PRIME
Produktions- und Projektionstechniken für Immersive Medien

PRODUCTION- and PROJECTION for IMMERSIVE MEDIA

Market Perspectives for 3D-Cinema and 3D-TV

Kemal Görgülü
HHI TiME Lab, 19.02.2010

Bundesministerium für Wirtschaft und Technologie

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Agenda

- Introduction
- Market Overview: Cinema
  - Worldwide D-Cinema and 3D installations in commercial cinemas
  - Business Models
  - Current Market Trends
- Market Overview: 3D-TV
  - Additional considerations for 3D-TV
- Final Remarks

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Introduction

- 3D “waves” in the 50’s and 80’s failed
  - Technological problems, especially in postproduction and exhibition (“eyestrain”, “sickness” …)
  - Content availabilty, content “quality”
- For a long period IMAX screens and theme parks (“4D”) were the only places for 3D exhibition
- Technically poor 3D-TV emissions have been shown during the last two decades over and over again
  - Nothing which could have convinced the mass-market!
- Introduction of digital production, postproduction and projection systems / technologies changed the situation dramatically

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Worldwide D-Cinema and 3D-Cinema installations in commercial cinemas (02/2010)

- Worldwide D-Cinema installations: approx. 14.000 (out of 115.000 total)
  - North America: approx. 7.600 screens
  - Europe: approx. 3200 screens
  - Asia: approx 2.800 screens
  - Other: approx. 400 screens
- Worldwide 3D-Cinema installations: approx. 7.000
  - North America: approx. 50%
  - Europe: approx. 22 % (Germany: approx. 400 3D-screens)
  - Asia: approx. 20 %
  - Other: approx. 8 %
- 2009 global 3D box office revenues: 2 bn US $ (more than 50% from US 3D screens; AVATAR not included)

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3D – Business Models for Cinema Exhibition

- Investments for 3D equipment comes on top of D-Cinema installation costs
  - Exhibitors pay
  - Some integrators include 3D-packages for roll-out programs

- 3D installations occur independently of organized roll-out schemes (exhibitors take the initiative)
  - E.g. publicly funded models (UK) or VPF model (US)

3D – Business Models for Cinema Exhibition

- 3D exhibition business models depend on the 3D projection technology used
  - Licensing costs
  - Leasing of the equipment / lease per film
  - Profit sharing (of each sold ticket)
  - Disposable glasses vs. reusable glasses

- Premium pricing models make the investment in 3D exhibition technology very interesting for the exhibitor
  - Pricing based on fixed charge per ticket (3 € - 5 €)
  - Pricing based on flexible charges depending on content/event

3D – Business Models for Cinema Exhibition

- 3D plays currently a considerable part within the D-Cinema roll-out
  - 3D offers an USP for cinema exhibitors
  - In contrast to “just” projecting digitally, 3D offers a <u>really visible difference</u> to the audience
  - Pricing models make 3D content exhibition in cinemas extremely interesting (up to 3 times more revenue/screen)
- 3D drives digital roll-out!

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3D – Current Market Trends for Cinema Exhibition

- Audiences seem to love 3D (they come back after watching one 3D movie!)
- Exhibitors continue to invest in 3D equipment
  - Equipment shortage for projectors!
- Studios/producers guarantee (”push”) content availability
  - (Commercially) very interesting film line-up for the next 2 years
- Lack of 3D screens (regarding film line-up)
  - Industry needs more screens!

3D – Current Market Trends for Cinema Exhibition

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- USA: polarized 3D-systems market leader (RealD / more than 85%)
- Europe: variety of 3D-systems co-exist (RealD / Dolby / XPAND; approx. 1/3 market share each)
- Technicolor is introducing an (intermediate) film based 3D system

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Market Overview 3D-TV

- No 3D-TV standards at the moment (ongoing discussions, e.g. SMPTE TaskForce)
- 3D Blu-ray standardization finalized
- Competing display technologies (polarized vs. shutter)
- “3D-Ready”-displays commercially available in the US (for 2 years, but not in Europe)

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Market Overview 3D-TV

- Major manufacturers are committed to offer 3D-TV sets (Panasonic, Sony, Samsung, LG, Phillips …)
  - Availability: spring 2010
  - Pricing: 2500 € (and more...; including 2 pairs of glasses)

- Tests show that 3D content production and distribution over existing broadcast-infrastructure is possible
  - Mainly sports but also alternative content such as concerts/opera etc.

Market Overview 3D-TV

- Opening match at FIFA Worldcup 2010 will be broadcasted in 3D
  - Approx. 25 games will be produced in 3D during Worldcup 2010

- Several 3D-TV channels are announced for 2010
  - Sky (UK)
  - ESPN
  - Direct TV (US)
  - Sony/Discovery/IMAX
  - …

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Additional Considerations for 3D-TV

- Autostereoscopic 3D displays are still in a pre-mature state

- Will the consumer wait until auto-stereoscopic displays provide a comparable viewing experience at home?
  - Approx. 60 %: 3D with glasses is OK f
  - Approx. 35 %: 3D is only without glasses OK
  - Approx. 5%: 3D is not an application for home entertainment at all!
  - Source: (representative) survey within PRIME research project and (unrepresentative) survey at IFA 2009

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3D – Cinema: Final Remarks

- Common 3D acquisition and postproduction knowledge is still very rare among cinematographers/directors/postproduction houses (compared to 2D)
- Artistical 3D film “language” is still under “development/ investigation” (how do I use the depth for telling the story?)
- Significantly increased box-office by now! Will this stay in place?
- Since AVATAR 3D (business) awareness is everywhere within the industry!

3D – TV: Final Remarks

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- 3D-TV could be seen as the next innovation after HD
  - 3D-TV fits into technology road-map for displays (refresh rates, pixel increase, …)
  - 3D games as door opener for 3D @ home (PS3, Nvidia, …)

- 3D Broadcast:
  - Artistical hurdles (e.g. where do I place the cameras in stadiums?)
  - Availability of reliable (proven) end-to-end broadcast infrastructure / technological hurdles
  - Acquisition/production/distribution knowledge within the broadcast value chain is still very, very rare

- 3D-TV is (still) far away of becoming a mass market reality

3D – TV: Final Remarks

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- TV channels, standardization bodies and manufacturers are making lots of efforts in order to make 3D-TV happen
- Will the consumer accept 3D-TV?
  - Acceptance of 3D for varying viewing conditions and a wide range of display sizes?
  - Wearing glasses?
  - What kind of content is desired by the mass market?
- 3D-TV experience has to be as good as 2D-TV
  - 3D function of TV sets should be disengageable
- Availability of standards, TV sets and *good quality* content is key factor for success

THANK YOU