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Access versus Content: Emancipation in the Web Era?

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Abstract

'Access' versus 'Content' and the ever-lasting question 'Who is king and who is queen?' has been an on-going topic in the debate about profitable business models for electronic commerce facilitation and electronic content provision. This paper shows how 'NetCologne', a medium size private telecommunication and Internet service provider on the liberalized German telecommunication market, has prevailed against established competitors and gained a leading position as regional player. Having set up its own subscriber network of about 40,000 'fibre-kilometres' within the city of Cologne, the company has developed its business model following the traditional core competence of telecommunication operators, i.e. access provision and basic value-adding functionalities. Only recently NetCologne has started to adjust its business model on also facilitating content provision and electronic commerce. In this context, the paper discusses conceptual and actual opportunities and obstacles for access providers to remain successful in the new era of electronic commerce and electronic content provision.

Introduction

Involvement in Internet-based activities and content provision on the Web are increasing and it seems to have become 'compulsory' in many industry sectors including telecom and infrastructure services (Berryman et al. 1998). At the same time, blurring traditional market segments, industry categories and measurement schemes have lost importance in the Internet economy. End users are at the center of their own value webs (European Commission 1998, p. 1-17), or to phrase it differently – at the focus for almost every provider's value-adding activities regardless of where the provider is positioned in more traditional 'value chains' (Adam, Yesha 1996; Benjamin, Wigand 1995).

This paper analyzes the case of NetCologne, a German medium-size telecom, an access – provider who is battling to position itself in the new era. Should the company continue to focus on access provision and infrastructure services, or should it 'swim with the trend' and search for major business opportunities on the 'content front'. In other words should NetCologne concentrate on 'content creation', 'content aggregation' or other content-based services?

With the general trend to content provision , we observe an increasing number of players aiming to dominate both content and channel (access). The era of high-speed transmission networks currently leads to more telecom and access providers 'hunting for' content ownership. So-called 'telcos' have long been trying to harvest the potential of vertical integration into content. This trend has been fostered by the emergence and growing importance of the Internet. Assuming that the distinction between Internet broadcasting and conventional TV will shrink or even vanish, telcos will naturally find themselves positioned as gatekeepers to the viewing public (e.g., Mackie-Mason et al. 1996). Whether such a situation will lead them to increasingly bid into content according to the predictions of Financial Times (Shilingford 2000), remains to be seen. In the case of traditional terrestrial transmission (TV cables), in most countries, content owners have integrated into transmission and not vice versa.

In such an environment, a company like NetCologne faces a dilemma: Should they continue to focus on access provision and infrastructure services as their core competence? In this approach, content-related activities would predominantly 'serve' as a tool that attracts customers and creates loyalty; i.e. increased traffic via NetCologne's network. Or should NetCologne 'swim with the trend' and consider content related activities as providing more value to customers and hence offering higher profit margins. Which part of the value chain will develop into a tool or act as a catalyst for the other? Who will provide the easiest access mechanism to attract and keep audience attention, and to harvest 'return on attention' from it? Will it be the access providers who will be needed but are not in focus of most customers' attention, or will it be the content providers who at the same time are independent of a specific network provider and are at the center of customer interests?

Focusing on the discussion 'access versus content' and the ever lasting question 'Who is king and who is queen?', the following analysis will apply the electronic

publishing value chain (see Figure 1) as suggested by the European Commission (1996). Main concept of the suggested value chain is the division in infrastructure services and content-related activities such as hosting and moderating electronic communities (e.g. Hagel, Armstrong 1997; Shapiro, Varian 1998; Timmers 1999; Turban et al. 2000).

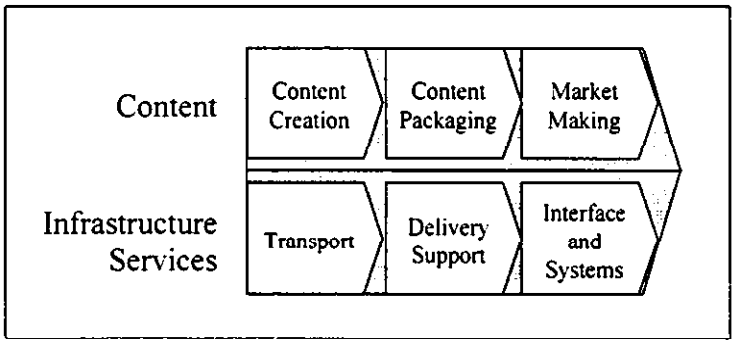

Figure 1: Electronic Publishing Value Chain (Source: European Commission 1996, pp. 21-22)

As not too many companies are actually making profit on the Web (which is different from 'making money on the stock exchange'), we will investigate revenue potentials of both 'access provision' and 'content provision' (see also Loebbecke, Butzbach 1998; Loebbecke, Powell 1999).

Business Environment

In today's European Markets, a process of deregulation characterizes the telecommunication and infrastructure services. Whereas competition for public telecommunication services has already started earlier in Finland, Sweden, Great Britain, Denmark, and the Netherlands. Nearly all the markets in other countries belonging to the European Union were opened to competition in January 1998.

Since 1996, the German telecommunication market has been deregulated in a step-by-step approach. First, companies were allowed to offer data transmission services, mainly based on infrastructures leased from the German Telekom. Subsequently, commercial organizations could apply for the permission to establish telecommunication networks and services for closed groups, e.g. corporate groups. Finally, the entire German telecommunication market was opened for private companies and competition.

The German telecommunication market is the largest and one of the most important markets in Europe. It has a market volume of EURO 24 billion and is followed by the French market with EURO 16 billion. The market for Internet and on-line services has been one of the fastest growing market segments in Germany. Together

with an increasing number of Internet users, the number of Internet service providers doubled within two years, from around 500 in 1996 to almost 1,000 in 1998.

In 1998, the turnover based on Internet services was assessed at EURO 2.8 billion and forecasted to reach EURO 4.35 billion in 2000 (Zerdick, et. al. 1999). Since January 1998, private and commercial customers in Germany freely select their telecommunication service provider.

The liberalization of the market attracted many new players and, since 1998, more than 200 licenses have been granted to 120 organizations granting permission to operate a private telecommunication network offering public telecommunication services.

For the following discussion covering the pros and cons of 'access' versus' content', we suggest to further distinguish among players, i.e., telcos (see Table 1).

	With Infrastructure	Without Infrastructure
Large Telcos	Mainly former monopolists e.g., British Telecom, German Telekom, France Telecom	National and international operators e.g., Worldcom, Mobilcom
Small and Medium Size Telcos	Regional or City Carrier e.g., NetCologne	Regional or City Carrier e.g., ISIS

Table 1: Telcos along the Dimensions 'Size' and 'Infrastructure Ownership'

Former monopolists are large telcos with their own infrastructures, i.e. with their own cables in the ground. Others recently established national and international conglomerates such as Worldcom or Mobilcom are large access providers without their own infrastructures. Large telcos have the advantage of wide geographical coverage offering access to large number of potential customers. In most cases, those are comparatively cash rich.

However, deregulation also provides small and medium size players with a chance. Most of them pay for access to the infrastructure of the large providers, and then sell their own services to business and private customers. In Germany, only in a few cities, German Telekom has to face competitors offering telecommunication services based on their own networks. NetCologne is one of the best-known examples of such a 'city carrier' with its own infrastructure.

NetCologne, a Successful City Carrier

NetCologne is one of a few telecom companies that set up its own subscriber network for its services (see also Schaefer, Loebbecke 1999). The company offers communication products and services tailored to the individual customer, reaching

from 'simple' telephony to professional Internet solutions, implementation and management of corporate networks, and broadband communication networks.

Beside German Telekom, NetCologne is the only telecommunication service provider operating in Cologne in possession of its own cables in the ground. With 40,000 glass fibers cables, so-called 'fibre-kilometres', within the city of Cologne, another 10,000 'fibre-kilometres' in the vicinity of Cologne, and investments of around EURO 150 million until December 1999, NetCologne has established one of the most advanced and modern fiber glass networks in Europe. Hence, NetCologne was among the first few new providers on the market to offer business and private customers the entire spectrum of telecommunication services on a regional basis at comparatively low prices. Since entering the market in 1998, NetCologne has provided Cologne and the surrounding communities with its services.

The shareholders of NetCologne comprise the largest electricity provider in the area (64.9%) and two major regional banks (25.1% and 10%). All three shareholders are well-established companies with long traditions in Cologne. Each partner has established a trustful relationship to the citizens and has acquired comprehensive knowledge about the market environment in Cologne. While the electricity provider offers infrastructure access, the main contribution of the banks lies in customer access and financial backing.

Equipped with a capital stock of EURO 4.5 million and a turnover of EURO 56 million in 1998, NetCologne has created more than 330 jobs. In December 1999, Net Cologne's customers amounted to 55,000 within its telephone business with 4,500 being business customers. Another 26,000 customers were counted within Net Cologne's Internet business; of course, double counting is possible and likely. On average, around 3.4 million speaking minutes are managed through NetCologne's own network (December 1999).

Company Development

Since its foundation in October 1994, NetCologne has been aware of a powerful network as crucial for all services to be offered. Hence, in 1995, the company laid the ground for City|Net|Cologne – a glass fiber network for the Cologne area. This Asynchronous Transfer Mode (ATM) high-speed network allows the transfer of audio and multimedia data with a transmission rate of 155 (later 622) Megabit per second. By the end of 1995, more than 3,500 buildings were connected to the network, which soon allowed NetCologne to become independent from the previous monopolist German Telekom.

The first service offered by NetCologne was high-speed access to the Internet. Inter|Net|Cologne provided customers with comfortable and cost-effective access to the Internet. High speed-connections with transmission rates up to 56 Kbit/s via analogous modems and 64 Kbit/s for ISDN attracted a broad variety of customers. However, in order to test the infrastructure and start services in a controlled way, NetCologne concentrated its Internet business on selected customers. It used

time and two geographic zones and charges only by seconds. Compared to other pricing schemes (charging per minute) this leads to average cost saving of 20 % (CCL Telecommunication quoted from NetCologne (ed.), 1999.)

High speed Internet access (Inter|Net|Cologne) was the first service NetCologne offered on the market, and it is still a brand product for the company.

For end users, NetCologne's Internet services comprise access via modem with a transmission rate up to 56 Kbit/s (K56-Flex standard) or ISDN, high speed connection to NetCologne's Internet backbone with a bandwidth of 34/155 Mbit, individual email-address, private homepage on a NetCologne server (up to 1MB), and installation service.

For business customers, NetCologne tailors its Internet services to the needs of individual customers. The entire spectrum of Internet services is covered: high speed Internet access (dial-up, dedicated data subscription line (DSL)), email services, domain name services, web-site hosting, server hosting, i.e. integration of a client's server into Net Cologne's computer center, as well as Electronic Commerce related services.

In co-operation with its partners, NetCologne organizes and co-ordinates the entry of a company into the electronic marketplace of Cologne ('www.koeln.de'). It provides advice and realizes the design of web-presences, and the integration with back-office applications, accounting, and transaction systems.

All companies and organizations that decide to have a web presence on Net Cologne's servers, either with their own domain or within the domain of NetCologne, are integrated into the company's 'Business Forum', which is accessible from the company's Internet starting page Inter|Net|Cologne. Within this forum, links to all listed companies are sorted and grouped according to specific key words, e.g. education and training, on-line shopping, or telecommunication. All Internet URLs are automatically connected to 'www.koeln.de', the city information system and electronic market place of Cologne.

Targeted to business customers, NetCorporate comprises services around the implementation of corporate network architectures, including connections of dislocated branches, network outsourcing-services, and comprehensive communication management. NetCologne's Network Management Center promotes reliable network performance and 24-hour service.

Based on its TV cable network, NetCologne provides TV, radio and teletext to its customers (50 TV channels and 25 radio channels in German and foreign languages).

Cologne being the center of North Rhine-Westphalia's media industry, Media|Net|Cologne is a corporate network for the media industry in the Cologne area, namely for TV stations, TV service providers, (production) studios, media and advertising agencies and related companies. Media|Net|Cologne enables a real-time transmission of uncompressed multimedia data with a bandwidth of 2.4 Gigabit per second.

'Access' versus 'Content': Converging Business Approaches for NetCologne

Exploiting Core Competencies - NetCologne as Access Provider

NetCologne aims at offering customers a secure basis for successful electronic commerce on the Internet. The continuous enlargement of the network infrastructure and several co-operations with partners, for example, to develop and realize different concepts for secure electronic payments, are supposed to contribute to this goal.

As described above, one of NetCologne's most valuable assets is its own network, which allowed the company to enter the telecommunication market as independent market player. Nevertheless, NetCologne has announced to continuously develop to become totally independent from the infrastructure of German Telekom. NetCologne plans to invest about EURO 200 million in its infrastructure by the year 2004 (Werner Hanf, CEO, NetCologne).

Net Cologne's broadband TV cable network also increases in importance. It provides a bandwidth of 10 Mbit – around 150 times ISDN – and guarantees 2 Mbit on average. As it offers a back channel, it will serve as a future infrastructure for interactive electronic commerce. Field tests with cable modems and the earlier aforementioned co-operation with the Bertelsmann Broadband Group illustrate NetCologne's awareness of this issue. More than 55,000 households have already been connected to the cable network. In the effort to offer this infrastructure to as many citizens as possible, NetCologne has settled contracts with several house owners and with the most important house constructing associations in Cologne. Together, they guarantee potential access to at least 70,000 households in Cologne.

Tackling New Opportunities - NetCologne's Content Focus

Based on partnerships with the municipality of Cologne and a large regional publisher, NetCologne's Internet starting page (www.internetcologne.de) evolved from a simple Internet access facility to a portal and electronic marketplace for the Cologne area. In addition to topics that refer to NetCologne's Internet services, e.g. 'Internet for private customers', 'Business@NetCologne', 'Service pages' and 'Business Forum', the site is built on two main pillars,

(1) the on-line city-guide for Cologne (www.city-guide.de), and

(2) the official city pages and electronic marketplace for Cologne (www.koeln.de)
[Koeln' is the German name for Cologne, hence www.koeln.de].

www.city-guide.de

The first content driven service, which NetCologne offered to the public, is an on-line city-guide for the city of Cologne. In January 1997, the first release of the guide went on-line. The integrated content and services have continuously been improved and enlarged. A search engine provides the functionality to search for key words on all web pages. In particular, the following content can be accessed:

News	latest headlines, local and sports news and weather forecasts – all information is selected from a regional perspective,
Events concerts, exhibitions,	information about events in the city of the day, e.g. fairs or cinema and theatre programs as well as cultural events, e.g.
City of Cologne	a broad range of local information, such as - map and pictures of the city, - information on vehicle traffic (parking facilities, traffic jams, etc.) - information about Cologne's cathedral, the 'Dom', - information on the local carnival season, - tips concerning relaxation places, - a restaurant guide, - information provided by the municipality, e.g. office hours and other administrative issues like registration procedures, addresses or links to municipal districts, and - links to selected Cologne companies and organizations, sorted according to topics like education, computer and Internet or sports,
Regional information companies) in the	links to different on-line resources (information and region of Cologne,
On-line meetings	chat and news forum where users can exchange information and discuss different topics. To attract users and stimulate discussion, visitors of the chat forum regularly have the opportunity to chat with well known per sons of the Cologne area, e.g. managers, sportsman or artists,
Specials access a games and the erotic gallery	topics not fitting in the above structure. Currently, users can computer corner with information on hardware, software, Internet, a tutorial on the new German spelling rules, and an with pictures taken by local Cologne photographers.

'www.koeln.de' – Cologne's Virtual Marketplace

In April 1998, the municipality of Cologne gave NetCologne the right to use Cologne's URL and to lead the official Internet pages of the city – 'www.koeln.de'. In return, NetCologne assured to provide and maintain the required technical

infrastructure, i.e. server, storage and network capacities, as well as all related services. The site offers general information services. an electronic marketplace, information about offers of non-profit organizations, and information about and services provided by the municipality of Cologne.

Information services Similar to the city-guide

- What's going on in Cologne – information and city overview of Cologne, e.g. city maps, facts and figures about Cologne and links to on-line services,
- Tourism/hotels – tourist attractions in Cologne and its vicinity and organizations, which support visitors in preparing their trip to Cologne (e.g. tourist office or hotel reservation service),
- Traffic & transportation – local traffic and transportation, e.g. public transport network, parking places, cap services, airports, ports and waterways, and railway system. Visitors can access up-to-date information about vehicle traffic in the city. The information is updated every ten minutes and informs about parking places and forecasts traffic jams. On a virtual city map, users can locate the parking facilities closest to their location.

Electronic marketplace Opportunity for companies to present themselves on the Internet, attract customers, and find business partners

- Cologne market place – an electronic classified directory, which gives an overview on companies in the Cologne area. Currently, it contains addresses of more than 7,000 companies and organizations. It is free to enter this database and new addresses are added daily. Users can search for companies, products or services without charge,
- Fairs/economic area – listing fairs or congresses and hence leads to potential business partners.

Platform about non-profit institutions

- 'Education and science' – e.g. universities, training companies etc.
- 'Culture' - cultural information and news, current exhibitions, museums or movie and theatre programs,
- 'Health care' – links to organizations in the area of health care, like central hospital and relief organizations,
- 'Social life' – links to organizations that provide information about the social life in Cologne.

Interface to municipality

- 'Municipality Cologne' – official pages of the municipality of Cologne,
- 'Public Authorities' – public authorities of the city and the state, e.g. unemployment office and Internal Revenue office,

- 'Citizens Services' – e.g. on-line registration of new car.

The objective of the co-operation with the municipality is to provide a common platform for Cologne companies and organizations that want to present themselves on the Internet. All services in relation to Cologne are bundled and presented under a common URL, combined with the official web pages of the municipality of Cologne. Today, 'www.koeln.de' is established as one of the main Internet addresses for profound and comprehensive information about Cologne. Interested companies and organizations have the opportunity to be listed on this common platform for a small fee.

Towards Emancipation of 'Access' and 'Content Provision' – NetCologne's Coverage of the Value Chain

While NetCologne defines its core competencies on the technological side, the company considers technology to be mainly an enabler, while content driven activities to be the main value-added services for customers. Customers are looking for comfortable and cost-effective ways to access the Internet, and wish local and regional information (e.g. Choi et al. 1997). Hence, NetCologne has designed, created and offered such services from the early phases of the company's inception. More recently, in its ambition to move from being a pure telephony and Internet access provider to a content provider and broker of regional information, NetCologne has established several content driven services (see above).

So far, till now NetCologne's business partners supply all the content offered on or via the company's Web pages. NetCologne focuses on attracting content to its site in order to increase Internet access and thus provide traffic on its network. Content is not seen or run as a stand-alone business yet, but as an important tool that helps to further extend the usage of the existing network infrastructure (see also Loebbecke 1999).

Nevertheless, in strong partnerships NetCologne engages itself in the (co-) development of content-based services, where the content or the content-based service will be the good to be sold and charged for. Ideally such services would be sold via Net Cologne's network, but there is no reason why the content-related business could not be separated from the infrastructure one. Therefore, the company could and is expected to offer such services also to customers, who are not accessing the Web via Net Cologne's network.

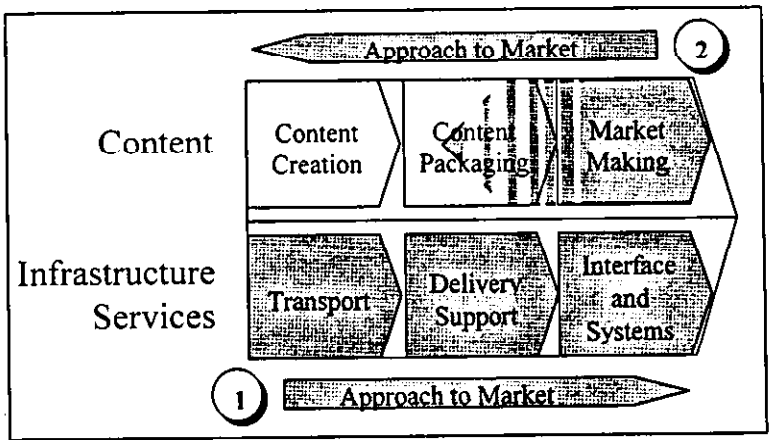

Figure 2: NetCologne's Position in the Electronic Publishing Value Chain (after: European Commission 1996, pp. 21-22)

Turning our attention towards the value chain depicted in the above Figure 1, from the very beginning of its business activities NetCologne has offered all three kinds of infrastructure services. Concerning content-related activities, NetCologne tackles and manages the chain 'from the back': The company is engaged in 'Market Making' and starts to get involved in 'Content Packaging'. But 'Content Creation' – regardless if concerning the creation of content products or content-based services – is still to be developed and strategically fit into Net Cologne's overall portfolio of products and services (see Figure 2).

'Access versus Content': Opportunities and Obstacles for Traditional Access Providers

Sources of Revenue

There is a difference between (a) just offering a service, (b) generating revenue from it, or (c) even harvesting profit (Bichler, Loebbecke 2000; Goldfinger 1997). Unfortunately, the profit question can hardly be answered in any generalized form. However, it is clear there will be no profit without revenue. Hence, we will at least try to shed some light on the issues of revenues.

Generally speaking, offering content on the Web has to be attractive for providers in one of two ways:

(1) Strengthening a company's competitive position with respect to its traditional products (e.g. higher turnover as a consequence of Web activities), or

(2) Expanding towards additional, profitable product lines (e.g. selling information / content-based products and services).

For NetCologne, 'option (1)' would mean applying content provision to generate more subscriptions and more traffic, i.e. content-related activities as an indirect source of income. 'Option (2)' would imply that content or content-related products and services can be turned into stand-alone products to be sold not only to customers using NetCologne's network.

So far, NetCologne's direct revenues stem mainly from its role as access provider, i.e. 'Option 2' has not been implemented yet. Infrastructure focus on broadband connections and a back channel would lead to even higher amounts of bits transferred, i.e. access to broadband applications would therefore foster the access-based turnover (see also Dempsey et al. 1998). Indirect revenues from its role as content aggregator have just started playing a role.

Financial Flows among Players

It is important to appreciate the different strategic positions for various groups of players – 'content providers', 'access providers', and 'consumers' – seeking to be successful in the battle for successful access and content provision (see also Griffith, Taylor 1996). We would like to suggest six different scenarios (see Table 2) regarding financial flows between access and content providers, regardless whether those services will be hosted by the same company or not.

	Content Providers	Access Providers	Consumers
Scenario 1	receives no payment *(many small content providers)*	receives payment on time/volume basis from consumers	pay for access
Scenario 2	receives predefined 'share' from access providers *(once when selling content rights or continuously based on traffic)*	receives payment on time/volume/content basis and 'shares' with content provider	pay for access
Scenario 3	receives payment based on content directly from consumers *(pay per view)*	receives payment on time/volume basis from consumers	pay for access and content (separately)
Scenario 4	receives payment directly from consumers *(pay per view)*	receives payment 'share' from content providers	pay for content
Scenario 5	receives payment for content rights from access providers	receives only indirect revenue from advertisers *(or direct revenues from other sources, see Figure3)*	no payment

Scenario 6	receives only indirect revenue from advertisers *(or direct revenues from other sources, see Figure3)*	receives only indirect revenue from advertisers *(or direct revenues from other sources, see Figure3)*	no payment

Table 2: Financial Flows among Players Adapted from: Loebbecke (1999)

Concerning the vast majority of content offered on and via the Internet, the most common financial flow has been from consumers to access providers with most of the content being provided for free to consumers (Scenarios '1' and '2').

In Scenario '3' content providers receive payment for their content directly from the consumers, who not only have to pay the access providers, but also the content providers for the content they access. Competition among content providers for customers should directly develop. Therefore the quality of (paid content) or at least the appreciation for paid content is likely to improve. Examples of content to be paid separately are still rare, but as soon as the Internet becomes a general outlet for entertainment products, for example like instance movies or sport broadcasting, then some form of Internet income for content providers will likely occur.

With or without direct payment for content, there seems to be a clear trend that consumers' direct payments for access based on time and volume will decrease drastically (Scenarios '4', '5' and '6'). Telcos and ISPs have been competing to offer more favorable access conditions to consumers. Access prices are decreasing, and as a result, the share of revenue gained via access and subscription fees compared to total revenues is also decreasing. For instance, looking at the two largest access providers in Germany, market leader T-Online made 92% of its 1999 turnover with access fees, AOL Europe is already more advanced on the path to a new strategic focus. Nevertheless, even AOL Europe still gained 75% of its total turnover in 1999 with access fees (FAZ 2000).

In Scenario '4' consumers get free access to the Internet, but have to pay for (selected) content. Scenarios '5' and '6' indicate a situation in which access and content are free of charge for consumers. In Scenario '5', content providers sell content rights to access providers and thus generate direct income. Such a situation is very common in the context of TV broadcastings. In Scenario '6' both content and access provider generate indirect revenues from advertising.

This paper cannot predict the relevance of all scenarios in the near future. Customers increasingly take access as a commodity and pay for customized, high quality content. Those payments could be direct or indirect via acceptance of advertisements. This trend would indicate a move towards scenarios '4', '5' and '6'.

Although access providers generate revenues in all scenarios, following the situation described above, they have to rethink their strategic positioning. For a niche access provider such as NetCologne, this implies the growing need to assure continuous revenue streams (direct or indirect) from access provision or to 'swim with the trend' and to move more towards the business model of a content provider.

Integrating Access and Content

Access and content cannot be separated from each other. Both depend on and stimulate each other. Access providers maintain a strategic position as they provide the necessary infrastructure for all services, i.e. content delivery or the electronic commerce activities, which are not yet discussed. They are the gatekeepers to the customers (see Figure 3). Nevertheless, access providers have to exploit their infrastructure, hence, they have to foster all initiatives, which stimulate and increase the traffic on its infrastructure.

Adjusting to likely monetary flows and sources of revenue, the industry trend goes towards integrating content and access. The remaining questions relate to the direction and the form of integration: Who will integrate with whom, content providers with telcos, or access providers with content providers? Will integration be embedded in takeovers, mergers, or partnerships?

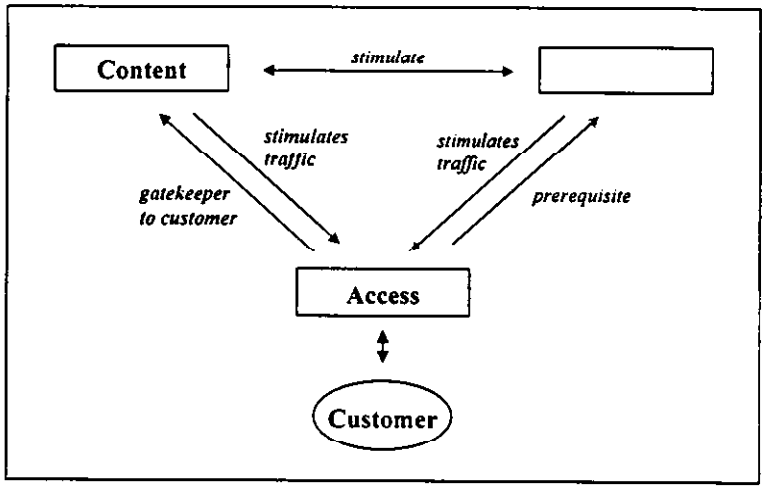

Figure 3: The Triangle 'Access', 'Content', and 'Commerce'

- Direction of Integration

Under the assumption that it will be "those who can manipulate content, who can leverage existing content ownership rights over several platforms, and who have brands the public recognizes" (Shilingford 2000). Many experts assume that it will be the media companies, who are adept at these skills and exploiting the assets, and who will eventually exploit the move to fixed-line and cable broadcasting. In the era of content overload, content will need to be sourced from content experts such as Hollywood, movie distributors, and TV networks, if new users are to be attracted to the Internet. This scenario suggests that media companies buy into telcos. Hence, telcos should stick to access provision and to then be a valuable and prospective partner for media companies.

On the other hand, mergers such as the one between AOL and Time Warner suggest a different scenario: The AOL / Time Warner merger is an example of access

providers getting into content. Another example along these issues are an access and service provider pushing into content and content ownership, is the British cable TV and telephony company BskyB buying into football teams.

Even when many large telcos (and other access providers) have the money to outbid media companies for TV and sports rights, an alternative strategic focus for them could be to concentrate on upgrading their networks before being taken over by rivals with more advanced technology. Indeed, compared to the size of today's telecom markets, many content opportunities on the Internet are quite small and not easy to materialize. This may at least question early returns on investments into content for access providers.

- *Form of Integration*

It is unlikely that small players with own infrastructure can grow into value chain activities such as content creation and packaging by organic growth. Since NetCologne is only a small telco without high capital resources, the company was and will only be able to enter the content game via strategic alliances.

Firstly, as a small niche player, NetCologne cannot acquire major content players; neither they will be a required access opportunity for any content provider. Secondly, as NetCologne has initiated major investment in putting cables in the ground, they need to continuously keep their main asset as state-of-the-art in order not to be taken over by a larger telco too easily. Investments in the physical infrastructure are sunk costs; profit needs to be gained from exploiting the infrastructure in the role of an access provider. Hence the strategy for the niche access provider NetCologne can only be to build on partnerships regarding content provision, but not to count on content ownership. For NetCologne to be a commercially attractive partner, the potential partnering content providers have to offer niche content so that the two niches are more or less the same. Only in such a setting the access provider NetCologne can differentiate itself in the industry and assure sufficient direct revenues from access provision and indirect revenues from content partnerships. Content as stand-alone product does not seem to fit into the company's scheme of assets and its strategic positioning.

Conclusion and Lessons Learnt

This paper shows how NetCologne, a medium size enterprise, has so far prevailed against established competitors and gained a leading position as regional service provider on the German telecommunication market. Based on its technical infrastructures and customer orientation, NetCologne experienced an extraordinary economic growth. Foundation for this success has been the set up of its own technical infrastructure (cables in the ground), which forms the basis for all services offered.

NetCologne has followed a farsighted strategy. Since the company's foundation NetCologne's' philosophy states: "Infrastructure is essential and the basis for ALL

value-added services offered to the customer." Consequently, NetCologne's core competence and asset 'infrastructure services' is of high value. Generally speaking, the company sells bandwidth and maintains access to a broad customer base. Bandwidth and customer access are two assets, without which no content provider can survive, especially in the (future) multimedia and bandwidth-intensive Internet era. If customers are not willing to pay for access any longer, content providers will have to cover these cost vis-à-vis access providers. This would strengthen NetCologne's competitive position and result in direct revenues from content providers.

On a more advanced level, NetCologne is convinced that the Information Society will provide comfortable and powerful access to the Internet for all. It is aware that the set up of an appropriate infrastructure is just a first step and an enabler for high value added digital business. Hence, it continuously searches for partnerships to complement the company's products and services and to contribute to the formation of a successful player in the electronic commerce and content provision era.

Only with adequate content on its infrastructure, NetCologne is able to increase traffic on its infrastructure. Consequently, NetCologne has to reinforce its position between content providers and customers. To be attractive and become the 'first choice' access provider, NetCologne has to

(1) provide (or more precisely transmit) attractive content to the consumers, and

(2) offer attractive customers and an efficient network infrastructure to content suppliers.

An efficient and reliable infrastructure combined with high quality content will trigger other customers to integrate commerce services on NetCologne's platform, which will not only result in revenues for NetCologne, but also stimulate the entire triangle of access-content-commerce.

Hence, beyond being an access and infrastructure service provider, the company aims at establishing the development and maintenance of content provision through partnerships as additional pillar for economic growth. Its major success factors in this battle for access and content are its strong technical competencies and the powerful networks with connections to several ten thousand households in the Cologne area. Those success factors have made NetCologne an attractive partner for companies that would like to offer content-based services. The co-operations with the municipality of Cologne or with the Bertelsmann Broadband Group are just examples.

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