

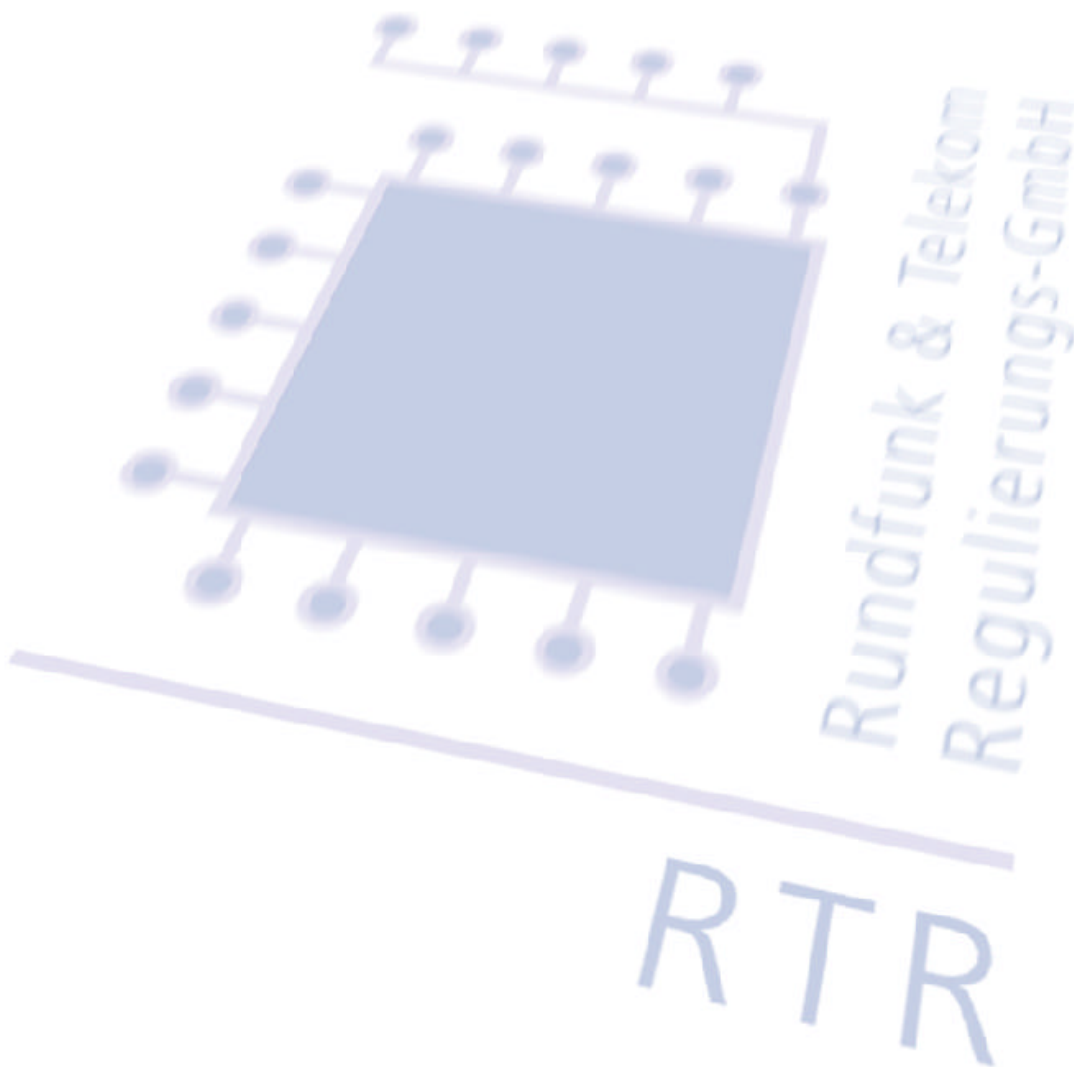
BROADBAND INITIATIVE

2003

Austria on its way to a top position in the Information Society

BROADBAND STATUS REPORT

May 2003



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1 Management Summary

Motivation and Objectives

Information and communication technologies and the services and applications made possible by them are changing people's everyday lives, the key processes of the economy and public administration. They are the foundation of the knowledge-based society, which requires broadband access technologies in order to fully realize its potential.

It has become evident that broadband does not only have a significant impact on individual branches of industry, but is also a core stimulus for other spheres that determine the progress and growth of a country. Broadband has a key influence on the following areas:

- innovation
- competition
- investment
- the structure and organisation of enterprises
- as well as the general standard of education

of a national economy.

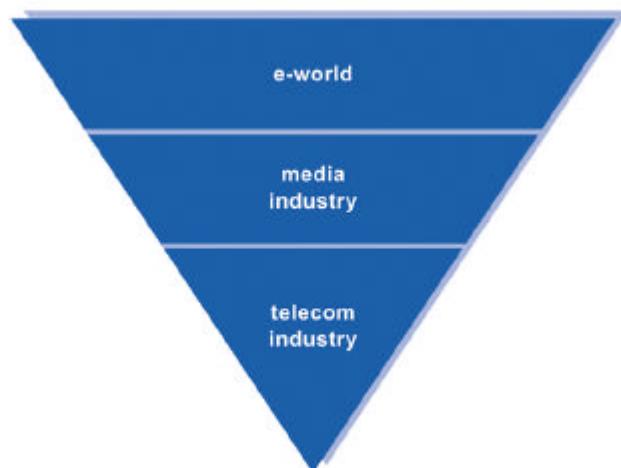


ILLUSTRATION 1 THE E-WORLD TRIANGLE

SOURCE NITA

Owing to a multitude of influencing factors it is hard to quantify exactly the economic influence and importance of an extensive modern broadband infrastructure and the services based on it. However there are economists who assume future scenarios in which potentially 50% of GDP may depend on broadband applications and the utility based on them.

In all three of the levels shown above there are challenges not only for politics and private business – but also for the general public. It is necessary that the supply of infrastructure with the supply of services are put together so that this combination creates an automatic upwards spiral with self-sustaining competition. This means that initiatives for furthering the ubiquitous infrastructure have to be coordinated with initiatives concerning content, such as e-government.

The utility of broadband internet access in the information and knowledge-based society shall be illustrated with a few key examples:

- The search for and procurement of information will be revolutionized, becoming faster, easier and more cost-effective.
- Information can be made available to anyone, at any time, at any place. In order to guarantee universal access it will no longer be necessary to make available information in a decentralized system of multiple physical outlets (e.g. in libraries) – now it is possible to access a webpage from anywhere in the world. Global cooperation makes it possible to reduce parallel work.
- New branches of industry, products, different and more efficient distribution channels are being created (e-commerce, e-banking).
- Within the whole subject area of e-government supply-side measures of the public authorities are being addressed. This comprises services such as the electronic tax return or the availability of information online. What's more the public authorities have been in the vanguard in the use of ICT (information, communication, telecommunication) services, and, by being early adopters, they serve as a forerunner in the use of new technologies. The overall demand for ICT services serve as a stimulus on upstream and downstream sectors of economic activity on the demand side.
- Universal supply and affordable access to information make it easier to overcome the geographical and social "digital divide". On the one hand it enables more people to access information and knowledge already available in well-developed urban areas. On the other hand, due to the low costs of electronic dissemination, information can be made accessible to large segments of society which up to now have been excluded by high costs, e.g. for the printed version. The costs for searching information have also been reduced dramatically, e.g. by efficient search engines.
 - Increasing the individual local quality of life counteracts the tendencies of migration from these regions.
 - It is easy for enterprises to set up a business in a region where broadband infrastructure already exists – SMEs, in contrast to large companies, cannot finance the necessary installation costs.
 - The local tourism industry is provided with the opportunity of marketing its region globally in an effective and, most importantly, cost-efficient manner.

In connection with the promotion of broadband infrastructure the multiplier effect plays an essential role. This is well-known in the sphere of transport infrastructure, for example. A motorway or a well-developed railway infrastructure in itself does not create any added value, but shorter handling times (in upstream and downstream industries) enable increased quality and the reduction of costs. Industries like just-in-time delivery or logistics enterprises arise. This also has an effect on airports or leisure activities, for example, which depend on an efficient feeder infrastructure and/or an extensive catchment area. In addition this infrastructure helps to stimulate regions, as the improved logistical possibilities induce new enterprises to move in and the inhabitants are able to reach their workplaces faster.

Investment in broadband infrastructures does not create an added value in itself either, but lays the foundation for the information society and causes positive growth and innovation effects on the upstream, downstream and associated levels of value added. This starts with increased turnover in the telecommunications sector itself, includes stimulating growth in the supply industry and ends with increased productivity in other economic sectors, e.g. due to employment effects in the content sphere.

- Thus not only the industry establishing this infrastructure profits from investments, the benefit also spreads via downstream and associated economic sectors, which are able to increase their productivity and thus their competitiveness by means of a robust, extensive broadband network.

The resulting overall economic utility exceeds the original investments many times over. These positive growth stimuli constitute a multiplication of the means employed in the total value added chain and thus an increased prosperity of the overall economy.

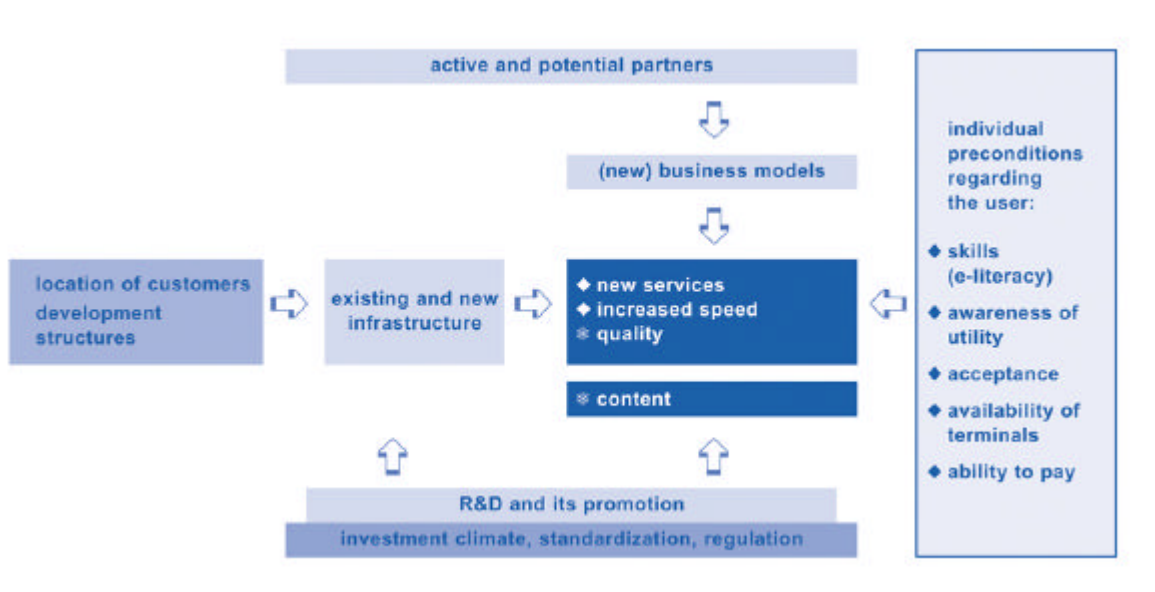


ILLUSTRATION 2 LEVELS OF THE PROMOTION OF BROADBAND PENETRATION
SOURCE PROGNOSE (BROADBAND ACCESS) AND OWN ADDITIONS

Illustration 2 shows the networked environment in the subject area of broadband. On the one hand the users have to meet the preconditions so that they are able to use the services and content in the first place. The public authorities have an essential influence on this, and also on the creation of a stable economic environment providing opportunities and stable framework conditions for all parties involved, for example by regulatory measures.

Apart from efficient services and widely usable content, a universally available broadband infrastructure constitutes a location factor, especially in view of the imminent EU enlargement. Here Austria can differentiate itself compared to other countries with lower wage costs.

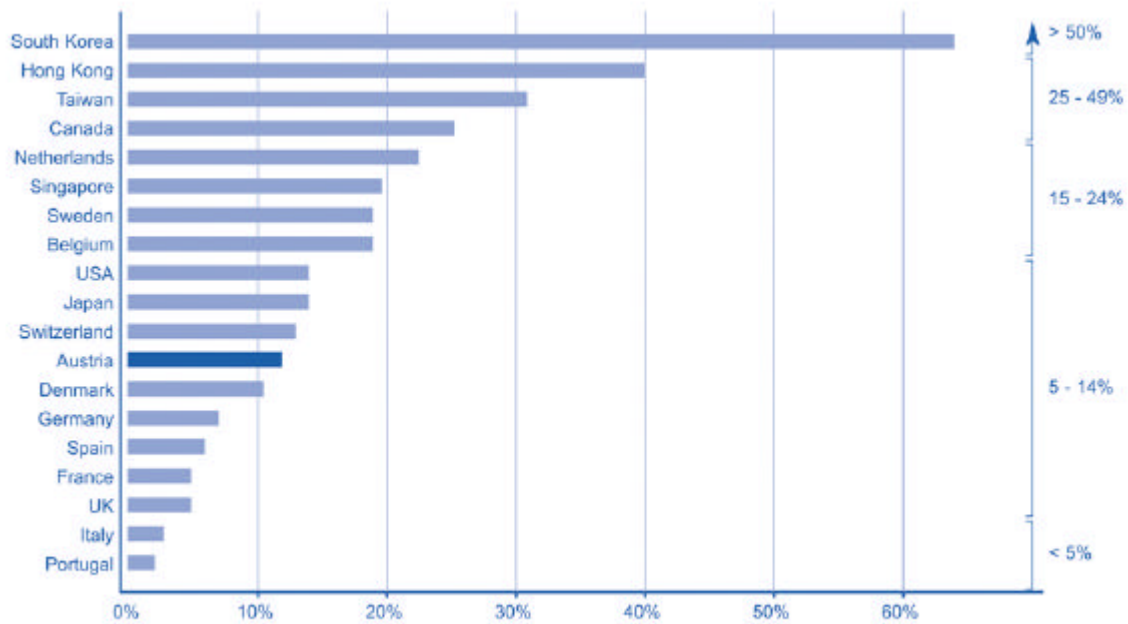


ILLUSTRATION 3 BROADBAND INTERNET SUBSCRIBERS REFERRING TO HOUSEHOLDS INTERNATIONALLY
 SOURCES EMARKETER, OVUM, ADL RESEARCH 03/2003

It is true that Austria, with a broadband penetration of approx. 16% of all households at the end of the first quarter of 2003, comes sixth in Europe and is thus above the EU average of approx. 10%; however leading broadband nations such as Belgium and the Netherlands have already achieved 18% and 22 % respectively due to their focused broadband policies. It becomes evident from Illustration 3, which shows the latest available international overview, as well as from the current market penetration, how dynamic the development has been in this market. After a relatively early introduction of broadband to the market (via TV cables in 1997, ADSL 1999) Austria has now fallen behind in comparison with other European countries¹. In order to regain its top position amongst the information societies of Europe Austria needs well-directed national efforts concerning broadband access technologies, applications and the content sphere. Not taking these opportunities would not only mean that great future development potentials for the economy and society will be missed, but also that an impending digital divide in some areas would not be overcome. This would have immediate effects, some of them negative, on the business location Austria in international comparison.

¹ In the beginning of 2000 Austria came second in an international comparison, according to IRG figures – referring to households – it came fifth at the end of the third quarter of 2002, at the end of the fourth quarter of 2002 it only came sixth in a European comparison.

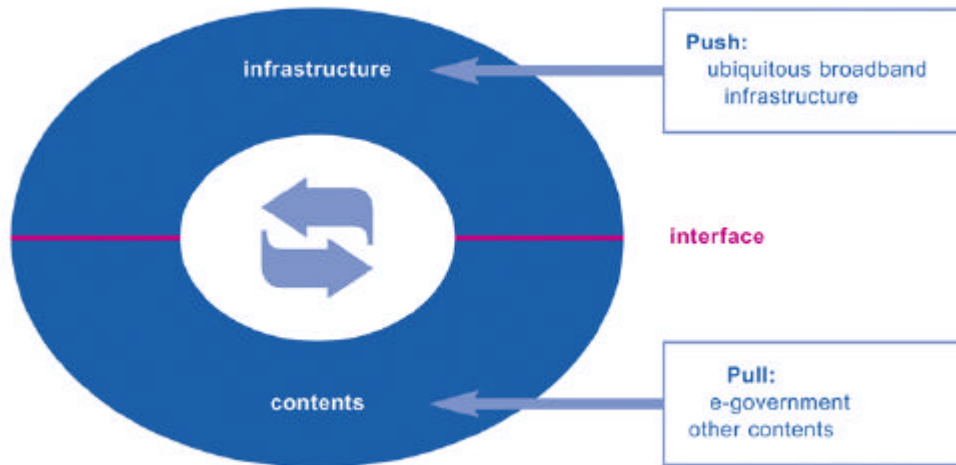


ILLUSTRATION 4 THE BROADBAND ENGINE
SOURCE PROGNOSE AND OWN ADDITIONS

The objective is to increase the revs of the broadband engine between supply push and demand pull and thus position Austria at the top of the European knowledge society.

The first objective of the initiative is to raise the awareness of decision-makers, opinion leaders and the general public regarding the positive social and economic effects in connection with broadband. In addition to the symposium of the Regulatory Agency on 2 April 2003 the present report demonstrates the opportunities as well as the potential costs if this chance is missed.

The second objective of this initiative is to start a comprehensive communication and discussion process and to initiate the establishment of a task force on a high political level, which, based on a master plan, coordinates and controls all relevant Austrian activities.

For this purpose the RTR GmbH will evaluate the suitability of existing and new aid models to give the politicians the possibility to increase the broadband access to the Internet and to guarantee a universal coverage. One of the topics of this report are different ways to reach a maximum of results regarding the national economy, through the use of public funds.

Recommendations and further steps

The promotion of broadband has to take into account all aspects of its promotion. It starts with the passing on of basic skills of the information society (e-literacy) both at school and in adulthood, which create the fundamental awareness of their utility and the corresponding acceptance.

In densely populated areas the supply of broadband infrastructure and the services connected with it is market-driven and takes place even without any promotional activities. The question is whether, or rather when and at what rate, the comprehensive supply that Austria needs will be realised or which maximum rate of supply can be expected based purely on the mechanisms of the market economy.

In regions where the development of broadband is inefficient, whether due to unfavourable geographical conditions, a low population density or a low purchasing power, there will be no broadband connections provided at market conditions in the foreseeable future. In order to be able to realise the above-mentioned opportunities and bridge the social and economic digital divide, regional promotional activities are recommended. Aiming in the medium term at a self-sustaining competition of enterprises in the private sector without any long-term involvement of public authorities, and taking into consideration the lower levels of administration, the (knock-on) promotion of enterprises providing infrastructure seems to be an efficient instrument for the supply of these regions. In order not to cause a market

distortion by promotional activities, strict neutrality is called for in the selection of technology and operators. Furthermore it is necessary that the promotional measures are compatible with the European regulations on state subsidies (Article 87 EU Treaty).

Due to their multiplier effect, general measures for an increase in the deployment of broadband, e.g. by tax benefits, exceed in their utility the mere supply of infrastructure to regions that have so far not been connected. An increased supply of broadband services increases the individually felt utility and thus the overall demand in the sector, which in turn intensifies the interplay of supply and demand. Apart from the direct promotion of strictly determined geographical areas, demand-side models that do not affect competition should be implemented.

If no services are offered nobody can use them – if there is no demand, no supplier acting in an economically rational manner will offer services – the well-known chicken and egg dilemma. Here the power of a demand-side accumulation of initiatives set up by the state comes in, as is intended by the eEurope programmes of the EU.

Austria in particular disposes of widely utilizable content to a high extent; in this context attention must be drawn to the existing museum archives, for example. The removal of barriers that obstruct a more widespread use of contents could stimulate growth while using only modest monetary funds.

The set objectives cannot be achieved in a short sprint, as this is rather a long-distance run; success in this context means making broadband universally available in Austria and on a sustainable level.

As international experience has shown the establishment of a task force staffed with senior politicians is a precondition for this, which both drafts and implements a geographically and sectorally comprehensive master plan devised for a long-term and sustainable success.

To achieve this requires the following:

- the introduction of broadband has to become a national task;
- geographical full supply;
- the involvement of all relevant stakeholders such as associations and regional initiatives in a joint approach;
- stronger orientation of the public sector towards broadband applications by supplying the respective content and by using broadband services itself;
- creating the preconditions for a flourishing market with the help of legal and regulatory measures.

Within the framework of its functions in the public sphere as a specialist center, RTR-GmbH is prepared to act as a think tank and make substantial contributions and provide focused inputs, such as the present report. Future activities comprise symposia, accompanying benchmark reports and background reports in the RTR newsletter and RTR reports at <http://www.rtr.at/broadband>.

In the following chapters

In the following chapters the subject of “broadband Internet access“ will be examined in detail and the possibilities of its promotion will be discussed. Based on the collation of existing definitions of the term “broadband“ the positive effects on the economy and society are illustrated. It is widely known that the availability of broadband connections alone is not sufficient for an information-based society. E-literacy, the knowledge of how to handle new technologies, is of crucial importance. Adequate terminals are necessary to be able to use the services. However, what has to be solved is the chicken and egg dilemma: if services are not offered, nobody will use them – if there is no demand, no supplier acting in an economically rational manner will ever offer such services. This demonstrates the power of a demand-side accumulation of the initiatives set up by the state, as foreseen by eEurope. The following chapter is dedicated to the general possibilities of promotion and its admissibility as regards neutrality in competition and state subsidies. Finally, international role models and model projects are illustrated and examined.