

Case Study: Deutsche Telekom and „Schools Online“ (SaN)

Connecting German Schools to the internet

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Executive Summary¹

The CEO of Deutsche Telekom, Ron Sommer, and Jürgen Rüttgers, current prime minister of North Rhine-Westphalia, founded “schools online” (in German: “Schulen ans Netz”, and short: SaN) in 1996 with the goal of connecting German schools to the internet. In his opening speech, Ron Sommer said the commitment of Deutsche Telekom was made on the grounds of its responsibility towards society. Deutsche Telekom wanted to display good corporate citizenship in an area that was close to its business and expertise. He also claimed the money spent was an investment into the future rather than a sponsoring activity.

An early employee, Nikolaus Huss, responsible for public relations at SaN said: “There never was any clear indication as to what the goal was. It was never really made clear whether there was more to it than corporate citizenship. It was understood among us that somehow Telekom felt responsible for electronic alphabetisation and on the other hand was sure to profit from this later on, although nobody really felt it necessary to plan the future outcome.”

At the beginning, “schools online” started as a project under the roof of the business unit T-Com and was run in the “marketing unit”. A whole segment of the ICT market should thus be identified with Deutsche Telekom and help build its unique profile. Other competitors, e.g. AOL, joined the initiative but soon backed out.

The first phase of SaN ran from 1996 to 2000. Its task was to equip schools with internet access. When SaN began in the midst of the new economy boom, no more than 800 German schools had access to the internet. By 1999, 10,000 schools had been connected. A critical phase was reached in 2000, when it became clear that the original task was soon to be fulfilled and it was uncertain what would happen after every school was online. The future of the organization, and especially the degree of Deutsche Telekom’s further commitment was open, moral was low among the association’s seven employees. The staff wondered whether the success really was the end of „Schools online“? In fact, by the end of 2001 every German school had an internet access (35,000 lines). Mission accomplished?

This was not the case. From 2000 on, the Federal Ministry for Education and Research, (Bundesministerium für Bildung und Forschung, or short: BMBF) took the lead after having decided to fund a new program to foster use and implementation of new media in schools. „Schools online“ was to develop, test and provide teaching material and software to schools. Consequently, after 2001, „Schools online“ began to develop content and supply training and support for teachers.

In early January 2002, Germany was shocked by the results of the first international PISA survey that claimed poor academic performance (in both reading and writing skills) for German 15 year old students. It was succeeded by the second survey in 2003, which added poor mathematical performance to the list. At that time, “Schools online“ undertook a formal commitment to continue providing free access to the internet for schools on a permanent basis. “Schools online“ experienced vivid growth in 2002

¹ This case is based on a case study commissioned by the Bertelsmann Foundation, which is published in the “Handbook of CSR Case Studies”, forthcoming. The financial assistance by the Bertelsmann Founda-

and 2003, although Deutsche Telekom's shares collapsed and Ron Sommer had to step down as CEO. SaN had 640,000 registered users and experienced half a million downloads in 2005 per month. In the same year, "Schools online" received financial support from the European Union. Its budget was 6 million in 2004 and 8 million Euro in 2005. For its software development SaN received several awards (Giga Maus 2002, 2003 and 2004, digita 2003). The association employs roughly 70 staff members.

"In addition to reading, writing and mathematics, the ability to work with computers and to use the internet as an information and communication tool is a core competency for today's school children," explains Dr. Maik Lehmann, head of Education Marketing at T-Com and chairman of the Management Board of Schools Online. "Media and IT skills are indispensable and a child's ability to acquire them should not be dependent on the financial resources of the parents."

The rationale of Deutsche Telekom for the establishment and ongoing support of "Schools online" remains unclear. Deutsche Telekom has never put forward a business case argument, neither has "Schools online" ever been connected to the CSR department of the company. Apparently, this social sponsoring was former CEO Ron Sommer's, personal commitment. The Deutsche Telekom has never profited directly from "Schools online".

It might be argued that Deutsche Telekom prevented other suppliers from entering the school market – but at the time the market did not exist and there are still very few competitors queuing up to provide access to schools, let alone for free. The educational software market still remains as small as the market for school books.

At the time, the telecommunication firms Mobilcom and AOL said they too wanted to enter the market, but neither was willing to do it for free. Deutsche Telekom's competitors also sponsor internet access, PC's, training and other services, mostly on a regional level. Today, Deutsche Telekom still provides free access to schools and even upgrades the quality of the internet access (T@school).

Maik Lehmann said "Schools online is a project of strategic interest to us. We succeed in addressing a huge group of potential customers – 12 million pupils and half a million teachers. If we succeed in making the advantages of modern IT clear, much has been done for Deutsche Telekom as well as for our competitors."

"In a globalised knowledge and information society, we need a professional framework in order to improve and promote school children's media skills. With its innovative know-how, Deutsche Telekom has once again laid the foundations for new approaches to teaching," says Walter Raizner, member of the Deutsche Telekom Board of Management and CEO of T-Com.

The federal ministry is convinced that SaN is a success. "This cooperation has proved reliable and trustworthy. Both sides have given important impulses to the initiative", said Andreas Vogel who is responsible for the new media in the ministry.

The Telekom's Head of Group Sponsorship, Stephan Althoff, said that there were hardly any alternatives for the German state to partner with the DTAG, because it was

the only company that could provide access on a national scale. Althoff also put forward that from today's perspective the commitment faced three crucial challenges. Firstly, it was important to convince the teachers (which did not work out well for SaN at the beginning but bettered later on when SaN switched to the provision of content). The second challenge was to win the school book publishers (which was unsuccessful) and thirdly, the question of sustainability was not settled in a satisfactory way at the beginning which made the engagement more expensive than planned in the end.

The last point was the most important because the public debate on SaN's sustainability made DTAG vulnerable. When after three years, DTAG wanted to make schools pay for their running online costs, a controversial discussion about DTAG's responsibility started and in the end the DTAG had to make costly concessions to the schools.

Althoff held that the commitment was a mixed blessing, meaning that it was an achievement, but the cost-benefit ratio was not sufficient according to today's requirements.

Today, SaN entertains many "special interest" websites for pupils (surfcheck), teachers (Lehrer-online), women in education (LEAnet), school administrators (IT works) or girls (Lizzynet). T-Com will provide broadband access in order to allow multimedia work through quicker data-transfer. This infrastructural project is carried out by T-Com, without involvement of „Schools online“. Telekom expanded this program also to Eastern Europe (eSlovakia and Hungary). Deutsche Telekom said that the German initiative had cost 120 million Euros up to 2004.

Today, it seems as if the internet boom in German schools ended before it began. The technical infrastructure in the Länder is neither sustainable nor sufficiently spread over the country and there always seems to be a shortage of funding. Content provision is not the problem, all the Länder entertain webpages for teachers and supply information to pupils and most teachers use the internet at home for preparation. But it seems difficult to use new media within a holistic didactic concept and without spending too much time on technical details. The rigid organisation of German school days makes it difficult to embed new media into everyday school life. Thus, although youth is accustomed to the use of the internet, German schools on the whole are not part of the global virtual village. At the moment, public money for both computers and books is decreasing. Other topics have become more important in German schools.

BMBF promised funding of "Schools online" until 2008.

Background and Context

Telecommunication and Postal Services in Germany

German Postal Services and Telecommunication was a united, state-owned company called "Deutsche Bundespost" until 1989, when it was split up into three parts – postal services, telecommunication and regulatory functions. Postal services and telecommunication each held a monopoly on their respective markets until 1995. The exception to the rule was the market for mobile communication, which was opened to competition in 1990 when the first license was issued to a competitor. When they split up into two – Deutsche Telekom AG and Deutsche Post AG - the first IPO of the telecommunications

industry in Germany took place in 1996. In 1998 the market for fixed lines was completely opened to competition; it was the first in Europe.

Privatisation continued: In the boom years 1999 and 2000, the second and third slices of stock were sold on the stock market. Share prices were at their highest and many small shareholders jumped on the train and bought shares. The IPO of Deutsche Telekom was part of the new economy boom. It was also a huge media and public relations show as well as a widely debated event used by the financial industry to convince the German society of the advantages of a shareholder culture. One of Germany's most popular TV stars, Manfred Krug, advertised the "T-share". Today, the value of the shares is worth only a tenth of the old share price and most individual investors have sold their shares at a big loss. The T-share is the biggest under-performer in the German leading share index (DAX).

At the time, CEO Ron Sommer was considered one of the glamorous new economy stars in Germany, others being Thomas Middelhoff (Bertelsmann), Gerhard Schmid (Mobilcom), the Haffa brothers (EM.TV) or Paulus Neef (Pixelpark). In other European countries these roles were taken on by Jean Marie Messier of French Vivendi or Richard Branson of British Virgin. None of them except Branson survived the end of the boom in their respective positions. When the new economy and with it Deutsche Telekom's share price collapsed, Ron Sommer was quickly put under pressure by the German government, which still held a majority of shares and in the end had to leave his position. In November 2002, after a short interim with Helmut Sihler, the new CEO, Kai Uwe Ricke took over.

The German national government not only profited from the IPO and the sale of shares and still does today, but also from the auctioning of UMTS licenses by the federal minister of finance, Hans Eichel, in 2000. The German treasury cashed 50 billion Euros. Licenses for the new infrastructure were also bought by Deutsche Telekom at an absurdly high price. The high price for licenses was one of the reasons for the collapse of many companies in the telecommunications industry later on. Mobilcom returned the license in 2003; another company was forced to give it back because it did not invest into the UMTS-infrastructure. UMTS still is no economic success. German courts decided later that shareholders who suffered financial losses due to the decline in their share portfolios were not entitled to damage payments.

Deutsche Telekom's market shares are declining in most sectors, especially in fixed lines, as new competitors gain strength. This had been dreaded when the market was liberalised, but Deutsche Telekom is increasingly successful abroad and lately, even their share in mobile communication is increasing.

Deutsche Telekom AG

The turnover of Deutsche Telekom in 2005 was 60 billion Euros. Its net profits grew to about 5.6 billion from a mere 1.6 billion Euros in 2005. The share cost 12.9 Euros at the end of the year 2005, its all time high being more than 120. Deutsche Telekom employs nearly a quarter of a million employees worldwide. It is Europe's largest telecommunication company and the third largest carrier worldwide.

Strategic Business Areas

At the end of 2005, Deutsche Telekom defined its four strategic business areas

1. Broadband, Fixed Network (T-Com and T-Online). This area accounts for 36 % of all revenues.
2. Mobile Communications: (T-Mobile International), roughly half (48 %) of the net revenue of Deutsche Telekom stem from this area.
3. Business Customers (T-Systems) stand for 15 % of the net revenue.
4. Group headquarters & Shared Services (Vivento, Real Estate Services, De-Tee Fleet Services GmbH).

Deutsche Telekom is foremost a German company: nearly 60 % of the net revenue incurs in Germany, 22.3 % in the rest of Europe. Only about 20 % incur in the US and elsewhere.

Corporate Values

Deutsche Telekom uses the word “SPIRIT” to describe its six corporate values. As an acronym the letters stands for: Superior value, Passion for the customer, Innovation, Respect, Integrity, Top Excellence. The corporate values were inaugurated in 2003; at the same time the sustainability strategy of Deutsche Telekom was launched.

CSR at Deutsche Telekom

„Schools online“ is one of seven projects listed under “Corporate Citizenship” on the Telekom Website. Others are “Women on the internet” or “Agenda 21”. The unit “Corporate Sustainability & Citizenship” (CSC) was initiated in 2003. It is responsible for sustainability and CSR – seen as a business case by Deutsche Telekom. This department was preceded by a single-issue sustainability department, led by Dr. Ignacio Campino, who is also in charge of the new CSC department. In 2001 Deutsche Telekom still defined its responsibilities to society in terms of ecological sustainability only.

CSC’s ten employees are responsible for stakeholder dialogue and tackle topics such as climate change, sustainable supply chain management or demographical change. Deutsche Telekom’s charities have been awarded several prizes, among them the Corporate Citizen Award of the German association of employers for their Crisis counselling helpline “Nummer gegen Kummer”. Children who feel they have personal problems can call this number and receive help. Deutsche Telekom employees contact and coach the kids later in their free time.

In 2004 Deutsche Telekom initiated a foundation, which belongs to the large German foundations. It spent roughly 10 million Euros in 2005 on education, especially on tertiary education, research and technology. Deutsche Telekom has bundled its philanthropic activities here. Not surprisingly, Klaus Kinkel, a former German Secretary of State is its CEO, Edelgard Bulmahn, formerly minister of the BMBF is member of the board of trustees as well as a former secretary of state, of the federal ministry of finance, and today’s secretary of the interior.



Schulen ans Netz e. V., (schools online or SaN)

Schulen ans Netz e. V. is a non-profit, voluntary organisation and was founded in 1996 by the Federal Ministry of Education and Research and by Deutsche Telekom AG. The board consists of two men, one being the association's chairman, Dr. Maik Lehmann, a manager at T-Com and not responsible for the day to day business. There is also an advisory committee which consists of eight leading civil servants belonging to different federal ministries and bodies and the chief communications officer of Deutsche Telekom.

The initial goal was to connect 10,000 schools throughout Germany to the Internet within three years. The mission was completed in terms of technology in 2001. But along-side the technical aspects of its work, the organisation's ongoing activities became increasingly focused on content: forming teaching practice with the help of new media is now taking over as the main focus of the association's work. Against the backdrop of lifelong learning, the organisation aims to foster lasting change in school education. The main emphasis of its work today is to offer concrete online tools, content and support for teachers. Its budget in 2004 was 6 million Euros.

Schulen ans Netz (SaN) says it "supports teachers and student teachers in everyday, self-responsible and critical-minded use of new media. Together with numerous universities and education policymakers, the organisation develops innovative education models for the use of new media in schools. Self-responsible teaching and learning using modern IT resources is supported via seminars, workshops and events and a range of web portals that are either open to the general public or reserved for specific groups. These include special online services that provide technical support for women and girls, for primary schools and for school authorities." (taken from the website)

In an early evaluation based on case studies in schools in 1999, which is also the only publicly accessible evaluation and only addresses the implementation process of the hardware, Berlin professor of mathematics, Wolfgang Scholl and Doreen Prasse came to the conclusion that there are still multiple obstacles to overcome in schools. The researchers stated that there is no strategic implementation policy in schools, but a "muddling through" with new media. In most schools the use of new media stagnated. Innovators – pioneers – in schools used the new media a great deal, but the rest did not profit from the new technology. It was mainly a lack of organisational know-how in schools that led to insufficient use of the new technology. The survey lists three trends: one being the concentration of work in the hands of a few teachers, the second being isolation of the promoters and the last trend was network building in schools, the latter of course being the best development. The study claims a media curriculum for schools, a training for teachers and more financial means (e.g. for the promoters).

In 2005, German schools had one PC for 12 pupils on average, said a study carried out by BMBF. The European goal was to have one PC for every 15 pupils. In the same year another study (KIM survey) said that three quarters of all German children from 6 – 13 had experience with computers. They use computers mainly for play and for school work. Roughly half of the children work with special learning programs and most of the time they do this at home. Half of the children use the internet, a third of all children regularly. In 2006, a new survey in OECD countries showed that German pupils still use the computer less at school than the OECD average (OECD 25.1.2006).

It can also be argued that the project was one pillar to secure good contacts between a former state-owned monopolistic telecommunications company and the German state as the regulatory authority for future business.

A close alliance between Deutsche Telekom and the German authorities comes in handy in many situations, e.g. with the following issues, all raised in 2006.

The debate about monopolistic power and the safeguard of competition on ICT markets is ongoing. The latest addition to the debate was the German government's desire to grant Deutsche Telekom exclusive rights in the new high speed net ("VDSL", the new high speed broad band will be an exception to the monopoly control rules) if it agreed to invest into and build the net. European Commissioner Viviane Reding has committed herself to fighting for economic freedom: "I will say no to this. I do not want any new monopolies", she said in June 2006. Deutsche Telekom is willing to invest 3 billion Euros. The German Parliament and Federal Assembly have already voted the "Lex Telekom" accordingly.

The second case is Deutsche Telekom's wish to get rid of many of their staff, especially in fixed lines (T-com). As most of the staff concerned are still civil servants, the lay offs would exclusively have taken place in the eastern parts of Germany, where employees had been taken on by the Deutsche Telekom. The German government felt it necessary to prevent this new catastrophe for Eastern Germany and thus allowed Deutsche Telekom to let its civil servants retire early and pay for their full pensions².

In April 2006, a new discussion about levies on online data was imported into Germany by Kai-Uwe Ricke. The discussion started in the US, where the ICT providers who own and entertain the nets want to make big content companies as Microsoft, Google, Ebay, Amazon or Yahoo, pay for the fast provision of big data lumps in films, songs or photos.

At the end of 2005, the German state was Deutsche Telekom's biggest single shareholder: it held 37 % of the firm's equity. This also means it is the biggest stakeholder. The German Federal Ministry of Finance only has one seat in the supervisory board, currently occupied by Thomas Mirow.

E-learning market

E-learning is computer-enhanced training. E-learning is usually delivered via a personal computer, but includes learning delivered by other communications technologies such

² http://www.handelsblatt.com/news/Default.aspx? p=201_197& t=ft& b=1087075&doc_page=2

as video or even mobile communication. Methods include online lectures, tutorials, performance support systems, simulations, case studies, job aids, games, and more. Effective e-learning is often a blend of methods and e-learning is often only one of the methods used by a trainer or teacher to achieve his didactic goals.

The European market for e-learning is estimated at a mere 5 billion Euros by the European Commission and it is developing slowly. It started with the typical new economy hype, continued with a consolidation in the years following 2001 and continues to grow at a slow but steady pace. Experts envisage the potential growth in e-learning especially in the commercial sector (mostly but not exclusively in the IT industry itself), mainly for quick training or in order to install new or more efficient processes and mostly for adults and in higher and executive education. E-learning is also used to foster change management. Large companies profit the most from e-learning, whereas small and medium sized companies remain reluctant to use virtual or web based tools and invest in the technical infrastructure to do so. E-learning often is an important tool in distance learning.

German school book publishers who also deal with software said that business went down. Between 40 and 50 million Euros had been spent on educational software in 2005. Their association (VdS Bildungsmedien) called the development disappointing and underlined that still most schools did not possess the IT-infrastructure which is needed to work with the new media. Teachers experienced “techno-stress”, and the school book is still the dominant tool – sometimes complemented by web pages, CD’s or others. The association also complained about illegal software copies.

ICT industry

The German market for ICT is roughly 140 billion Euros, half of which is telecommunications (downwards trend) and the other half being information technology (share increasing). The market has been growing at a steady pace of about 2.4 % since 2003.

At the end of the internet and new economy boom in 2000, the German government provided 20,000 “green cards” with time limits for IT specialists in order to make focused immigration possible and simple (2000-2004). The ICT industry employed 820,000 people at the time. There had been an uncovered demand of another 100,000 IT specialists. The industry had started a public campaign about the shortcoming of the German education sector to provide sufficient experts. But when the boom ended, many IT specialists were laid off (in 2004 only 745,000 were employed in the sector) and many postgraduates did not find adequate jobs. Currently, Germany is experiencing a newly growing demand. The ICT industry seems to be a seismograph for economic development and the ups and downs of the business cycle.

BITKOM, the German Association for Information Technology, Telecommunications and New Media e.V., represents the interests of the industry, namely the manufacturers of ICT equipment and providers of software, IT services, telecommunication services and content. It works in particular to improve the regulatory framework in Germany, for modernisation of the education system and for an economic policy which encourages innovation. It has 750 members, companies that employ about 700,000 people, thus nearly the whole sector.

In 2006, the president of Bitkom, Willi Berchtold said „ our schools' new media equipment is a real scandal. As new PISA data show, there are only eight PC's for 100 pupils in German class rooms, whereas the average in industrialised economies worldwide is twice as much. In the US it's even 30 PCs for 100 kids. We really need to address this problem in order to enhance the quality of teaching and to prepare the new generation for the future.”

There is also an association which represents Deutsche Telekom's competitors, called the VATM. This association aims at reducing Deutsche Telekom's monopolistic power and strengthening its competitors, who are members of this pressure group.

Regulation

The ICT branch has its own regulatory legislation. The branch is controlled by a federal agency (Bundesnetzagentur) just as the other infrastructure nets such as electricity, gas, railways and postal services. Bundesnetzagentur (Federal Net Agency) was founded in 1998. In Europe, regulation and control has been up to the national states until now, but the EU Commission has already made clear that it thinks an EU-wide regulation would be helpful. Both the EU commissioner Viviane Reding and the OECD think the liberalisation of the German telecommunications market is still insufficient.

Schools, students and PC and Internet literacy

A recent OECD study from 2006 study shows that school students who are established computer users tend to perform better in key school subjects than those with limited experience or a lack of confidence in their ability to perform basic computer functions.

The study is based on OECD's PISA 2003 assessment of educational performance by 15-year olds. It backs up previous OECD analysis about the importance of computers in schools.

While access to computers in schools has increased in most OECD countries, there are some where large numbers of students still have only limited opportunities to use them. Moreover, even though access to computers is more universal at school than at home, 15-year-old students use their computers at home more frequently.

Nearly three out of four students on average in OECD countries use computers at home several times each week. In contrast, only 44% use computers frequently at school. In some countries, the discrepancy between home and school use is marked: Germany has the lowest percentage of frequent computer users at school among OECD countries (23%) but a high proportion of frequent users at home (82%).

The relationship with student performance in mathematics is striking. Students who have used computers for several years mostly perform better than average. By contrast, those who don't have access to computers or who have been using computers for only a short time tend to lag behind their class year.

In general, the poor performance of students who have only recently had access to computers is partly influenced by their family backgrounds: students with low home access, in particular, are likely to come from disadvantaged backgrounds. A sizeable positive effect from regular computer use is evident, even when taking account of

socio-economic factors. This is particularly obvious in Australia, Belgium, Germany, Korea, Switzerland and the U.S.

Even when schools are equipped with computers, students don't necessarily have the same degree of access from one country to another. The number of students needing to share a computer in a school in Germany, for example, is three times higher than in Australia, Korea and the U.S.

Within the framework of school projects, different methods of using computers in schools have been tested over the past four years. These methods are envisaged today for all schools within the framework of comprehensive education reform: abandoning the 45-minute rhythm, introduction of cross-curricular teaching, linking teaching in the morning with learning in the afternoon and encouraging self-guided learning. The use of computers in educational institutions also had positive effects in terms of quality. Follow-up studies to the PISA study show that pupils who are using the new media intensively also have good or even very good reading skills.

Although the euphoria which led to SaN in the first place has vanished and multiple internet projects proved non-sustainable, new media have become everyday tools in many schools. There is no criticism to be heard from teachers, parents or pupils concerning new media in schools.

A new challenge for many schools is the follow-up costs of their IT infrastructure. Schools spend two thirds of the IT budget on hard- and software. During the last years it has become apparent that this way of budgeting is misleading. Experts say that the initial investments in infrastructure should only be worth a third of the overall budget. Two thirds of the costs of IT in schools are associated with training, support, administration, and staffing³.

Policy perspective of the Ministry of Education and Research (BMBF)

“The objective of the BMBF is a transition from school books to multimedia teaching for day-to-day teaching in all subjects and at all levels⁴. Projects of media providers - i.e. publishing houses, but also museums, education providers or research institutions - are being funded. Furthermore, there is the "Teachers Online" service of the association “Schools Go Online”, focusing on broad exchanges of experience with methodological and practical issues of the use of media.”

Responsibilities and distribution of power in education

In Germany, the states (Länder) are mainly responsible for education and cultural affairs. The federal ministry BMBF only sets a regulatory framework and secures comparable standards and certificates. The “Kultusministerkonferenz” – Standing Conference of Ministers of Education - is the organ of the Länder that are culturally sovereign. It represents the interests of the Länder to the EU and to the BMBF.

³ <http://itworks.schulen-ans-netz.de/themen/finanzierung/umfrageergebnis.php>

⁴ BMBF Website 8 may 2006. <http://www.bmbf.de/en/equalification.php>

The distribution of authority (i.e. the cultural sovereignty of the Länder) is laid down in the Basic Law of the Federal Republic of Germany of 23 May 1949. In accordance with its official statutes, the Standing Conference deals with cultural policy matters of supra-regional significance with the aim of forming a common viewpoint and a common will as well as representing common interests.

In the framework of the Standing Conference, the Länder take responsibility for the state as a whole by way of self-co-ordination and are ensuring the necessary degree of common ground in education, science and cultural matters of supra-regional importance.

One key task of the Standing Conference is to ensure the highest possible degree of mobility throughout Germany for pupils, students, teaching personnel and those working in the science sector by means of consensus and cooperation.

In early summer 2006 a reform of the German federalism was voted, which will make it easier for people to discern responsibilities. Most of the mixed responsibilities (as exist today between the national state and the federal states) shall be abolished. The controversy in the political sphere focused on the distribution of authority in education and in environmental policies and reforms. The reform proposed by the Grand Coalition is to completely strip the national state of its responsibilities and duties in education. The argument most often put forward against this claim was associated with a success of the social democratic Schröder government: in 2003, BMBF minister Edelgard Bulmahn put through a bill that helped the Länder to establish all-day schools as a consequence of the PISA results. The federal government gave 4 billion Euros to the Länder for this purpose. The federalism reform bill, which was passed in 2006, rules out these funding mechanisms for the future.

ICT technology in education

From the 90s onwards the federal ministry for science and education (BMBF) has issued several programs in order to further ICT implementation in schools and vocational training. The projects tackle the problems of ongoing sustainable support (e.g. of administration solutions, networks, intranets in schools). Firms (e.g. Siemens) cooperate in these programs, as well as state-institutions.⁵

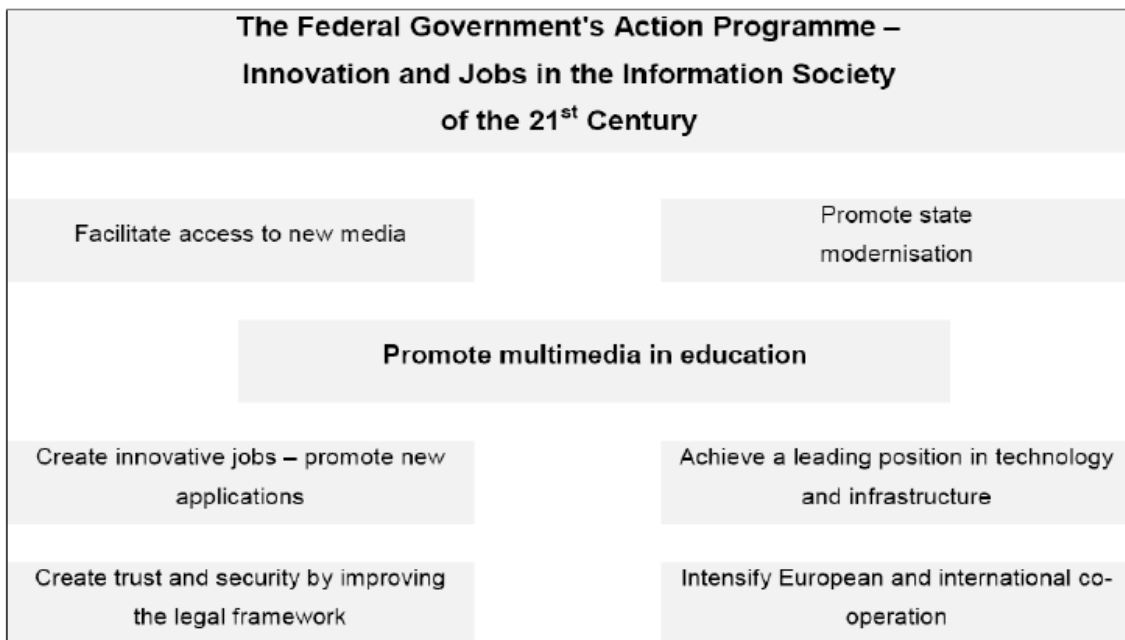
The federal ministry emphasizes the fact that more private commitment is needed and seeks to arouse interest in sponsoring activities.

“Computers and the internet are becoming everyday tools in our educational system. This goes for schools, initial and continuing vocational training and higher education alike. The end of the pioneer phase has been reached in the use of the new media in education. We are now at the beginning of a new normality in the use of media in education. BMBF support plays an important role in this.

Modernizing the educational system is of the utmost importance to the Federal Government. The use of computers and the internet in educational institutions has often

⁵ Source BMBF, http://www.bmbf.de/pub/itkon_e.pdf The federal government's action concept "online-offline, IT in education", 2000. Free online resource.

been a driving force for reforms in the past four years. They are adequate means to develop and broadly use new forms of teaching and learning, which meet future demands. Important educational aims, such as independent, self-guided learning and communicative skills can be promoted particularly well.



With the 'New Media in Education' funding program from 2000 to 2004⁶, the BMBF has furthered the reform process in the education system."⁷ Vogel, responsible for new media in the ministry said, "The market barriers for educational software in schools were the reasons for public funding, from which school book publishers have much profited."⁸

The German federal states, their (new) media agencies and school authorities welcomed the new media and competed on forums and in public debates with the most far reaching plans. The Länder were mostly concerned with the "How to" instead of asking "Why?" Most Länder issued guidelines for social sponsoring by firms, initiated conferences, websites and pilot projects.

The Federal Ministry spent 200 million Euros on the program "New media In Education". Most of the money was spent on the construction of media and the development and testing of content, not on production and distribution to schools. On the other hand, Länder and municipalities which are responsible for the provision of school books and school software in high numbers reduced their funding remarkably in the last 15 years. Private spending grew.

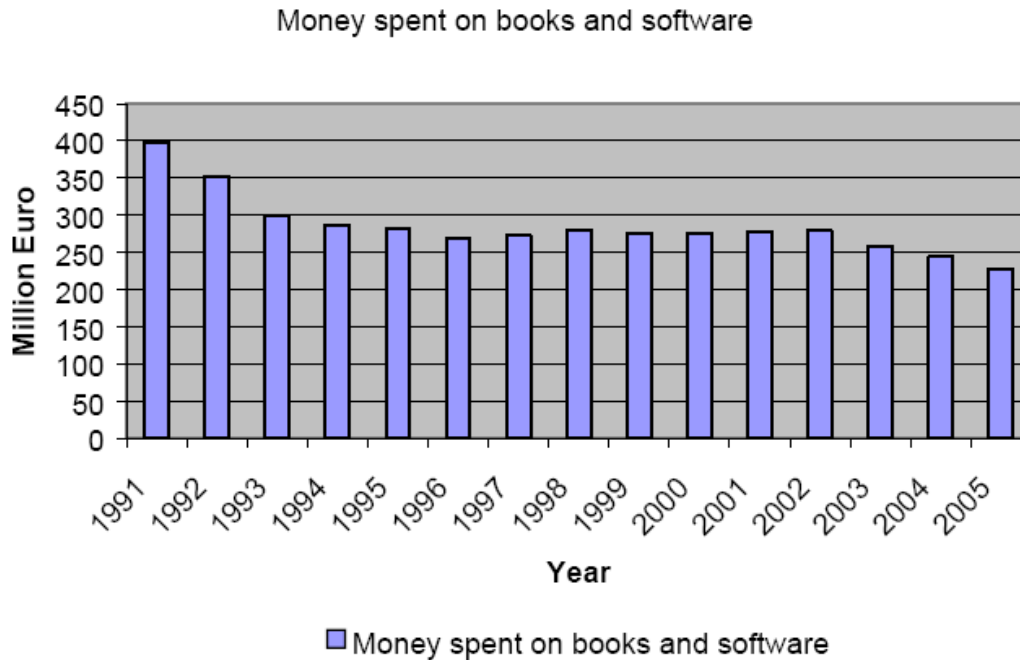
From 1991, when 398 million Euros were spent on books and software for schools, public spending sank to a mere 228 million in 2005. This means that the amount was

⁶ http://66.249.93.104/search?q=cache:QXLuPeLvqmkJ:www.dlr.de/pt_nmb/BMBF_NEUE_MEDIEN_ENG.PDF~bmbf-new-media-in-education&hl=en&gl=de&ct=clnk&cd=3

⁷ <http://www.bmbf.de/en/equalification.php>

⁸ Bertelsmann Foundation CSR handbook

reduced from 34,30 to 20,10 Euros per pupil. Private and public spending on school books and software altogether amount to 440 million in 2005 – 42 million or roughly 10% more than 1991.⁹



Position of BITKOM – Germany’s ICT corporation/association

The association concentrates on voicing two connected concerns: one is the shortage of ICT experts and the other one stems from the fact that Germany needs more IT education in schools and German pupils need to be confronted with new media earlier and in better ways.

“After a difficult phase, the consolidation process in the ICT sector has now more or less reached completion. ICT companies provide 750,000 jobs in Germany, most of them highly qualified. To these must be added the numerous jobs among ICT users in all areas of the economy. BITKOM’s main educational objective is to create a new generation of innovative specialists with a high standard of technical knowledge and expertise.

(...) We are doing our best to ensure that the ICT sector’s needs for highly qualified staff are satisfied. BITKOM is working to establish a flexible educational landscape with an international orientation, modern training programs and advanced training certificates that are up to international standards. Germany’s new advanced IT training system has introduced some significant innovations into vocational training. On-the-job training and the application of e-learning or blended learning concepts make for efficient qualification schemes that suit companies’ needs.

⁹ Compiled from Source: Association of educational media suppliers Germany.
<http://www.vds-bildungsmedien.de/html/vds.htm>

Germany's universities play a key role in securing the country's position as a high-tech innovator. They must be given greater freedom. University courses need restructuring, and more must be done to enhance quality and promote cooperation with the business world. Germany needs trainees and students with a solid grounding in technical subjects. It must also open up its labor market. In this respect, the German Green Card, introduced on the initiative of the BITKOM as a stopgap measure during the IT boom, was a milestone. It finally led to a comprehensive immigration legislation, which provides the basis for employing highly qualified foreigners in Germany."¹⁰

Telecommunication policy is mainly a European issue

The European Commission set the frame with "eEurope action plan", a policy that was launched in 2000. The first e-learning initiative was launched in 2001. The Commission then adopted the 36 million Euros program "eLearning" from 2004 – 2006 to adapt the EU's education and training systems to the knowledge economy and digital culture. The succeeding program, called i2010 sets a different main focus. According to the EU, the information society is moving from the pilot phase to a "wide deployment" and thus must meet new challenges. i2010 will tackle growth and unemployment¹¹.

At the Lisbon European Council in 2000, the heads of state and government set the Union the objective of becoming "the most competitive and dynamic knowledge-driven economy in the world". This overall educational goal is framed in the ten years program "Education and Training 2010", which includes policies like the Bologna process and the Copenhagen process. Europe, which enjoys one of the highest levels of education, and has the necessary investment capacity, still lags far behind in the use of the new information and communication technologies. eLearning is designed to enable Europe to catch up by intensifying its efforts. It implements and extends the eEurope action plan into education and training, including in particular the guidelines for employment.

This initiative has four components: to equip schools with multimedia computers, to train European teachers in digital technologies, to develop European educational services and software and to speed up the networking of schools and teachers. Most of the resources to be mobilised will be national, but they should be backed by all the adequate community instruments and by the development of partnerships between public authorities and industry.

"Globalisation, new technologies and demographic developments constitute an enormous challenge; one of the answers to this problem is the access to lifelong learning." said Ján Figel, Commissioner for Education, Training, Culture and Multilingualism in the European commission.

¹⁰ http://www.bitkom.org/files/documents/BITKOM_Portrait_2005.pdf

¹¹ <http://www.e-europestandards.org/#i2010>

Criticism/Stakeholder views

Although there has been some criticism by teachers and their corporations, as well as school book publishers (competition!¹²) and some journalists concerning the Telekom's role at the time, it was hardly influential and has in the meantime completely subsided. There were no political initiatives in the German parliament or in the administration against the idea of a public private partnership (with the exception of a "Kleine Anfrage" concerning IT competence and the role of Deutsche Telekom of the socialist party PDS in 99, Bundestags-Drucksache 14/312).

A new campaign by the school book publishers to prevent a cutting of public funding for school books had no public response. The industry undergoes a rapid process of concentration. It is generally not feared that the private funding of the German educational system might not be sustained by the firms in the long-run. On the contrary, critics only put forward, one could have done more:

One line of argument against "Schools online's" work was indeed that it did not reach enough pupils. Often there was only one access to the internet in a school and that was in the teachers' room or in the headmaster's office. Another point is that teachers still cannot cope with the new technologies and use them rarely, especially women. Some critics also put forward that new media only work with a good overall didactic concept, but teachers mostly do not possess enough competencies to use the technology. Time consuming technical problems were also found to be a hindrance. Another line of argument was that there was not enough content for schools available.

A point that was virtually missing in the public debate in Germany (apart from a big article in the weekly paper "DIE ZEIT" by Susanne Gaschke) was the question "cui bono?" In the US in 2000 there was a debate around the "alliance for childhood" against early use of new media in schools. An alliance of professors, NGO's and others claimed that only the big companies profit from the computerisation of schools, but children would suffer a loss of fantasy and creativity and instead sit in front of a pc screen and get overweighed.

When computerisation of classrooms began, there was also criticism against private donations (partly old computers) and sponsoring because of possible manipulation of the pupils, which soon subsided. The BMBF and D21 even initiated a platform "Marktplatz für Schulen" which was meant to serve as a market maker between potential sponsors and schools in 2002. But the platform was soon abolished and independent regional solutions emerged.

Germany's pace of privatisation and the implementation of competition is criticised (e.g. from the OECD). In fact there is "rising concern" over a re-monopolisation in ICT (not in mobile communication where market shares have split up in near - even distribution among the big four Vodafone, Eplus, T-mobile and o2 – the market for mobile communication is an oligopoly).

¹² The German government said in 2000 concerning the competition that the market for school books was so much bigger (1 billion DM) than the market for web based material (12 million) that the fear of the publishers was unsubstantiated. High economies of scale – said the government – made a initial push essential for the market of educational software to develop. (Sept. 2000, „Förderprogramm Neue Medien“, BMBF).

Competition

Under the auspices of the German Federal Ministry for Family Affairs, Microsoft Germany has launched its own program called “Schlaumäuse” – clever mice – for kindergartens in 2003 together with its partners (partners, certified partners or gold certified partners; IT consultants, trainings suppliers or systems integrators), a school book publisher, Cornelsen, and UNICEF. The initiative supplies content but also offers the hardware necessary for the programs. The goal of the initiative is to enhance children’s speaking skills. The TU Berlin accompanies the project. Microsoft Germany spends 30 million Euro a year on its educational ventures, which are clustered under the heading “WissensWert” – in English roughly “worth knowing” or “the value of knowledge”.

The Initiative D21 is Europe’s biggest public- private partnership. It consists of a network of more than 200 member companies and organisations. The non partisan non profit association wants to stimulate education, qualification and innovation and thus growth. The initiative puts forward its claims together with its political partners in projects like “girl’s day”. All the projects by D21 have a close relation to ICT.

In Switzerland a similar approach is called SiM (Schule im Netz) and is organised as public private partnership with several partners on the private side (sun, Microsoft, IBM, Dell, Cisco, Apple and Swisscom). The financial resources are split in three. Originally, the private side and the federal state planned to pay 100 million each over a five year period (2002 – 2006), the cantons 800 million CHF. The sums have been cut substantially in the meantime. Comprehensive data do not exist, but the national state cut its SiM budget to 37 million francs in 2003 (25.53 million Euros).

Austria started its notebook classes in 2000 and still carries on with the project. 10.200 pupils currently work on laptops. The program is still expanding. Austria is planning to use notebook classes as a regular method of schooling.

In February 2003, the British Government announced a new capital investment program in secondary education called “Building Schools for the Future” (BSF) which was formally launched by the Prime Minister in February 2004. It seeks to bring the whole secondary school infrastructure up to 21st century learning standards over a 15 year time frame. The emphasis of the program is on securing improvements in educational standards across the country, driven by a state-of-the-art learning environment. The program is carried out by Partnerships UK (PUK) which was formed in 2000 to help the public sector meet big challenges. Its mission is to make public private partnerships better, stronger and faster. The program has established itself quickly, putting in place a team of educationalists, procurement specialists, program managers and commercial experts to work with local authorities in developing and delivering their local programs. It is expected that three phases of investment covering over 35 local authorities will be completed over the first three years.

Local authorities in Great Britain have a long history of contracting with the private sector for the provision of services. However, this program requires the private sector to engage with its local authority partner at the strategic level, to understand their aspirations for secondary education. They are then tasked with developing appropriate capital projects - by designing new buildings, refurbishments, provision of technology,

and maintenance services - that will deliver the educational strategy and learning environment that the local authority and school users are looking for. Spread over ten years, this is also a long term partnership, involving the procurement of an entire local program of investment through a single procurement, saving time, costs and money for all parties concerned.

Public private partnerships in education, especially with regard to the use of new media, are also popular in developing countries in Asia and India.

Annex

- PISA data on computer usage by pupils
- Deutsche Telekom (key data, financial data, T-share, shareholder structure, sustainability report)
- “Auf Wiedersehen, Ron!” press clipping on Ron Sommer leaving Deutsche Telekom in 2002
- fact sheet “Schulen ans Netz”
- OECD study “Regular PC users perform better” - survey on the impact of technical computer and media knowledge for alphabetisation/education

Further Information

- **Bertelsmann Foundation**, Handbook of CSR Case Studies, to be published in fall 2006.
- **Jones, Ken/Bird, Kate**, Partnership as Strategy: Public-Private Relations in Education Action Zones, British Educational Research Journal, Vol. 26, No. 4

Abstract:

The article summarizes recent political and theoretical presentations of 'partnership' and 'networking' and discusses their relevance to the understanding of contemporary education policy. It focuses in detail on the first stages of the establishment of Education Action Zones (EAZs) in two areas of England, describing in detail their patterns of governance, and the relationship they involve between 'public' and 'private' partners. It questions whether existing theorisations are adequate to understanding the dynamics of partnership in situations where there are substantial conflicts of interest between 'partners'. It concludes that 'partnership' in the EAZ context needs to be understood not as an established system of clearly-defined relationships but rather as a political strategy intended to accomplish a historic shift in the governance of education.

- **Kübler, Hans-Dieter**, Bildung zwischen Markt, Medien und ideellem Wert, 15 Thesen, Landesinstitut für Erziehung und Unterricht, Stuttgart, 2003.
- **Levin, Henry M.**, Stanford, University American Behavioral Scientist The Public-Private Nexus in Education, Vol. 43, No. 1, 124-137 (1999) Sage Publication

Abstract:

Although explicit public-private partnerships are rare in education, there is a close connection between the public and private goals of education. Education inherently serves both public and private interests. It addresses public interests by preparing the young to assume adult roles that promote civic responsibility, embrace a common set of economic and political values, and share a common language. Education serves private interests in promoting individual development, understanding, and productivity that contribute to adult productivity and well being. Unfortunately, educational policy may find itself in conflict while

simultaneously serving both public and private mandates. This article reviews that challenge and presents a variety of ways in which public and private sectors collaborate educationally. It focuses most fully on the issues that arise from recent proposals for educational vouchers in which public resources would be used to promote and fund schools in the private marketplace.

- **Rekowski, Peter**, Die Frage ist nicht Ob sondern Wie, Cooperative Regulatory Enforcement and the Politics of Administrative Effectiveness, John T. Scholz, American Political Science Review, Vol. 85, No. 1 (Mar., 1991) , pp. 115-136.

Abstract:

Even when political interests control bureaucratic outputs, the control of policy outcomes is complicated by trade-offs between controllable versus effective implementation strategies. I use a nested game framework to explain why a cooperative strategy can increase enforcement effectiveness in the narrow administrative game and why principal-agent control problems and collective action problems associated with the strategy lead policy beneficiaries to oppose the effective strategy in the broader political games. Analyses of state-level Occupational Safety and Health Administration enforcement provide evidence that cooperation does enhance the impact of enforcement in reducing workplace injury rates but that policy beneficiaries oppose and sabotage cooperation. The interactions between administrative effectiveness and interest group politics in this and other implementation situations require that both be analyzed simultaneously, and the nested game framework can provide a systematic approach to such analyses.

- **Reuen, Schmitz**, Schule im Netz, Das Internet als Arbeitsmittel im Deutschunterricht, Essen, in: Der Deutschunterricht 1/2000.
- **Stoll, Clifford**, Logout, Fischer, 2002.

Linklist

On Deutsche Telekom AG:

- All documents on financial data, management, staff and sustainability in the download center: <http://www.deutschetelekom.com/annualreport2005>
- Annual Report 2005: <http://www.deutschetelekom.com/annualreport2005>
- Human resources and Sustainability Report 2005 :http://download-dtag.t-online.de/englisch/company/9-sustainability/PUN_2005_engl..pdf
- Ron Sommer leaves Deutsche Telekom, economist, 18th July 2002: http://www.economist.com/printedition/PrinterFriendly.cfm?story_id=1234826

On SaN: Schulen ans Netz:

- <http://en.schulen-ans-netz.de/>
- factsheet San http://en.schulen-ans-netz.de/schulensansnetz/dokus/Factsheet%20SaN%20_engl..pdf
- Evaluation of SaN by HU Professor Wolfgang Scholl in 1999 http://www2.psychologie.hu-berlin.de/orgpsy/forschung/texte/SaN_Ergebnisse_HUB.pdf

On regulatory reforms of the ICT market OECD 2004:

- <http://www.oecd.org/dataoecd/46/19/32408088.pdf>

On PPP in education in Switzerland (text in German):

- <http://www.schuleimnetz.ch/dyn/1916.asp?lang=de>
www.ppp-sin.ch (German, French or Italian websites)

On educational matters:

- German educational system and facts about Germany: <http://www.tatsachen-ueber-deutschland.de/507.0.html>, <http://www.kmk.org/dossier/dossierinhalt.htm>
- PISA 2000 results, executive summary on 25 pages, free download http://www.portal-stat.admin.ch/pisa/download/executive_e.pdf
- PISA – exec. summary of the results, to date publications on German education and Pisa results http://www.oecd.org/topicdocumentlist/0,3024,en_33873108_33873402_1_1_1_1_37455,00.html
- Study Promoting Digital Literacy, José Manuel Pérez Tornero, free download http://europa.eu.int/comm/education/programmes/elearning/doc/studies/dig_lit_en.pdf
- OECD study (2006) on performance of regular computer users in key school subjects, http://www.oecd.org/document/17/0,2340,en_2649_37455_35992849_1_1_1_37455,00.html
- data on computer access of school students <http://www.oecd.org/dataoecd/27/40/35992769.pdf>
- KIM survey on media use of German children in German: <http://www.mpfs.de/studien/kim/kim05.html>, <http://www.mpfs.de/index.php?id=50>

On European education policy:

- eEurope 2002 and 2005 – policy by the European Commission to foster the information society including elearning in schools. eEurope action plan was approved in 2000. Overview: http://europa.eu.int/comm/education/programmes/elearning/index_en.html
- portal for e-learning: www.elearningeuropa.info

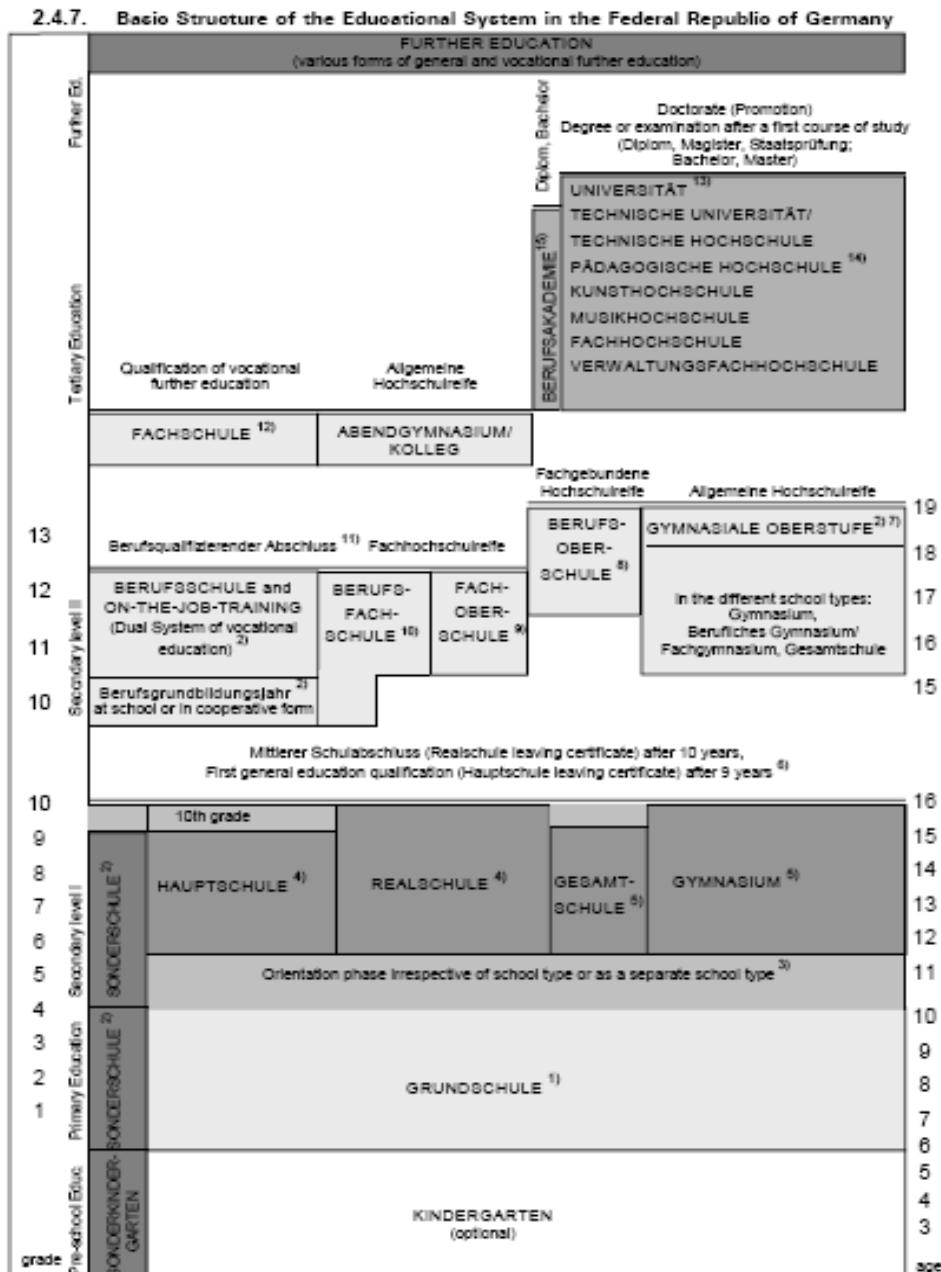
On German education policy:

- BMBF policy paper “online – offline, IT in education”, the federal governments action concept 2000 http://www.bmbf.de/pub/itkon_e.pdf
- running projects financed by BMBF/ESF managed by DLR http://www.dlr.de/pt_nmb/Schule/laufende_projekte/
<http://www.eid.dlr.de/pt/nmbf>
- Germany's innovation strategy action plan (text in German), http://www.bmbf.de/pub/aktionsprogramm_informationsgesellschaft_2006.pdf

On the E-learning market:

- Final report on the e-learning suppliers market in Europe by the Danish Technological Institute, September 2004.
http://ec.europa.eu/education/programmes/elearning/studies_en.html#Suppliers

Graphs



Source: KMK, The Education System in the Federal Republic of Germany, 2004.

<http://www.kmk.org/dossier/dossierinhalt.htm>

The share price of Deutsche Telekom from 2000 onwards

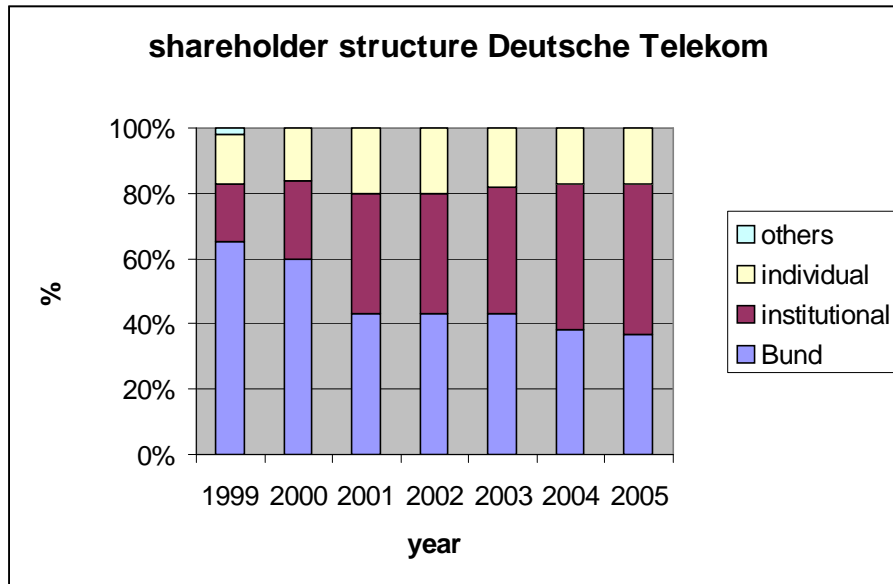
DEUTSCHE TELEKOM N
as of 4-May-2006



Shareholder structure DTAG

1999	3 billion shares	43 % Bundesrepublik Deutschland
		22 % KfW
		18 % institutional investors
		15 % individuals (2,25 Mio persons)
		2 % France Telecom
2000	KfW sells 20 mio and buys France Telecom shares	60 % Bundesrep. and KfW
		24 % institutional investors
		16 % individuals
2001	increase of share capital	43 % Bundesrep. (31 %) and KfW (12 %)
		37 % institutional investors
		20 % individuals
2002		43 % Bundesrep. (31 %) and KfW (12%)
		37 % institutional investors
		20 % individuals
2003		43 % Bundesrepub. (26 %) KfW (17 %)
		39 % institutional investors
		18 % individuals
2004	state sells shares	38 % Bundesrep. Bund (23 %) KfW (15 %)
		45 % institutional investors
		17 % individuals
2005		37 % Bundesrep. Bund (15 %), KfW (22 %)
		46 % institutional investors
		17 % individuals
2006	KfW sells 4,5 % to Blackstone	KfW share reduced to 17,3 %, Bund 15,2 % Bundesrep: 32,5 %

Source: compiled from DTAG Website



Source: Compiled from Deutsche Telekom reports

The B2C market for telecommunications¹³

Fixed line market	10 % competitors 90 % DTAG (April/May 2006)	
telephone calls	42 % of call-by-call minutes were provided by competitors, 58 % by DTAG. The price for call-by-call is lowest in Germany compared to other European countries and the US. The market is concentrated	8 competitors and the DTAG together have 90 % of the market share.
Broadband	7,5 million lines – about 90 % provided by DTAG (incl. about 10 % resale). VATM says in 2006 65 % market share lie by the “incumbent operator”. http://www.vatm.de/content/pressemitteilungen/inhalt/20-02-2006.html ECTA says in July 2005 it was 81 % plus 7 % resale. http://de.internet.com/index.php?id=2036680	Germany lies behind Scandinavian and Anglo Saxon countries in the number of access. The penetration rate in Germany (11,5%) is about EU25 average, but clearly under EU15 average (13 %). European average: about half of the market share lies with competitors.
Mobile communication	Prices are highest among the countries included in the survey (Sweden, Italy, US, UK, France). DTAG's share of the market is 38 % (30.2 million customers April/May 2006).	81 out of 100 Germans possess a mobile phone, this is more than in the US (58) but less than Sweden (106).
foreign lines	DTAG provides 40 % of all outgoing calls	

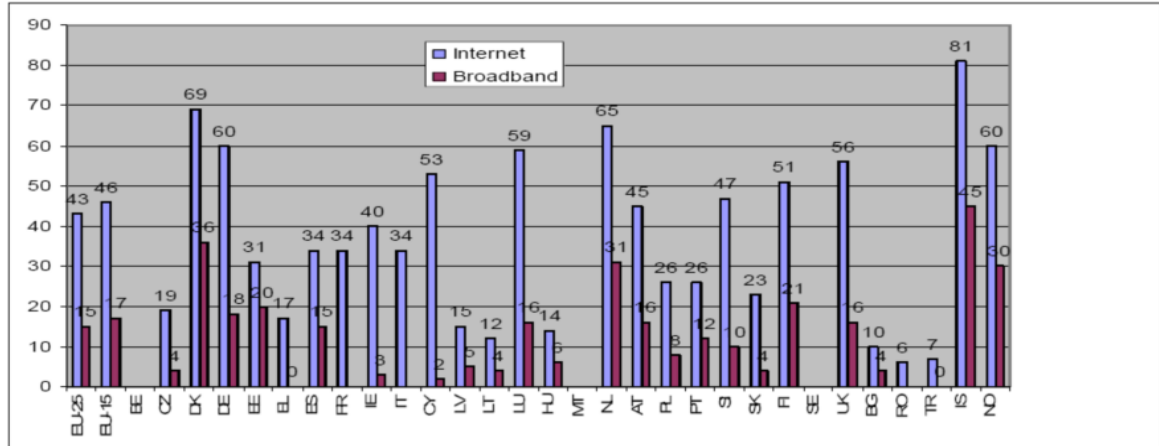
Sources: DTAG, VATM and ECTA

Internet access

The internet has continued its rapid expansion in European households. In 2004, an average of 43% of households in the EU25 had access. The differences between countries are large, but growth seems to be

faster in those with a low penetration. A growing proportion of internet connections are broadband. A high rate of internet access also seems to correlate with high broadband penetration.

Graph 3: Level of Internet access: households - percentage of households who have Internet and broadband at home, 2004



Source: Eurostat, ICT household survey

Source: Eurostat, <http://observatorio.red.es/documentacion/actualidad/boletines/statistics.pdf>

¹³ ZEW data from either 2003 or 2004. <http://www.bmwi.de/Redaktion/Inhalte/Pdf/S-T/telekommunikation-benchmark-endbericht.property=pdf.bereich=bmwi.sprache=de.rwb=true.pdf> The figures grow fast. At the end of 2005 the number of broadband lines was 8,5 million and 7,9 million DSL lines.

Number of internet service providers

As an indicator, the number of internet service providers is in many cases not based on reliable records. Sometimes, a rough estimate has to be given for individual countries for more than one year, if new surveys have not been carried out. Comparisons between countries would not therefore be reliable, but the trends within countries mostly have a more solid basis. Keeping these reservations in mind, the number of internet service providers has evidently stabilised, with some growth in many countries and a decline in a few.

Table 4: Number of Internet service providers

	2001	2002	2003	2004
EU-25	:	:	:	:
EU-15	:	:	:	:
BE	98	99	104	92
CZ*	:	:	:	:
DK	28	36	41	49
DE	700	750	800	900
EE	60	128	120	135
EL	173	168	173	170
ES	579	642	672	:
FR	:	:	:	34
IE	:	:	:	20
IT	507	333	:	:
CY	17	17	17	15
LV	:	11	101	129
LT	17	39	60	98
LU	33	32	31	32
HU	80	62	71	100
MT	16	14	14	15
NL	:	:	:	:
AT	200	200	220	270
PL	:	:	:	108
PT	30	32	26	30
SI	49	51	73	61
SK	39	143	187	211
FI	45	51	98	120
SE	100	100	120	150
UK	700	700	:	:
IS	12	12	12	12
LI	:	20	:	:
NO	:	117	132	157
CH	114	125	131	156
BG	200	200	200	200
HR	:	:	:	14
RO	115	269	362	515
TR	83	66	91	89

* Number of licence holders for 2001-2004 : 789, 1228, 1810, 2934

Source: Eurostat, <http://observatorio.red.es/documentacion/actualidad/boletines/statistics.pdf>

OECD 2004 on regulatory reforms of the ICT market

The telecommunications regulator, the Regulatory Authority for Telecommunications and Posts (RegTP) can be commended for making some significant pro-competitive decisions such as flat rate wholesale Internet access, local loop unbundling, leased lines provisioning times, etc. However, RegTP has been less effective in seeing its decisions *implemented* and has been reluctant to investigate important issues such as wholesale mobile termination rates. DTAG has successfully used judicial review of regulatory decisions to delay, indeed block, the enforcement of regulatory decisions.

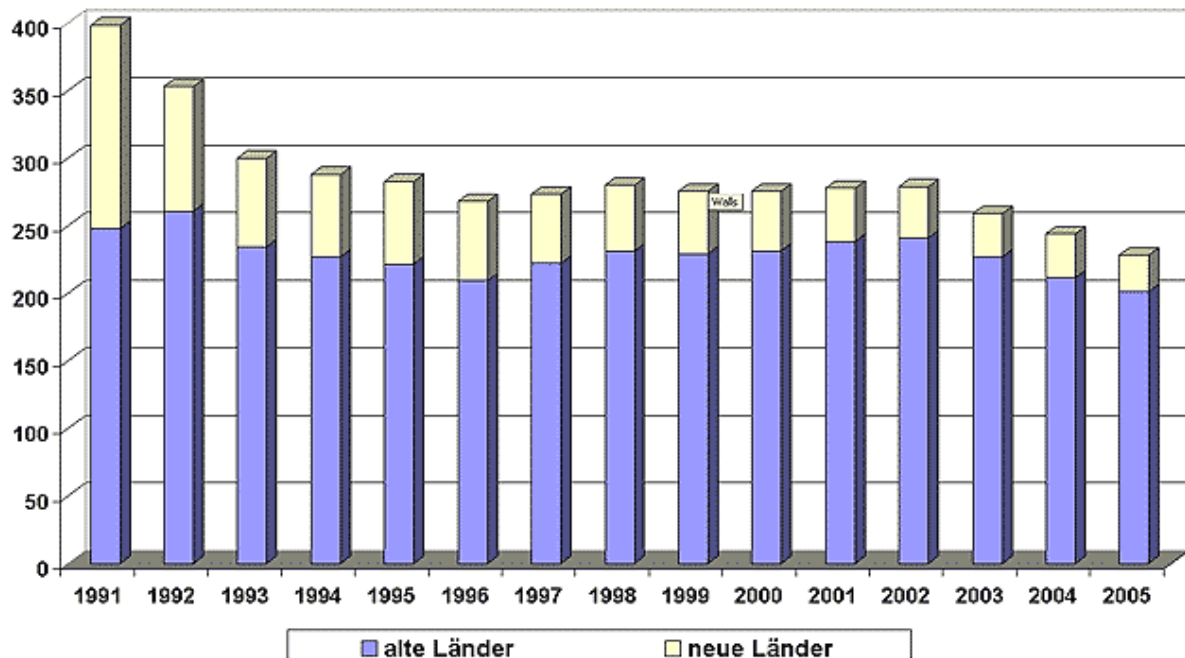
While unbundling of the local loop was mandated back in 1997, through delays in the provision of leased lines, price-squeeze tactics, artificially low retail prices for DSL services, etc., DTAG has virtually precluded competition and retained or even recently established a dominant position such as in broadband services. It is shortsighted to allow the dominant incumbent to leverage its monopoly status into the broadband market even if the means used is seemingly attractive low ('dumping') prices that accelerates take-up. In the long run this can disadvantage competitors (including those with innovative technologies and services), constrict competition, lead to adverse higher broadband prices and slow broadband deployment and take-up.

The German government has played a positive role by recognising the importance of pro-competitive reform and of encouraging new communication technologies and services for the economy. However, some weaknesses have become evident. There is some lack of clarity in the 1996 Telecommunications Law; the dominant incumbent has been able to apply "deny and delay" tactics to frustrate competition; in some important areas, regulators have also been slow to act until threatened by European Commission infringement notices. In general, Germany has not been among the leaders in terms of introducing new innovative policies but has tended to be a follower of EU initiatives. Early signs of success in pro-competitive reform are fading in the face of rising concerns over market re-monopolisation by the incumbent Deutsche Telekom (DTAG).

Source: <http://www.oecd.org/dataoecd/46/19/32408088.pdf>

Öffentliche Schulbuchausgaben 1991 bis 2005 in Mio. €

(Quelle: VdS Bildungsmedien e.V., Frankfurt am Main, Februar 2006)



Source: Association of educational media suppliers Germany.

<http://www.vds-bildungsmedien.de/html/vds.htm>

German press clippings

- Alle Schulen und Lehrer sollen ans Netz. Neue Zürcher Zeitung 21.11.2001
Enttäuschte Euphorien. Lernen am Computer und die Aktion "Schulen ans Netz" bergen mehr Probleme als erwartet. Süddeutsche Zeitung 27.3.2001
- Schulen ans Netz - Schüler ins Netz? Die Welt 8.11.2000
- Schulen gehen gratis ans Netz. AOL ermöglicht auch Lehrern kostenlos Surfen im Internet. Frankfurter Rundschau - Deutschland-Ausg. 23.2.2000
- Kein Geld für Internet-Zugang. "Schulen ans Netz": Streit um die Folgekosten. Frankfurter Allgemeine Zeitung 13.12.1998
- Schulen ans Netz. Weitere 100 Millionen Mark zur Verfügung gestellt. Sozialpolitische Umschau 26.1.1998
- Alle Schulen sollen ans Netz gehen. Handelsblatt 2.1.1998
- Bund und Telekom: Weitere 100 Millionen für Schulen ans Netz. dpa-Dienst für Kulturpolitik 22.12.1997
- GEW: Hauptschulen bei "Schulen ans Netz" benachteiligt. dpa-Dienst für Kulturpolitik 15.12.1997
- In den Kinderschuhen auf Online-Kurs. Die Initiative "Schulen ans Netz". Handelsblatt 5.12.1997
- Weitere 69 Berliner Schulen gehen ans Netz. Der Tagesspiegel 17.10.1997
- Speth warnt vor Stadt-Land-Gefälle bei Schulen ans Netz. dpa-Dienst für Kulturpolitik 13.10.1997
- Schulen ans Netz. Die Zeit 19.9.1997
- Schulen ans Netz. Sonderprojekt - Nutzung elektronischer Informationsquellen. Sozialpolitische Umschau 1.4.1997
- Lehrer lernen surfen. Vor einem Jahr ist in Bonn der Verein "Schulen ans Netz" gegründet worden. Die Tageszeitung 20.3.1997
- Kritischer mit dem Netz umgehen lernen. Michael Drabe - er leitet die Koordinationsstelle "Schulen ans Netz" - zieht im DLZ-Gespräch eine Zwischenbilanz. Deutsche Lehrerzeitung 9.1.1997
- Immer mehr Schulen können ans Netz. Der Tagesspiegel 1.10.1996
- Konkurrenz um Schulen ans Netz. Deutsche Lehrerzeitung 15.5.1996
- Millionen für Initiative "Schulen ans Netz". VDI-Nachrichten 26.4.1996
- "Schulen ans Netz." Frankfurter Allgemeine Zeitung 19.4.1996
- Initiative bringt die "Schulen ans Netz". Welt 19.4.1996
- Schulen ans Netz. Moderne Kommunikationsformen sind noch wenig gefragt. Süddeutsche Zeitung 21.12.1995

- Telekom will mit 35 Millionen Mark Schulen ans Netz legen. Welt 20.12.1995
Schulen, ran ans Netz. Frankfurter Rundschau - Deutschland-Ausgabe
14.12.1995 GI will Schulen ans Netz anschließen. Computer Zeitung 7.9.1995
- „Schulen ans Netz“ in: „Computer + Unterricht“, Friedrich Verlag, Nr. 41, 2001.
Viel Schrott dabei, Spiegel online, <http://www.spiegel.de/unispiegel/schule/0,1518,344754,00.html>, March 2005. The author calls SaN a
„symbolic action“.
- Computer lösen keine Bildungsprobleme, Computerwoche, Sept. 2002
<http://www.computerwoche.de/index.cfm?pid=818&pk=533061>
http://zeus.zeit.de/text/2001/02/200102_c-schule_zeitpun.xml (Marktplatz für
schulen, competitors...)

ICT industry

German ICT association – Bitkom – on German Education policies and on federalism in education:

Rückschritte gebe es dagegen in der Bildungspolitik. „Wir halten es für sehr bedenklich, dass sich der Bund im Zuge der Föderalismusreform aus der Schul- und Hochschulpolitik verabschieden will“, sagte Berchtold. Einheitlich hohe Bildungsstandards ließen sich nicht mit Kleinstaaterei durchsetzen, das habe die Vergangenheit gezeigt. Die OECD weise zudem seit Jahren darauf hin, dass das deutsche Bildungssystem chronisch unterfinanziert ist. „Ein echter Skandal ist die Ausstattung unserer Schulen mit neuen Medien“, sagte Berchtold. Nach der jüngsten Sonderauswertung der PISA-Studie kommen in deutschen Klassenzimmern auf 100 Schüler nur acht Personal Computer. Im Durchschnitt der weltweit größten Industrienationen sind es 16. In den USA kommen auf 100 Schüler sogar 30 PCs. „Hier müssen wir dringend gegensteuern, um die Qualität des Unterrichts zu verbessern und die junge Generation auf die Zukunft vorzubereiten“, sagte Berchtold.

Aus BITKOM-Sicht muss dringend dafür gesorgt werden, dass sich das bei Jugendlichen weit verbreitete Interesse am PC-Spiel in ein Interesse an der Technologie hinter dem Bildschirm umsetzt. Dies könne nur durch einen modernen Unterricht mit neuen Medien geschehen. Berchtold: „Wenn die nationale Politik eine Kernaufgabe neben der inneren und äußeren Sicherheit hat, dann ist es diese und es ist ihre vornehmste: Bildung.“

Source Bitkom's web page, June 2006

Kennzahlen zur ITK-Branchenentwicklung



Frühjahr 2006

ITK-Markt Deutschland	Marktvolumen (in Mrd. Euro)					Wachstumsraten			
	2003	2004	2005	2006	2007	04/03	05/04	06/05	07/06
Summe ITK	127,7	131,1	134,3	137,4	140,1	2,6%	2,4%	2,4%	2,0%
Summe Informationstechnik¹	65,2	66,3	68,1	70,5	72,8	1,6%	2,8%	3,4%	3,3%
Summe Telekommunikation²	62,5	64,8	66,1	66,9	67,3	3,7%	2,0%	1,2%	0,5%
Summe ITK Hardware u. Systeme³	33,5	34,0	34,1	34,3	34,5	1,6%	0,3%	0,6%	0,5%
Computer Hardware	17,6	17,4	17,1	17,1	17,1	-1,4%	-1,2%	-0,1%	-0,3%
TK-Endgeräte	4,8	5,2	5,2	5,1	5,1	7,3%	0,2%	-1,0%	-0,8%
Bürotechnik	2,6	2,7	2,9	3,0	3,1	5,0%	4,4%	5,1%	4,7%
Datenkommunikations- u. Netzinfrastruktur	8,5	8,8	8,9	9,1	9,2	3,5%	2,0%	1,4%	1,3%
Software	14,9	15,4	16,1	17,0	17,9	3,5%	4,5%	5,5%	5,2%
IT-Services	26,1	26,7	27,9	29,1	30,4	2,3%	4,4%	4,5%	4,5%
Telekommunikationsdienste⁴	53,3	55,0	56,2	57,0	57,3	3,2%	2,2%	1,5%	0,6%

¹ Computer Hardware, Bürotechnik, Datenkommunikationshardware, Software, IT-Services

² TK-Endgeräte, Netzinfrastruktur, Telekommunikationsdienste

³ Computer Hardware, TK-Endgeräte, Bürotechnik, Datenkommunikations- u. Netzinfrastruktur

⁴ ohne Carrier-to-Carrier Geschäft

Quelle: BITKOM (März 2006)

Public Private Partnership and Education in America, Jacqueline Rhoden-Trader, Ph.D., EducationNews.org, February 3, 2000

Despite the recent debate and sometimes negative press over Microsoft's "monopoly" on access to the technology age, Bill Gate's brainchild continues to find favor among the nation's most precious resources - teachers and students. Last week, in an unprecedented move, the twenty-five year old company announced a \$344 million software donation to support a worldwide initiative to train 400,000 teachers. (see www.microsoft.com/presspass)

Called "Intel Teach to the Future," the initiative builds on Microsoft's longtime commitment to teacher training and its philanthropic attitude toward underprivileged populations. For example, just last year it awarded the United Negro College Fund (UNCF) a \$300,000 Equal Access Grant. These funds are being used to underwrite special projects that improve technology access at six historically black colleges and universities. Both donations come on the heels of the ever growing "digital divide" controversy that looms over decision makers in both the public and private sectors.

Equipping and educating our teachers, those responsible for inspiring young minds, is an integral part of academic success. Far too many school teachers lag behind in technological access, knowledge, comfort level, and application. Additionally, the effort to meet immediate teacher enrollment demands has also increased the gap between seasoned and novice teachers with extensive computer skills. Veteran teachers are more likely to view technology as not of their era. A majority of urban educators grew up in a time where the possession of a calculator placed them at the top of the technology ladder. Meanwhile, new teachers come into these systems appalled at the lack of technology in schools and champion the cause for technology.

Fostering public and private collaborations are our best hope to bridge the digital divide. Providing teachers with hands-on training will allow them to move from theory to

practice and will enable them to become better stewards of our nation's children. In a society where more students in urban and rural communities are performing at lower levels than their suburban counterparts, technology preparedness at the teacher level can only increase the learning potential of minority students. Given equal access, training and opportunity, urban teachers and their students can make positive contributions to the ever changing global economy.

(...) Managed properly, public/private partnerships at local levels can fix acute and chronic problems much faster than government bureaucracy. The time is now to give these partnerships a chance without politicization. If America loses its footing in an already competitive global race for technological advancement, both U.S. citizens and their corporate communities lose.

The Microsoft donation alone is not enough, but the effort should serve as an example for the nation's public and private sectors to join the crusade for the betterment of our schools. We should increase our effort to work with tech firms that have taken an interest in creating training opportunities for teachers and students. National and state government should appropriate funds for local jurisdictions to develop and implement technology initiatives with public sector groups interested in closing the gap between the "haves" and "have nots."

A national "call to action" on the part of educators, politicians, civil rights leaders, policymakers, parents, private corporations, and foundations is the type of collaborative effort necessary to jump-start a technological revolution in urban America. For years, teachers have been criticized for their inability to reach and teach urban students. Likewise, they have been pleading for help in educating our children. Instead of finger-pointing, the new model should be to accept help from everyone interested in promoting our nation's youth, especially our corporate citizens.

By forming partnerships with schools and community organizations, corporations can build conduits for monetary donations and corporate involvement. The public sector should seize the opportunity to activate practical applications of these dollars, human resources and training. Grassroots type advocacy should even be considered to create local policy for these partnerships to work. This paradigm shift in educational theory and practice can only be successful with the earnest involvement of each sector. (...)

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