Marketing New Technology
Additive Manufacturing for
Ceramic Materials

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Hype or Industrial Revolution?
Additive Manufacturing
AM: Hype or Revolution

Replicator - The new Future?
AM: Hype or Revolution

New Applications
Perpetuum Mobile ?!

“I print my own 3D-printer at home and then I return the one I just bought.”

Source: Eulenspiegel 2/15
Hype Cycle

Gartner’s 2015 Emerging Technologies Hype Cycle
Additive Manufacturing
Technology Provider’s Point of View

- Cool and superb technology
- Solving all problems in the ceramic industry
- Industry is waiting for this new technology
- Production problems in industry should be huge
- Restrictions are not so important
- Changes can be made easily
- New applications are already waiting
Additive Manufacturing

Industry’s Point of View

- Very interesting and hot topic
- A lot of potential in future application
- Difficult to imagine this future applications
- Exaggerated expectations
- Wants to use the same material, design and thinking
- Doesn’t want to modify anything
- Wants to start with mass production of established products
Market Challenges

Additive Manufacturing of Ceramics

- Available materials are limited
- Processes are complex
- Whole process chain needs to be considered
- Market is still underdeveloped
- Potential of AM is not yet fully understood
- No ceramic success stories
- Many myths around AM
Reality in the Beginning
Additive Manufacturing
No Problems
No Access to Real Problems
Disillusionment

Changes
NEXT EXIT
Chasm
Disillusionment
Reasons
What is behind the curtain?
What will the future bring?
Sometimes not good in creating...
... but good in copying
From Cart to Car ...
... or even a combination
Crossing the chasm

Geoffrey A. Moore
Crossing the Chasm

Strategy

- choosing a target market
- understanding the whole product concept
- positioning the product
- building a marketing strategy
- choosing the most appropriate distribution channel and pricing
Crossing the Chasm

Practical things to do

- Easing the hype
- Using the hype to spread the word
- Being honest
- Don’t be tempted by too big visions
- Getting down expectations, but keeping visions alive
- Building up trust in academia and industry
- Generating success stories
Crossing the Chasm

Generating success stories

- Close collaboration with academia
- Convincing industry that NDAs are not always useful
- Creating best practice examples
- Making seminars / workshops
- Developing own ideas
- Dealing with small ideas but also working with crazy people
- Ready to take some risks
Static Mixer

- Completely new design with varying channel cross section and interconnections
- Improved efficiency due to turbulent flow
- Shorter reaction way
- Less material for mixer
Outlook

Key Drivers for an Industrial Revolution
Industrial Revolution

Requirements for an industrial revolution by the Additive Manufacturing

- Engineers need to rethink and learn a new way to design
- Out-of-the-box-thinking necessary
- Freedom and the scope for development necessary
- Whole process chain important to realize the full value
- Additional benefits for the customer must be higher than the cost of production
- Material properties and quality must meet the requirements
Why is it Important to deal with additive manufacturing?
"There's no reason anyone would want a computer in their home."

Ken Olsen, founder and president of Digital Equipment Corp. (1977)
LITHOZ
Manufacture the future.