

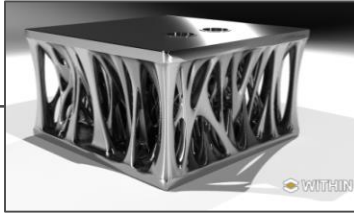
Industrial 3D Additive Manufacturing: Start into a new era of Manufacturing

Dr. Adrian Keppler, CEO EOS GmbH
World Materials Forum



Industrial 3D AM is a “Digital Manufacturing Technology” offering various advantages

Freedom of design



- Lightweight
- Complex / bionic structures
- Functional integration
- Reduced material usage
- Lot size “1”
- Customization

Freedom of materials



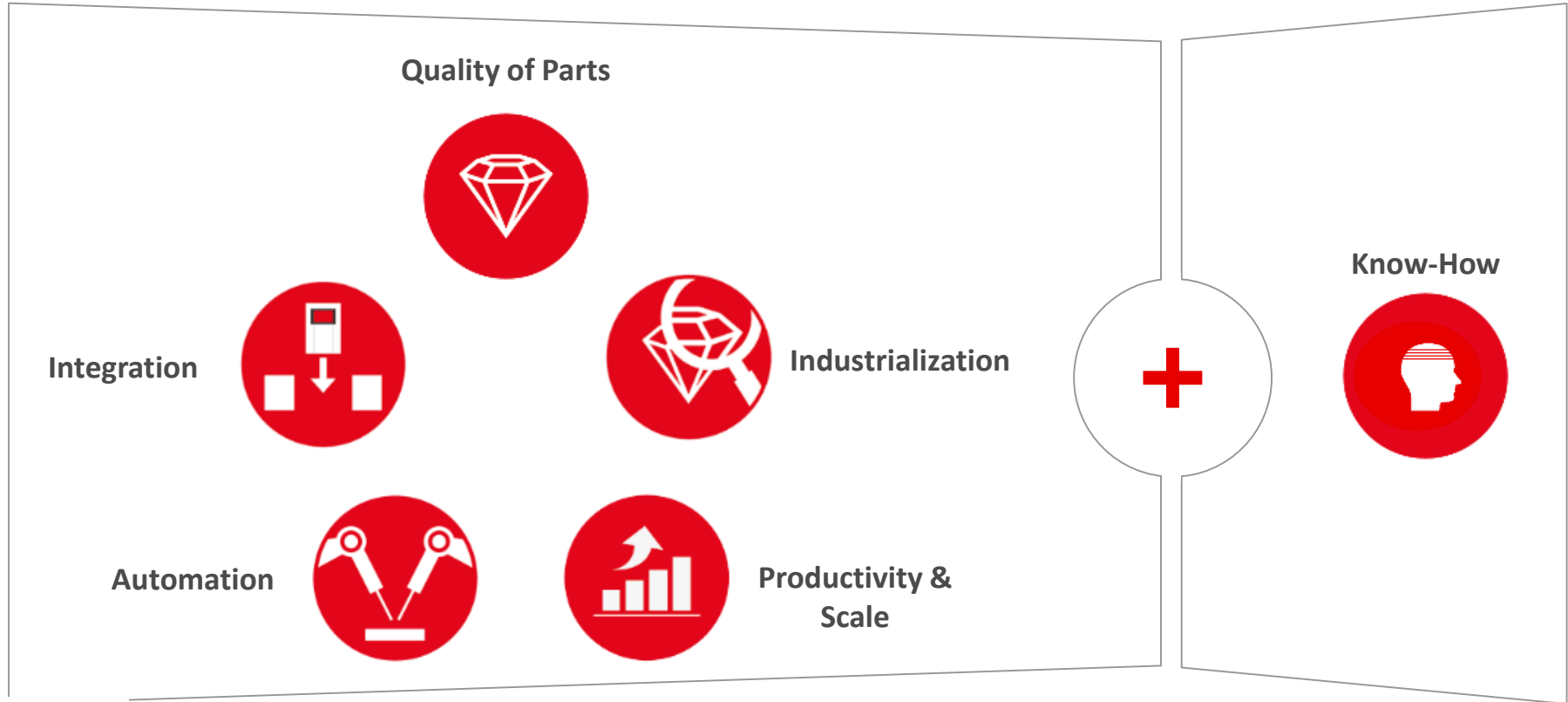
- New Metal alloys
- Advanced polymers & composites
- Ceramics
- “Digital” materials

Freedom of manufacturing

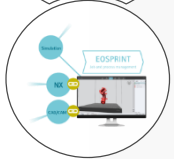


- Digital manufacturing (e.g. spare parts on demand)
- Distributed manufacturing (global vs. local supply chain)

But what exactly does it take to enable companies using 3D Additive Manufacturing technology in serial production?



EOS is addressing and implementing all required elements



- **Know-How Transfer:**
3D AM ramp-up acceleration
- **Operational Efficiency:**
Uptime & throughput increase

- **Automation**
- **Integrated Production:**
 - HW interface
 - CAD integration
- **Shared Modules:**
Efficient & flexible setup

EOS M4-4 / P500:

- Throughput increase & CPP reduction by factor 2-10
- Material flexibility
- Industrialization



- **Process Adaptation:**
Reduced build time by up to factor 10
- **In-situ Monitoring Efficient material usage:**
100% material re-use



There are success stories. Several companies already mastered the outlined challenges

LIEBHERR



- Simplified: 10 parts eliminated
- Weight: ↓ 35%
- Fulfilling certification requirements



arianeGROUP



- Simplified: 248 to 1 part
- Cost: ↓ 50%
- Weight: ↓ 25%
- Production time: ↓ from 3 month to 35hrs



MECURIS

www.mecuris.com



- Customized: 100%
- Weight: ↓ 65%
- Freedom of design: 100% for structures, functions & material thickness



MINI



- Individualized: 100%
- End-to-end production chain

EOS has a clear vision: Integrating 3D AM as a key technology into the “Digital Factory of the Future”.



What is required to get there? Let's identify & develop sensible applications to grow the 3D AM market



910g Aluminum

2 Wheel mounts



1 Antenna mount



224g Polyamide 11

4 Foot orthoses



1 Quadcopter



391g PEEK

17 Skull implants



1 Heavy current lever



168g Titanium

1 Break pedal



3 Hip implants

