾

Gerhard Martinek ³⁾

DI Dr Walther Richter ⁵⁾

Senator h. c. KR Ing Werner Kasztler ²⁾

(Chief Executive Officer)

Dr Alberto Mazzarelli ⁴⁾

Ing Mag Rudolf Fischer ²⁾

Dr Claudio Albanese ⁴⁾

1) until October 31, 1998

2) since November 1, 1998

3) until July 23, 1998

4) since December 22, 1998

5) until October 19, 1998



Telekom
on the road
A full-servi
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Austria
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a strategic
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arket.

Telecom- munications

**Telekom
Austria has**

faced the challenges of the market. Especially the area of telecommunications is determined by strong efforts of different market participants to take an active part in the shaping of competition. In the past, there have been very different views regarding the starting position of PTA. Today, looking back over the last few years, we are able to say: we have been successful in effecting the internal change toward a customer-oriented enterprise with a commercial orientation.

Telekom Austria wants to and will assert itself in particular within Austria against the international competition. The enterprise, with respect to profitability, has been quickly raised to an internationally competitive level. We are able to offer customers our superior services at competitive, affordable prices, and are in the process of meeting the requirements of international investors in the context of the planned IPO.

PTA's reference numbers and performance data of Telekom Austria AG	1996	1997	1998
main access lines	3,779,000	3,725,800	3,570,100
ISDN-lines			
Basic access lines	40,600	83,100	152,200
Multiple access lines	1,400	2,600	4,100
total number of connected lines ¹⁾	3,901,600	3,969,400	3,996,600
degree of digitisation	72%	82%	92%
customers A-Online ²⁾	31,249	36,142	60,376
mobile telephony customers			
analog mobile network D	260,500	250,300	200,300
digital mobile network A ₁ ³⁾	303,000	689,400	1,280,600

1) Main access lines and ISDN lines (basic lines with 2 channels, multiple lines with 30 channels); rounding off may lead to differences in totals.

2) BTX (Bildschirmtext), PAN (Public Access Network) and Highway Backbone customers included.

3) B-Free included

In order to reach our goals quickly, we have chosen an international partner for the telecommunications business. A prerequisite for this move was the legal independence of the Telecommunications Division, which we have implemented retroactively as of January 1, 1998, with the incorporation of a stock corporation and the separation of the Divisions. Telekom Austria AG is continuing the entire business of the previous Telecommunications Division of PTA. The interests in Mobilkom Austria AG and the former Datakom Austria AG, which was converted into a GmbH in the course of the restructuring, belong to Telekom Austria AG since the spin-off.

Buon giorno Italia


Telecom Italia is our strategic partner for the future. The partner selection process was commenced immediately following the resolution of the supervisory board at the change of the year 1997/1998. With Telecom Italia, an internationally experienced enterprise has been selected, which already had proven itself outstandingly in the mobile telephony sector as partner of Mobilkom Austria AG. The

agreements were executed on October 28, 1998. Following the final authorization by the European competition authority, the agreements became legally effective as of December 22, 1998.

The implementation of a number of joint projects with Telecom Italia has already been commenced. Within the strategic partnership, Telecom Italia nominates the Deputy Chief Executive Officer and Chief Financial Officer (CFO), and the management board member in charge of Marketing and Sales (CMO). Experts from Telecom Italia have been deployed for important project tasks, respectively for tasks within the line organization of Telekom Austria AG.

Pole Position in Competition

Besides the corporate restructuring and partner selection, we also have implemented the measures to prepare for competition. We only have had little time to do this. Nevertheless, our result of the first year following the opening of the market has been positive: Telekom Austria has been able fully to bring to bear its advantages as the only full-service provider with a technically advanced, high-



At Telekom Austria,
we have only one
thing on our minds:
the customer.



Around **300,000,000**
customer contacts per year:
we feel obliged.

quality and comprehensive network. The excellent expertise of the personnel, the large number of existing customer contacts and the reliability of our service have become our biggest assets in competition. With our services in the area of interconnection, we have provided the decisive contribution for the many alternative network operators to be able to commence activities, and for the liberalization of the telecommunications market in Austria to become reality.

We intend to assert and expand our market advantage. Essential in this regard is the constant orientation toward the customers and the ongoing effort toward customer satisfaction. We also will continue and deepen the active involvement with changes in the market.

Leadership in Innovation and Technology

The subsidiaries of Telekom Austria also distinguish themselves by the securing of the quality attained and the search for new solutions: Mobilkom was able successfully to assert and expand its position as market leader. A1 has remained number one also with respect to the number of new subscribers. Mobilkom has already laid the foundation for its future as technology leader: it was able, as the first mobile telephony operator, to offer connections over Iridium and to introduce the VoiceButler service. The "Butler", as the first convergent product, reads the text of new e-mails over the mailbox. Mobilkom, as market leader with a sense of responsibility, has undertaken to point toward the next generation of mobile communications: Thus we have started an information campaign covering UMTS (Universal Mobile Telecommunications System).

Datakom Austria GmbH also is able to point to a most pleasing result. With custom-made, all-inclusive solutions and the high reliability of its data services, it also has established itself as market leader. Datakom will commence to act as a certifying body for the digital signature. It will issue certificates enabling users to encode and digitally sign electronic messages and documents. Thereby, the sender and the recipient will have the assurance, that the message has neither been manipulated nor falsified in the course of transmission, and that the identity of the sender is in accordance with that stated by him.

Competitors are becoming Customers

The Austrian telecommunications market is flourishing, and that is an achievement also of Telekom Austria: in the year of liberalization, we have concluded 15 freely negotiated agreements with competitors; an additional four interconnection agreements were concluded through orders of the regulatory authority.

In November 1998, we submitted our first comprehensive interconnection agreement ICC 2000 (Interconnection Contract 2000). All important aspects of interconnection have been covered in over 100 pages. The contract serves to create an important prerequisite for the equal treatment of all competitors and for the technical access for new network operators. The transfers take place over access lines, the number of which will be announced on the basis of the estimates of the other network operators during the planning rounds.

New Challenges

However, the legal and technical challenges are immense: the obligation of equal treatment – the so-called non-discrimination – for us means: a concession, once granted, must be offered to all alternative operators. The orders of the Telekom Control Commission with regard to the subject of interconnection enable the new operators to gain access to the market with relative ease. The decisions of the Commission, by comparison with other European interconnection fees, can be regarded as very competition-oriented.

Political Decisions – Economic Effects

The decisions of the Telekom Control Commission with respect to the question of interconnection have significantly shaped the year 1998. After one year, they constitute the central area of the evaluation of the market and regulatory situation. At first, the charges for the termination of calls in the network of Telekom Austria were determined in March of 1998: for calls from other Austrian fixed or mobile networks terminating with our subscribers, we receive (per minute) ATS 0.25 respectively 0.33. The amount is determined by how many switches at the upper levels of the network hierarchy (so-called regional switches) are being passed. In October of 1998, the Telekom Control Commission determined the charges for originating traffic, i. e. the amount which Telekom Austria receives for the transport of calls over its lines to the carrier network of an alternative operator. For reasons related to competition policy – in particular to push ahead the building of an own infrastructure by the competition – these rates for originating services were determined at a higher level than in the case of termination, that is, at ATS 0.28 (in case of one regional switch being passed) and ATS 0.55 (if two regional switches are passed).

We know our Market ...

Competition is increasing, and thus the significance of marketing is rising. New employees and a clear allocation of duties heighten the effectiveness of our marketing. We develop the strategies together, the implementation is carried out also with our regional organization. The latter delivers fresh impulses for the strategic work, with reports back from the success of the events and the course of marketing activities. The regular observation of the market and its customers for us is part of daily business. In market research, we test marketing instruments, measure customer satisfaction and conduct product and market studies. The requirements of our customers are central in this regard.

... and our market knows us

Telekom Austria places the main emphasis of market communications on its special position as the only full-service provider for all groups of customers, its great wealth of experience, its reliability and the special responsibility as provider of the universal service. The customers do honor these values: Telekom Austria is referred to as a reliable and modern enterprise with decades of know-how and a broad range of services. Two thirds of Austrians are satisfied with the service facilities. The quality of the fixed network does receive explicit praise. 63% of residential customers and 61% of business customers award it a grade of A. The ISDN campaign running since March of 1998 has been especially successful. The first wave in the spring of 1998 provided basic knowledge regarding ISDN; the second wave in the fall of 1998 advertised the free changeover to ISDN.

Beside the performance description by way of two comprehensive telecom catalogues in the spring and the fall, and info-flyers and pamphlets, we presented our classic campaigns in the print media, radio and tv. In addition, we are partners of the Austrian Olympic Committee, the Austrian

Soccer Association, the Austrian Ski Association, and we support the Austrian Sporthilfe (Assistance to Athletes). The sponsoring activities of Telekom Austria are being received very positively by the population. This is confirmed by regular tests conducted by market researchers.

Together, supporting each other: our Commitment

In the area of social sponsoring, we for years have supported the charitable project "Licht ins Dunkel". There has been a new development this year with respect to the technical support for the project: instead of providing exclusively lines, we have this year installed a complete call center at the K niglberg headquarters of the Austrian Broadcasting Corporation. The call center has been in operation for the entire duration of the project, from November 1998 until February 1999.

To understand the customers ...

In 1998, we have further expanded successfully the target group-based orientation of the distribution channels. To our business customers, as the only provider, we make available holistic communications solutions with a high-quality, stable network and competent, innovative employees. We count approximately 180 large enterprises and public service bodies among our key customers, for whom we develop solutions specific to the area of business concerned. Thus, we already have implemented corporate networks, call centers for commerce and service businesses, and intranet solutions, such as for the social insurance carriers.

... to accommodate the Customers

We have strengthened and newly organized our sales and support teams in the regions. The customers are able to reach us over the new freelines of Telekom Austria, 0800 100 100 for residential customers, and 0800 100 800 for business customers. Or they visit us in presently more than 40 Telekom Shops. Network products and terminal equipment can be purchased at all post offices. We have successful distribution channels, because we always are close to the customer.

ISDN – the superfast Twin Access is the Medium of the Future

The approximately 152,000 ISDN-accesses sold at the end of the business year 1998 constitute an impressive success. We also consider it to be a result of our two-stage advertising campaign. With it, we succeeded to make ISDN known among the population as the “superfast twin access”. Approximately 60,000 customer calls concerning ISDN were received by the call center. By reason of this great success, we have extended the campaign for the free changeover to ISDN until the end of February 1999.


Further, since the fall of 1998, we offer, with ISDN accesses, ten supplementary services free of charge, which further heighten the attractiveness of this product line. Finally, as of September 1, 1998, an additional tariff option was introduced, the so-called “ISDN Business Tariff 3”, which guarantees cost savings to intensive users.

Digitize Yourself

A normal digital telephone access also offers significant conveniences. In order better to acquaint the subscribers with our range of services, we have distributed selected information since the summer of 1998. Our customers thus are informed in the “Tips” included with the telephone bills about everything concerning the supplementary services included with the digital access, such as alternating between two parties, call waiting and the possibility of the automatic “completion of call on meeting busy”. Very easy and comfortable – this is how you enter the digital age with us.

The Broadband Services ADSL and ATM

The broadband network is the “backbone” of our Austrian telecommunications infrastructure for high-quality broadband services. At the end of 1998, with more than 400 customer accesses, we entered the age of broadband communications. For approximately 50 private pilot customers, the age of broadband services commenced with ADSL. ADSL offers a range of unimagined possibilities



Competition makes us
strong. We are a fair
player on the free market.

of modern communications with an entirely new technology enabling transmissions in the high bit-rate spectrum and opening the way to absolutely new dimensions on the information and telecommunications highways.

The broadband service ATM building on ADSL makes it possible for the first time, to transmit huge quantities of data of the most various kinds over one single connection. Audio, video and data transfers can be transmitted with a hitherto unseen speed, quantity and quality. This creates new conditions, perspectives, and opportunities for the professional life of tomorrow.

“The number requested is ...”

One of the most important new developments of the business year 1998 was the nation-wide introduction of the “automated directory assistance” (ADA). We obtain the data of the subscriber wanted from our computer-assisted information system. The caller is given the calling number itself by a voice computer. The waiting times for persons seeking directory assistance thus are reduced by 20%. Different technical adjustments and optimizations at the switches were required for the introduction of ADA. We will build thereon and will carry out further improvements of the quality of service and expansions of the range of products.

Changing over is worth it

The “0660” service is being succeeded by a new, especially powerful offer – the “serviceline”. We are offering, with the aid of the “intelligent network” technology, the further products developed in the business area of value-added services, i. e. freeline, voting line, global freeline, and Telebusinessline. The change-over to serviceline and freeline is free of charge for existing “0660” customers.

Always the right Connection

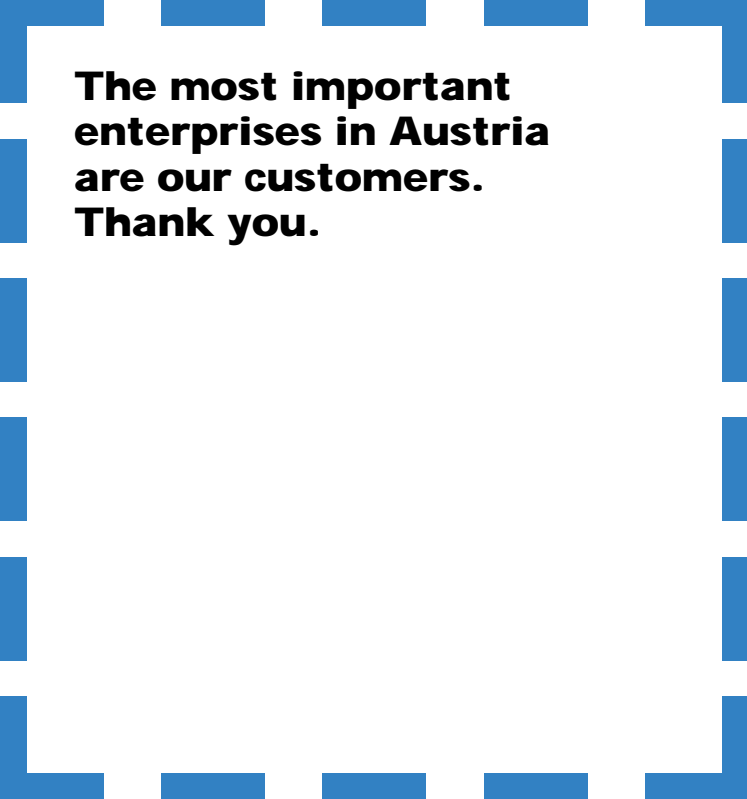
With respect to all services on the basis of the intelligent network, we develop together with our customers a so-called traffic routing system: a decision is made, which calls are routed by us from which areas, at what times, to which destination. A uniform directory number across Austria is allocated; depending on the type of service, the subscriber and the calling party share the call charges (shared cost services), or the caller is charged a higher rate (premium rate services). With Freeline, the caller pays nothing (freephone services), and with Global Freeline, a uniform directory number applies throughout the entire world – without charge to the calling party.

Ready for Dialogue

The Voting Line service enables our customers to conduct opinion surveys by telephone. The callers are able, by a selection code, to depose their opinion pro or contra, under an Austria-wide uniform number. We count the calls and pass the data on to our customers. By way of the Telebusinessline, the customer is able to offer information services under a single number across Austria. The customer decides with its selection from four rate levels, how much the caller has to pay for the info-hotline (premium rate service). We collect all charges for our customers and pass on the agreed portion.

Call Center: Efficiency and Quality ...

Following the successful introduction of the call center for personal and business customers in the previous year, we placed the main emphasis in 1998 on the optimizing and expansion of our services. The highly modern network technology of the virtual call center connects the thirteen locations, recognizes capacity utilization peaks and transfers calls automatically to another location. In the business year 1998, we have exploited the experiences gained, and have created a uniformly high level of customer service at all locations.



The most important enterprises in Austria are our customers. Thank you.

... mature Technology ...

The technical prerequisites also warrant, that all information is available in the same form at all call center workplaces throughout Austria: thanks to the newest version of CTI (computer telephony integration) which we installed at the end of 1998, our personnel at the call centers obtain even more information concerning the caller. For example, they are able to see how long the customer has waited for the call to be answered, whether there is a sufficient number of free lines available at the place to where the caller is to be connected, and whether the customer is classified in the optimal tariff having regard to his telephone usage.

... all-inclusive Solutions

Our experience as providers of turn-key, all-inclusive solutions benefits our customers also in connection with call centers. We install the call center facility and assist in finding the appropriate hotline from the range of value-added services offered. In addition to the technology, we also offer the services of accepting and processing calls: large mail-order businesses in Austria have the customer calls rerouted directly into the call center of Telekom Austria.

Stylish Equipment

In the business year 1998, we have established ourselves as specialty dealers in telecom products. Our distribution channels consist of the Telekom Shops, the mail-order department of Telekom Austria, the sale of telecom products at the post offices, and of the service teams responsible for the customer at home. We have aggressively advertised the strongly expanded range of products and services in the telecom catalogue issued in the spring and the fall and distributed to all households in Austria. We have increased the range of services with extended warranties and agreements for on-the-spot service for most of the products. We also increase continuously the range of the products offered by us, e. g. with ISDN-ready equipment, facilities for internet access and data transmissions or cordless phones with new functions.

The Euro and the public Telephone

As the only universal provider in Austria, we operate a nation-wide network of public coin and pre-paid card telephones. The conversion of the public coin and pre-paid card telephones to the Euro must be completed by the year 2001. In order to maintain the profitability of the payphones, we will carry out structural changes in the next years, and will shut down approximately 2,000 telephones at multiple phone locations.

New Ways of Security

In the local network Vienna, we have been offering for some years a telemetry and security service: fire alarms are transferred to the fire department, and silent alarms to the police. Our service is appreciated especially by business customers and owners of weekend homes. For this reason we have commenced in 1998 with the expansion of the required facilities, which should be completed by the end of 1999. The range of services offered moreover includes a "security network" for the monitoring of buildings and the operation of automatic controls, and a Utility Resource Management such as for the energy management of buildings. For 1999, we plan to organize a security monitoring system, in the context of which data are evaluated and passed on to service businesses, respectively to residential customers.

"Hot Wire" to the Press

Our mobile press center has been deployed successfully at the EU special summit at Pörschach (Carinthia) during the Austrian presidency, at the Forum Alpbach, and at six world cup ski races. At the center of this all-inclusive solution is a communications facility managing all telephones, facsimile machines and computers. We thereby

were able to secure professional communications and frictionless proceedings amid the hectic activities.

Transmission Technology for the Future

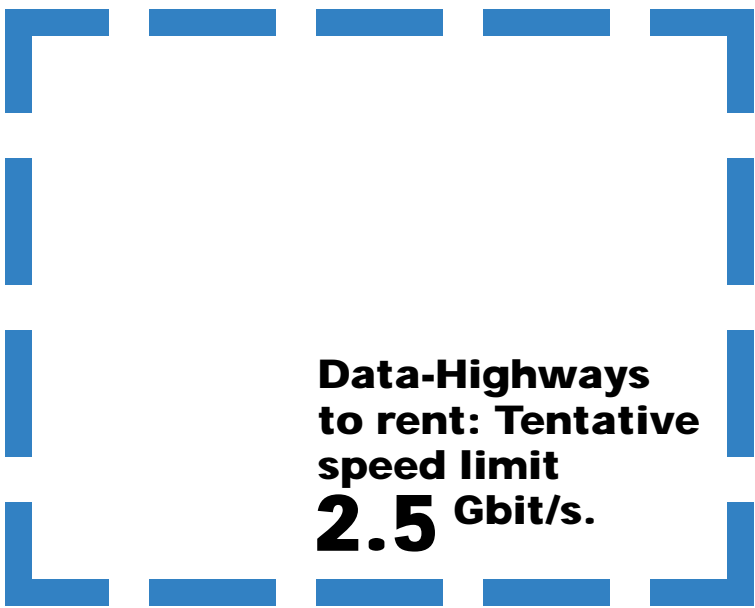
In the 1998 business year, we have expanded the performance of our network. Analog and older, high-maintenance transmission systems based on coppercables technology were replaced by new, favorably-priced systems using optical fiber cables. By the commencement of operations of optical fiber transmission facilities, we have been able to optimize significantly the use of the carrier network capacity and the automated back-up circuits of national and international connections.

Leased Lines: a high-quality Network ...

Our products range from analog leased lines with a bandwidth of 3.1 kHz up to dedicated digital lines with bit rates up to 155 Mbit/s. With these, we create solutions for the interconnection of private branch exchanges and the connection of voice and video – but also of large computer connections and corporate networks for mobile telephony operators. Our well-developed optical fiber backbone network with bit rates of up to 2.5 Gbit/s, among others, is available for the provision of these leased lines. We achieve the required high stability against line outage through network ring structures and physically separate alternate routings, as well as automated backup circuits.

... Quality Assurance for the Customer

In order to maintain the high standards, we have introduced a quality management system according to ISO 9001 for the area of leased lines. In May of 1998, the öQS Zertifizierungs- und Begutachtungs GmbH has confirmed, at a certification audit, the conformity of the system to the quality standards. With the quality assurance in the technical area, we also have improved the customer care: on the basis of a feasibility analysis, the customer receives an order confirmation including a schedule of costs and the delivery date. The regular analysis of the wishes and the satisfaction of our customers are part of the quality management.



Data-Highways
to rent: Tentative
speed limit
2.5 Gbit/s.

Lower Charges for Leased Line Customers ...

The market share of Telekom Austria in the area of leased lines is greater than 90%. The deployment of the most modern, cost-effective technologies has enabled us at the beginning of 1999, to lower the monthly rates by 19% for 2 Mbit/s lines, and by more than 50% in the case of longer domestic distances.

... and foreign Network Operators

We also have lowered – significantly in part – the mutual clearing rates for the international telecommunications traffic with a large number of foreign network operators. We have deepened the development and the maintenance of customer and supplier relations with the creation of a separate organizational unit for the business with international network operators. Further, we have introduced additional services such as freephone services, international freephone services and country direct services.

A Satellite for “Stadtfernsehen” TV

In the field of broadcast applications, we have installed an uplink station for the operator of the “Wiener Stadtfernsehen” TV station. The transmission signals are now sent via satellite to six cable head stations in the other Austrian provinces. The technical reach of the TV station has been increased, through this service of Telekom Austria, from 385,000 Vienna households to 650,000 Austrian households.

Service for EUTELSAT

For the European telecommunications organization EUTELSAT, we have technically supervised and measured the transmission of TV programs over the EUTELSAT satellite. We have prepared for the commissioning of ground stations, in order to expand the range of our services offered to international satellite organizations.

A new Product: the geographic Data Archive

The line department of Telekom Austria requires the geographic mapping of the areas to be serviced, for purposes of the documentation of its line facilities. We now offer for sale, either for the entire territory or for individual lines, the collected “Telekom Austria Geo-Data”, consisting of approximately 140,000 map folios with geodetically collected and digitally processed site data. These data stored on floppy discs or CD-ROMs are of interest above all to municipal administrations, infrastructure providers or civil engineers.

Tele-medicine via Satellite

In the context of the IST 98 fair, broadband ISDN using ATM technology was deployed, in a first commercial pilot project, for a multimedia transmission via satellite. Tele-medicine is a significant field for the application of this technology.

International Networks with Telekom Austria

In a competition for an order from MCI/Worldcom for a 34 Mbit/s transit connection between Italy and Germany, we were able to succeed against numerous competitors. We succeeded in creating the connection in the fastest time and at the best price. Telekom Austria and Datakom Austria jointly won the tender competition for a 155 Mbit/s leased line between Vienna and Frankfurt for the science network of the European Union (project Dante). By reason of our participation with the international TAE (Trans-Asia-Project) cable project, a direct land-based connection to Asia now is available to us.



50% of new clients
log in with A-Online.
Newcomers count on the
shooting star.

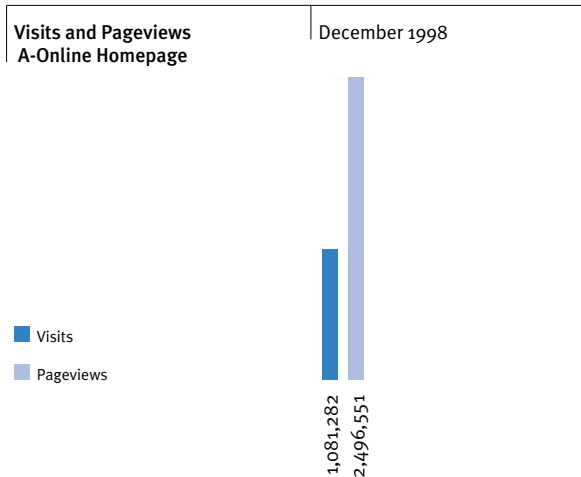
A-Online

Speeding up – on Highway 194

The Internet a long time ago has succeeded with its breakthrough as a communications vehicle. With the establishment of the Highway 194 Internet Vertriebs GmbH, the Internet provider of PTA and ORF (Austrian Broadcasting Corporation), in March of 1998, we have contributed to the rapid spread of the Internet in Austria. We are growing dynamically and are extremely successful: a 180% addition of new paying customers, the quadrupling of the number of employees, and the rise to rank two, according to the Austria web analysis, all within one year. Additionally, with more than 6,500 points of sale, we own the densest sales network in Austria.

Simply fast

A-Online counts on rapid and uncomplicated access to the Internet. Simple and fast is also our highest creed for products and services: at the beginning of the business year, we have simplified the rate structure. Customers now are able to choose between two models: the “A-Online Classic” offer is directed at persons using the Internet on an occasional basis and thus preferring a time-based charge. “A-Online Economy” guarantees unlimited access to the Internet and is the choice especially for frequent surfers making extensive use of the various services of the Internet. As an additional service, our customers are able to choose favorably-priced modems, in order to enter the new medium easily and quickly. Since November of 1998, we have been acquiring month for month more than half of all Internet newcomers. The market share of our brand A-Online on the residential Internet market has risen from 9 to 28% since July of 1998. We were able to welcome 6,000 new customers in December of 1998 alone.



Green Light for our Surfers

The most important criterion for satisfied surfers is the speed of data transmission. With a bandwidth of 34 Mbit, we are using one of the strongest backbones to the USA among comparable providers. The performance of the backbone within Europe has been increased in July from two to six Mbit. In direct comparison with the leading Internet providers, we thus offer one of the most powerful accesses to foreign Internet pages. The customers thus are provided with the best transmission quality even with rising numbers of subscribers.

A-Online – the Community-based Provider

With a strategic choice of sales partners, we have constantly increased the coverage provided by our distribution network. In the middle of July of 1998, sales commenced in more than 2,300 post offices, through 40 Telekom Shops and in all p. s. k. (Postal Savings Bank) branches. “Booming Monday” was the term used by the press to describe our first day of sales in post offices, on which we concluded more than 1,000 contracts with private households. Since late summer, A-Online has been available also in EDP retail stores, in book stores, in more than 2,000 tobacco shops and at Hifi and electronics stores. A-Online, with over 6,500 points of sale, thus is established as a community-based provider in the Internet business.

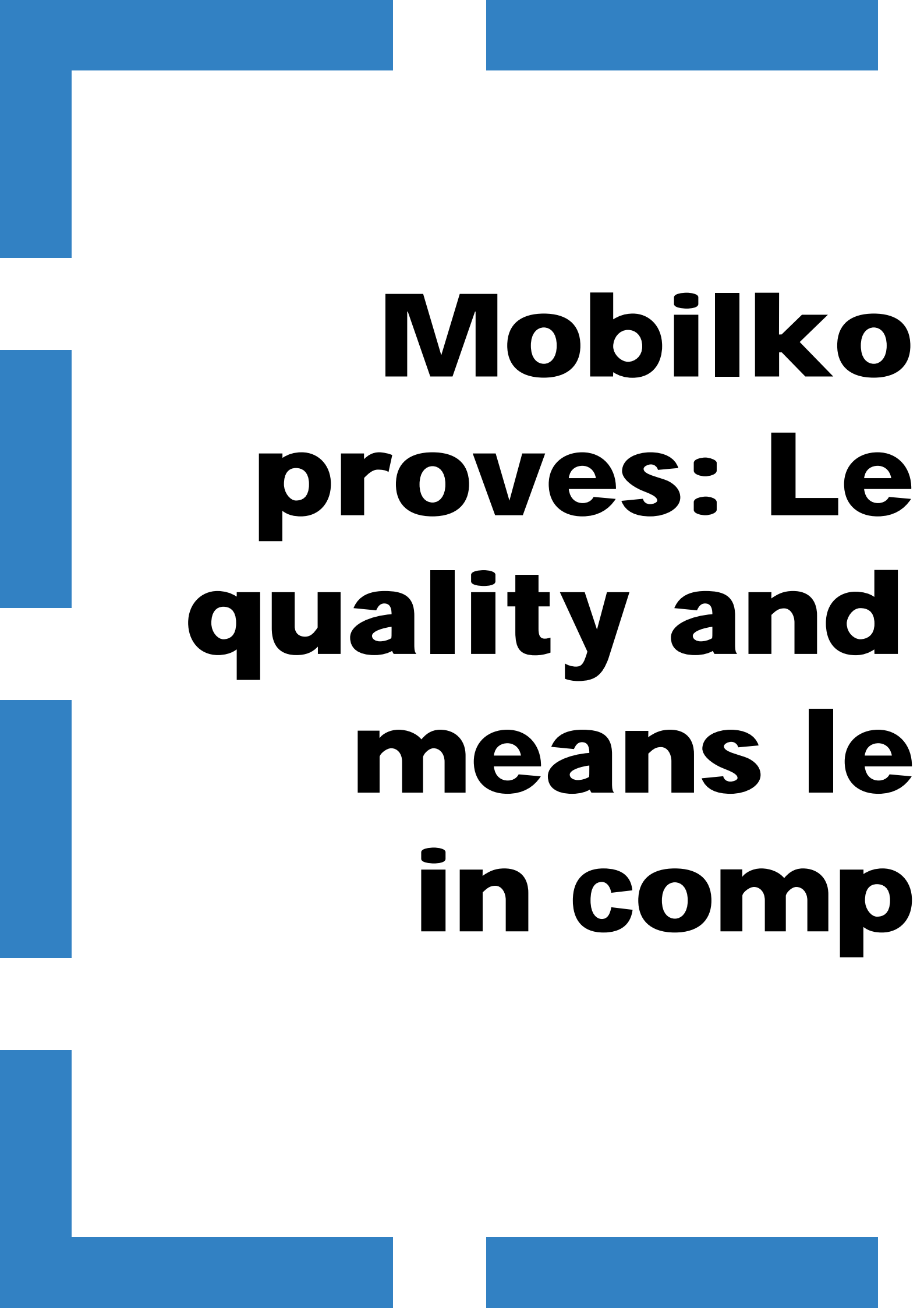
The Silver Medal for A-Online

Within a few months, our homepage www.aon.at has become very popular in Austria: With 2,496,551 pageviews and 1,081,242 visits, A-Online, already in December of 1998, has ranked as the second most-visited Internet site in Austria. Our A-Online homepage for this reason is also a most interesting and promising choice as an advertising carrier.

With numerous and comprehensive communications measures, we have been able to increase the publicity of A-Online enormously. In December of 1998, a survey attested A-Online a degree of publicity of 71%, which means an increase of 20% within ten months.

The Future belongs to the Network

The number of Internet users increases every day. Soon an Internet access in every household will be a matter of course. A-Online will play a key role in this growth market in Austria. We have created the basis for this in the last year. The strategy works. In the year 1999, A-Online plans to serve significantly more than 100,000 customers.



Mobilko
proves: Le
quality and
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leadership in
technology
leadership
competition.

Mobilkom

The boom of mobile telephony continues. An ever increasing number of customers are relying on our innovative products and services. At the end of 1998, 1.5 million customers were telephoning in our networks; mobile telephones have been available to 30% of all Austrians. In the foreseeable future, the number of mobile phone users will have surpassed that of the fixed network users. So much for the trend. And now the facts: we are the technology and market leader in Austria.

Success has a Name

The mobile telephony market is booming since liberalization. And we have mastered the challenge of the opening of the market. Thanks to important innovations, such as the VoiceButler or the free-of-charge Internet access A1-PocketNet, we have been able to mould decisively the development of the contested market. Our enterprise has become the technology leader. Despite the hard price competition on the Austrian mobile telecommunications market, we have been able to position our products, in particular the premium brand A1, as leaders in technology and quality.

Looking beyond one's own Horizon

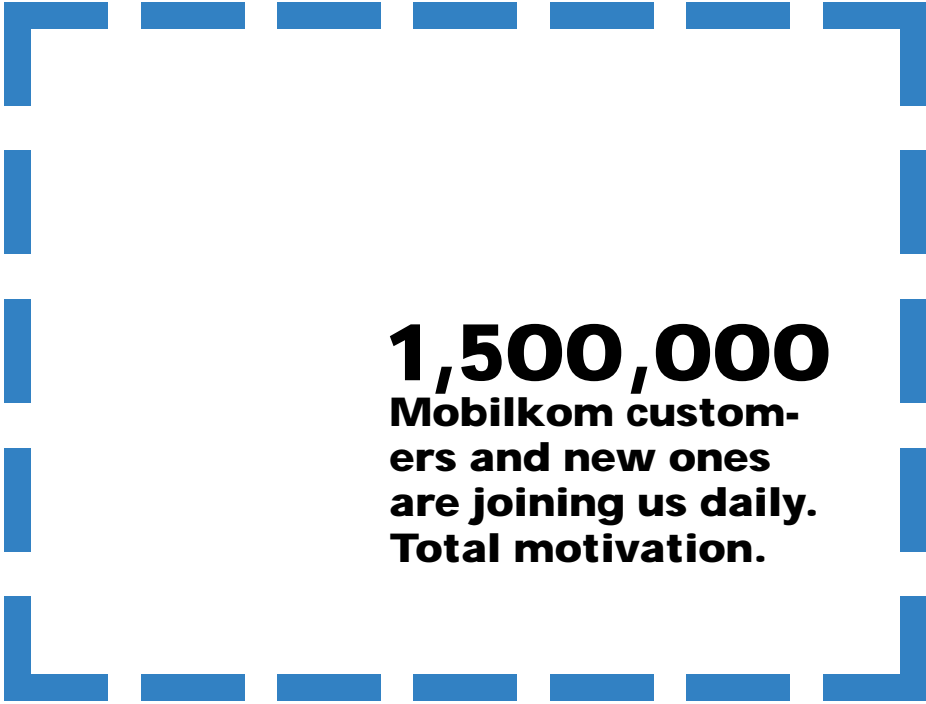
In the late fall, the consortium vIP-Net Croatia received the first private GSM license in Croatia. Mobilkom Austria holds 30% of the shares of vIP-Net. Besides the financial involvement, we contribute above all know-how and personnel to build up and to market mobile telephone networks. The consortium vIP-Net Croatia consists of four Croatian enterprises from the media, bank, construction and insurance sectors, Mobilkom Austria and Western Wireless International.

We are counting on being able to commence operations eight months after the award of the license. Three months later, coverage will already amount to 75%. The network is to be fully completed within two years. Experts forecast that in three years, there will be 500,000 mobile telephony customers in Croatia. This corresponds to a market penetration of 10%. We strive for a market share of 25% within this period.

Curiosity will advance us

UMTS, the Universal Mobile Telecommunications System, is a new technology for mobile telephony. With UMTS, we will provide mobile services for all communications, from moving images to data transfers for banking transactions. Thanks to UMTS, continental technologies are merging into a unified global standard.

As technology leader, we participate in research initiatives of the Forschungszentrum Telekommunikation Wien (FTW), the UMTS-Forum and the Technical University Vienna. We conduct research toward the further development of the Internet and with respect to technologies for interactive multimedia applications; we develop intelligent networks and antennas for future generations of mobile phones. Further, Mobilkom has commenced an information initiative. It is to point out the chances and opportunities of the new mobile telephony technology UMTS for Austria's



1,500,000
Mobilkom customers and new ones
are joining us daily.
Total motivation.

economy and society. The information initiative has been rung in by the symposium "Visions of a Wireless Information Society" led by international experts. The study "Third Mobile telephony Generation" and "The mobile Future of Enterprises" were being published widely.

In 1998, Mobilkom, as the first Austrian mobile telephony provider, introduced convergent products to the market. With A1-PocketNet, our customers are able to enter the internet both via the mobile phone and via the fixed network. The VoiceButler, a feature by which e-mails are read out to the caller via the mobile phone using the text-to-speech method, is a particularly special technical innovation. The A1-Handy-Banking service provides the customer with data base access and account management over the mobile phone.

Environmentally sound Progress

Mobilkom Austria offers the competition, where this is technically possible, unused antenna space on support units. In this regard, it is important to us to impair as little as possible the appearance of the urban environment and of the landscape: in choosing our sites, we thus prefer existing buildings in order to avoid the construction of separate support units. If we nevertheless have to build, then we strive to adjust the support units to the regional conditions.

Products & Services:

With us, you will be successful

Businesses relying on mobile telephony are better off: according to a study commissioned by us, the use of mobile phones not only facilitates internal communications. Also the external contact with customers, suppliers and business partners is improved on a lasting basis. This has a positive effect on the level of operating results. We accommodated this fact with the launch of a new tariff model, A1 Company, in August of 1998. The mobile Company tariff has been tailored in particular to small and medium enterprises. D-Company is the analogous product for the D network of Mobilkom.

We provide Mobility ...

Through the connection of the Internet and the A1 network, A1 NetOffice is an attractive and flexible communications solution for the business sector. Messages from the personal computer may be sent via the A1 network to mobile phones, pagers, facsimile machines, e-mail addresses or to other personal computers. Conversely, the Internet transmits data entered on a mobile phone display to a personal computer. Further, A1 NetOffice is equipped with an address book function, a time planner, incoming and outgoing maps and a chat room.

... fast and stable

Since 1997, all A1 customers have had free Internet access via their mobile phones. Since 1998, they now also are able to enter through their personal computer the most economical network at any given time, with a transmission rate of up to 56 K, respectively with the ISDN standard of 64 K. With the A1-PocketNet Traveller, A1 customers dial into a local Internet provider dial-in node in Europe, North America and the Far East. Via the mobile phone or the fixed network, the mobile customers have access also from abroad to their A1 PocketNet e-mail address or are able to surf in the Internet.

Flexible Network Management over the Internet

Since 1998, businesses are able to configure their mobile telephone system directly over the Internet. With A1 NetWork, we offer, since September of 1998, as the first mobile telephony enterprise in Europe, a mobile private branch exchange (Virtual Private Network – VPN) in the GSM network. Tariffs, short codes, rerouting and authorizations may be chosen directly via the Internet. Thus, the employees are accessible globally with short codes. The unique feature is that the businesses themselves are able to change the accesses and their authorizations via the Internet; thus, a flexible network administration and optimal expense management are possible.

The talking Butler

With the launch of the VoiceButler available to all customers of Mobilkom in the A1 and D networks, a decisive step into the mobile future has been made. This convergent technology widely enables the user to listen to e-mails through the conversion of the text of the e-mails into voice.

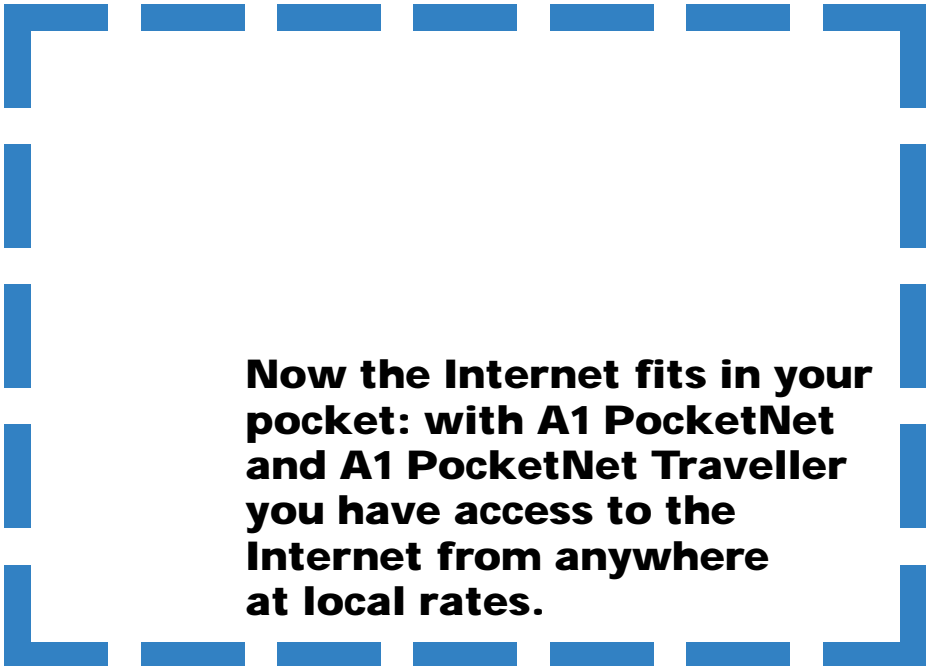
Be free – without fixed Charges

The successful course of the pre-paid card offered by Mobilkom continues on a steep climb. B-free, the pre-paid card mobile phone in the A1 network, had 397,000 new subscribers in 1998. Around Christmas, between December 24 and 27 alone, there had been 30,000 new activations. B-free customers enjoy the qualitative advantages of the A1 network without payment of a basic charge.

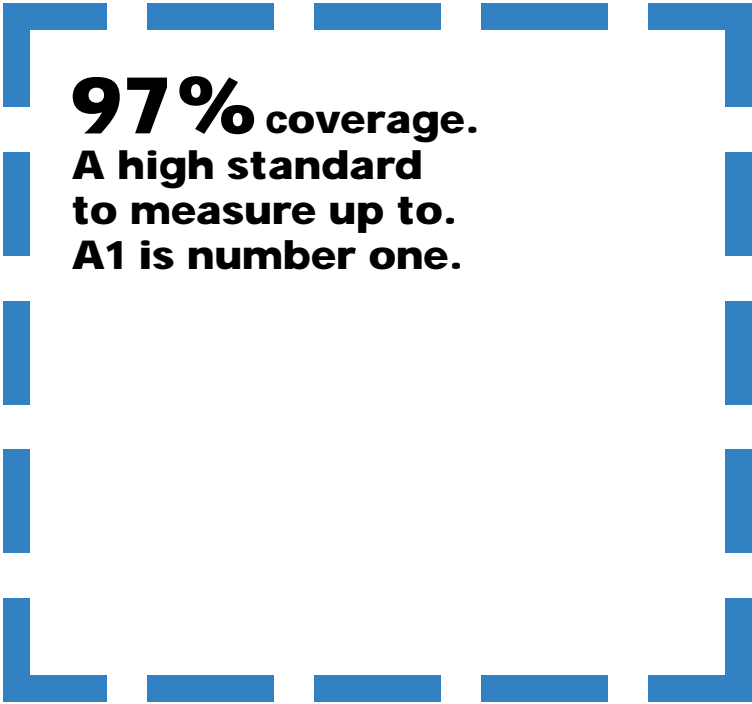
Sooner or later, everyone will appreciate our Network

The D-network today stands for the most favorably-priced mobile telephony network in Austria, with maximum network development. Almost the entire population is accessible with the D-network. The reception is distinguished by high stability. In 1998, there has been a repositioning on the Austrian market: it has been possible to strengthen the position of the D-network at the beginning of the year by means of a newly introduced tariff. Further, in 1998, the Mobilkom service “A1 for you” also has been offered to D-network customers.

Today we assume that due to its technical reliability, the D-network still will be deployed beyond the year 2000.



Now the Internet fits in your pocket: with A1 PocketNet and A1 PocketNet Traveller you have access to the Internet from anywhere at local rates.



97% coverage.
A high standard
to measure up to.
A1 is number one.

With a new Focus: I page, you pay ...

With CALL ME, Mobilkom offers a paging product based on the “calling party pays” principle. In this regard, the CALL ME customer pays neither basic charges nor other costs. The pager is ready to be used immediately after purchase. Additional information services, such as current daily news from politics, sports or leisure round off the service package. In 1998, we commenced to direct paging in particular at applications for specific target groups, such as physicians or emergency services.

Did you ask a Question today?

Under the hotline 0800 664 664, the call center of Mobilkom offers around-the-clock support with questions concerning the mobile phone. More than 300 employees respond to up to 20,000 calls per day. Despite the large demand, we respond in less than 20 seconds in 90% of all calls.

With the new installation of the call center in 1998, we count on the most modern technology. From every workplace, we are able to access via computer information concerning tariffs, roaming partners, coverage, billing questions, technical issues and mobile phone models.

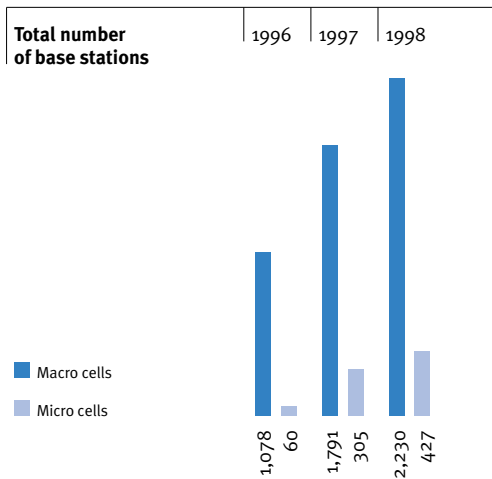
6666 – the Number for Your Number

Since March of 1998, we have been offering our customers the operator service “A1 ForYou”. Using the hotline 6666, every A1 customer is able within a few seconds to request any national telephone number and to have himself connected immediately with same. More than 100,000 A1 customers have used “A1 ForYou” since its market introduction. All expectations have been surpassed with this development.

Since April 1, 1998, every A1 customer receives, over the hotline 6644, information regarding events, concerts, clubbings, travel offers and sports news.

... where to buy

In 1998, we have quickly pushed forward the expansion of shops owned by Mobilkom and thus the sale in surroundings typical to Mobilkom. Until the end of 1998, 13 sales premises had been opened across Austria.



The Network for Austria

With a coverage of 97% of the A1 network at the end of 1998, Mobilkom lies not only ahead of the competition in Austria, but also ranks at the top across Europe. In total, 2,657 base stations were in operation at the end of the year, a plus of 561 base stations as compared to 1997.

In the course of the qualitative network development, we have in addition supplied 70 tunnels throughout Austria, with an overall length of more than 200 km, with base stations. We also have improved decisively the voice quality in the digital A1 network: since the end of November of 1998, Mobilkom offersEFR (enhanced full rate) throughout Austria. EFR is the further development of the currently applicable transmission procedure. With the a new voice coding technology, the voice sounds more natural and noise is reduced to a minimum. In this way, the voice quality in the A1 network comes very close to that of the fixed network.

Hello Uncle Sam

Mobilkom Austria is the first mobile operator in Austria who was able to conclude a roaming agreement with the United States. Since the beginning of 1998, A1 customers in the greater Washington and Baltimore area are able to call to Austria. In the middle of March, North and South Carolina, Georgia, Virginia, and Tennessee were opened as roaming territories; New York, the east coast of Florida, New Jersey, Philadelphia and New England followed somewhat later. For Austrian business travellers and tourists, the east coast is now almost completely on the air. The west coast of the USA is to follow as the next coverage area.

Since only the 1900 GSM system works in the us, we offer our customers, in cooperation with an airline, the possibility to rent an appropriate mobile phone.

Ever present

Since the fall of 1998, A1 customers can telephone via the satellite net Iridium. Presently, 60 of the 66 satellites are working in low earth orbit. Mobilkom Austria is the only service provider in Austria which provides Iridium's complete range of services. A1 customers can use their A1 SIM-card for roaming via satellite net or they get an Iridium number exclusively from Mobilkom.



Nobody
Datakom
New servic
fully launch
exceeded
Competition

can stop
Austria:
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targets.
surpassed.

Datakom

Our market is growing fast. We are growing even faster. With every day, we are gaining further market shares and are expanding our position as the leading provider of data communications solutions in Austria. Change for us is part of the business. Trendy today, outdated tomorrow. Our customers want custom-made solutions. What fits today, will be too small tomorrow. Power of innovation and readiness to provide service make us strong. We keep at it.

Datakom is more

The trend toward globalization has continued impressively during the past year. Parallel thereto, the demand for networking and information procurement has increased. After two years of existence, Datakom Austria GmbH is already Austria's leading and most comprehensive provider of data communications solutions. We provide the installation of the network infrastructure, conduct active network management and provide comprehensive data base and information services, e-commerce applications and EDI services (Electronic Data Interchange). Successful businesses and organizations across Austria and internationally use the services of our Datakom, and thus trust a reliable and competent partner.

More Personnel, more Locations

Our turnover growth exceeds significantly the market growth for data services. Our annual turnover in 1998 increased to ATS 3.2 billion. We hired 170 new employees. The number of our employees thus increased to over 800. Besides the head office in Vienna, there are branch offices in Graz, Linz, Salzburg, Klagenfurt and Innsbruck. Thus we are able to warrant nation-wide customer service. We have expanded in particular the regional product management.

Networks provide Publicity

Technological competence and solution-oriented thinking are important characteristics of Datakom. This enables us to tie optimal relations with our customers. The proof of this lies in our rate of success with calls for tenders in regard to networks: In 90% of all submissions of offers, we get on the short list. We are awarded the contract in 80% of these cases.

Thanks to our success, our publicity is constantly increasing. Opinion surveys in our target group (business user) were able to confirm this.

In the sector of network services, Datakom has achieved a degree of publicity of 70%, and in the sector electronic commerce and EDI services, Datakom ranges on first place, equally with a co-competitor, as the best-known provider.

Networks: One-Stop Shopping

Business-wide networks, so-called "Corporate Networks", currently constitute one of the largest potentials for growth in telecommunications. Corporate networks of Datakom are developed as all-inclusive solutions for the customer. This means that we procure, configure and install all the required facilities. Our nation-wide organization also guarantees operation and maintenance.

Networks: Growth

A swift expansion of the WAN (Wide Area Network) is the basis of our efforts to firm up the position as market leader. In 1998, we commenced operations at 30 additional sites for the protocol-oriented service DX FR (Dataswitch Frame Relay), and we have switched on our 25,000th customer. There has been pleasing growth also in the combinational



3,200,000,000 ATS
turnover and 170 new employees.
That's our contribution to
prosperity.

circuit DDL/s (Direct Data Line Combinational Circuit); we have connected approximately 5,000 new terminal stations.

Networks: Investments in Technology

In addition, we have pushed ahead the holistic construction of a nation-wide universal data network. In future, we want to offer to the Austrian business customers new services in the sectors data services and corporate networks. The investment costs for the first expansion phase amount approximately to ATS 135 million. With this new universal network, Datakom Austria GmbH is able to offer customer-specific solutions of high quality and availability.


Networks: Integration

Our corporate network solutions also integrate various value-added data services. Every customer has the opportunity with these additional services to obtain the appropriate data base and information services through Datakom, and to use the possibilities of the Internet with e-commerce and EDI. In our era of fast access to information, the

broad scope of the business sector is a significant competitive advantage, which will gain still more significance in the next years. The ever growing link between Datakom's business sectors of data services/corporate networks and value-added data services provides a unique product range and full-service solutions.

International Networks and Awards

In 1998, we have expanded our national and international cooperations. General Electric Information Services (GEIS) and British Telecom (BT) are our tried and true partners, NET and CISCO as world market leaders are among the strategically important suppliers. Datakom even has received a unique award from CISCO, the globally active IT enterprise. Despite the small market in Austria – in comparison with much larger countries of destination – Datakom has been awarded the 1998 prize for the best distribution partner of CISCO network products in Europe, Asia and Africa. With this international award, we are demonstrating our quantitative and qualitative market leadership for corporate networks. In only two years, we have increased the



Distinctive. Datakom Austria was awarded the distinction for the best distribution partner in Europe, Asia and Africa by the global player CISCO.

turnover in this business sector from zero to one billion ATS. Already in 1997, Datakom received the CISCO award as best reseller on the Austrian market.

Datakom is Austria-Partner

We have succeeded in gaining renowned enterprises and institutions as partners also in Austria. We maintain one of our most important partnerships with the barcode company EAN Austria. EAN is the operator of the ECODEx network, a form of electronic data and commercial traffic tailored especially to businesses. Datakom became a contracting partner in July of 1998, and thus is the second purely Austrian supplier in the ECODEx network, together with the previous sole supplier. With this product, we target as customers mainly small and medium enterprises, and enable the approximately 35,000 Austrian SMEs to join the world of Electronic Data Interchange (EDI).

Successful with the Customer

In connection with the numerous customer orders won in 1998 in the sector data services/corporate networks, Datakom has been able to assert itself above all with network services for insurance companies as the undisputed number one. All large insurance networks in Austria have been constructed and are maintained by us.

Apart therefrom, there have been several large projects with a unique position and important strategic significance within Austria. In this regard, we have taken over the Frame-Relay-Network of oö Datenhighway Entwicklungs-GmbH (ODE) and expanded same into a nation-wide network.

For one of the largest groups in Austria situated in the financial services and agricultural cooperatives sector, we have commenced with the networking of the eight main locations. This network will be the first classic broadband network in Austria using the newest optical fiber technology at the customer interface.

For the parent corporation PTA, Datakom is constructing the OPAL network, a holistic network of all post offices, one of the most expensive networking projects in Austria.

We also supply the Lotto/Toto network including several thousand sales locations with a new Datex-P connection; this development guarantees a much higher processing speed in every single location.

At the end of the year, we constructed one of the networks with the most significant performance in Austria: that of APSS, which reaches all 20,000 "Bankomat" direct debit cash registers in Austria. Our full service includes the construction of the network, the connection of the respective line termination points and also the maintenance, the network management and the upkeep of the direct debit cash registers.

Organization in Flux

The existing Datakom call center can now be reached under the Austria-wide number 0800 501 500. This call center is available to all Datakom business customers in the event of data line faults, and is now staffed with competent personnel nation-wide, around the clock.

In 1998, we have installed in Salzburg our own product management for data services/corporate networks, in order to meet regional customer demands.

Optimizing Processes

Since the fall of 1998, we have our own Intranet. All relevant functions of an Intranet, such as, for example, technical information, sales information, administrative information; marketing information and also discussion platforms and job exchanges can be accessed by our employees. In this manner, we secure transparent information and communications.

Insurance companies want to be on the safe side. It's no wonder that all the big players have their networks installed and maintained by Datakom.

A Year full of new Products!

February	March	March	April	April
<p>Reuters Call ...</p> <p>Using SMS (Short Message Service), customers are able to retrieve in real time over A1 cell phones, stock exchange information such as currency exchange rates, metals, share indexes, interest rates or stock quotations.</p>	<p>Corporate Voice over IP ...</p> <p>Internet and Intranet telephony now is available in corporate networks. The connection setup now takes place through a server, to be dialed up over the Internet or the Intranet. The server then will establish the connection between the telephone or the PC equipped for telephony.</p>	<p>Facsimile via e-mail ...</p> <p>It is possible with a new software electronically to receive, process and send, besides e-mails, also facsimile messages, telex and telegram messages. Thus it is possible to transmit both from a PC to a facsimile machine, as well as from a facsimile machine to a PC.</p>	<p>Mobilkom-Bills with FREDI ...</p> <p>In addition to the customary telephone bills of Telekom Austria, it is possible now to obtain the A1 bills of Mobilkom electronically, in an EDI format. FREDI stands for "Fernmelde-Rechnung über EDI" (Telephone Bill over EDI).</p>	<p>Customer Premises Equipment ...</p> <p>Analyzing existing corporate networks, supplementing missing network components (hard and software), renewing outdated components, deleting superfluous ones: Datakom's comparison of forecasts with actual results will optimize any corporate network, even if originally installed by a competitor.</p>

Customer Orientation

In order to obtain basic information concerning the expectations and attitudes regarding the conversion to the Euro, we conducted a comprehensive survey at the largest enterprises of Austria in the spring of 1998. This survey has shown that the large enterprises have specific demands against their suppliers, and that, by reason of their international involvement, they also have exact conversion plans. They will at last determine the economic events through their direct or indirect market influence. The Austrian small and medium businesses, often acting as suppliers, are coming under strong pressure thereby.

Lawyers are obligated, as of January 31, 1999, to use the “electronic legal traffic” (ERV) for the transmission of statements of claims in summary proceedings, and for executions. Extracts from the Land Register and the Company Register also are to be obtained online. In order to inform Austrian lawyers regarding these important changes and to familiarize them with the required technology, we initiated a road show across Austria in May and June. A total of 360 lawyers visited these informational events, which were held at eight locations throughout Austria.

Five to Two thousand

In the fall of 1998, we have set up a separate site at our webpage, concerning the subject of the “Year 2000 Readjustment”. There we list all products affected by the Year-2000 problem. At the same time, we provide specific help, explain measures and show the appropriate plans with dates.

News for King Customer

On the Datakom homepage, we offer national and international reports regarding the subject of telecommunications and data communications. We review the global news services daily, in order to keep our pages up-to-date. This news service is free of charge.

In 1998, we have created “datamatics” as a new, free-of-charge quarterly customer magazine. The magazine primarily focuses on application reports regarding our solutions and our customers. “datamatics” is strongly used also as an advertising carrier. Our customer magazine constitutes, through free ads or user stories, a strong sales-supporting communications tool in the area of customer care.

May	May	June	September	December
<p>Revenue Online ...</p> <p>Certified accountants now are able to access electronically the tax accounts of their clients at the competent fiscal authority. They also are able to access online account balances, accounting entries, prepayments made and assessments. Besides accessing data, they also are able to transmit data.</p>	<p>Corporate Intranet ...</p> <p>Intranet solutions supplement the existing WAN/LAN facilities of Datakom and enable complete internal communications. The Intranet includes user features such as Intranet-Server services, client products, and firewall solutions building on the network infrastructure installed by us.</p>	<p>Ecodex mit Datakom ...</p> <p>Ecodex is a form of standardized electronic data interchange (EDI) tailored especially to commercial enterprises. Datakom customers no longer have to change the provider in order to use Ecodex.</p>	<p>EDI Customs</p> <p>Freight forwarders are under a statutory obligation to forward electronically a collective report to the Austrian customs authority. Datakom has installed a separate data clearing service, which examines the data with respect to formal correctness and completeness and forwards them to the “Bundesrechenzentrum” (Federal Computer Center).</p>	<p>Datastream ...</p> <p>New data line services enable a selection of data transmission based on individual needs. Datastream is the further development of the current Data-Direct-Line services, which in future guarantees higher flexibility, greater potential for expansion, and constant supervision of the data networks. Several quality levels, failure guarantees and back-up routes round off the new services.</p>



To us progr
New app
New i
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deas.
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Research and Development

The opening of the markets and the ever accelerating development of new technologies keep the telecom sector in motion. As technology leaders on the Austrian market, we are able to build on our wealth of experience. We provide a vital contribution to research and development in Austria, and we are partners of the most important protagonists in industry and science.

The positioning of Telekom Austria above all in the research and technology programs of the European Union is a very important factor for success: we participate in the context of ACTS (Advanced Communications Technologies and Services) and TEN-Telecom (Trans European Networks) in research projects of the European Union. Their purpose is the promotion of modern technologies, network infrastructures and applications in communications technology.

Faster than the Eye

In the ACTS project PHOTON (Pan-European Photonic Transport Overlay Network), we work together with European network operators and with partners from industry and science on the further development of optical fiber high-speed networks (Wavelength-Division-Multiplexing – WDM). With the aid of purely optical elements (cross connects), enormous data quantities (10 – 40 Gbit/s) are transmitted over long distances. We already have successfully applied these technologies in practice, in the context of a German-Austrian trial network. The follow-up project MOON (Management of Optical Networks) places the main emphasis on the development of concepts for the management of the optical high speed networks, and tests them in field trials.

Speeding up – on the Info-Highway

In the ACTS project JAMES (Joint ATM Experiment on European Services), Telekom Austria contributed together with 20 European network operators to the organization of a pan European ATM network, which served as a platform for the testing of numerous innovative applications.

Internet Telephony at EU Level

The aim of the project TTT-Net (TEN Telecom TIPHON) is the development of an international service in the area of Internet telephony based on globally heterogeneous systems and networks. A Memorandum of Understanding of the operators concerning the framework conditions for the provision of Internet telephony services could arise from this project. The successful framework agreement with respect to mobile telephony (GSM) serves as an example in this regard. The specifications and standards of the IP networks required for global interoperability are being worked out in cooperation with European network operators and in the ETSI-Projekt TIPHON (Telecommunications and Internet Protocol Harmonization on Networks). Telekom Austria has assumed a leading role in this regard: we are coordinating the organization of an international trial network, to which also the USA and Canada are connected. The specifications developed in TIPHON will be tested in field trials within the TTT project, and system components will be developed further.



Standing in front gives
a broader perspective.
Telekom Austria is
committed to R & D and
cooperates with science
and industry.

Internet Telephony with the European Network Operators

In the context of the cooperation among the European network operators (EURESCOM), we evaluate, in the "European IP Testbed" project, various methods to implement the classes of service in IP networks. We also test their scalability. New network technologies are being developed and tested in the "Technical Development and Support for European ATM Service Introduction" project.

As the only Austrian full-service provider, we involve ourselves to a high degree in national research and technology policy, and thereby contribute significantly to the implementation of the individual national technology programs.

Competence in Research and Business: Austrian National Host (ANH)

In coordination with the Federal Minister of Science and Traffic, and the operator of the science network, we provide the most modern infrastructure in order to appropriately support the different R & D projects in Austria and in Europe. The National Host Initiative serves the research and technology development in Europe in the area of broadband communications. The aim is the organization of cooperative structures between enterprises, universities and other research facilities. Geographically this concerns also third countries, besides the countries of the European Union; of special importance in this regard is the "link" to the emerging economies of Central and Eastern Europe. The Austrian National Host contributes with organizational and technical infrastructure to the development of the information society in Europe.

Forschungszentrum Telekommunikation Wien (FTW)

In a consortium including science and business, we research new technologies for the further development of the Internet, for fast data transmissions over existing copper lines, and technologies for interactive multimedia applications. The consortium was formed at the end of 1998 at the instance of the Technical University Vienna in the context of the K-Plus program of the Federal Ministry for Science and Traffic.

The research activities concentrate on the latest areas in the field of product development, in which Austria already possesses internationally recognized know-how. Telekom Austria and Mobilkom Austria are working together with three university institutes of the Technical University Vienna, the Austrian telecommunications supplier industry and several small and medium enterprises. This cooperation secures to these companies early access to the most modern know-how and enables the selected bundling of research resources.

Telekom Austria is involved in the discussion regarding the founding of further competency centers throughout Austria, depending on the subjects, and in coordination with its internal R & D programs.

In the context of the research and development programs of Telekom Austria, we develop future-oriented new developments such as UMTS, security in the Internet with digital signature and broadband satellite systems in joint projects with Austrian institutions. Our most important partners include:

- Technical University Vienna: a new generation of mobile telephony (UMTS)
- ARS Electronica Center/ORF (Austrian Broadcasting Corporation) Upper Austria: multimedia applications
- Technical University Graz: digital signature, broadband satellite systems
- Research Center Seibersdorf: control of data bases through the human voice
- Danube University Krems: new electronic media.

Personally signed: Datakom and Telekom Austria shape the development and certification of the digital signature.

In support of its R & D activities, Telekom Austria is conducting several pilot tests and practical applications of new technologies. Besides the technical framework conditions, we are testing the acceptance of the different multimedia contents and collect experience for an Austria-wide deployment.

ADSL Pilot Test in the Waldviertel Region

Since October of 1998, approximately 50 residential and business customers of the Waldviertel region pilot test interactively use Telekom Austria's new broadband technology ADSL. The test customers are linked to fast, broadband Internet accesses and to the services of regional online-providers and tv broadcasters.

Internet Telephony

The pilot test regarding Internet telephony has started in 1998 and is now successfully in operation. It focused on the general technical functionality of the transmission of voice over the Internet, and has created the basis for broad future application.

Digital Signature: Security in the Internet

We have developed a product in a cooperation of Telekom Austria, Datakom and the Technical University Graz, which can be deployed for the secure transmission of data over the Internet, for example for electronic commerce. With this product it is possible to examine, with the aid of the digital signature, the authenticity of transmitted documents in the Internet.

At the present time, no legal framework for digital signatures in Austria is existing. Datakom has established itself already in the launch phase as a certifying body, and has assumed the administration and issue of digital signatures in Austria.

Multimedia in Austria

We are cooperating with the ORF (Austrian Broadcasting Corporation) and the Ars Electronica Center in a multimedia project in Linz. Via copper cable, the pilot customers receive video clips, movie trailers, tv and radio programs, and art in digital form and applications in virtual reality.

Convergence: the Future of Networks

The convergence between the fixed network and the mobile network will bring far-reaching changes for network operators. The customer in future will no longer differentiate, in which of the two networks he is just phoning. UMTS (Universal Mobile Telecommunications System) is the European version of a mobile telephony system of the next generation. With UMTS, it is possible to communicate simultaneously with several media. Now the network operators are challenged to structure their networks anew. In cooperation with the Technical University Vienna, we are exploring the capacity of the networks and their potential for optimization.

Published by	Telekom Austria Aktiengesellschaft
Projectmanagement	Theresa Philippi Cooperation: Sabine König Postgasse 8 A-1011 Vienna, Austria
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English translation	MAG. CHRISTIAN MALBURG, LL. B. MMAG. SABINE FEHRINGER, LL. M. Rechtsanwälte Rahlgasse 1 A-1060 Vienna, Austria
Lithos and printing	Agens-Werk Geyer + Reisser Druck- und Verlagsgesellschaft mbH Arbeitergasse 1-7 A-1050 Vienna, Austria
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Telecommunications Glossary

ADSL

Abbreviation for Asymmetric Digital Subscriber Line; a digital transmission method for broadband applications. Constitutes a modulation and line technology for asymmetrical data traffic developed for conventional copper lines. Very high transmission speeds over normal telephone cables can be realized (up to 8 Mbit/s to the subscriber and up to 700 kbit/s from the subscriber; see also xDSL).

ATM

Abbreviation for Asynchronous Transfer Mode; very fast transmission and switching technology for high speed networks. Modern communications technology for the transmission of voice, data and multimedia, with a uniform network technology (bandwidth from 64 kbit/s up to the Gbit/s range).

Backbone

Networking of network elements (exchanges or transmission elements, computers) with high transmission capacities.

Bandwidth

Capacity of a digital transmission link, stated in bit/s.

Broadband Technology

Communications technology enabling transmission rates of more than 2 Mbit/s.

Browser

Program to search for and display Internet contents. For better clarity, a Browser provides a graphic visualization of www information and enables the selection of specific services.

Cable Head Station

Central station in a cable-TV network.

Call Center

Service units providing operator-supported voice services, such as, for example, hotlines or service lines on the basis of voice telephony service.

Convergence

The growing together of computer technology, electronic media and telecommunications (technical convergence, market convergence etc.).

Corporate Networks (CN)

Telecommunications networks designed for the special requirements of businesses and including local and supraregional networks.

Cryptography

Methods for the coding and decoding of information to be protected against unwanted access by third parties.

CTI

Computer Telephony Integration, computer-supported telephony. Through the interaction of telephony and computer technology, call center employees, for example, within seconds are shown information regarding the caller on the screen.

Digital Signature

Method to verify the authenticity of transmitted information. A code assigned to a text prior to transmission of data, certifying author, text and date with the aid of mathematical procedures using encryption. The recipient is able, based on the signature, to electronically verify the authenticity and integrity of the text.

Dual Mode

A new mobile telephone technology enabling the user with a single phone to telephone in different frequency ranges of two mobile communications networks.

E-Commerce

Abbreviation for "electronic commerce"; electronically processed trade via the Internet. Includes all aspects connected with electronic commerce via telecommunications networks.

Frame Relay

A connection-oriented network technology based on packet switching with bandwidths up to 2 Mbit/s.

Fiber Optics Cable

Optical cable with several optical fibers. Modern technologies permit a data transmission rate of up to 40 Gbit/s per fiber.

GSM

Abbreviation for Global System for Mobile Communication; the GSM system is the internationally standardized, European-wide digital radio network enabling both telephone-quality voice transmission as well as data transmission.

Highway 194

High-performance Internet network of Telekom Austria AG for fast, high quality data transmission. The network infrastructure for all online-services of Telekom Austria.

IN

Abbreviation for Intelligent Network; a network architecture simplifying and accelerating the introduction of new, complex services.

ISDN

Abbreviation for Integrated Services Digital Network; digital telecommunications network enabling simultaneous voice and data transmission with one access (bandwidth from 64 kbit/s to 2 Mbit/s).

LAN

Abbreviation for Local Area Network; a computer network enabling the exchange of data within a geographically limited territory.

Leased Line

A non-switched transmission way between two pieces of terminal data equipment which is permanently ready for use.

Macro Cell

Range of a mobile radio station with an area of coverage having a diameter of several kilometers (see also GSM).

Mediamatics

An new term composed of "media" and "telematics".

Micro Cell

Range of a mobile radio station with an area of coverage having a diameter of several hundred meters (see also GSM).

Network

Communications system of several network elements connected with each other (computers, switches, transmission elements) for the transmission of voice and data.

New Generation Internet

Global initiative for the technological advancement of the Internet.

OES

Abbreviation for Austrian digital Telephone System.

Online Service

Modern services (information, entertainment, e-commerce) offered via data networks (see also Highway 194).

Originating Subscriber

Transmission of a call from the calling party to the interconnecting point of the alternative provider's network

Roaming

A performance feature of cellular radio networks which ensures the availability of activated mobile telephones regardless of location in third party mobile telephone networks. Arising costs are settled customarily with the home network operator.

SMS

Abbreviation for Short Message Service; a mobile communication service used for the transmission of short alphanumeric messages in GSM networks.

Standardization

The determination of technical specifications for a uniform realization of telecommunications systems (e.g. globally, European-wide). This determination takes place in international bodies (ETSI, ITU etc.).

Telematics

A term referring to the combination of telecommunications and information.

Terminating Service

Delivery of a call from the connecting point of the alternative provider's network to the party being called.

UMTS

Abbreviation for Universal Mobile Telecommunication System; an advancement of the present mobile telephone standard (e.g. GSM in Europe) into the direction of a globally useable mobile radio standard. With UMTS, the performance of mobile radio networks is to be upgraded to multimedia and Internet applications.

Uplink Station

Transmission facility for the transmission of information from earth to satellites.

Voice Browsing

User-Interface-Control via voice (see also under Browser).

WAN

Wide Area Network; telecommunications or computer network with national or global range.

:DSL

Variations of the Digital Subscriber Line-Technology; e.g. HDSL, SDSL, VDSL, IDSL, U-ADSL, Euro-ADSL (see also ADSL).