A large industrial 3D printer with a prominent orange frame is positioned in a modern, open-plan office. The printer is situated between concrete pillars, and the ceiling features recessed linear lighting. In the background, there are glass-walled offices with desks, computers, and lamps. The overall atmosphere is clean, professional, and tech-oriented.

BigRep

Printing a Revolution

How 3-D Printing will change manufacturing

1

How it all began

The next big thing

2

Why industry 4.0?

The impact for your company

3

Stories

From the big ideas to the big print

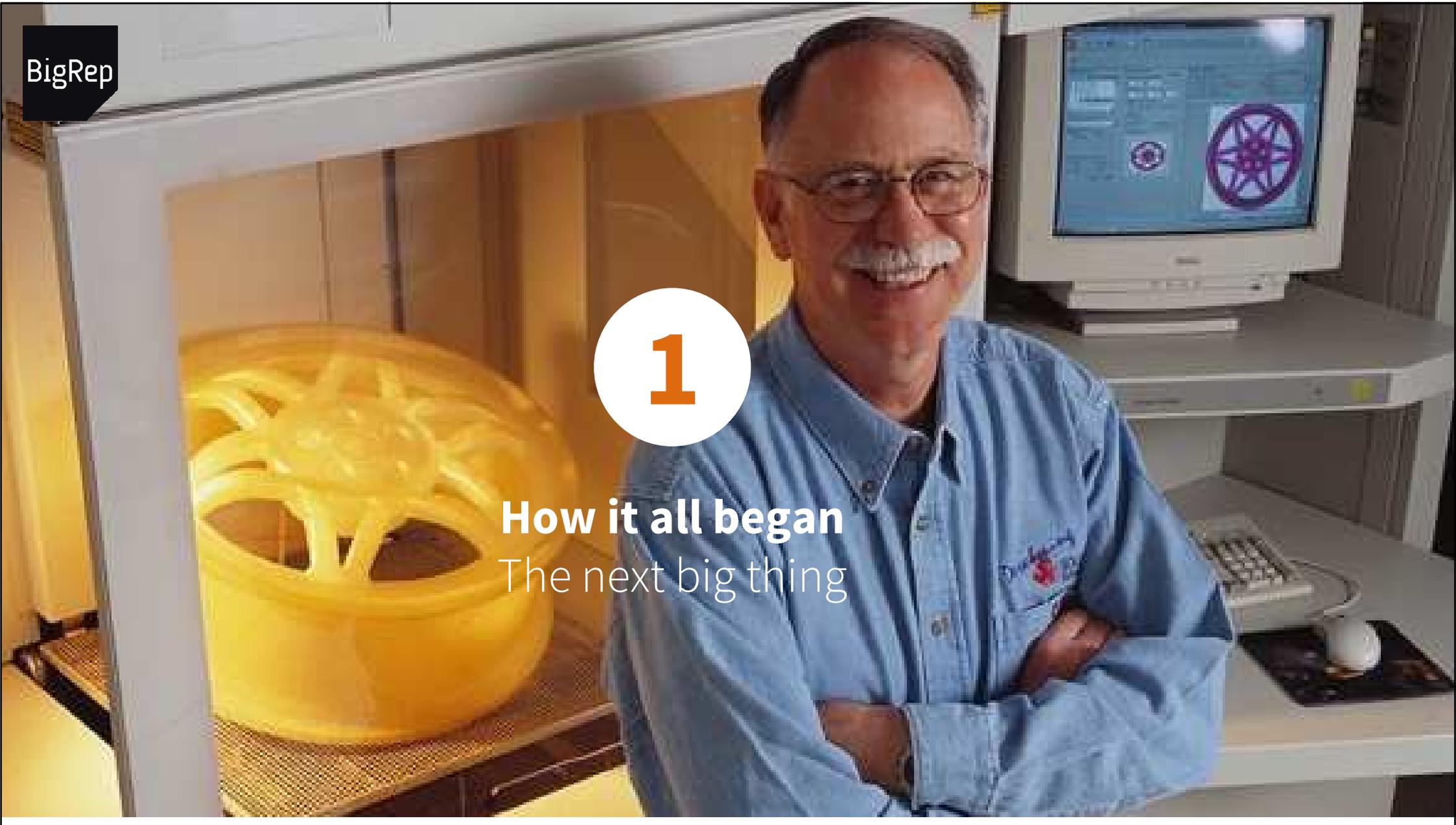
4

The Future

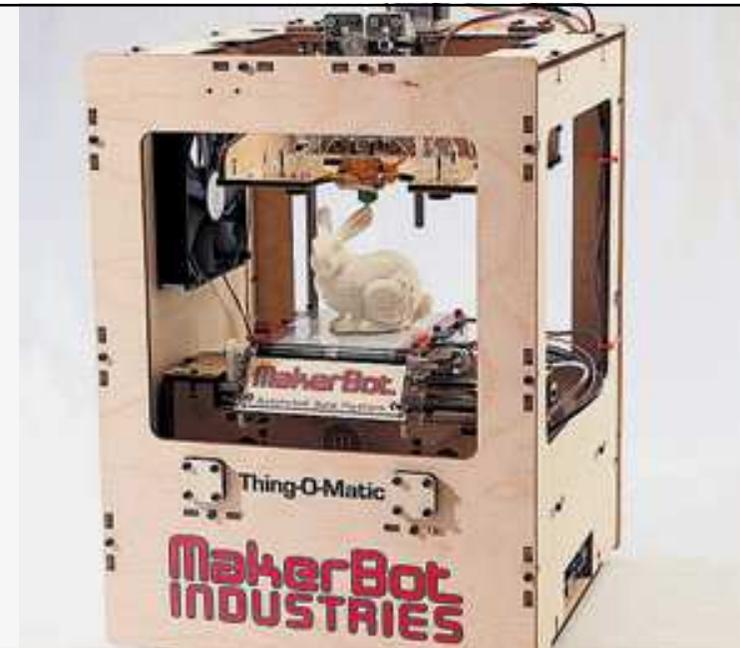
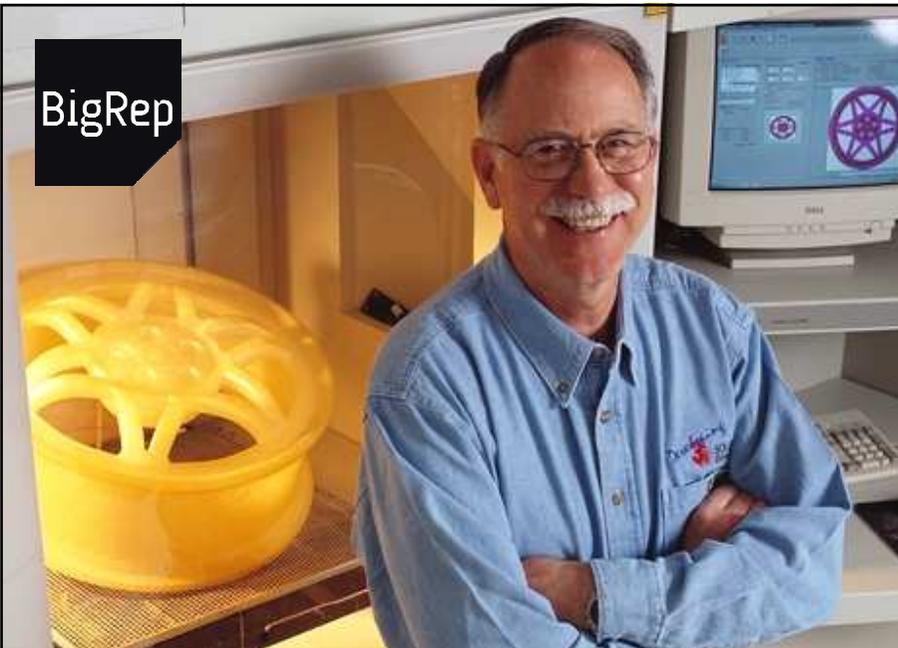
Things will never be the same again

1

How it all began
The next big thing



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How it all began...

3D Printers were designed to be built by anyone with technical skills

Easy as assembling IKEA furniture - Transparency

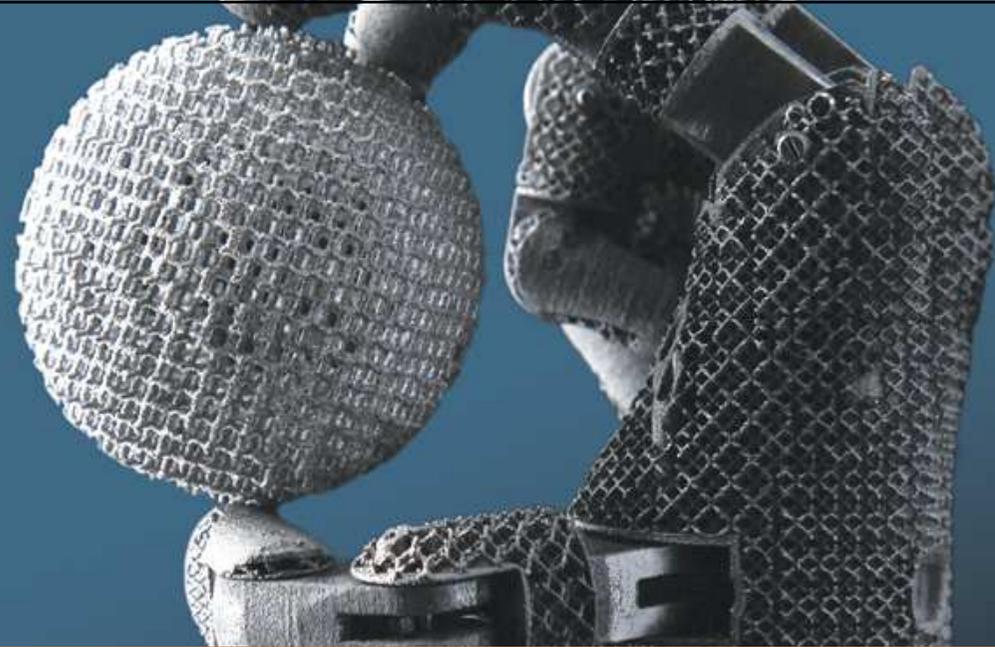
3D technology was brought into everyone's home

„The pioneering moment“

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The Next Big Thing



1. **Powder Bed techniques** (SLS = Selective Lasersintering , SLM = Selective Laser Melting) → Mechanical engineering
2. **Fluid Materials** (SLA = Stereolithography, DLP = Digital light processing) → Prototyping
3. **Extrusion** (FFF = Fused Filament Fabrication or FDM (Fused Deposition Modelling)) → Mechanical engineering, Molding, Prototyping
4. **Laminated techniques** (Laminated object manufacturing) → Prototyping

2

Why industry 4.0?
The impact for your company





Why industry 4.0?

3-D printing (additive manufacturing) is likely to revolutionize business in the next years

Industrial 3D printing is now at a tipping point

It has moved well beyond prototyping, rapid tooling, toys and it will increasingly be used to produce high-volume parts and products in several industries*

*Source: Harvard Business Review, May 2015



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The impact for your company

2014 PwC surveyed 100 manufacturing companies - two-thirds were already using 3-D printing*

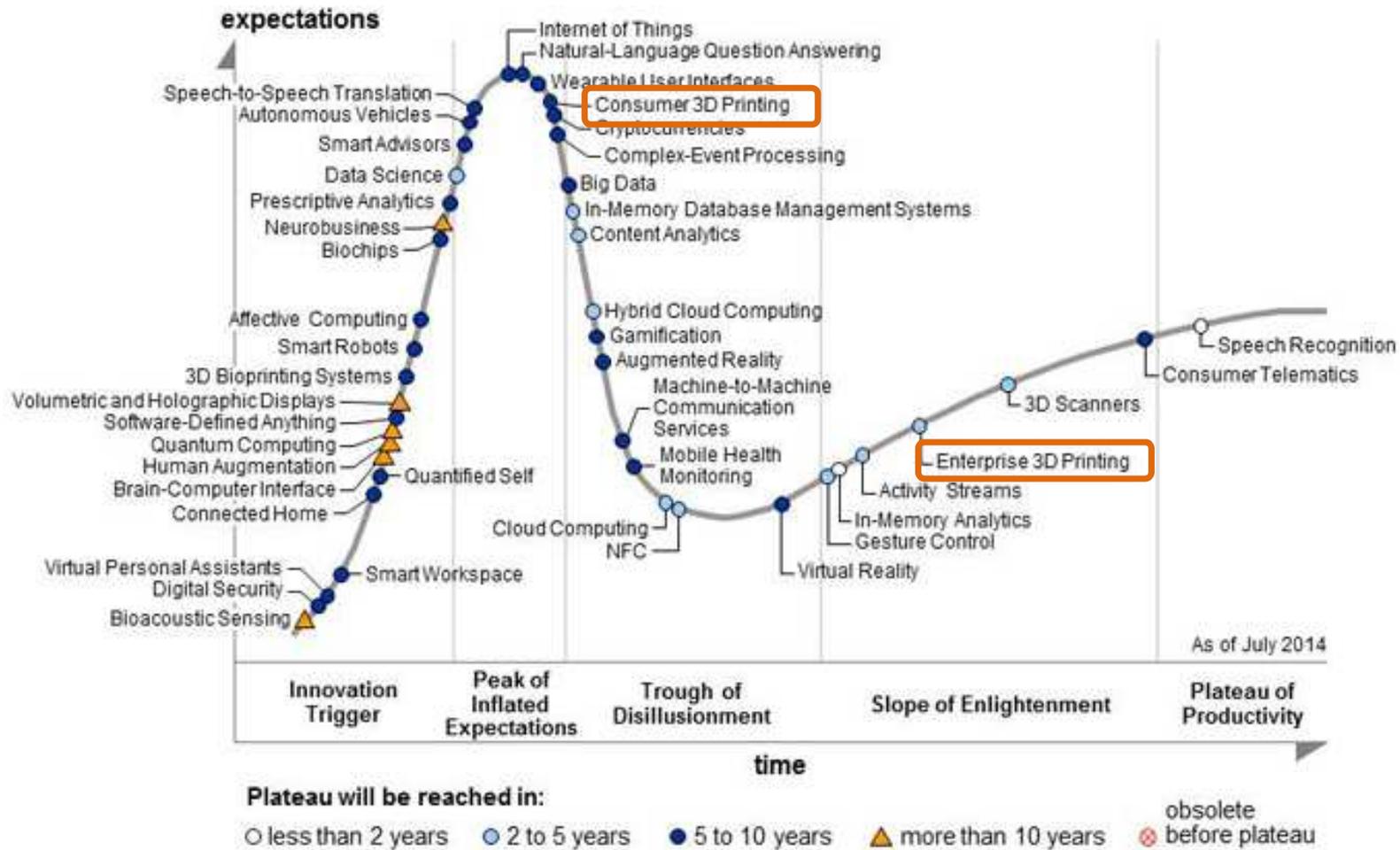
A technology is „mainstream“ when it reaches an adoption level of 20%**

3D printing has expanded much faster than expected**

The market value is expected to grow to USD 5.4 billion by 2018*

* Source: PwC survey and analysis, February 2014

** Source: Gartner Report, Hype Cycle Report for 3D printing, 2014





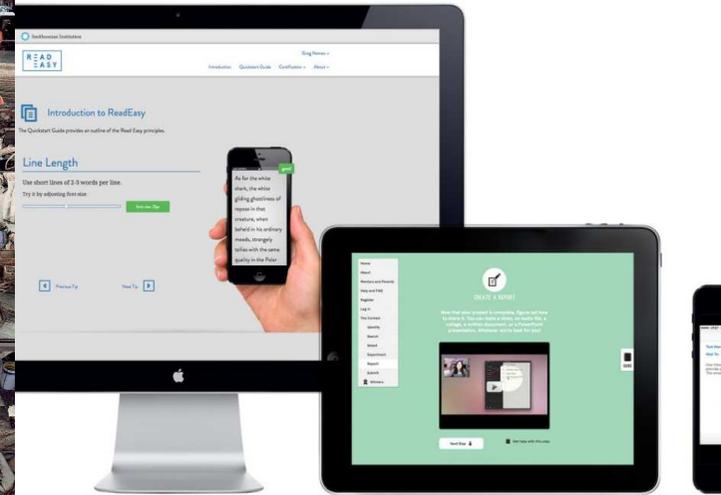
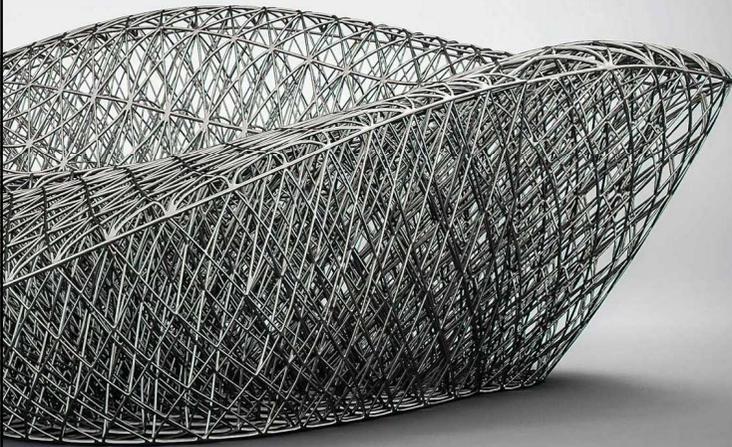
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The impact for your company

3d printers can build larger components and achieve greater precision and finer resolution at higher speeds and lower costs

The advantages of 3-D printing over other manufacturing technologies could lead to profound changes in the way many things are *designed, developed, produced, and supported*

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Rethinking value chains and production processes

1. Designs of great complexity
2. Rethinking the supply chain
3. Digital platforms



1. Eliminating the waste
2. Spare parts on demand- no warehouse, less shipping
3. CO₂ emissions are lowered through shortened processes and more direct manufacturing*

* Source: Understanding the Benefits of AM on CO₂, P.Reeves, 2013



*Conclusion – 3d printing is ready to emerge from its niche status and become a viable alternative to conventional manufacturing processes.**

*Outlook – Sales of individual-grade 3D printers in the U.S. will be **42%** of industrial automation and robotic sales in 2020.**

* Source: McKinsey Quarterly, January 2014, mckinsey.com/insights

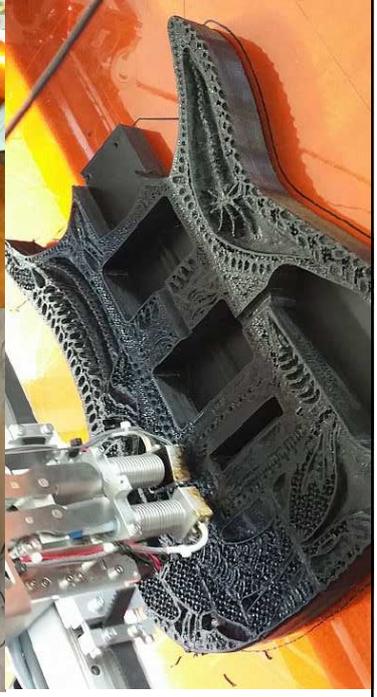
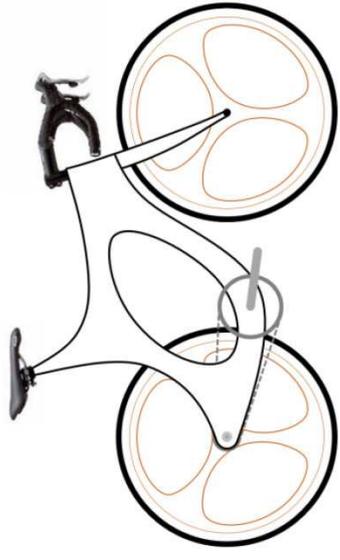


3

Stories – from the big ideas to the big print

Leading companies are already using 3D printing.





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U.S. hearing aid industry converted to 100% AM in less than 500 days. Not one company that stuck to traditional manufacturing methods survived.



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GE Aviation has switched to printing the fuel nozzles of certain jet engines

By using Additive Manufacturing GE says it will cut the cost of manufacturing by **75%**



BigRep



„Strati“ – 49 parts in 48 hours

Local Motors printed a roadster from bottom to top in 48 hours including wheels, chassis, body, roof, interior

4

The Future – Things will never be the same again
+ 500% growth in 5 years

BigRep



Real-time changes in product strategy will be possible

In the future producers will have many more options

They will have to decide which components or products to transition over to additive manufacturing, and in what order



These leading companies are adopting Spark

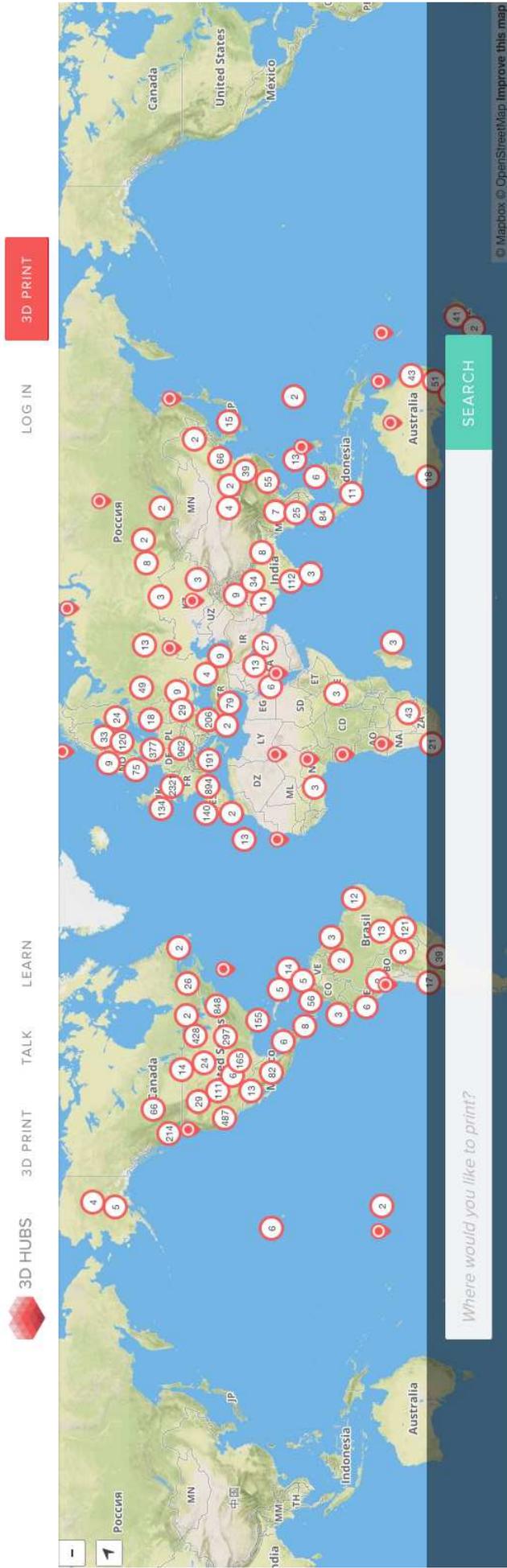


Platforms are a feature in the highly digitized 21st-century markets

Additive Manufacturing will be no exception

Platform owners will be powerful because production itself is likely to matter less over time

Source: Harvard Business review, May 2015



Popular cities

- New York** 110 makers, 228 printers
- Milan** 829 makers, 192 printers
- Los Angeles** 862 makers, 156 printers
- London** 101 makers, 154 printers
- Paris** 914 makers, 128 printers

ALL CITIES

Upcoming events

- MAR 25** 3D Show and Tell Philadelphia
- MAR 27** 3D Hubs & ColorFabb Workshop Stuttgart
- MAR 31** 3D Hubs & FabLab Groningen Groningen

MORE EVENTS

Talk topics

- Can I discount orders for returning clients?** 4 comments
- Best Marvin Printer settings? ABS & PLA** 2 comments
- A 3D Project for Your Classroom** 2 comments

POPULAR TOPICS



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„*Printer farms*“ will effectively commoditize the making of products on demand

Production will be dynamically orchestrated

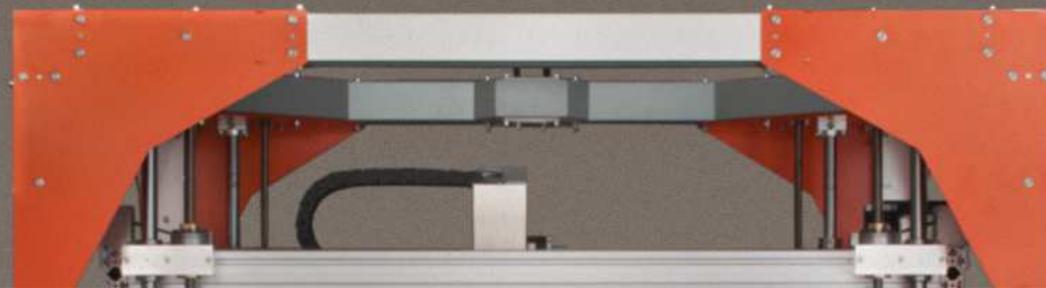
Consumables will be ordered by machine automatically 4.0

One printer = a production business.

From €38.000,- MSRP

24h = € 480,-

30 days = € 14.400,- in revenue





Compared to the internet revolution AM is in 1995
The future of AM will bring similar surprises like the internet
(WiFi, smartphones, cloud computing)

This future will arrive quickly

BigRep is a technology start up in Berlin Kreuzberg,
manufacturer and developer of the world's largest serial 3D printer

Founded in **2014**

40 employees

Export ratio of **95%**



BigRep

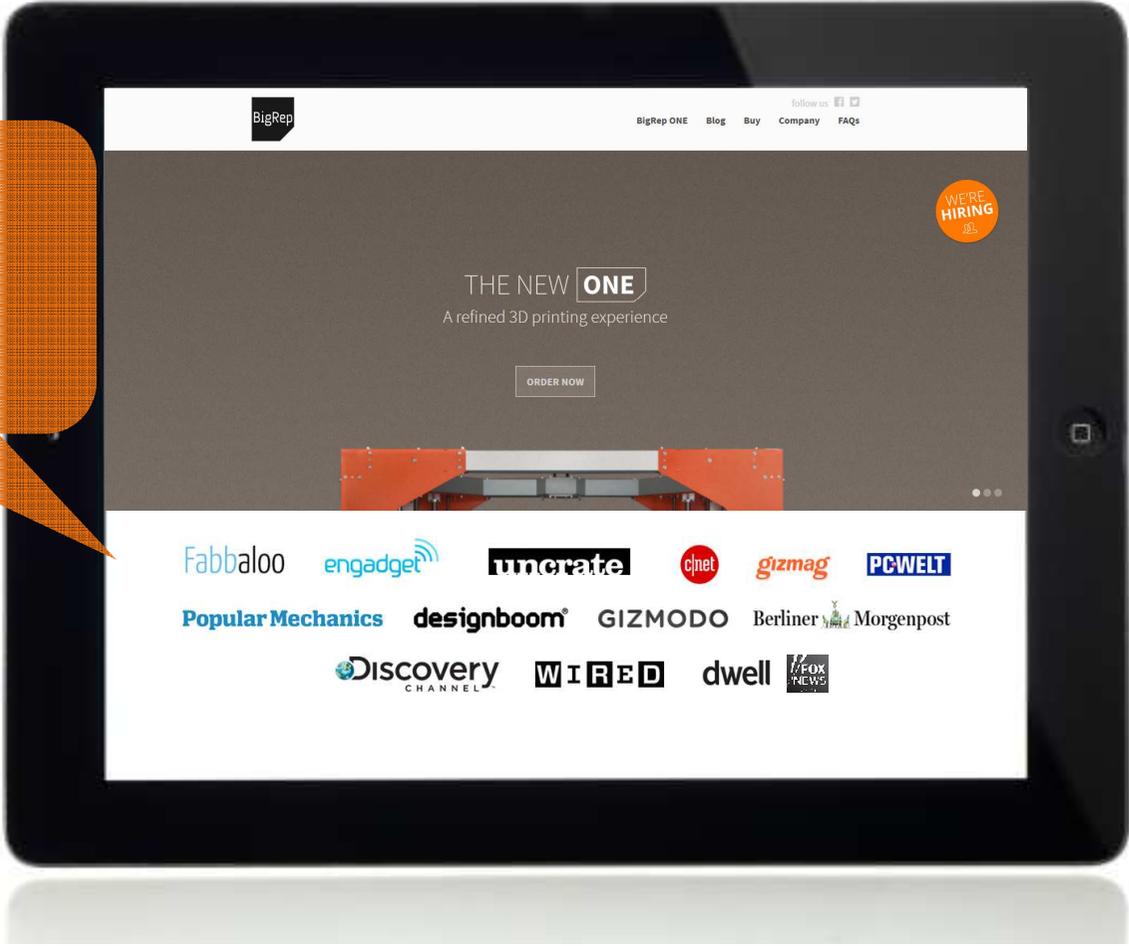
Our goal is to re-define manufacturing processes all over the globe.

We want to rebuild manufacturing.

We provide the necessary tool:
An affordable Full-Scale 3D Printing Infrastructure.



BigRep
in the media

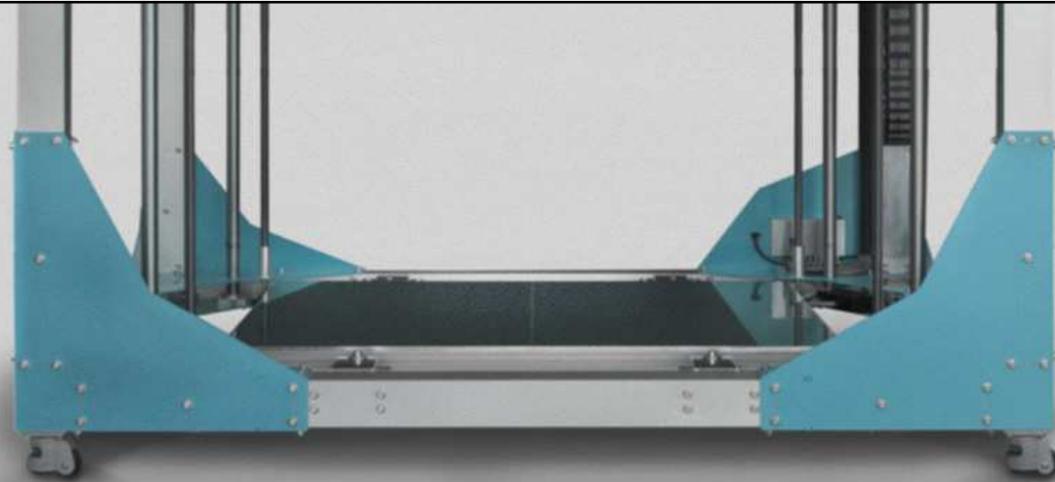


A close-up portrait of Barack Obama, looking slightly upwards and to the right. He is wearing a dark suit, a white shirt, and a blue patterned tie. The background is a soft, out-of-focus blue-grey.

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“*3D printing* has the potential to revolutionize the way we make almost everything. (...) the next revolution in manufacturing is *Made in America.*”

BigRep



Natalie.Jacob@lacon.de

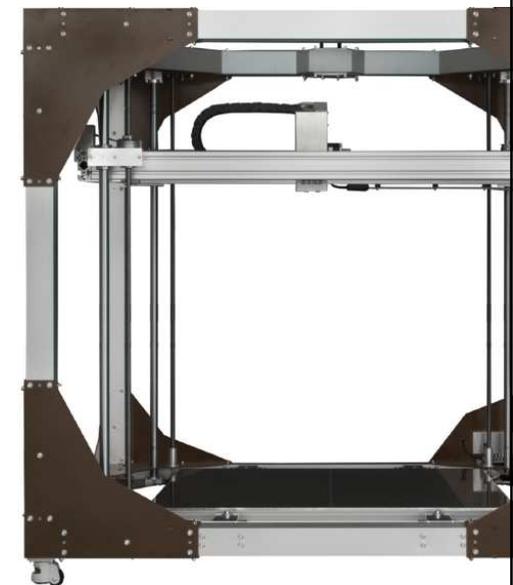
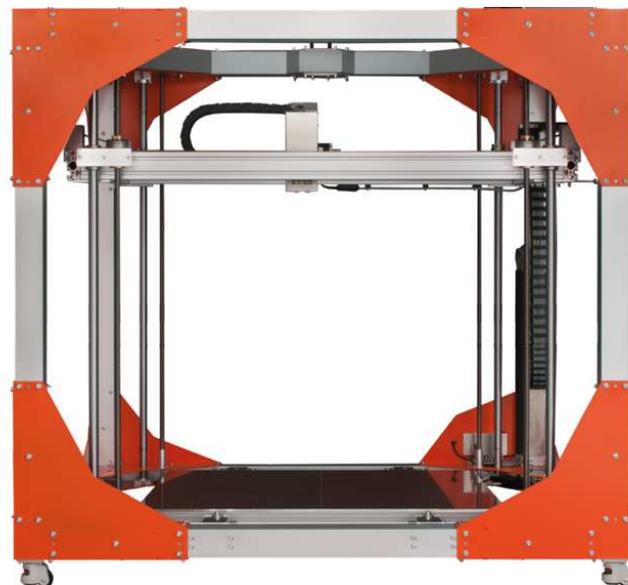
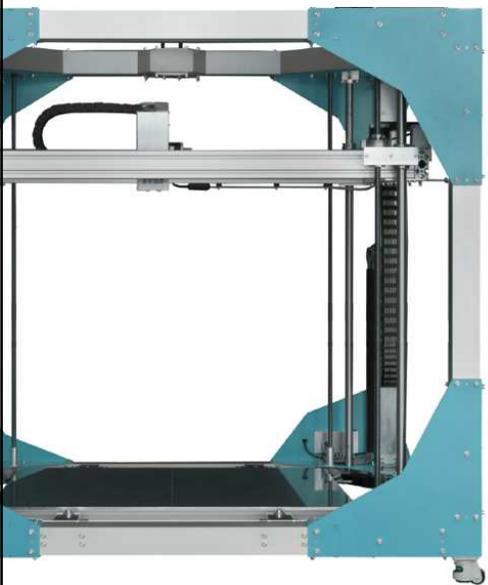
BIG IDEAS. **BIG PRINTS.**

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Lacon & BigRep: Outsourcing Partner seit der ersten Stunde
Qualitätssicherung & Qualitätsmanagement

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Thank you!
beyer@bigrep.com