



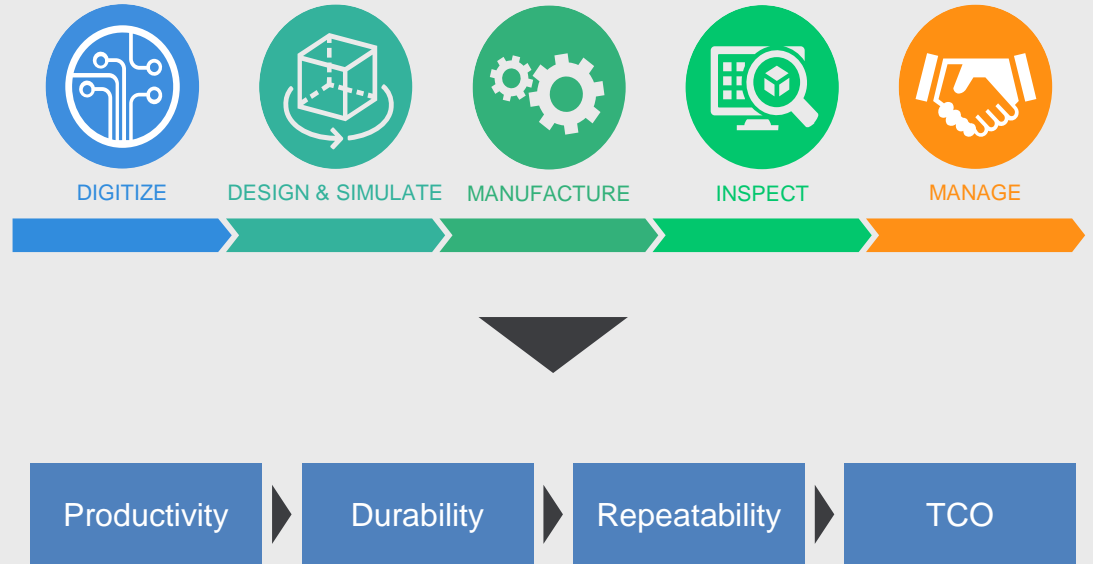
Accelerating Adoption of AM Production Solutions

Vyomesh Joshi, President and Chief Executive Officer

Formnext 2019 | November 19, 2019

Making 3D Production Real

Customer Needs → Production Workflows



3D Systems' Transformation Journey

→ April 2016

Listen, Learn
and Build



- Improve reliability, quality
- Win back customer confidence
- Prune product portfolio
- Shift from prototyping to production
- Augment talent

2017–2018

Create Foundation
for Growth

Customer-driven Innovation

Operational Excellence

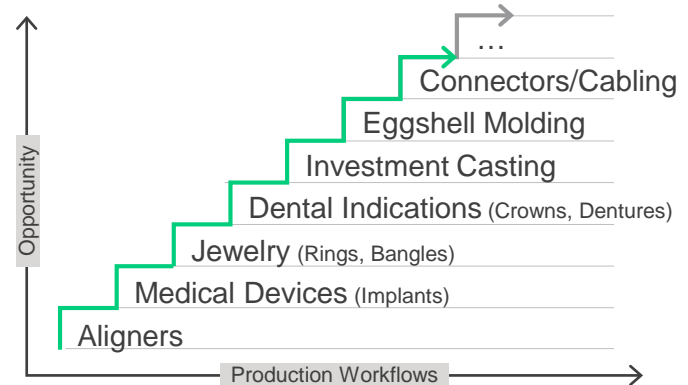
Partnerships

Our People

- Application-centric approach
- World-class cost structure
- Talent and leadership

2019 & Onwards


Scale
and Lead



- New innovative production solutions
- Materials portfolio expansion
- Uptime-based technology services
- Scaling Customer Innovation Centers
- Certified manufacturing partners



Accelerating Adoption of Additive Manufacturing



	Strategic Direction	Organization & Processes	Technology Enablement
4 Strategic Applications Across Company	Embedded in company strategy C-level sponsorship	Embedded in relevant operational areas	Production locations Research centers
3 Application in “Champion” Departments	Clear direction of application	“Champion” departments First cross-functional teams	Own systems Established collaborations
2 Experimenting and testing	Invest, test and understand the technology	Test 3DP technology No structured process	Testing different technologies
1 No Experience	Leadership has no or low awareness	Evaluation and consideration	First considerations of form of application

Source: E&Y Research



Rapid Market Transformation

2016 → 2019

Maturity levels 2, 3 & 4 more than doubled
while level 1 decreased 50%

Customer Value Drivers

Efficiency

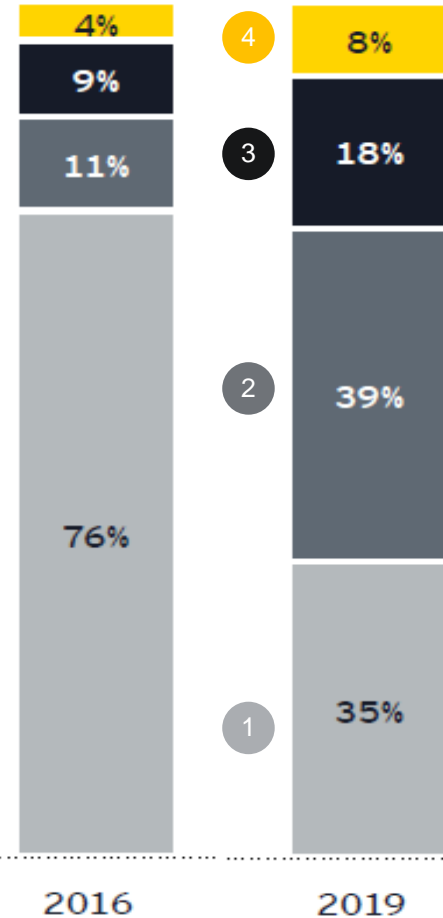
In production

Growth

New designs & end-use parts

Transformation

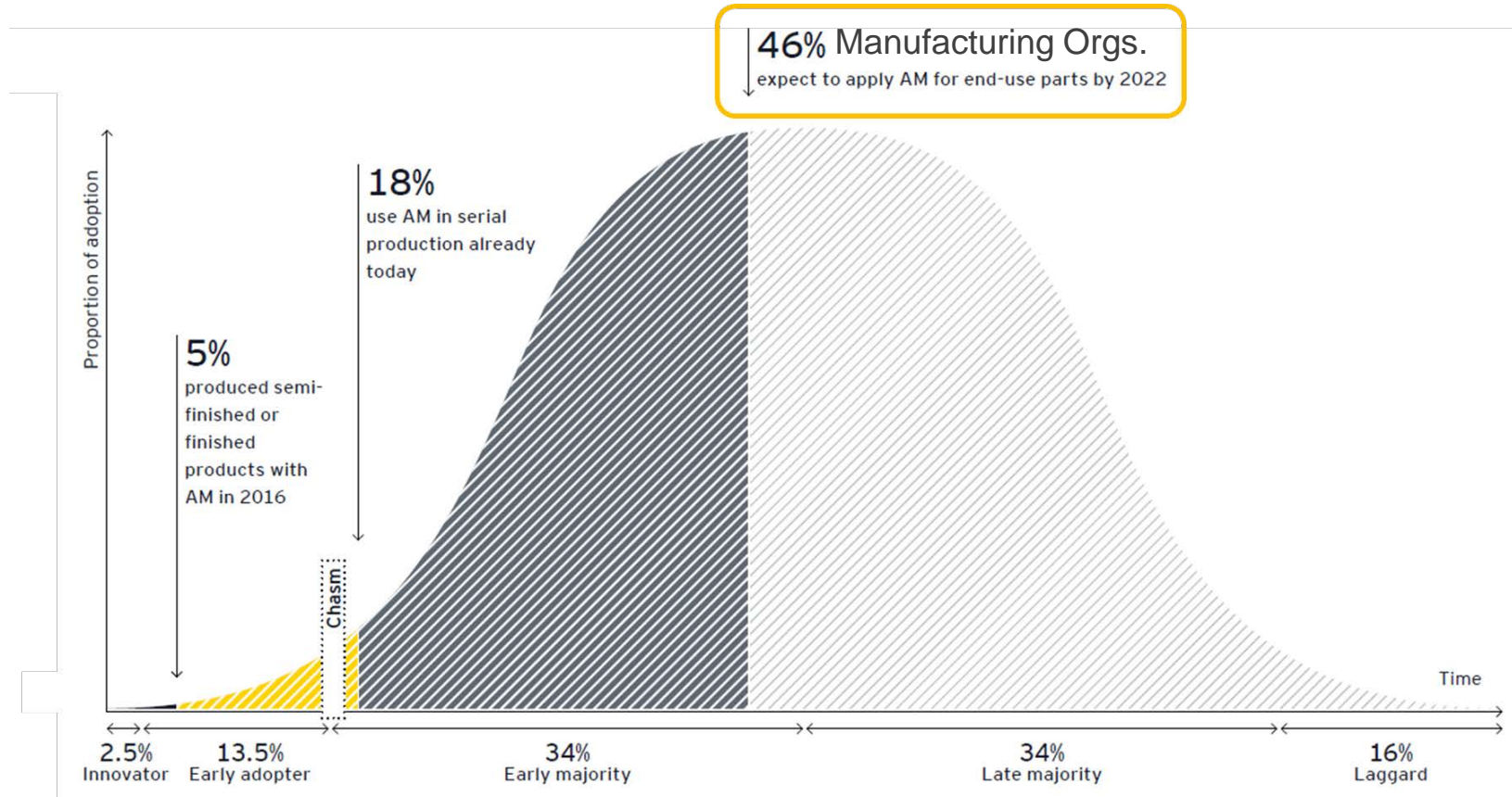
New business models



Source
E&Y Research



Adoption of Production Parts Expected to Grow



Source: E&Y Research 2019

Additive Manufacturing Value Chain

EY

We Check All the Boxes

Systems manufacturers

Primarily original equipment manufacturers (OEMs) of AM machines. Most also offer related software, materials and services.

Materials producers

Providing raw materials for 3DP, ranging from chemicals players offering polymer to metallurgical companies supplying metal.

Software developers

Mainly developers of AM-related software, such as for design, process simulation, workflow and CAD-model slicing, as well as for digital platforms.

3D scanning and reverse engineering companies

Focusing on the reverse process of scanning existing products, to digitalize or further engineer/process them.

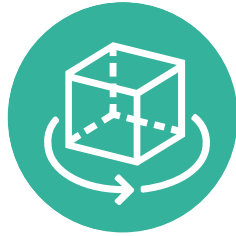
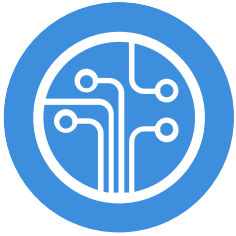
AM service providers

Providing services such as AM contract manufacturing, design, engineering or technical consulting.

3D Systems : Entire Solution Planning



Production Solutions Architecture



DIGITIZE

DESIGN & SIMULATE

MANUFACTURE

INSPECT

MANAGE

Application Driven

Fully Integrated Solutions

Assets for each phase

200MM+ production parts in 2019 with 3DS technology

Figure 4 Materials Enabling Production

25+ Application Focused Materials



Tough



Figure 4 PRO-BLK 10

Production-grade, rigid material for production parts

High Temperature



Figure 4 HI TEMP 300-AMB

High temperature resistant translucent plastic with HDT over 300 °C

Silicon Molding



Figure 4 EGGSHELL-AMB 10

Process-optimized material for sacrificial tooling to cast silicone

Elastomer



Figure 4 FLEX-BLK 10

Flexible and durable, production polypropylene-like material

Biocompatible



Figure 4 MED-AMB 10

Rigid, translucent material that can be sterilized and tested at high temperature

Dental | 12 Bio-compatible and CE Certified



Metal Production Platforms

High Volume Metal Manufacturing



DMP Factory 500

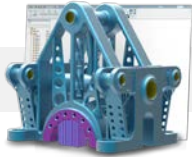


DMP Factory 350



DMP Flex 350

3DXpert



Software

Subtractive Production Centers



HSM 200 U LP

Broad +GF+ subtractive portfolio






Production Materials

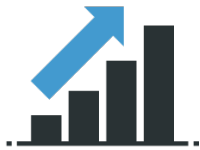
17 Production Materials

Titanium | Stainless Steel | Aluminum | CoCr | Ni



Production Software Solutions

 DIGITIZE	 DESIGN	 MANUFACTURE	 INSPECT	 MANAGE
Dx Geomagic® Design X™	Fr Geomagic Freeform®	Ci Cimatron®	Cx Geomagic® Control X™	Co 3D Connect™
Gs Geomagic® for SOLIDWORKS®	Xp 3DXpert™ for SOLIDWORKS®	Gc GibbsCAM®		
W Geomagic Wrap®	Ci Cimatron®	Xp 3DXpert™		
		Sp 3D Sprint™		



**INCREASED
PRODUCTIVITY**



**REDUCED
DELIVERY TIME**

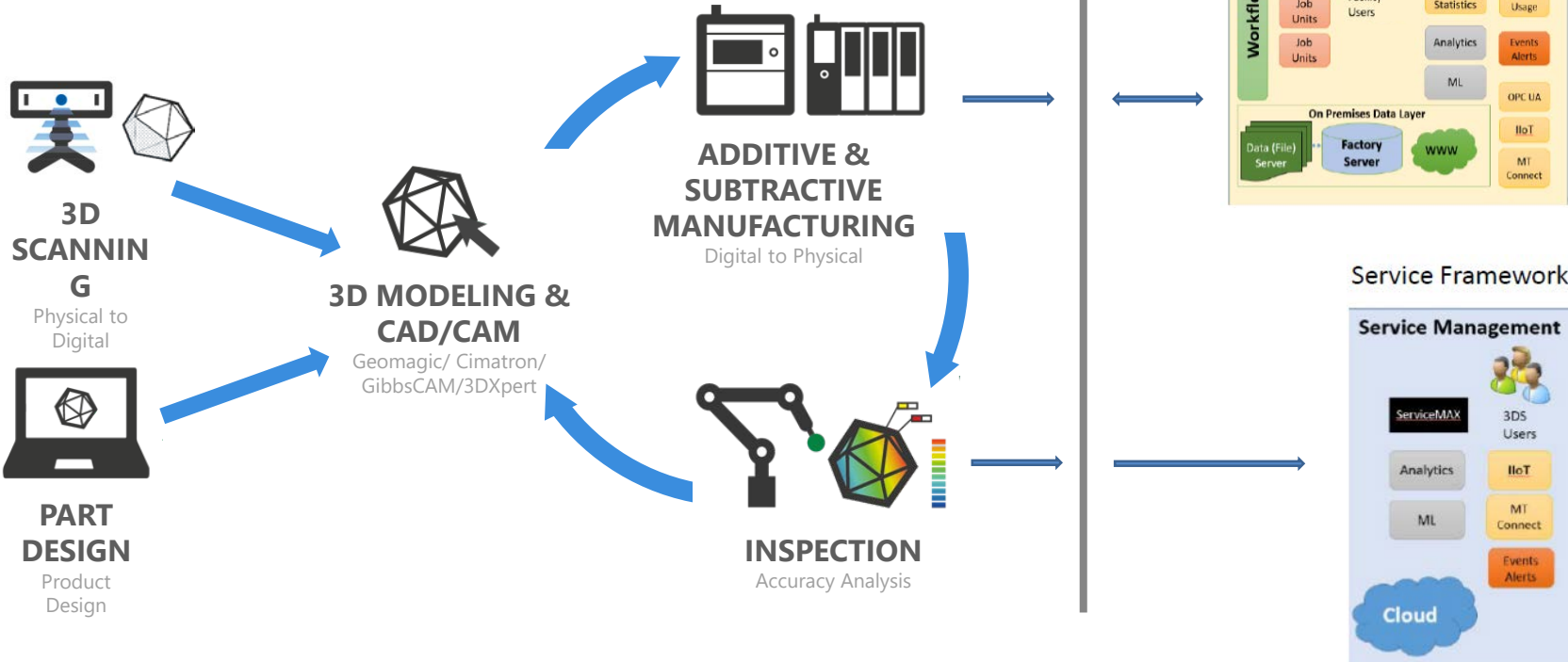


**LOWER
TCO**



**HIGHER
QUALITY**

The Digital Factory Vision



3D Systems & GF Machining Solutions Partnership

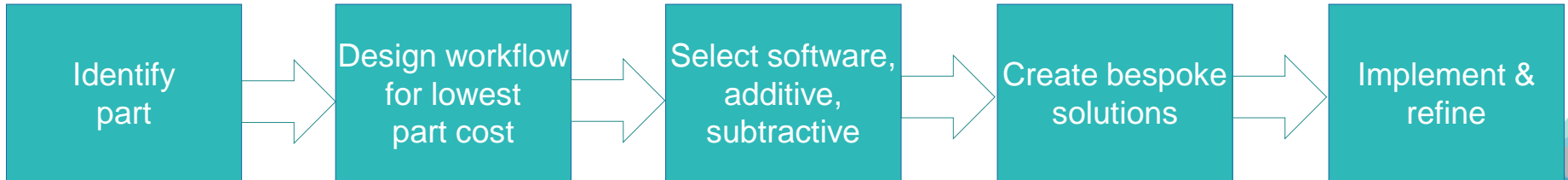
Best-in-class in additive & subtractive manufacturing

Common vision to design end-to-end production workflows

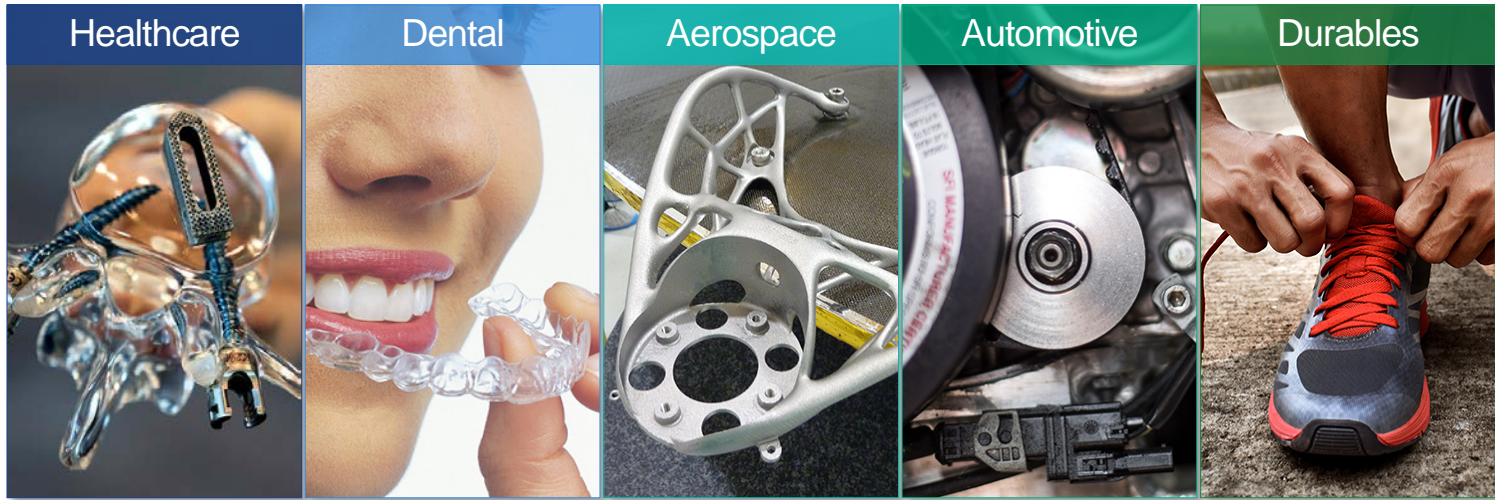
Complete process chain competence

Enhanced global customer support

Designing optimized & integrated workflows



Target Verticals



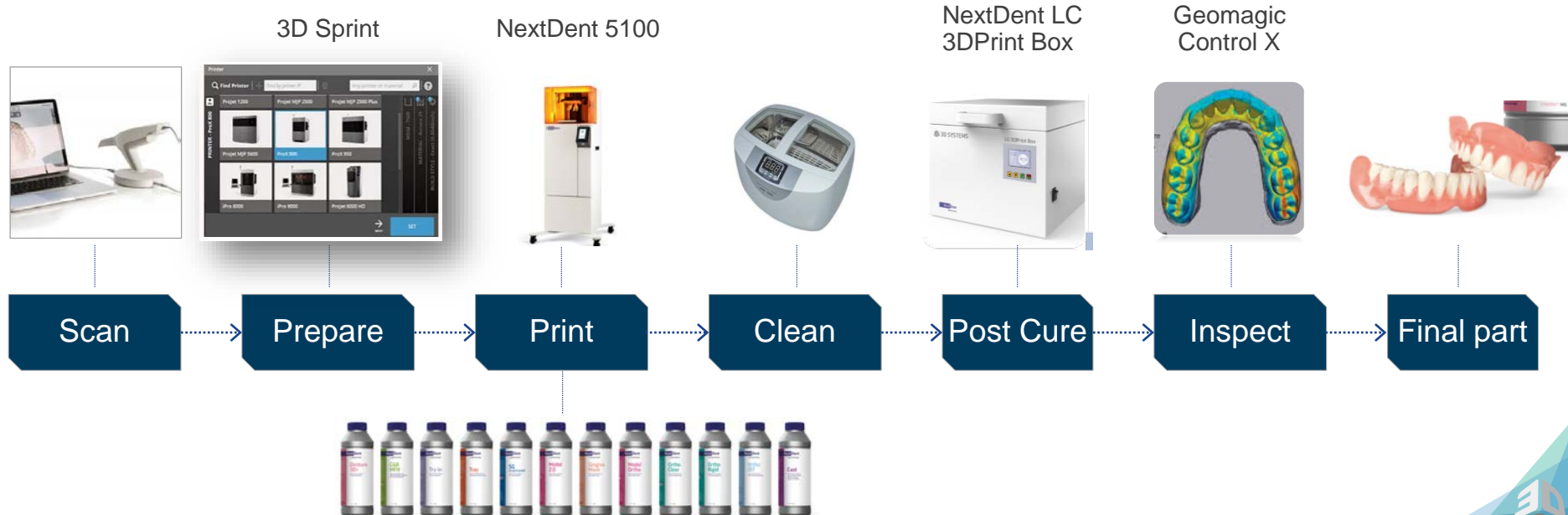
Common customer themes across verticals

Customers' organization maturity varies dramatically → Seek sustained guidance

Customers willing to explore production solutions → Require bespoke solutions

Dental Production Solutions

5MM+ production & end-use models in 2019 using 3D Systems' technology



Jewelry Production Solutions

4MM+ production casting jewelry models produced in 2019

Multiple plastic production products & materials used based on requirements

Jewelry Design Software

3DSprint

Figure 4 | MJP 2500 W | ProX SLA

Automated with Figure 4 Production

Geomagic ControlX

Castable Pattern for Production



Design

Prepare

Production

Post Cure

Inspect

Final part



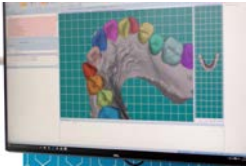
Invisalign™ Production Solution



433,000/Day

Single highest volume additive production in the world

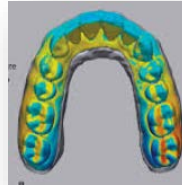
3D Sprint



ProX 800



Geomagic Control X



433,000

Invisalign Aligners
printed models **per day***



Scan

Prepare

Print

Inspect

Form

Inspect

Final part

* Average over two consecutive quarters



Medical Devices Production Solution

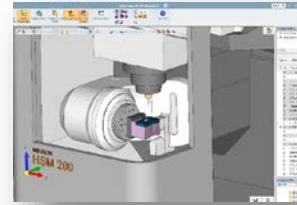
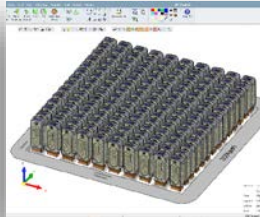
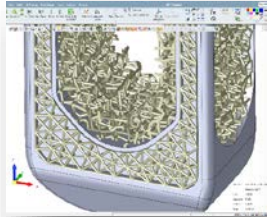
Spinal Cages 500,000+ units annually

3DXpert

3DXpert

Geomagic
Control X

Cimatron, 3DXpert



Design

Prepare

Print

Inspect

CNC Prep

Machine

Final part



DMP Flex 350

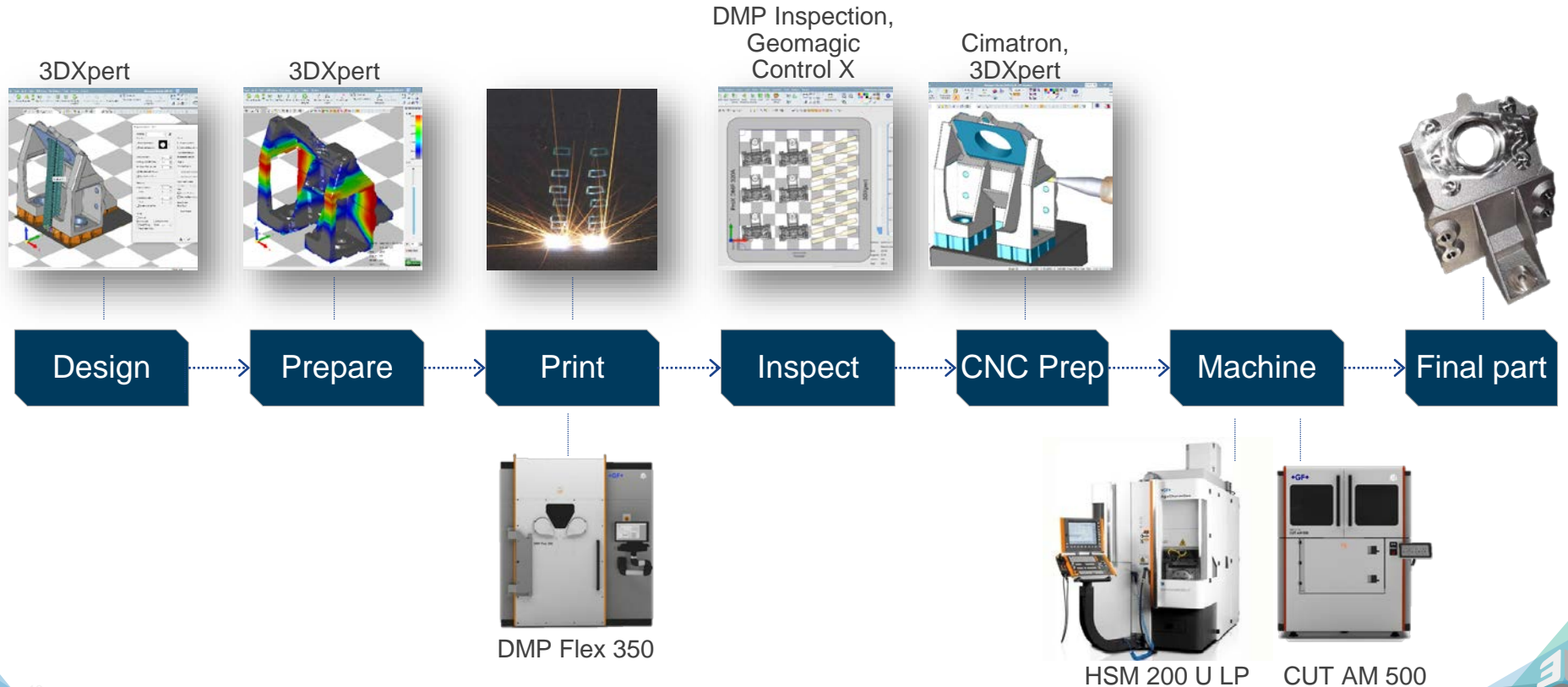


HSM 200 U LP



Aerospace Bracket Production

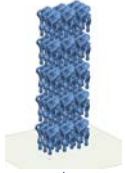
With Metals Production Platform



Automotive Production Solution

Direct Digital Production with Figure 4™

Geomagic
Design X



Digitize

Prepare

Prototype

Produce

Post-
process

Inspect

Manage

Final Part

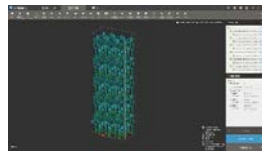
Figure 4
Standalone



Figure 4 UV
Cure Unit 350



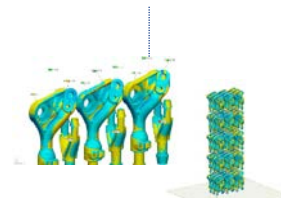
3D Connect
Service



3D Sprint



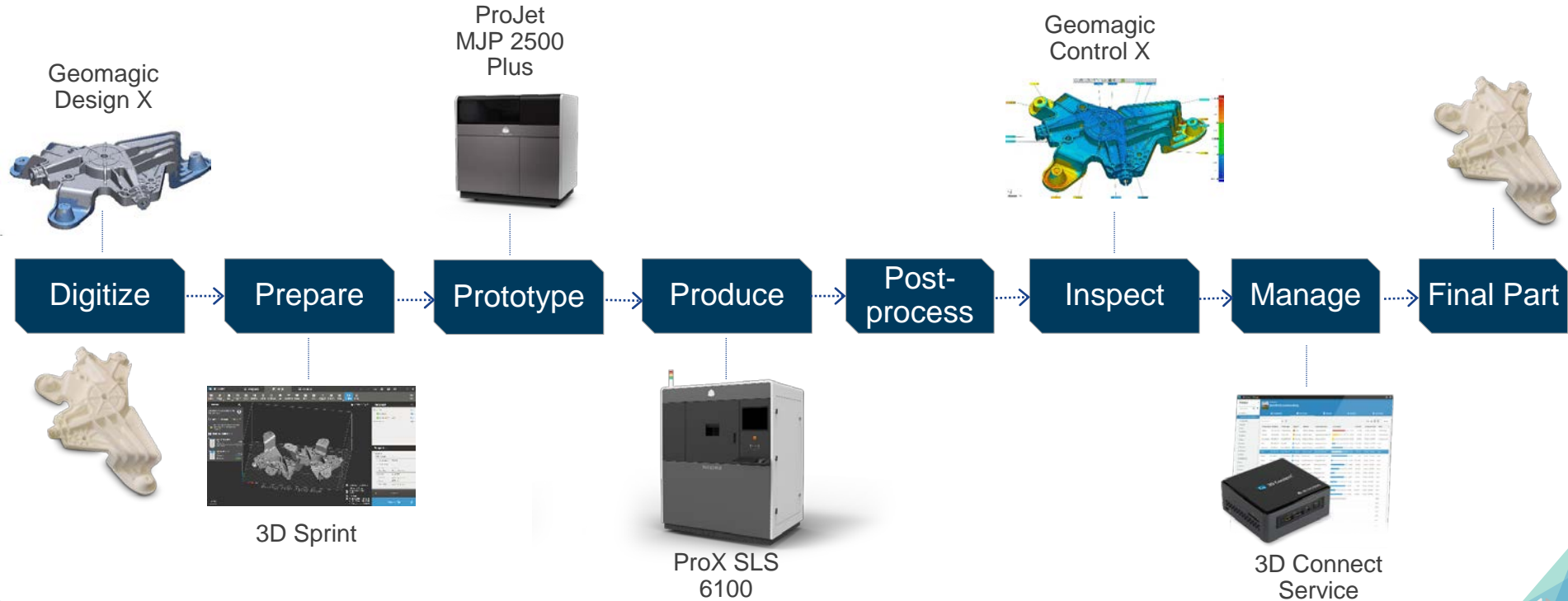
Figure 4
Modular



Geomagic
Control X

Automotive Bracket Production with SLS

Tool-less Digital Production from Prototype to Part

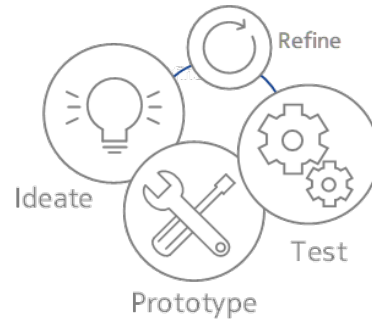


Innovation through technical and market validation with our ecosystem partners towards market trials

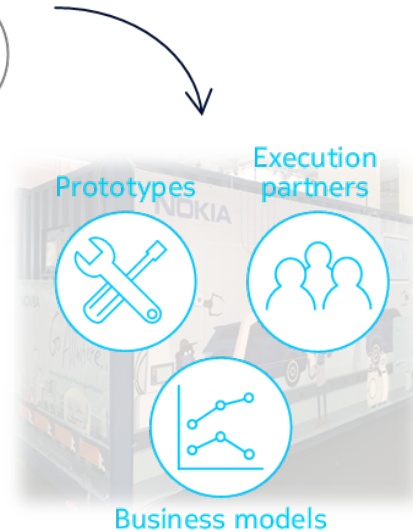
FiaB innovation ecosystem



Agile prototyping



Concept showcase



Market trials



NOKIA



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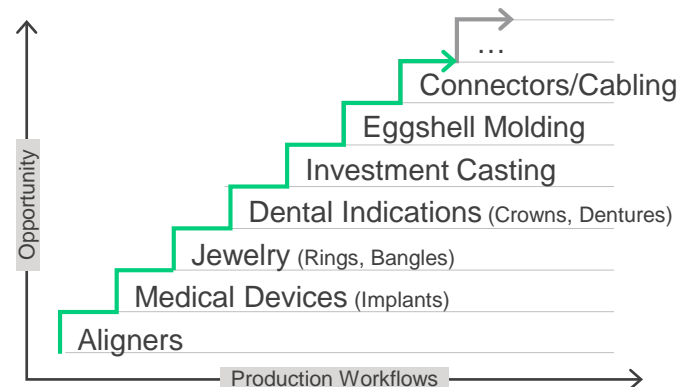
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3D SYSTEMS®