

E-Content in Europe: Dimensions of an Emerging Field

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E-Content has come a long way: while it started mainly as text-oriented information on the Internet it changed rather speedily to multimedia content, rendering text, graphics, audio and video and combinations of these media types. By now, E-Content is also no longer a phenomenon of the computer only but has switched over to all kinds of networked digital devices, such as mobile phones or personal digital assistants (PDAs). This content explosion demands for an inquiry into the changes brought about in the different dimensions of content production and reception, such as the need for new business models, creation processes and modes of presentation. It also calls for a clarification of what we are talking about when speaking of E-Content. The term has become a buzzword of the new millennium, used in manifold ways. In this article, we will elaborate the concept of E-Content and establish a well-founded definition – something missing in theory and practice until now. We will then look at the dimensions of the market and sketch major challenges for the European E-Content industry. Finally, our article also presents some findings and recommendations resulting from the EU-funded research and dissemination project ACTeN (Anticipating Content Technology Needs), that ran from 2002 to 2004, and in the framework of which most of this book's contributions were produced.

1 Beyond the Technology Hype

When dealing with new media, it is normally just a matter of time until somebody quotes Marshall McLuhan's decades old saying that "The medium is the message" (McLuhan and Fiore 1967) – just as if this is the answer to all questions. What new media have to tell us is basically that they make things possible that were not possible with the older media. However true that may be, this insight doesn't offer any help once those new media aren't that new anymore but have rather created an industry of their own. The excitement over the newness of those media has calmed down and

they have become a regular component of society and economy. Thus, new media are no longer a fancy toy but they do have to serve a purpose. Customers and businesses in Europe nowadays start to reflect the limitations of technocratic visions in the same way philosopher Henry David Thoreau commented the American dream 150 years ago: “We are in great haste to construct a magnetic telegraph from Maine to Texas; but Maine and Texas, it may be, have nothing important to communicate” (Thoreau 1854, p 52).

In a situation like this, it is the content that comes to the fore again. If the initial phase of any new medium is much about technology and its promises, an old fashioned but solid factor like content is what really counts once we have understood the message of the medium.

Since the rise of the Internet in the mid-1990s, a lot of technology was developed while little focus was put on the content. Little thought was devoted to the question which kind of content would actually make sense to access online, and also how to use content to gain revenues. Instead, newspapers started to digitise the whole content of their print versions and published them online without any further modification. The surge was so strong that those who refused to jump on the train were immediately branded as not having understood the new information age. However, the crash of the new economy in 2000 put an end to this mindless trend and led to a reflection over how to actually use the new media in a meaningful way. Just like with older media the answer lies in the adequate use of content, not just in the technology.

Important lessons can be learned from the introduction of the video recorder: even a technically inferior device became the standard platform in Europe due to the superior content available. The more advanced German Video 2000 system lost the battle over the standard to the VCR system, due to the lack of enough movies adapted to this system (Heß 1993). Technology alone is quite obviously not sufficient: it is content that sells. When dealing with the new media, it has become customary to speak of E-Content when meaning content that appears online. However, the usage of this term is everything but clear. Therefore, a discussion of the concept and definition of E-Content appears necessary.

2 Defining E-Content

The term E-Content stands in a line of a large number of other terms that are being used in connection with new media without having a clear understanding what is actually meant by them. It has become common to add an

„E-“ to all kinds of fields: Government becomes E-Government, Democracy becomes E-Democracy, Business becomes E-Business, and so on.

Often it remains unclear, however, what exactly constitutes the difference between an activity and an E-activity and if there is one at all. Does adding the fashionable prefix “E-“ just mean that there are computers and the Internet involved in some way? But how does that make a difference? It should be clarified what exactly E-Content is supposed to mean and how it is different – if at all – from other kind of content.

2.1 From a Broad to a Narrow Understanding

A review of the relevant literature shows that a clear-cut and agreed-upon definition of the term is still missing. As a recent study notes “none of the international or national standard industrial classifications separately identify digital content products or industries” (Pattinson Consulting 2003). Although digital content has been the subject of debate at the OECD (1997, 1998, 1999), work on defining the content sector, digital content or E-Content has not proceeded for a couple of years now.

Thus, the term E-Content is used in a great variety of ways, often without clear indication of what exactly is meant by it. For example, in a collection of interviews that sprang from the United Nation’s World Summit Award 2004,¹ experts from a large number of countries worldwide were asked what E-Content means in their country (Manzar and Bruck 2004). Some speak of E-Content without defining it; others give definitions that differ a lot from each other. Therefore, people think about different concepts when speaking about E-Content. Some of the definitions are very broad (e.g. “E-Content is all forms of digital information that’s used for multiple purposes in different fields and areas” (Ibid., p 41)); others would also encompass broadcast media (e.g. “E-Content stands for products or services that are electronically delivered” (Ibid., p 271)). Most definitions thus base E-Content solely on the technological means of delivery (e.g. “...content that is in electronic or digital form” (Ibid., p 159); “...any information stored, processed or accessed by electronic means” (Ibid., p 306)). This view of E-Content is similar to a definition given by the OECD that understands the concept as encompassing all “data or information that can be displayed, processed, stored, and transmitted electronically” (OECD 1999).

However, approaches that define E-Content very broad carry some problems. First and foremost, one should make a distinction between data

¹ See <http://www.wsis-award.org>

and information: *Data* can be thought of as content only from a strictly technological point of view. Such a definition of E-Content would comprise any kind of data that appears on a screen, even the data produced when groceries are scanned when paying in a grocery store (Handshake Media 2003, p 33). However, these bits and bytes carry no meaning neither for the actors themselves nor for any observer of the situation. Therefore, it makes sense to think of content as being meaningful data or *information*, symbols that can be utilised and interpreted by human actors during communication processes that allow them to share visions and influence each other's knowledge, attitudes or behaviour.

But this doesn't answer yet what E-Content is in comparison to any other kind of content. Does the "E-" just imply a different means of delivery, or does the "E-" actually change what is delivered?

2.2 From Content to E-Content

Content has to be delivered by some kind of medium. Therefore, an inquiry into the history of media seems useful to track the specific attributes of E-Content.

Apart from the first medium ever in history – the human body – the media were always based on some kind of technology. Those technologies got more and more elaborated during the course of media history. This development is mirrored in the classical categorisation of media forms introduced by the German scholar Harry Pross (Pross 1972). He differentiates media according to the technology involved in their production and reception. Pross draws a distinction between primary, secondary, and tertiary media. *Primary media* signify those that are bound to the human body and do not need any kind of technological device, neither in their production nor in their reception. The natural language is the best example for this kind of media. *Secondary media* do need technology on the production side, but not on the reception side, e.g. all kinds of print products like books or newspapers. Finally, *tertiary media* require technological devices both for production and reception. All kinds of broadcast media like radio and TV fall under this category, but also film and CDs as well as the telephone and the networked computer. All kinds of new media are therefore tertiary media. But more generally this category encompasses all media that need electricity in their production and reception, whether the content is stored analogue or digital.

If one would understand E-Content quite literally as *electronic content*, it would thus be identical with the category of tertiary media, and digital content would only be a subcategory of that. Some of the definitions men-

tioned before could mislead to this interpretation. However, this is not how the “E-“ is meant usually, and it is also not how E-Content is understood here. In fact, one must rather subdivide this category of tertiary media into media containing *analogue content* (video, broadcast TV and Radio) and *digital content* (DVD, Internet, Digital Radio). Digital content then consists of online as well as offline content. While *offline content* can be stored on a CD-ROM or a DVD, *online content* is always delivered via a network and allows for interactivity and feedback routines.

Only online content – this is our proposal – should be understood as E-Content in a strict sense. E-Content thus is a subcategory of digital content. It is necessary to point to this differentiation as the terms E-Content and digital content are often used as though they were the same. This is for example the case in the eContent programme of the European Commission where digital content is understood as “any information (interactive information, transaction, education, entertainment ...) published on any Internet platform, from the traditional web through wireless devices to Internet appliances and broadband video” (European Commission 2001, p 1). What is described here is actually E-Content, as offline content is explicitly excluded. On the other hand, the ever more important category of mobile content is ignored, which constitutes another limitation of this definition.

2.3 Towards a Qualitative Difference of E-Content

So far, our argument shows that E-Content is defined by different means of delivery. However, E-Content must also make a difference in qualitative aspects in order to distinguish itself from offline content or any other content, and thus to become a distinct content type. Only a qualitative difference gives us reasons for thinking of E-Content as a new concept and as the foundation of new business models and market segments. Indeed, it has been the big mistake of many dotcom companies that they were not able to create content that really made a difference.

E-Content defined as digital information that is integrated into a network has the potential of reaching another level of quality than any other kind of content. It may be changed within a couple of seconds, delivered to millions of people throughout the world, fitted to serve the need of specific communicators and recipients, stored and displayed on an ever-expanding number of devices like computer monitors, mobile phones, PDAs, interactive TV sets and many more.

Therefore, we propose the following *definition* of E-Content:

E-Content is digital information delivered over network-based electronic devices, i.e. symbols that can be utilised and interpreted by human actors during communication processes, which allow them to share visions and influence each other's knowledge, attitudes or behaviour. E-Content allows for user involvement and may change dynamically according to the user's behaviour.

It is a subcategory both of digital and electronic content, marked by the involvement of a network, which leads to a constant renewal of content (contrary to the fixed set of content stored on a carrier such as a CD-ROM, or the content broadcast via TV and Radio). This constant renewal of content in tie with its dynamic change allows for a qualitative difference, thus making it E-Content.

This concept is also supported by media history (Stöber 2004). While all the media that evolutionary developed do not replace each other and can exist at the same time, it is also true that each new medium builds on the former ones but expands the possibilities of what one can do with media. New media thus allow for new kinds of content that were not possible before. The invention of writing allowed for a new kind of organisation of knowledge distinct from the oral tradition; the invention of photography allowed for snapshots of reality; the invention of broadcasting allowed for radio plays.

So while each new medium opens up a whole new world of content opportunities it also brings with it a number of *new requirements and demands* that need to be dealt with in order to fulfil the promises. These demands can be divided into several levels, i.e. the *creation, technological and business* side of the new medium.

For example, with the invention of newspapers, the creation side had to deal with the question what qualifies as “news” and what is suitable journalistic writing, the technological side had to find ways of creating an adequate layout for the content with a satisfying print quality, whereas the business side had to come up with a suitable business model in terms of what content is worth and how to finance it, which in turn would eventually also lead to the rise of press agencies, freelance journalists, and public relations departments. A grander perspective would also include the changes brought about on the content reception side as well as the political and societal impact of content. Any new medium demands for a specific media literacy of the recipient: you have to be able to read to benefit from a newspaper. On the political and societal side, emerging media and their content were elementary more than once in the development of modern democracies.

All these dimensions are also relevant when thinking of E-Content and how it makes a difference. After a stocktaking of the European E-Content market, we will then chart the dimensions of the concept by looking at the technological, business and creation side of the game.

3 Stocktaking of the European E-Content market

In Europe content plays a key role both on the economic and the social side (Bruck 2002, 2005). The sheer size of the content economy at the beginning of this century has been estimated at more than € 400 billion, with over 4 million people employed in this sector (European Commission 2001, p 1). This number, originally proposed by the European Information Technology Observatory, was also confirmed by OECD reports. Content here refers to all kinds of media publishing, marketing, and advertising. According to this estimation, digital content made up for € 50 billion of the size of the whole content industry in the year 2000, with numbers increasing.

3.1 The Symbiosis of ICT and E-Content

However, one has to keep in mind the rather turbulent years that the digital media industry has gone through since then. The slowdown of the information and communication technology (ICT) market also affected the E-Content sector. The steady growth stopped and the market size remained at a certain level for some time as there has been a tendency by major media companies to freeze all kinds of E-Content production after the dotcom crash, focussing again on their core competencies. But while it is true that the expectations that were uttered at the peak of the Internet hype were exaggerated, it is also true that the rather negative vision of the ICT market – and the E-Content industry in tie – that followed afterwards does not have any grounding in reality either. Every single aspect of the value chain in businesses or non-profit organisations may be enhanced by implementing Internet technologies (Zerfass and Haasis 2002) and software is a major driver for innovation even in very traditional branches. For this reason the ICT market remains a thriving force in economic growth, worldwide. A recent study by IDC supports this claim (IDC 2004). Even more significant, the market growth rate that has been slowed down since the crash in 2000/2001 is accelerating again. Although far from the growth rates of the late 1990s, the ICT market has left behind its negative trend after the crash,

and the growth rate is now back to an estimated 4% by 2005 (EITO 2004, p 3)

It is safe to assume a correlation between E-Content and ICT market growth. Access to content stays the main reason to engage oneself within the digital world (Forrester Research 2004, p 149). E-Content is also identified as one of the main drivers for future growth of the ICT market (Lamborghini 2004, p 16). However, clear numbers indicating the current size of the E-Content market in Europe are missing. This is not very surprising keeping in mind the mishmash of terminology in this field mentioned before, and it is even not clear in which sense digital content was understood with regards to the market size in 2000. That's why one can only estimate the actual size of the E-Content market in 2005, based on the growth rates of the ICT market since 2000. Taking the E-Content market size of € 50 billion as a starting point, this leads to the following result:

Table 1. Development of the European E-Content market (Source: own calculation; ICT market growth rates from EITO 2004, p 3)

Year	ICT market growth	Estimated E-Content market size
2000		€ 50 billion
2001	3.2%	€ 51.60 billion
2002	0.1%	€ 51.65 billion
2003	1.2%	€ 51.70 billion
2004	3.0%	€ 53.25 billion
2005	4.0%	€ 55.38 billion

According to this calculation, the *European E-Content market nowadays is worth about € 55.4 billion*. While this is obviously not an empirical number as there are more factors that play a role in the development of the E-Content market than just the ICT growth, it is at least an indication. Probably that number is even higher as especially the mobile content sector has grown considerably since 2000, and also the Central and Eastern European countries have caught up in E-Content.

If one looks at the usage and production side of E-Content, people and businesses in Europe are well under way in terms of *Internet usage*. According to recent numbers compiled by Morgan Stanley, 29% of all “onliners” live in Europe, compared to 25% users from North America (TNS Infratest 2004, p 164).

Compared to other regions of the world, however, a lot still needs to be done about the *production of E-Content*. While Europe is rather strong in the field of traditional content (for example print publishing), it has to gain

ground when it comes to the creation and exploitation of digital information and services. The majority of content on the Internet still originates from the US. But one must also note that there has been a rise in the websites created in Europe by companies and institutions, thus increasing the amount of genuinely European E-Content (European Commission 2003). For a European E-Content market it is therefore important to catch up on the production side of E-Content.

3.2 A New E-Content Market Situation

The E-Content market in Europe is undergoing a structural change at the moment. One of the most remarkable trends in the past two years was the fast *breakthrough of broadband*. This isn't only of technological importance, but also has implications for E-Content, both on a quantitative and a qualitative level. A large data throughput is now possible, downloading music and videos has become easier and spread rapidly. Playing streaming music and video has become common. E-mail messages have got bigger attachments containing photographs, graphics and movies. If E-Content started as a mainly text-oriented category with added pictures, now the audiovisual media types come into focus.

A crucial change for the E-Content industry also lies in the development towards *paying for content*. Beyond doubt there is much money to be made with E-Content. According to the German W3B survey (Fittkau & Maaß 2003) every third German already pays for E-Content. So the "free of charge"-culture with which the Internet started off is on its fallback. In Europe paid content is still a nascent industry but is forecasted to grow rapidly over the next four years and will be worth € 3.2 billion by 2007 (Jupiter Research 2003). 23% of the Europeans are predicted to make online purchases in 2007 with an average yearly spending of € 70 per buyer. According to Jupiter Research, the breakdown of consumer spending on paid online content and services remains diverse. Whereas so far the largest category of paid online content and services remains adult-related content, Jupiter Research predicts that by 2007 this pattern will change, with multimedia related content – driven by high broadband usage – taking the lead. The experts forecast that multimedia content will represent 50% of total paid online content and services spending, ahead of paid text and picture-based services, which will count for just 25% of consumer spend-

ing. For the first time, adult content will not be the primary generator of revenues accounting for just 25% of consumer spending.²

A recent report by the market research company IRN Research (2004) that focuses on the information industry gives further reasons why the European online information market will show growth: sales in the *online scientific, technical and medical (STM) information segment* increased by 24% at current prices in 2003. Although this high double-digit increase in sales is explained mainly by significant switching of spending from hard copy sources to new online services, the total European STM market increased by 6% in rather difficult times.³ With these new opportunities new players and new roles enter the market, as pictured in Figure 1.

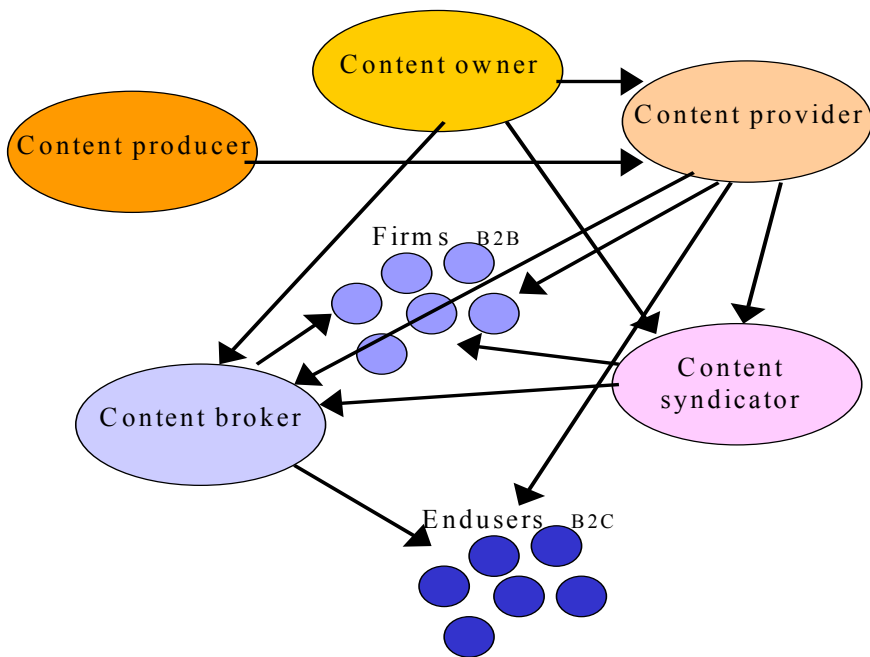


Fig. 1. The competitive environment and roles in the content market (Source: Schenk 2001)

² For further considerations see the chapter “Paid Content: From Free to Fee” by Jak Boumans in this book.

³ For further considerations see the chapter “Scientific Publishing: A European Strength” by Zeger Karssen in this book.

3.3 The Rise of Mobile E-Content

The situation not only looks promising for E-Content on the Internet, but also for *information distributed via mobile phones*. Given the recent developments of the telecom industry, innovative content on mobile devices might matter as much as – if not more than – E-Content on the Internet. Europe is going mobile and has a leading position in the realm of wireless services. At the beginning of this century, the number of mobile users in Western Europe already doubled the North American market (European Commission 2001, p 1). Nowadays, 73% of all adults use a mobile phone regularly, and this figure is estimated to rise up to 78% until 2007 (Forrester Research 2004, p 197).

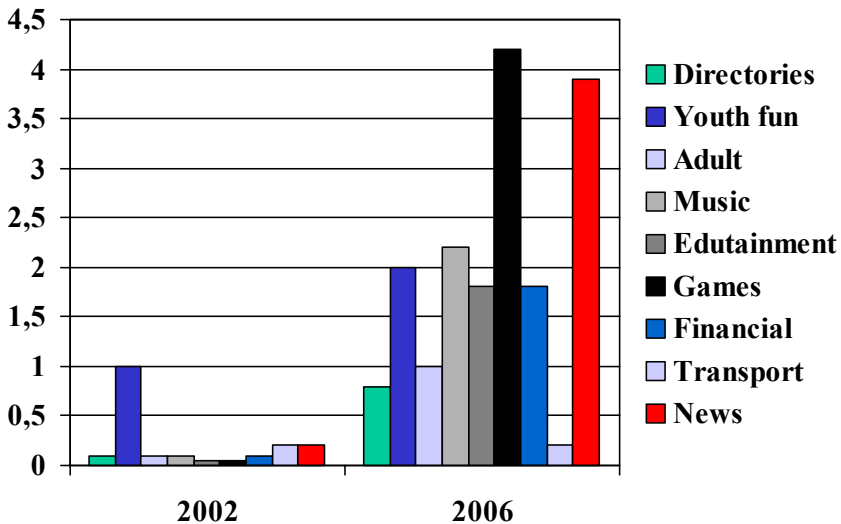


Fig. 2. Market size of content-centric mobile data applications 2002–2006, yearly revenue in EUR (Source: European Commission 2002, p 4)

Although mobile content applications are expected to make up just 4.6% of total mobile operator revenues and 7.9% of total content provider revenues by 2005 it will drive the consumption of content on more traditional media.⁴ Today, ringing tones and icon downloads generate the largest part of the mobile content revenues in Europe. This shows that Europe today is still far away from exploiting its digital content via mobile applications.

⁴ For further considerations see the chapter “Mobile Games: An Emerging Content Business Area” by Tommi Pelkonen in this book.

Nevertheless, providing content is seen as the most important value-added link in the value chain of mobile media and entertainment, as Figure 3 shows.

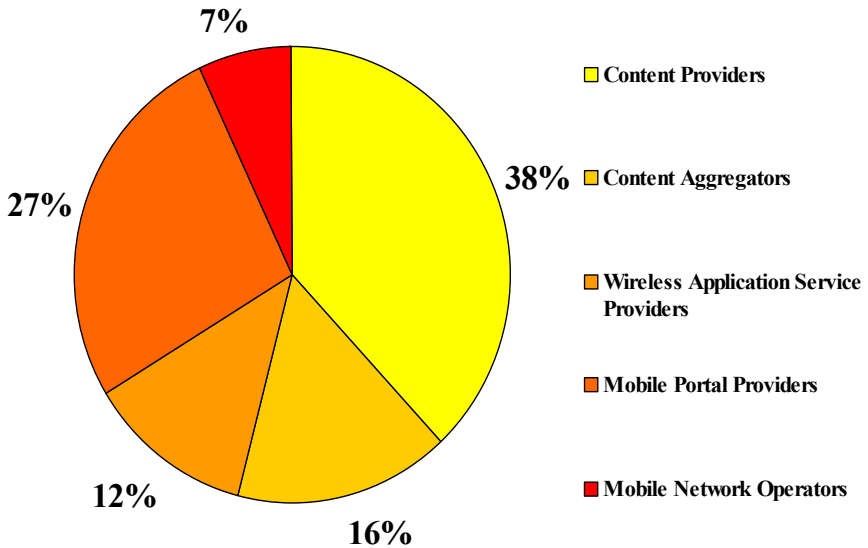


Fig. 3. Average split of content fees between mobile media & entertainment value chain players (Source: Ericsson Consulting 2002)

The *European mobile content market needs to be created*. Everything must be invented to reach the forecasted € 18.9 billion market: services and applications, a value chain, interactions between players, business models and customer segmentation. The successful creation of the market requires that a set of convergent forces drives all players in the same direction. The European mobile communication landscape today is populated with numerous players – handset manufacturers, mobile network operators, content providers, etc. – each competing to lead the market and striving to own the customer relationship. As a result, there is a lack of cooperation and ongoing conflicts between content providers and mobile network operators.

There is another factor hindering the development of the European mobile content industry: during the last years, the industry faced some difficulties in providing affordable handsets with the necessary features to use mobile content services. Also, high 3G license and network infrastructure costs have forced operators to become even more cost conscious. This results in the scrapping or delay of investments in key enabling technologies such as billing system upgrades and user localisation systems. In addition,

mobile operators want to control the largest possible part of the value chain in the hope of increasing their revenues. This reduces operators' willingness to provide access to their platform to third parties. The limited availability of sophisticated handsets justifies that potential players adopt a "wait and see" attitude. Finally, the proliferation of standards for the packaging and transmission of content over mobile infrastructure requires players to spread their investment capability over multiple technical options.

It still has to be seen whether users will move to access E-Content via mobile devices, adding this kind of usage to the existing success of voice and text messaging. Some voices say that the majority of users have no real interest in paying for anything except inter-personal communication from mobile devices. With this comes the question still to be decided: Will professional marketing, useful applications, speed to market and intelligent pricing enable the mobile to become a hand-held "everything" device? Or will health scare factors, lack of investment in networks and the dominant market position of telcos who are incapable of creating attractive content be predominant? These are the factors which will influence the take-off of mobile content in Europe.

4 Technological Trends and Challenges

4.1 Broadband and Its Implications for Europe

As already mentioned, there is a major trend in the European ICT landscape towards broadband connections. After incumbent telecom operators were summoned to unbundle the telephone line, dial-up started to disappear. The *advantages of broadband* were immediately apparent: It is much faster, the connection is always up; dial up and check in are no longer needed. And broadband is having – besides its core function to have a high data throughput – a major impact on the way people consume media at home in general. Certain content types – namely audio and video applications – have become common to download or consume via streaming modes, almost like broadcast media. Broadband technology will thus bring new market opportunities for multimedia solution providers and E-Content providers.

But while all European countries are developing their own IT industry and are working on improving their abilities in this area, the establishment of the *communication infrastructure differs between the European countries*. Especially with regards to the spread of broadband technology the penetration, adaptation and acceptance differs between the EU member states. Countries like Sweden, Denmark or the Netherlands are leading

when it comes to the proportion of users connecting at home via broadband, while other countries like Germany or the UK show an intermediate broadband penetration. Almost all of the new member states (with the exception of Estonia) lag considerably behind (Empirica 2003, p 12). But even by 2007 only 27% of European households will have broadband connectivity, compared to 50% of North American households (Forrester Research 2004, p 190).

Even if falling prices will propel the European broadband market (PwC 2004), user behaviour will not change over night and stick with some of the traditional suppliers of content, particularly TV channels. The limited broadband market means that European developers will have less experience of engaging with broadband users and emerging markets than developers in markets with quickly growing broadband penetration. Underdeveloped local and regional markets for broadband network supply, dominated by one or two players, will persist. This creates huge *access barriers and power imbalances in market transactions for content producers and suppliers* who are not in the cross media business. Companies who do not have privileged access to a relationship with a broadband network provider are largely shut out of the market and have little or no alternatives open to themselves. This is particularly discouraging as policy makers are keen to advertise the gains in broadband penetration and usage. Producers thus are faced with a regional lack of competitiveness in the access to broadband networks. This turns out to be a challenge on a European scale and needs to be solved.

4.2 Mobile Content

The realm of mobile business is the new frontier of the digital economy (Stanoevska-Slabeva 2004). Looking at today's situation, altogether 1.3 billion people use cellular phones worldwide (BITKOM 2004, p 12). These are *more users than fixed networks ever had*. With a highly flourishing zone in Asia, it is estimated that the 2 billion barrier will be taken by 2008. With 242 million users of mobile phones in Western Europe, they too have become important carriers of content (European Commission 2002). This is largely due to the technological development of mobiles that turned them into mini-computers and multimedia devices. Mobile Content started off with text messaging, but step by step new services were possible, e.g. mobile games. In a recent study, market researchers Frost & Sullivan (2004) have estimated that the yearly revenue for mobile games in Europe will increase up to € 6.3 billion until 2006, thus climbing from just

€ 720 million in 2002. Thus, mobile communication and mobile E-Content is getting increasingly important.

Our research within the ACTeN project identified several technological trends in mobile content (Buchholz et al. 2004, p 20):

1. *Vision is on its advance*: The European multimedia market currently transits from text-based to picture-based communication. With this shift from mainly voice-oriented usage to multimedia data-dense services comes a side-effect beneficial for carriers: networks are used to full capacity. However, customers are not yet hooked on to the use of mobile E-Mail or MMS as much as to SMS due to slow transfer rate, expensive rates and lack of cost transparency. Industry visionaries in Europe anyhow predict the shift from audio to vision, although the users have not yet clearly committed themselves.
2. *E-Mailing via the mobile Internet*: A mobile content study by market research company PbS illustrates that although the private, stationary Internet usage as well as the mobile phone usage has increased, the combination of both in form of GPRS, WLAN or HSCSD has not increased in the same way (PbS 2003). 11% of the users interviewed are interested in mobile Internet. Especially high is the interest in wireless local area networks (WLAN) (33%), although the actual usage lacks much behind (14%). When asked for reasons why they would start using WLAN the answer given most often was to send and receive E-Mails, followed by accessing the Internet when being on the move and accessing appointment and address details. Similarly high is the interest in UMTS, although actual activities on the side of the customers are still missing.
3. *Zapping on the mobile phone*: In order to receive television programs, the digital video broadcasting terrestrial mode (DVB-T) is indispensable for future mobile phone TV. The advantages are obvious: digital TV is on its advance (in Germany the whole of Berlin and Brandenburg is fed with digital), plus the DVB-T mode is making mobile transmission possible even if the receiving end is moving fast. However, an optimised DVB version for handhelds is necessary due to the high electric power consumption. To expand the possibilities, the big players in the cellular communication world are already working on scenarios in which digital TV gets linked to interactive services. The integration of GSM and UMTS makes it possible for customers to use the feedback channel and access services like info sites, E-Commerce or sport betting.

4.3 Interactive Digital TV (IDTV)

Apart from broadband internet and mobile content, Interactive Digital TV (IDTV) can be identified as a third major trend affecting European E-Content markets. People are already very familiar with television sets, therefore acceptance towards IDTV might come easier than when being confronted with totally new devices. Combined with the possibilities of ICT *the television set can thus become a digitally and interactively rich medium* that helps to spread information in a way people are already used to.

IDTV should also not be limited to television only, but use cross-media with combinations of IPTV, mobile and interactive film. This would include innovation outside the broadcasting environment. In most countries, IDTV is still looking for its place. The biggest challenge lying ahead is posed by the perception of not seeing the value added towards regular TV. Apart from the return channel and the interactivity, more features have to be made clear. These could include e.g. a wider range of channels, a sophisticated program guide, or the possibility of switching angles during sports programmes.⁵

5 Business Trends and Challenges

5.1 Looking for Suitable Business Models for E-Content

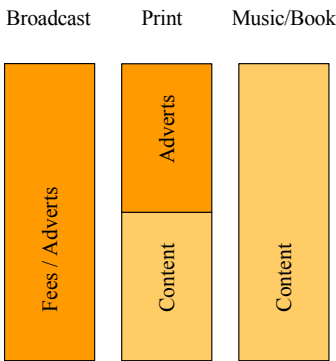
One of the biggest challenges that the E-Content industry is facing lies in finding suitable business models to gain revenues from providing content. There aren't clear solutions yet, also due to the *very different market situation in contrast to traditional media markets*. As Figure 5 highlights, revenues are made in much more complex ways in the E-Content industry.

When considering – for example – the case of interactive broadband TV it becomes apparent that interactive screen content is still in its infancy, both as a cultural form and as an industry. Linkages across the various developments are still feeble. For creatives this area is a big switch. On the content production side, one can illustrate generically the demands and challenges to creatives when they move into new technology in terms of platforms and delivery channels. A company which started out as an advertising agency or as an independent film maker has to evolve into a firm with arms covering documentaries, animation, and now networked content

⁵ For further considerations see the chapter “Interactive Digital Television in Europe” by Janne Orava and Mika Perttula in this book.

delivery. This requires the use of extremely high compression technologies to deliver high quality video in real time. Such a company has also to develop in-house capability to support a networked “virtual animation studio” to enable it to access global talent pools – and international contracts. Technology and skill investments can pay off only if there is a supranational marketing. This requires a huge investment to set up and maintain the virtual studio linking people with various skills for an animation project. Such a company would need to secure significant equity funding to enter the content delivery business. Companies where the original business of web services has been used to support diversification into new areas show that these challenges constitute problems in an acute way.

Business model for traditional media



Business model for new media

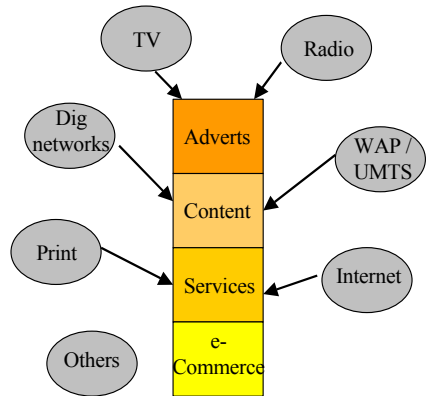


Fig. 5. Change of business models for media (Source: Schenk 2001)

So while new media allow for new kinds of content, it is of *crucial importance to develop new kinds of products based on that content*, where the benefit is so obvious to the user that s/he is willing to pay for it (Welfens et al 2004). Different business models for content services, such as music, online newspapers, E-Magazines, games and movies need to be developed. Only when projects and services exist that can demonstrate the new commercial possibilities, an industry based on E-Content will have a chance to survive.

5.2 Enabling Digital Rights Management

Closely tied to the question of the business model is also the challenge of *securing the copyright of E-Content* (Picot and Fiedler 2004). Part of the change from “free to fee” is therefore concerned with how to avoid illegal copying of content. However, this position is not beyond dispute: Some actors in the content industry, especially from smaller European markets, even consider that copyright will only serve and pay for the big players and that the vast majority of producers, independent or contractual, would have more to gain from a vibrant “digital commons”. The increasing complexity of the issues and changes in digital rights management and of the reuse of digital materials create *high levels of business uncertainty and management insecurity* even with established players in the traditional mass media. The specific issue of exploiting public sector information resources is recognised by the European Commission which has a specifically funded programme to fuel the development of contents using these resources. But apart from the specific areas of educational content and digital applications for E-Government services the matter of government policies about copyright and intellectual property is largely a terra incognita. Moreover, along with the copyright issues some other important questions have to be answered when considering how to cash in on creative ideas. The most relevant issues are *content standards* and *data formats*.

5.3 The Industry Has Consolidated

Digital media has stabilised its position as a professional service industry. Electronically provided services are an increasingly important part of any business activity and the importance of digital communication and transactions via digital devices and transmission networks is growing steadily.

Despite of that, *hyper-growth is history*: most of the companies are profitable, but the industry turnover is expected to grow just at two to five percent a year up to 2006. Digital media has become similar to any other industry. There is no longer a “new economy” (Buchholz et al. 2004, p 26).

The industry has consolidated, both regionally and by its turnover. A typical digital media company employs less than 10 persons. Yet, most of the industry turnover is created in the few largest companies. Specialisation is therefore one of the key factors for success: it is crucial for digital media companies to find out their core competence. They need to offer their clients and partners services that offer true added value.

6 Creation Trends and Challenges

6.1 New Players Compete for Survival

The value chain for content production has changed dramatically through digitisation and the resulting interconnection and convergence of delivery channels and technologically defined media. The new chain has dropped all simplicity and consists of crossed paths, clusters and clouds, not streams and sequential organisation. The *value chain shows vertical and horizontal integration and new differentiation*. There are new freedoms and new gatekeepers, new delivery networks and new business models. Apart from publishing houses, press agencies, newspapers, magazines as well as financial and stock market services a lot of small content producers have emerged. Content brokers – also called content syndicators – bundle the content on offer and mediate between those offering and those interested. They negotiate singular or monthly fees, clarify on legal issues and provide content in the appropriate forms and formats. It is noteworthy that some of the most interesting and innovative web developer firms show one or both of two characteristics. First, their founders have a strong background in event management and approach the web more as a “venue” than a publishing site. Moreover, sites seek to provide a rich content experience and strong production values and score with innovation known and demanded in the advertising markets. Both severely limit the development of the web as a new medium with its own cultural formats and forms.

6.2 Challenges of Cross-Media Content Production

One major trend in the contemporary E-Content creation industry certainly lies in cross media content production. It aims at *producing content once and using it across a number of each platforms*, each one referring to the content on the other platform, but each one also offering a singular view on the content which can only be offered by this medium. E.g. a TV series that also offers an online platform on which the content is part of the overall realm but presents a unique version. As E-Content has the means of interactivity, this possibility will be used to stay in touch with users, allowing them to follow a story differently, feeling more engaged by having more ways to use the information.

The big challenge in cross-media content production lies, of course, in generating an *integrated cross-media approach to content* that keeps in mind what every medium can do best, but doesn't lose sight with the overall connection to content in other media. Another challenge in cross-

media content production is also posed by the fact that this kind of content production will often be limited only to the big content players, i.e. large media companies, that possess the necessary resources. Smaller companies will have to *cooperate within interfirm networks* (Sydow and Windeler 1998) in order to cope with the complex value chain of E-Content products.

Moreover, the industry had to learn that the way recipients use E-Content and especially websites differs fundamentally from the traditional style of reading books or browsing magazines. The conversion of information into E-Content is not a simple task. It especially requires ways to secure the *usability of websites and mobile applications*, for example self-sustaining navigation wordings and intelligent retrieval functions (Zerfass and Zimmermann 2004).⁶

6.3 Suitable Content for a Heterogeneous European Market

E-Content is key to the quality of the information society as experienced in the daily lives of citizens. Due to its rootedness in the diverse linguistic and cultural landscapes of European countries, *E-Content remains a local and regional creator of value*. Whereas technologies develop rapidly and reach hurricane levels of velocity, quality content and innovative applications lag behind. Digitisation has made the production of content simpler, but it takes time to produce – and also to use. The consumption of content cannot be sped up without changing or even losing meaning. While technology is turning pervasive and ubiquitous, content remains local and connected. According to a recent study, on the average only ten percent of all websites viewed in the European Union originate in other EU countries. The rest are either indigenous or North American offerings (European Commission 2003, p 15). Hardware and software can be marketed globally, *contents are tied to culture and language*. Unlike technology they do not ship easily and work only where people share and understand them. The technology push is obvious and commercial technologies, both hardware and software multimedia, have made content production a high performance activity in terms of tools. One gets an entirely different picture when one looks at other aspects, such as interactivity. If one compares the rapid advances in the technology measured by performance, one can note with curiosity the slowness of the advances in interactivity measured by new cultural forms.

⁶ For further considerations see the chapter “The Usability Factor: Improving the Quality of E-Content” by Ansgar Zerfass and Bernd Hartmann in this book.

However, this clash between technology and content is as old as media based culture. It is *not a fundamental contradiction, but a dynamically created structural gap*. The content gap is a social and economic one and is created by the imbalance of pay and inequity investments. It is even widening as we move ahead within the information society. So there is great need to understand the E-Content market and its technology needs more thoroughly. During the next years, cultural and linguistic boundaries will persist. For this reason much effort has to be spent on the localisation of contents.

6.4 The Rise of User-Generated Content

Apart from professional E-Content producers, a new trend has emerged in content creation that concerns user-generated content. As the Internet and mobile phones make it easy for everyone to download – or upload – information, community content is becoming increasingly important. Sites and services are created where people can upload their own texts, music and videos in order to share this with people of their community. The fast diffusion of both digital (video-)cameras and camera phones is accelerating this trend. Moreover, *personal content* is becoming a trend. With people building up terabytes of digital data, personal content will have to be organised, stored for the future and made accessible.

7 Findings and Recommendations from ACTeN

Within the EU-funded project ACTeN (Buchholz et al. 2004),⁷ one of our main objectives has been to detect *content technology needs of creative multimedia producers*. The focus has been appropriately on the use and usefulness of the results of technology research in terms of technologies and tools for creative content production. Content creatives were in turn approached during the course of the project to learn (Scouting Workshops), consider (Business Roundtables) and reflect (Scholars Network Conferences) on the adequacy of European approaches for their own needs and the changing business requirements. Some of the most notable findings gained from the assembled experience of professionals in the field can be summarised in the following way:⁸

⁷ See also <http://www.acten.net>

⁸ For a more in-depth consideration of the findings see the chapter “Prospects of E-Content in Europe” by Peter A. Bruck in this book.

- Digital content production is not distinctive and different in its own right. Issues around the industrial organisation and structure of digital content are common to content and creative industries generally. More important is however the change in overall content industry.
- Although business models aren't clear yet, there is a consensus that content suppliers will gain market influence on two levels: traditional media operators through cross-media offering of content; small independent producers will find their market with institutional and corporate content products.
- There is a constant need to reinvest in new technology platforms, tools and skills for all kinds of content producers. This need can pose a limit to the growth of European companies.
- The service and benefit for the user has to go first.
- Incumbents have the advantage of market power, and new entrants have to fight for their shares.
- Production values change with the emergence of new genre templates for formats and content presentation.
- The opening up of new channels is likely to create a shortage of appropriate content.
- There is a need for new and highly efficient tools for interactive content production.
- The linking between content companies and ICT firms can sometimes be difficult. They have different cultures, different agendas and see each other intuitively not as partners or worthy collaborators.
- For content producers to act successfully in markets, the record of finished products and reference list of clients becomes equally important as the mastery of technologies and tools.
- In spite of the new media's tendency to be globally accessible, there still remains a high importance of geography for opportunities in personal and industry development. Content producers that live and work in London, Munich, Stuttgart or Vienna have better career chances than those that are seated on the periphery of Europe.

All of these findings of course serve as a base for further consideration of what needs to be done to improve the situation of the E-Content industry in Europe. The recommendations that one can deduct from the findings

address decision makers on various levels, from those running a company involved in E-Content production up to policy makers on the EU level. All of those levels can contribute to the process of improving the standing of the European E-Content industry.

Companies have to invest in business models and EU-wide partnerships. They also should establish international linkages and networks which serve as low cost ways for technology and tools training and exploitation. On the creation side, they must offer users more control over content and also improve the usability of content. *Researchers* have to dedicate themselves to researching how the industrial organisation and market functions of the content industries overall evolve within a digital environment and how the competitive landscape is being changed (as digital content production is not different in its own right). *Policy makers*, finally, have to establish a stable legal framework for the distribution of content over digital networks. They need to pave the way for appropriate technical conditions to make the networks function and foster the development of new and highly efficient tools for interactive content productions.

8 Conclusion

The development of a truly European E-Content industry has only just begun. The trends and challenges described in this chapter need to be dealt with in an efficient way in order to foster a sustainable growth in this industry. The history of new technologies shows that after an initial hype and an inevitable burst of the bubble, the industry based on this technology is very likely to show *sustainable growth*. With the ICT market and the E-Content industry having already left behind this crash, all signs indicate to a sustainable growth for the future.

With regards to the European Union, one must also note that E-Content has a *wide cultural potential* for all European countries. It creates added value by exploiting and networking European cultural diversity and paying special attention to multilingual, localised services. Through this, E-Content may indeed form a basis of the future Europe.⁹

⁹ The authors would like to thank Bernd Hartmann for valuable discussions and his assistance in preparing this article.

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