

# **E-Content**

Technologies and Perspectives  
for the European Market

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Peter A. Bruck · Andrea Buchholz  
Zeger Karssen · Ansgar Zerfass  
(Editors)

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# E-Content

Technologies and Perspectives  
for the European Market

With 24 Figures and 28 Tables

 Springer

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## **Editorial**

Every technology is only worth as much as the benefits that it has to offer. This is especially true with regards to the new digital technologies that surround us everywhere we go, in the shape of the Internet, PDAs, mobile phones or all the other digital devices that have become an integral part of our everyday life.

Technology is not used for technology's sake. It is always some content that we are looking for when using all those digital devices. Technology offers us the means of making our lives easier, but only through giving us more efficient access to content. We are looking for a specific information when using search engines, we want to acquire a certain skill when taking part in E-Learning, we want to be entertained when playing games on our mobile phones.

Content is king in the digital world. But content is also an economic factor, and it is especially important for the European Union with its ambitious goal to become the most competitive and dynamic, knowledge-based economy in the world by 2010, a goal often called the Lisbon process. With the enlargement of the European Union in spring 2004, new opportunities in the field of research and technological development as well as business cooperations are opened up. Cross-border cooperation becomes an important factor. One prominent field that is likely to profit from this development is the information and communication technology sector, as well as the multimedia branch and with it the whole E-Content industry.

This in mind, eleven partners from ten European countries – five of them from the new member states – collaborated from 2002 until autumn 2004 in a joint EU-funded project with the aim of “Anticipating Content Technology Needs”. This initiative, abbreviated as ACTeN, dedicated itself to supporting the business community and strengthening the multimedia sector in Europe by stimulating innovation in tools, technical environments and product features. This book draws on the work of the project and presents edited and rewritten versions of some of the deliverables. The publication is undertaken as part of the exploitation of results and funded by partner resources.

## **Architecture of the Initiative**

Charting the field of E-Content is a difficult task as technical, economical, and creative trends in this field are linked in highly complex ways. In order

to approach the field from various sides and offer multiple perspectives the ACTeN project used three different methods: 1) Business Roundtables in major European countries that gave practitioners the chance to bring together the different views of supply and demand of E-Content services and to understand how their counterpart is thinking; 2) Scouting Workshops where E-Content trendsetters presented their work to a business and scientific audience and gave insights at the edge of innovation, thus starting a transfer of excellence; 3) Scholars' Network Conferences where leading researchers presented their projects on the subject of E-Content and discussed problems and solutions of today's research in the field. With the presentation of extraordinary solutions and the various meetings of all parties involved, ACTeN helped to understand market developments better and has built a bridge between science and business.

In the course of the project, the general need for summarising the findings according to several fields arose, and thus the idea of "E-Content Reports" was born. Those reports were meant to provide readers with an overall view of the main issues of a specific field, a description of the major players in the market, a description of its trends and of the market's future developments. Because descriptions of the historical development of the field are available, the main attention was directed towards the present situation and future possibilities. The topics selected are covering the whole spectrum of E-Content, analysing some of the most innovative and seminal areas. Some of the chapters of this book are based on these E-Content-Reports while also additional chapters and resources were added.

## **Resulting Structure of This Book**

The book is divided into *three main sections*: The section "E-Content Market in Europe: An Overview" charts the economic side of the E-Content sector in Europe, thus giving an idea of the market conditions in which all E-Content activity takes place. In the section on "Content Applications: Selected Cases" the articles deal with the predominant fields of E-Content. The last main section, "User-Centric Content Production and Interaction", focuses on the end user and his or her modes of using E-Content. The book also features an outlook together with a guide to important resources on E-Content in Europe.

The introductory chapter by Andrea Buchholz and Ansgar Zerfass, "*E-Content in Europe: Dimensions of an Emerging Field*", gives a well-founded definition of the term E-Content, something that has been missing both in theory and practice until now. After a stocktaking of the market,

the chapter then introduces major trends and challenges facing this emerging field as well as some findings and recommendations that result from the ACTeN project.

“*Digital Media Service Business*” by Tommi Pelkonen presents an analysis of the current position of digital media companies within the overall value creation process. The article also discusses the market development and presents the key trends that this industry is being confronted with nowadays.

In the next contribution, Jak Boumans deals with the hotly debated issue of “*Paid Content: From Free to Fee*”. Especially since the dotcom crisis, it has become clear that online advertising is not sufficient to fund expensive online activities. Thus, a change is currently occurring towards paying for consumer content and trade information. The article combines a look at the Internet and at mobile services.

Attila Nagy then presents the field of “*E-Learning*” as one especially prominent case for E-Content applications. Due to our emerging knowledge economy and the information society, there is a higher demand on the individual for continuous personal learning development. E-Learning promises to offer the means to achieve this in a modern and efficient way. The article thus presents what E-Learning can and cannot do, and what might be future trends in the field.

A different, yet equally promising field of E-Content applications lies in “*Scientific Publishing: A European Strength*”, as presented in the chapter written by Zeger Karssen. The possibilities of the Internet and E-Content have challenged the traditional structures of scientific publishing in the fields of Science, Technology, and Medicine (STM) and new business models emerge. This development comes along with a concentration in the STM publishing industry, where in the long run only the biggest players will be able to run profitable online journals.

“*Mobile Games: An Emerging Content Business Area*” are the topic of another chapter by Tommi Pelkonen. The author makes an inquiry into the entertainment possibilities of mobile phones. While games are a common application on computers and consoles already for decades, they also have conquered the mobile phone by now. The chapter illustrates selected key trends in the mobile game business market, including the value creation process.

The final chapter of this section by Jak Boumans deals with “*Cross-Media on the Advance*”. Cross-media is a catch phrase in the contemporary media landscape, where content creation for convergent media opens up new markets across media. The chapter reflects upon impacts on the content production chain, the application fields, business models, and the future of cross-media.

A discussion of “*Interactive Digital TV in Europe*” by Janne Orava and Mika Pertulla opens the section on user-centric content production and interaction. Through digitalisation, television is now facing the biggest change process in its history, and all players in the European TV industry are affected by this. The article sheds light on this transition and highlights implications for the broadcast markets.

The article by Ansgar Zerfass and Bernd Hartmann on “*The Usability Factor: Improving the Quality of E-Content*” deals with an increasingly important aspect of digital media: The need to make applications, namely websites, mobile services and online games, as easy-to-use as possible. Business models will pay off if the user is able to access valuable E-Content in an efficient and satisfying way. The chapter discusses the concept of usability, its social and economic implications, methods of usability engineering, and major fields of application.

The section concludes with an overview over “*Experience Machines: Capturing and Retrieving Personal Content*” by Peter Werkhoven. As the permanent use of all kinds of digital devices from PDAs to mobile phones by major parts of the population generates unprecedented amounts of personal content, ways are needed to organise this flood of content in a meaningful manner. The chapter presents selected model applications that offer solutions to the problem, and also discusses social implications of a future where content is never lost.

In an outlook, Peter A. Bruck highlights the “*Prospects of E-Content in Europe*”. He mentions past and present developments in the industry and sketches trends that pave the way into the future of European E-Content, also including insight gained from the ACTeN project.

The book concludes with “*A Guide to Resources on E-Content in Europe*” compiled by Andrea Buchholz, Bernd Hartmann and Swaran Sandhu. Information on E-Content is provided by different sources, e.g. online journals and portals, research projects dedicated to special aspects of the overall topic and branch associations. This chapter also portrays the partners who were involved in the ACTeN project and who have become centers of excellence on E-Content in their respective countries.

## **Credits and Acknowledgements**

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also indebted to Katharina Wetzel-Vandai from Springer, Heidelberg, for her support of this publication.

A research and dissemination project like ACTeN, combining eleven partners from ten European countries, spanning two years and reaching out to thousands if not ten thousands of people could only become a reality thanks to the overwhelming support of all the partners involved. These were: Digital Dispatch (France), ELET (Slovakia), EADIM European Academy of Digital Media (The Netherlands), Electronic Media Reporting (The Netherlands), ICNM International Center for New Media (Austria), OPI Information Processing Centre (Poland), SC ITC SA Institute for Computers (Romania), MATISZ Hungarian Association of the Content Industry (Hungary), MFG Baden-Württemberg Agency for IT and Media (Germany), MindTrek Association (Finland) and TC AV Technology Centre (Czech Republic). The European Commission funded the project within the IST Information Society Technologies action line; special thanks go to Werner Janusch for accompanying the initiative from Luxembourg.

Dr. Andrea Buchholz was a perfect project leader. Her work contributed to the excellent reviews given to ACTeN by the European Commission. Prof. Dr. Peter A. Bruck, the “spiritus rector” of the initiative, made sure that the project was intertwined with the EUROPRIX and World Summit Award networks. Those initiatives help to make multimedia innovations visible across nations and cultures, thus fostering achievements in content production and distribution.

Finally, thanks go to all the participants in the Business Roundtables, Scouting Workshops, and Scholars’ Conferences. The success of the initiative and a lot of the insights reported in this book are due to your creative input and the points of view and experiences you shared in many discussions.

Stuttgart, Salzburg and Paris, February 2005

The editors

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# Introduction