

Materialise

From engineering start-up to international company active in biomedical R&D & clinical applications

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BioBusinessEvent, Almere, 10/6/2010

Content

- Introduction
- How did we evolve?
- Challenges and hurdles
- Conclusion

Content

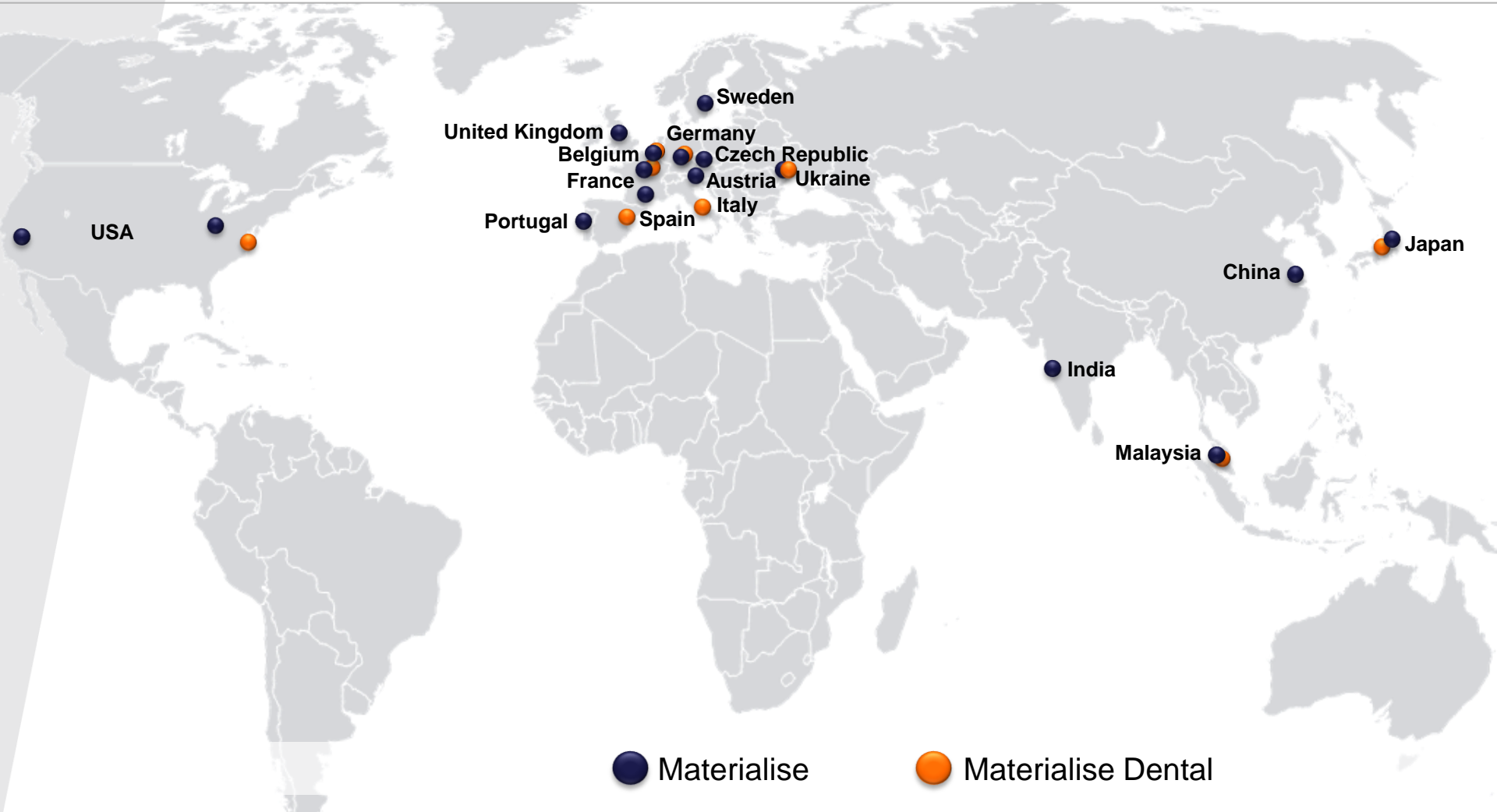
- **Introduction**
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Introduction

- Started in 1990 in engineering & product design
- From KU Leuven mech engineering
- Grown to over 800 employees worldwide
- HQ in Belgium, offices all around the world
- Now >50% (bio)medical turnover

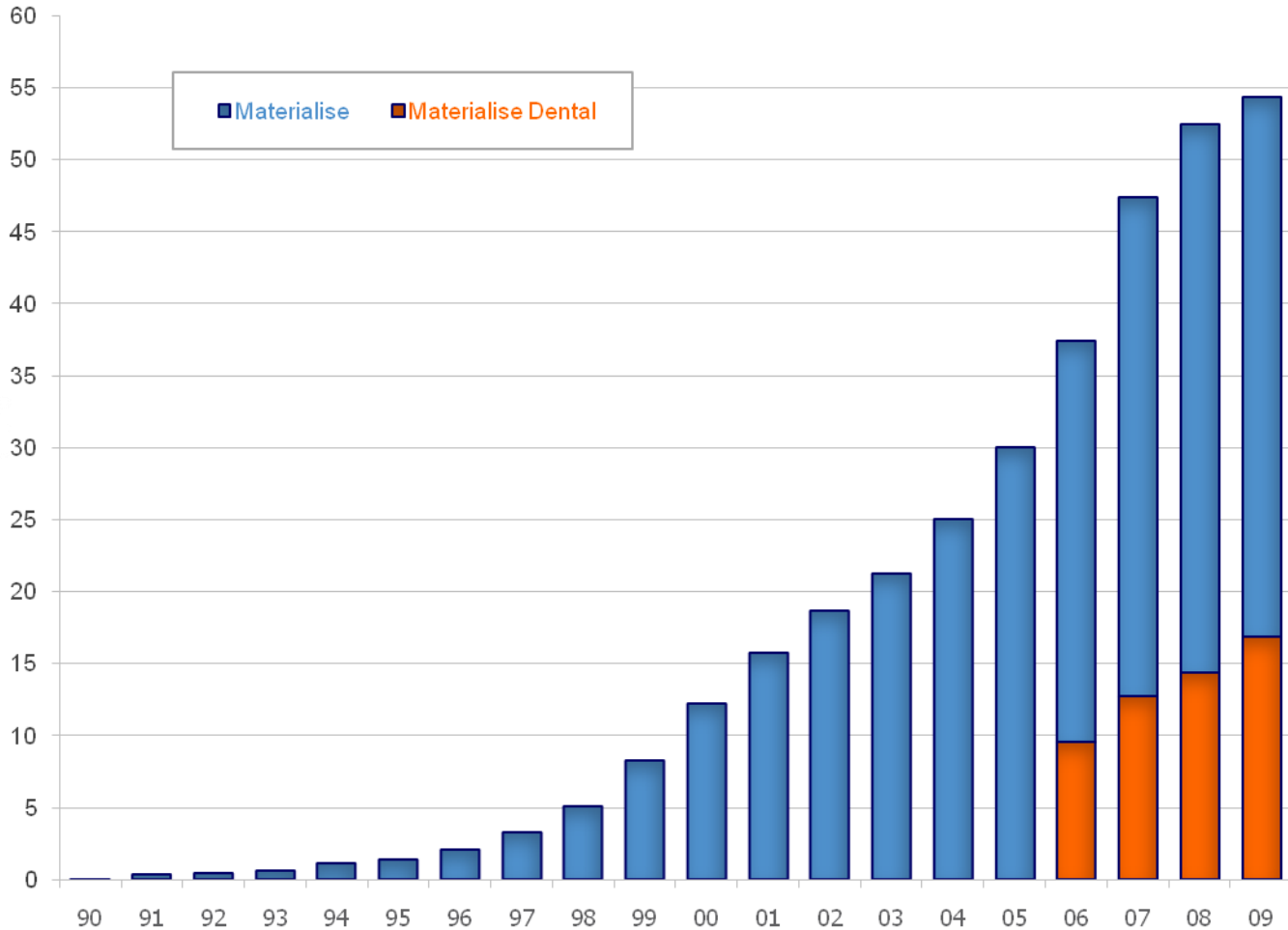


World Wide presence



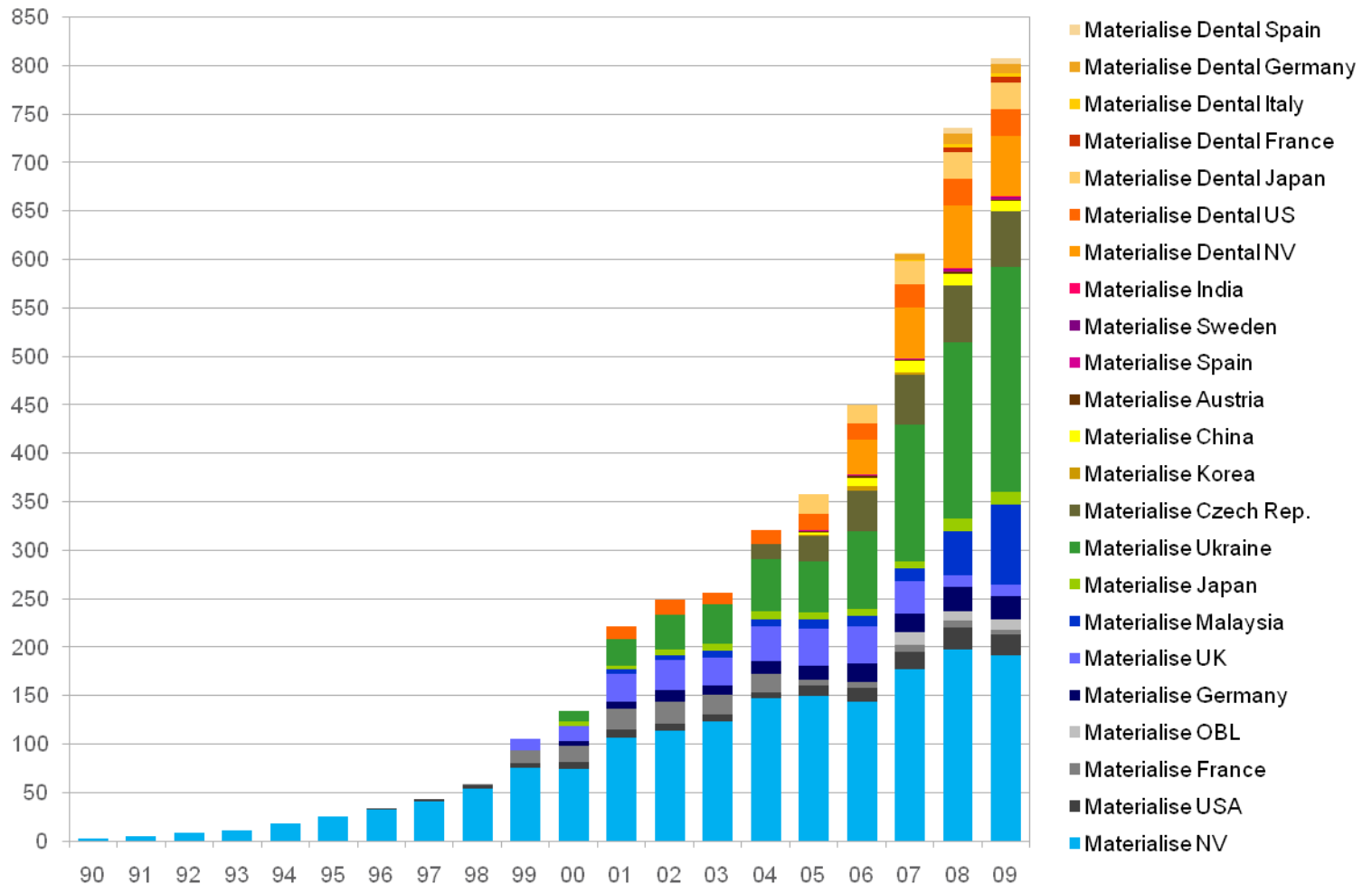
Consolidated Sales in M €

1990 – 2009

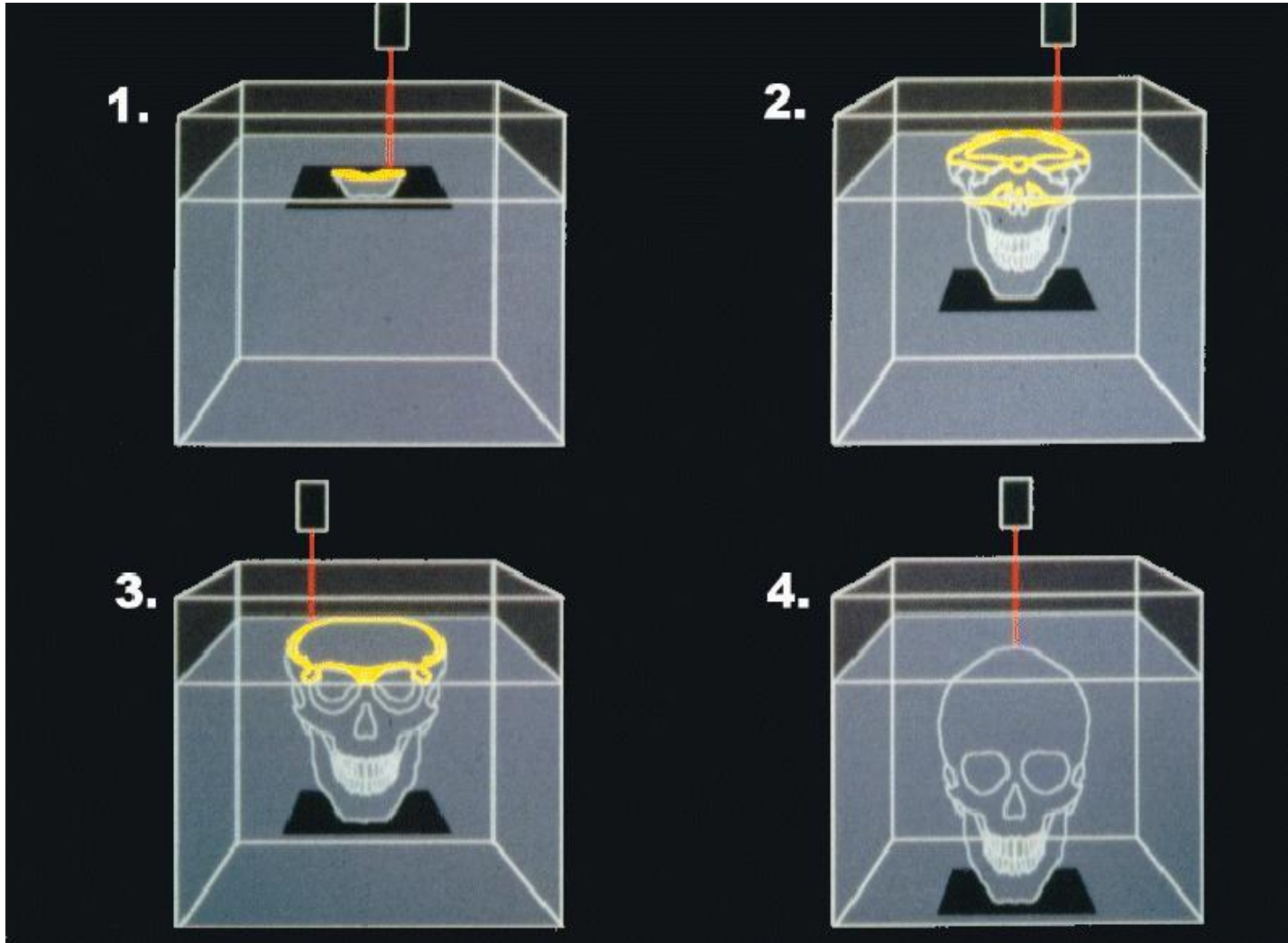


Materialise Personnel

1990 – 2009



The principle of layered manufacturing



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Translating technology into Added Value

Layered manufacturing technology allows to build *unique models of arbitrary complexity*

Conclusion

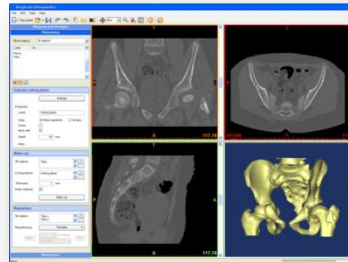
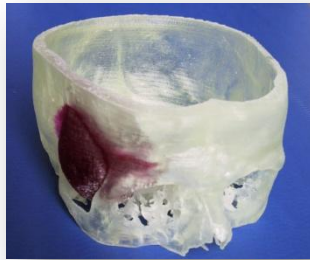
- *Medical models*
- *Mass customization*



Evolution

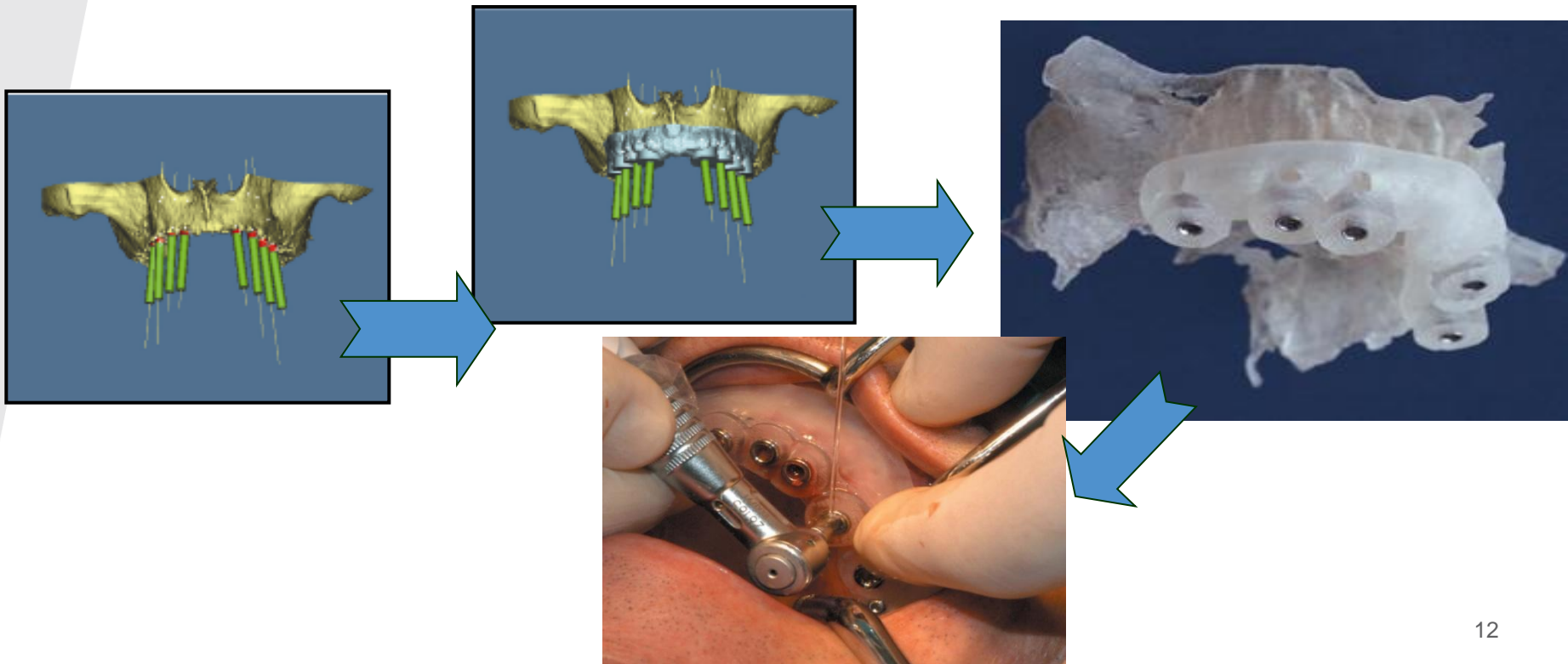
1991-1995: Getting Started

- Medical Models
- Software (Mimics) from CT to 3D Printing
- Accuracy and multi-scanner



Market revolution & combining know-how

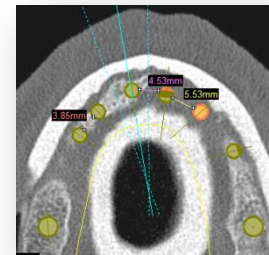
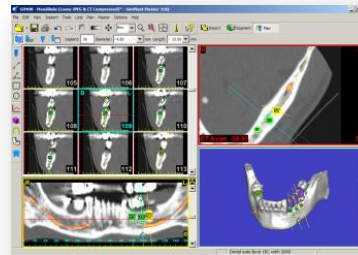
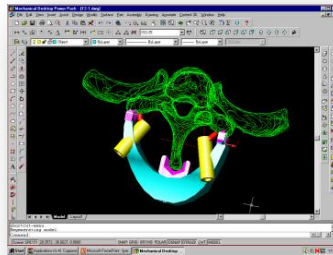
- A surgical guide
 - Is a customized patient-specific tool to transfer surgical planning to surgical theater
 - Combines layered manufacturing & CT-image know-how



Evolution

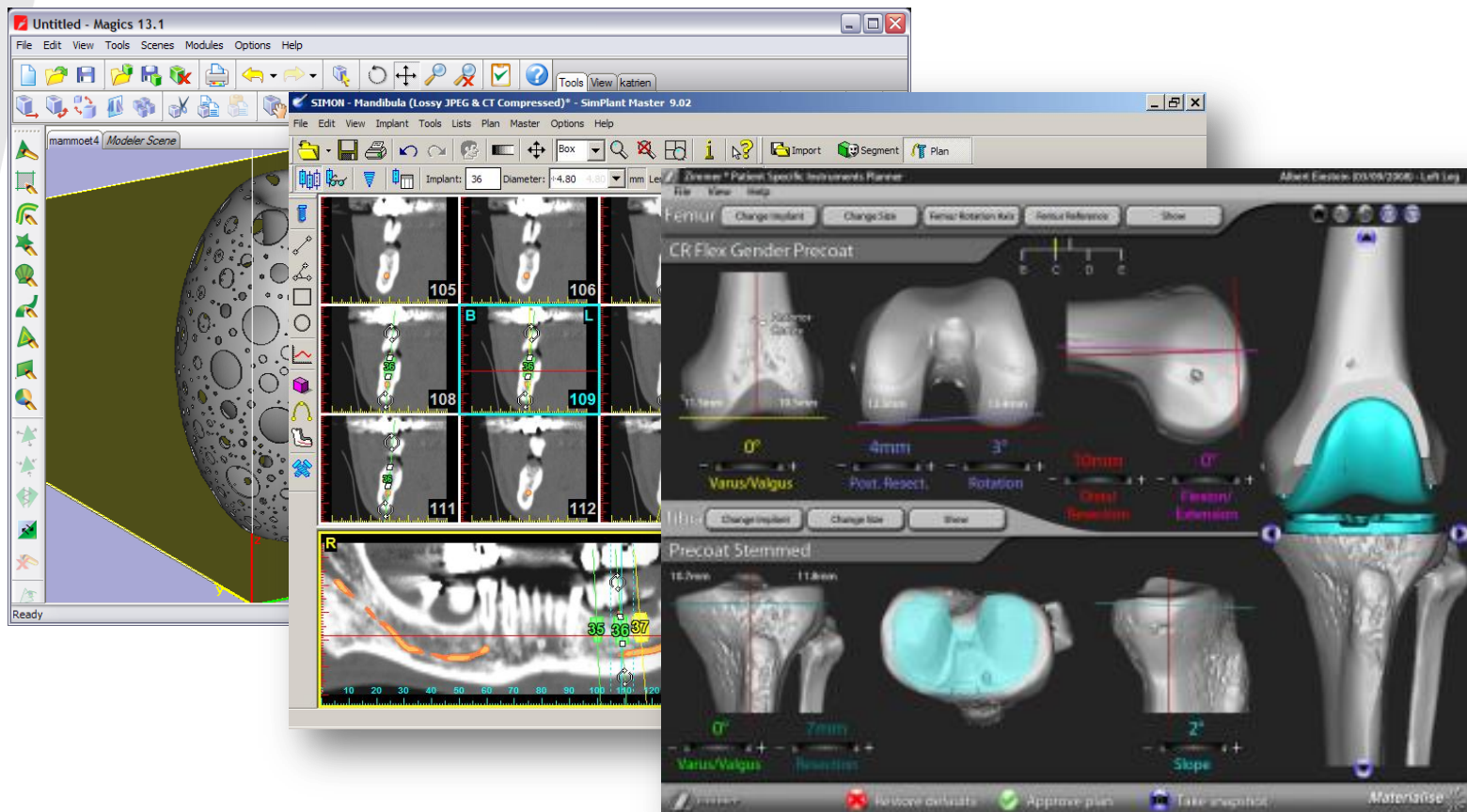
1996-2000: Guided Surgery

- Transfer of Surgical Plan to Surgery
- Patent!
- Dental, CMF, Orthopaedic, Spine, ...



Engineers versus Doctors

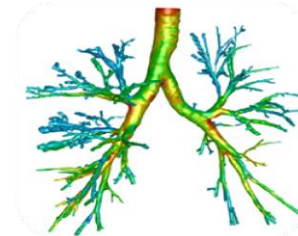
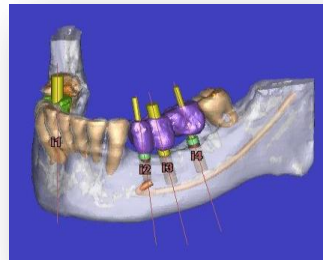
- Engineering SW versus Medical SW



Evolution

2001-2005: Proof of Concept

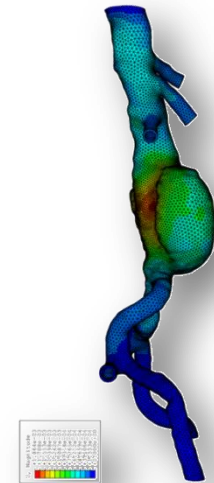
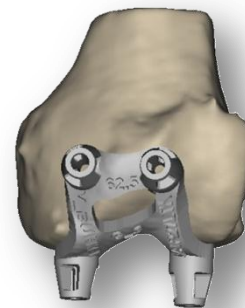
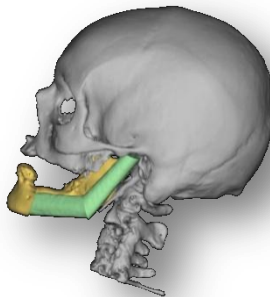
- From concept to business reality
 - Scientific proof
 - Mature products
 - Even towards standard of care in Dental implantology
- Usage of FEA to connect engineering and medicine + digital CAD



Evolution

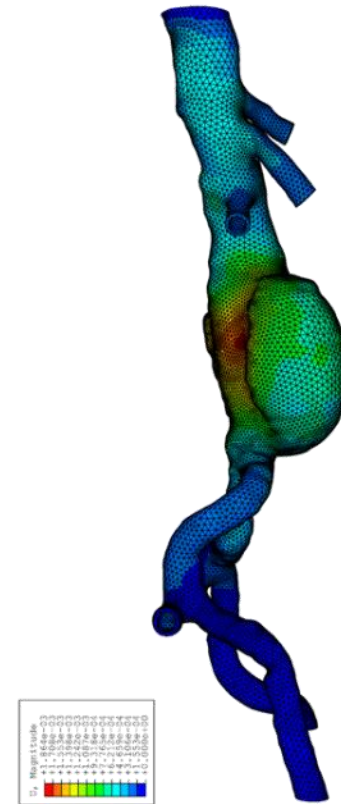
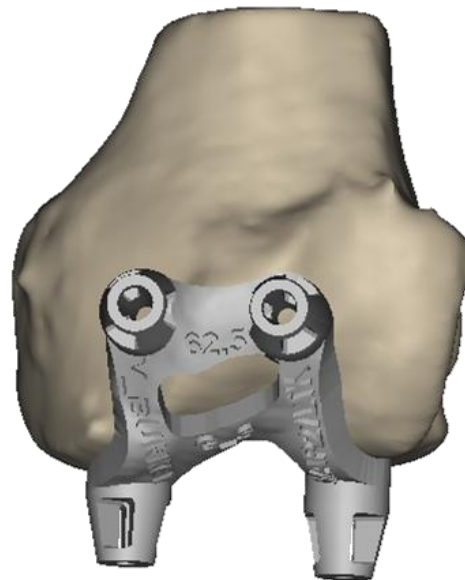
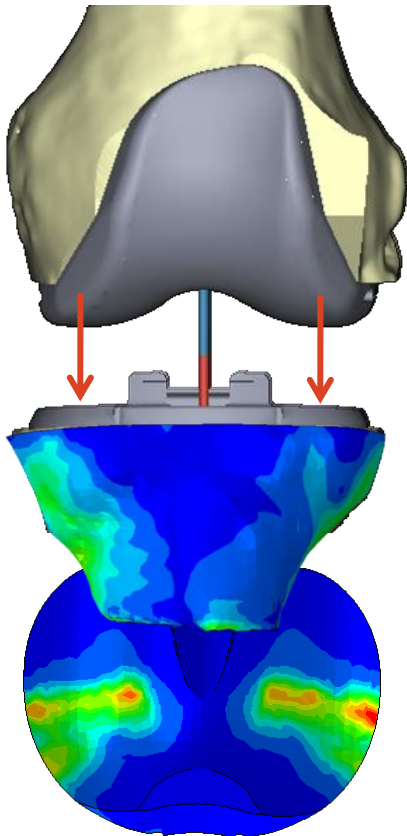
2006-2010: Confirm & expand

- Expansion beyond dental: orthopaedic, CMF
- Standard for biomedical engineering
- Research Custom Implants



The future: more engineering

- Getting Engineering and Medicine Married



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Challenges and Hurdles

- Market acceptance and access
- Need for critical mass w.r.t. partnerships
- Regulatory affairs
- Understanding the medical profession
- “Danger”
 - Difficult “missionary work”
 - Once successful → big guys jump in!
 - Partnerships essential!
- Showing only successes, not failures
 - Try a lot of things and keep what works! (systematically)

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Conclusion

- Started as engineering company
 - with ideas about medical applications
- Learned how to do things right gradually
- Always technology based
- By doing so, caused real evolutions
 - in surgery and patient treatment
 - and in biomedical engineering
- And planning some more...

**Thank you
for your attention!
Questions?**

Materialise

driving your innovations



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