Automotive Connection

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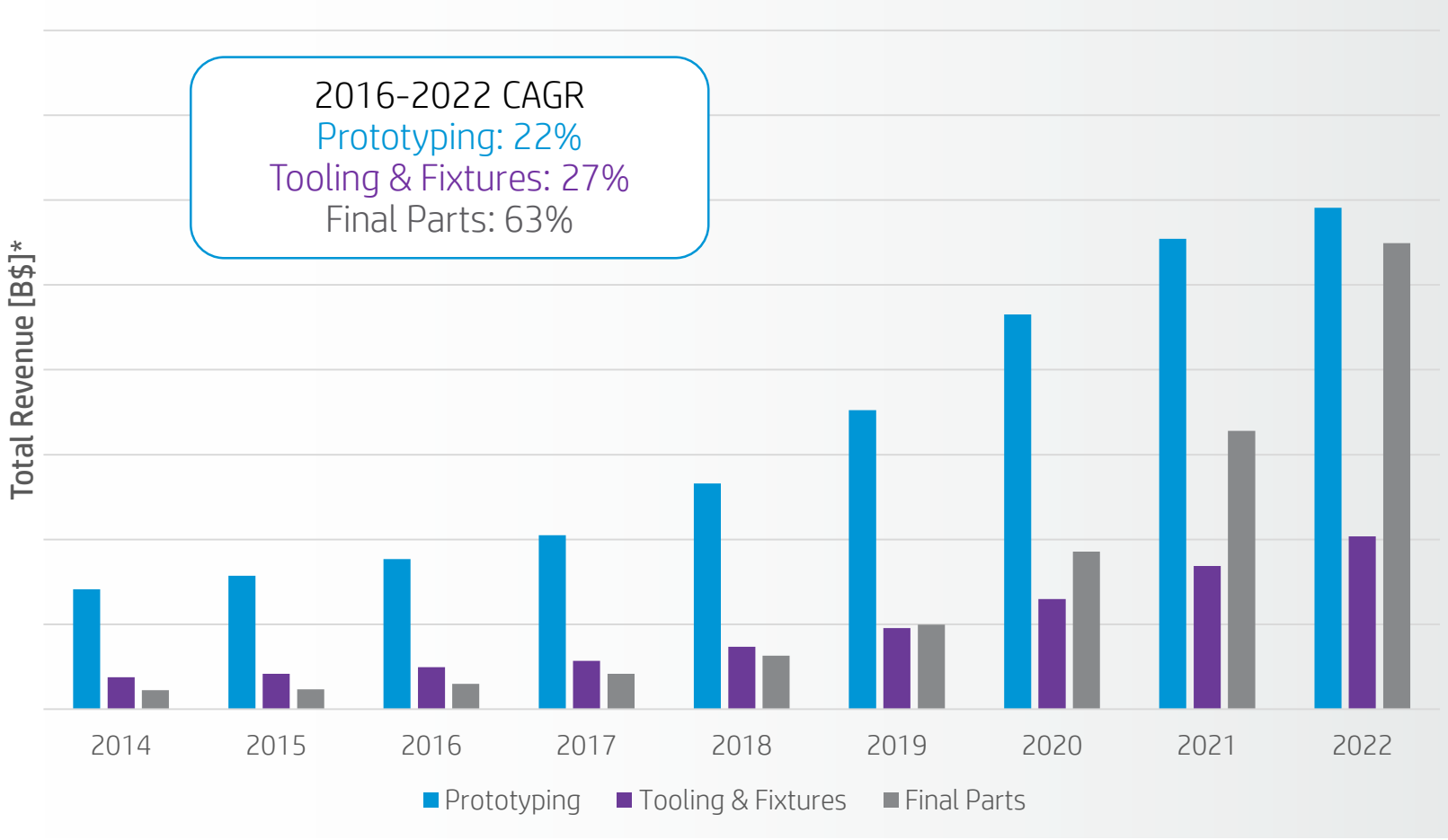
3D Printing Application Engineer

October 9st, 2019 – St Quentin-en-Yvelines

Reinvent industrial production with HP Multi Jet Fusion

3D printing market



"3D printing is poised to disrupt $4 to 6 trillion (USD) of the current global economy over the next five to 10 years."

- AT Kearney, 3D Printing: ensuring manufacturing leadership in the 21st century, 2018

Source: Mar-2018 3DP Sizing I *Revenue includes hardware, materials, software, services, and service bureau value add

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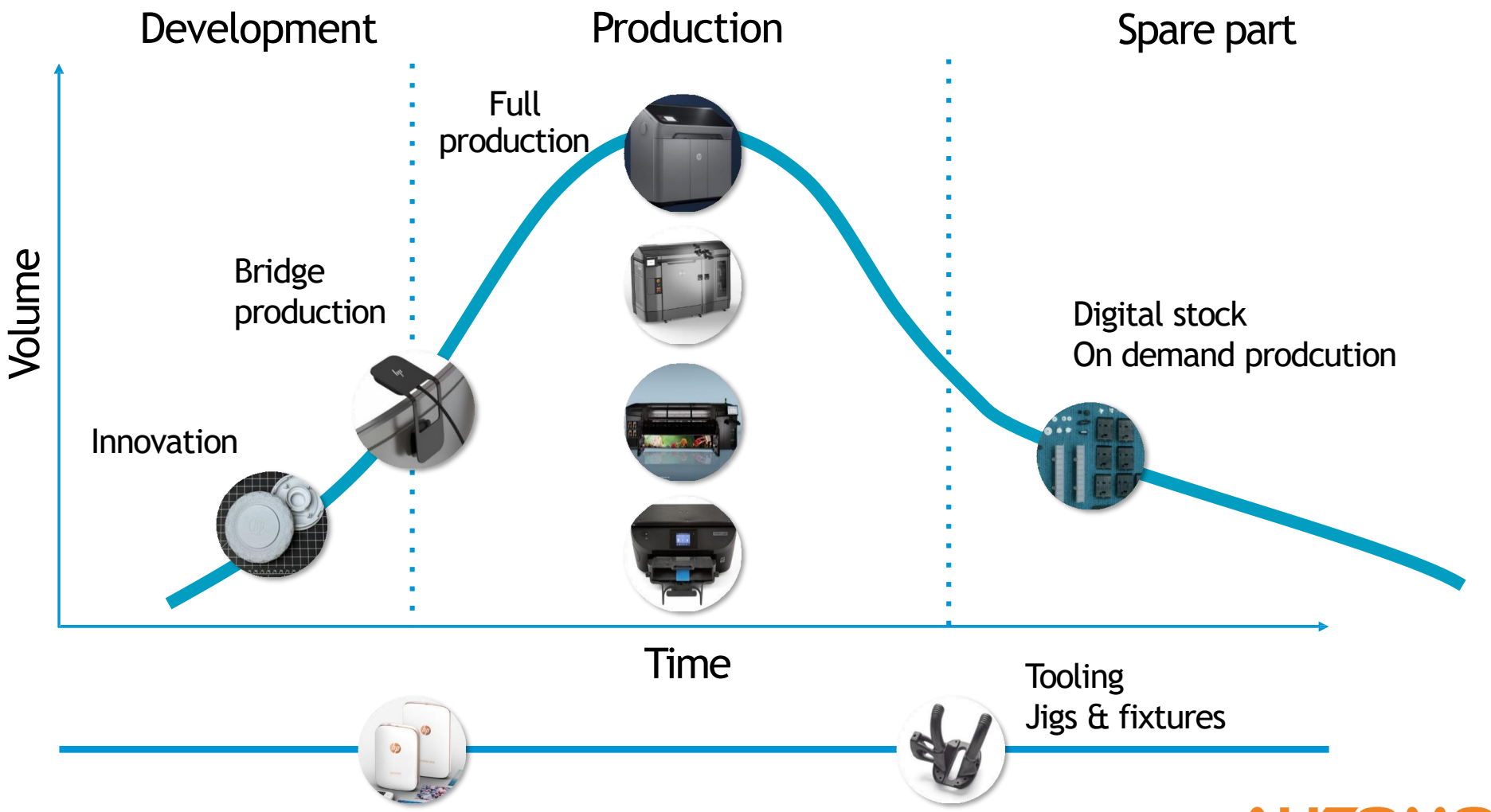
HP Multi Jet Fusion



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Decades of printing leadership

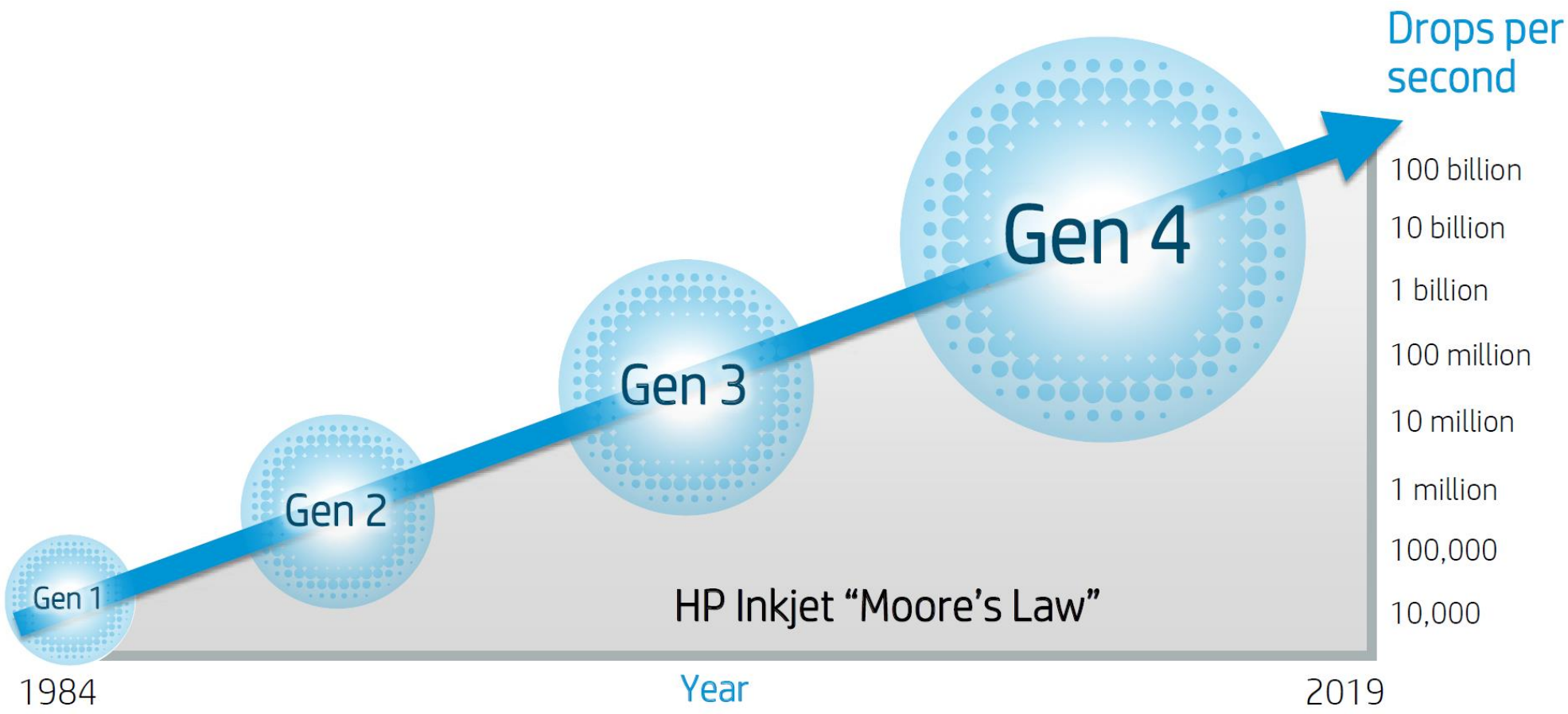
Inkjet technology

PageWide Print Bars

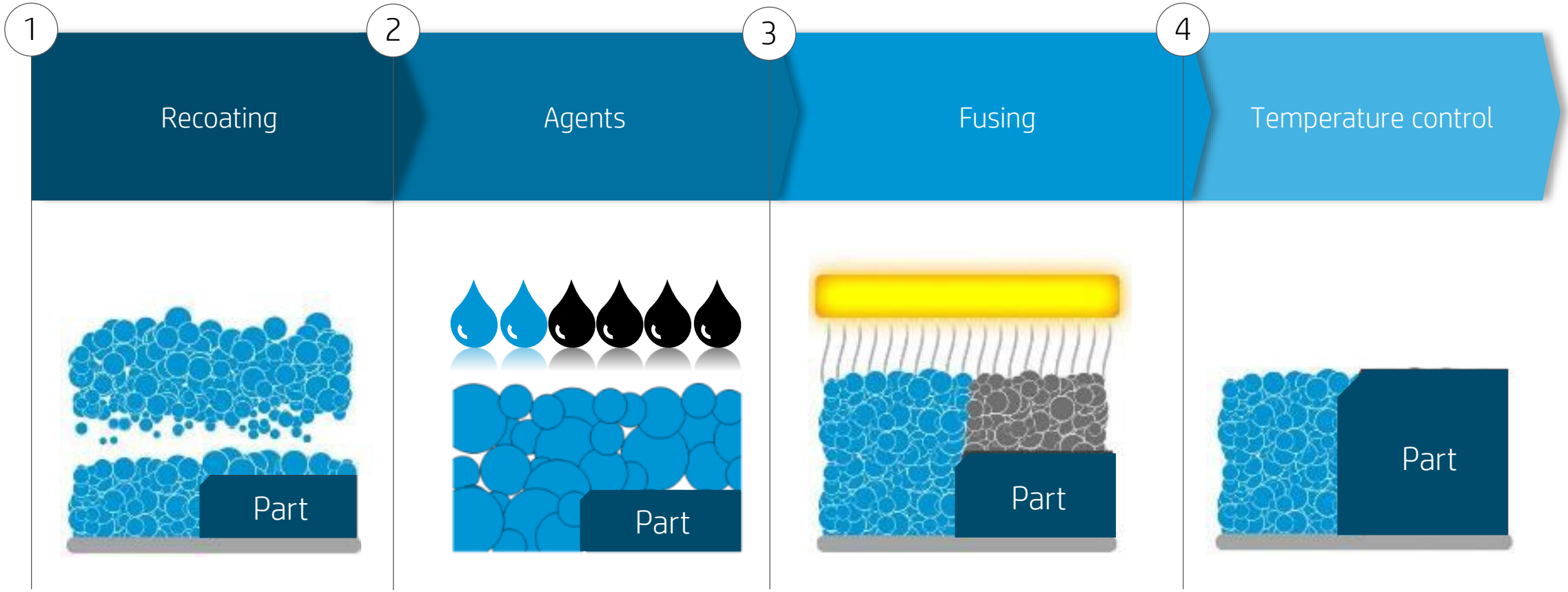
30+ years of IP

Integrated Manufacturing

Inkjet performance



Principe de la technologie MJF



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HP Portfolio

HP JET 500
Full color prototyping

HP JET FUSION 4200
Low production

HP JET FUSION 5200
Production

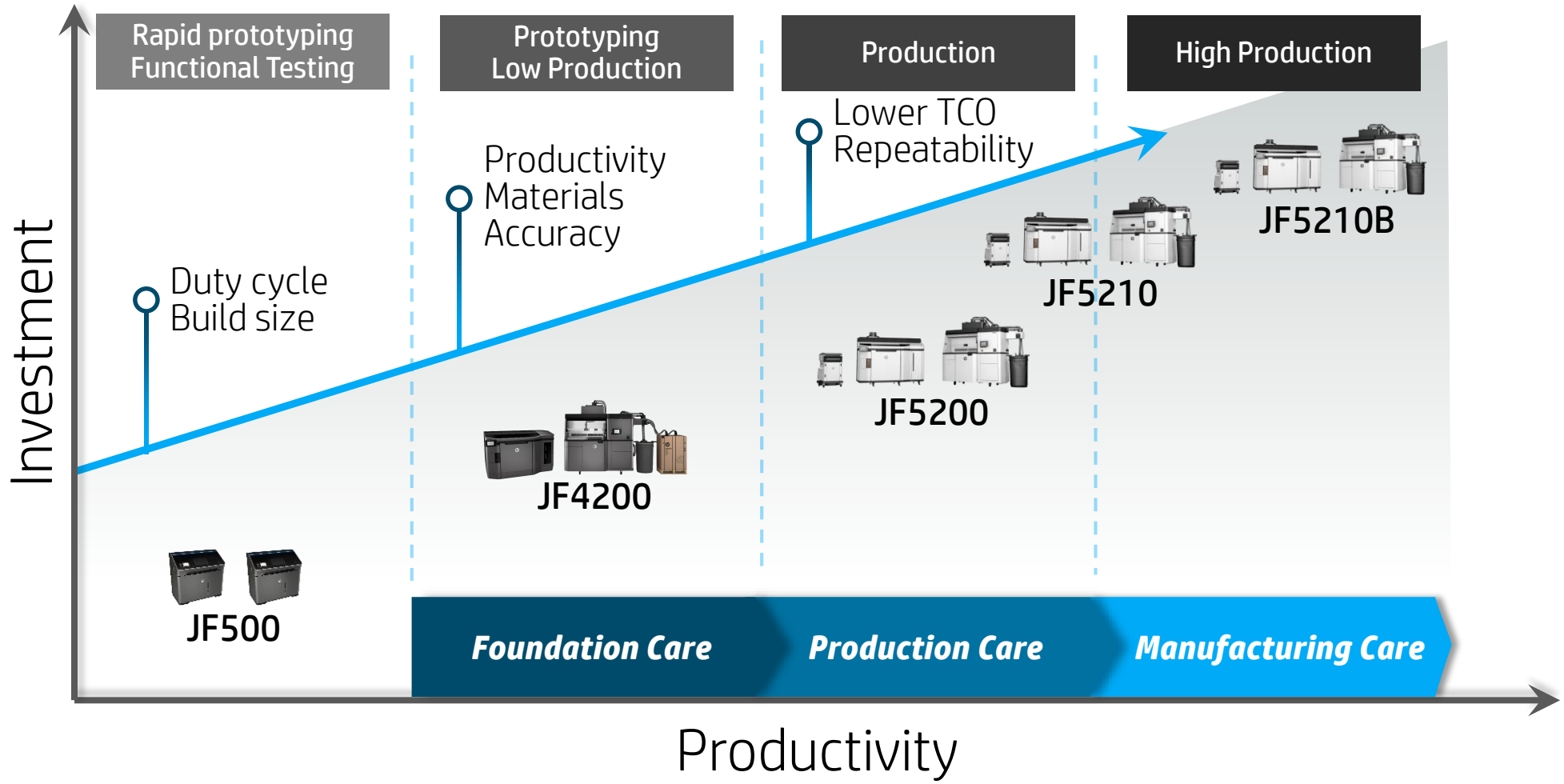
Printing speed
15000 nozzles
Geometry independent

Functional parts
Isotropic properties

Materials
High reusability
Powder management

Free form design
No support needed

HP Portfolio



Market transformation

New York, 5th Avenue, 1900

Source: US national archives

13 years

New York, 5th Avenue, 1913

Source: George Grantham Bain Collection

3D PRINTING: CATALYST OF THE 4TH INDUSTRIAL REVOLUTION

DIGITAL TRANSITION

Artificial Intelligence

IoT

Data Science

Robotics

Additive Manufacturing

PRODUCTION TRANSFORMATION

Innovation

Time-to-market

Virtual inventory

Supply chain optimization

Higher capital efficiency

JF5200 | Production

HP 3D Process Control software

HP 3D Center software

HP SmartStream 3D Build Manager

AUTODESK® NETFABB®

materialise innovators you can count on

SIEMENS

Industry-leading software integration

Printer

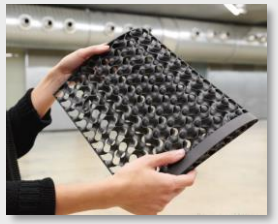
Build Unit

Natural Cooling Unit

Processing Station

Hovmand Forklift

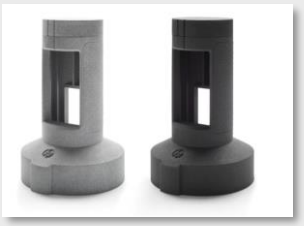
HP 3D High Reusability PA 11



HP 3D High Reusability PA 12

BASF Ultrasint™ 3D TPU01

Data courtesy of Addit·ion & Kupol



Girbau 3D Dyeing Solution

HP Jet Fusion 3D Solution Services

HP Financial Services

Applications

Transportation

Data courtesy of Heli Racing, printed by Zigg Zagg NV

Data courtesy of Motospirit UPC

Data courtesy of CAF

Medical

Data courtesy of nivellispo

Data courtesy of iOrthotics

Data courtesy of Hulotech, Invent Medical, Crispin

Industrial

Data courtesy of Ficep S3

Data courtesy of Sag Tubi

Data courtesy of IAM 3D Hub

Consumer Goods

Data courtesy of Ballast

Data courtesy of Kupol and Horizons Optical

Data courtesy of New Rock and Wiivv

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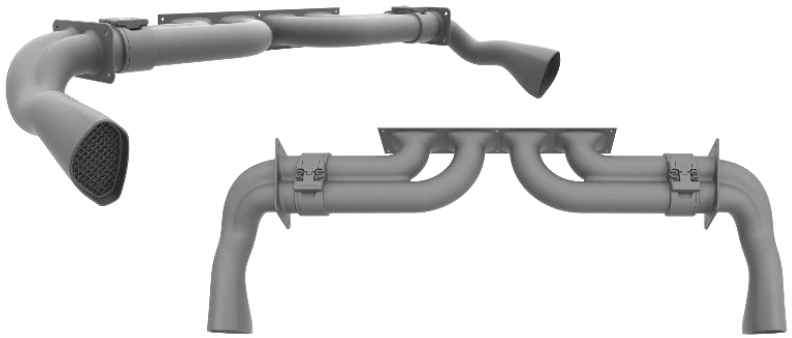
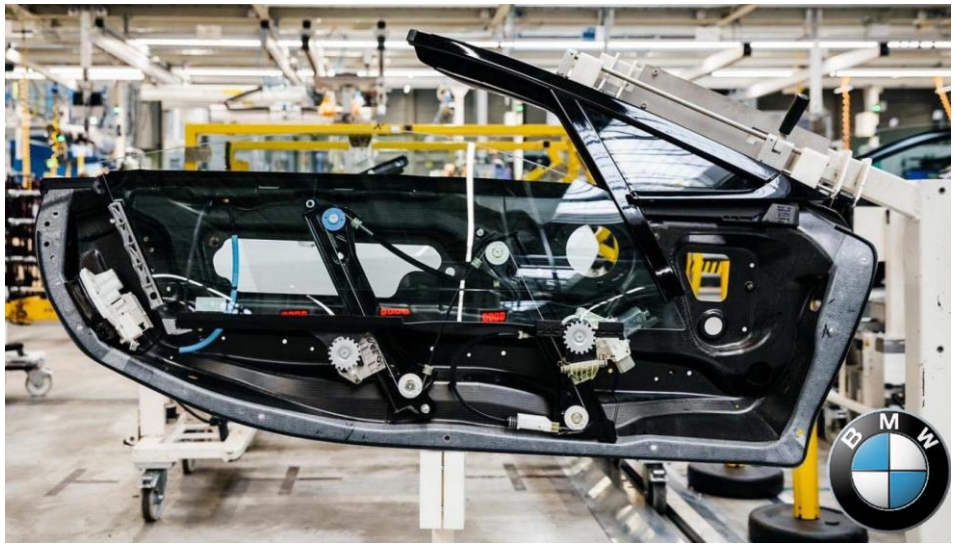
Applications





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3D printing leveraging

Design for **ADDITIVE** Manufacturing (DfAM)

- Fast prototyping
- Lightweight, compact & complex design
- Local & reactive production
- Complex function & geometry
- Competitive short run
- Mass customization

Knowledge and **SKILLS** development

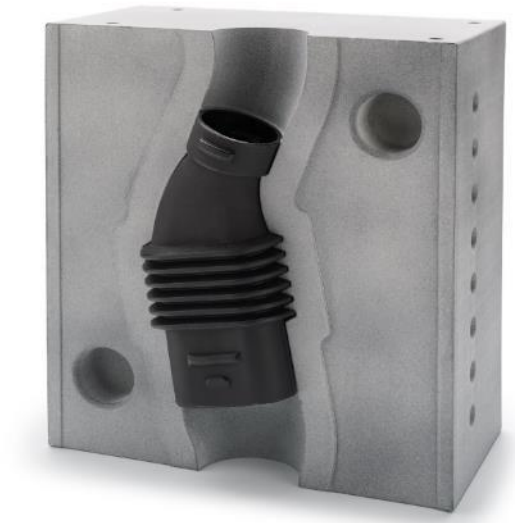
- Ramp up & advanced trainings for operators
- DfAM for engineers & designers

REDUCE PARTS NUMBERS

CUSTOMIZATION

MJF & Blow Molding

EXTRUSION BLOW MOLDING (EBM) MOLDS



- To manufacture extrusion blow molding (EBM) devices for automotive air ducts, Eurecat turned to 3D printing powered by HP Multi Jet Fusion (MJF) technology.
- HP MJF allows for the simultaneous printing of both cavities and different mold geometries to test.
- Compared with metallic molds made with CNC Machining, the molds made with HP MJF resulted in a cost decrease of 46%.

COST SAVINGS

Molds made with HP MJF technology cost 46% less than metallic molds made with CNC Machining.

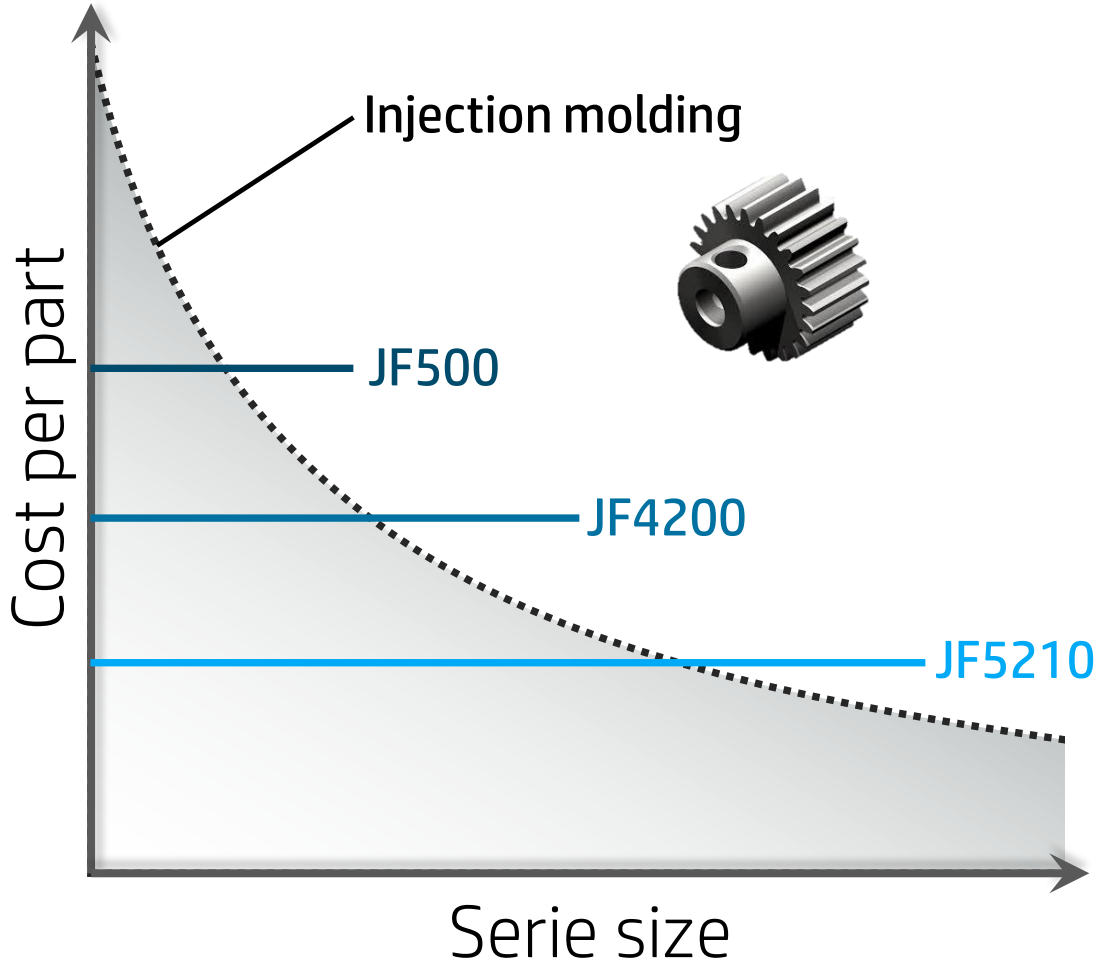
TIME SAVINGS

With CNC Machining, production took 2 weeks, but with HP MJF, production time decreased to 2 days.

MATERIAL

HP 3D HR PA 12

MJF Vs Injection Molding



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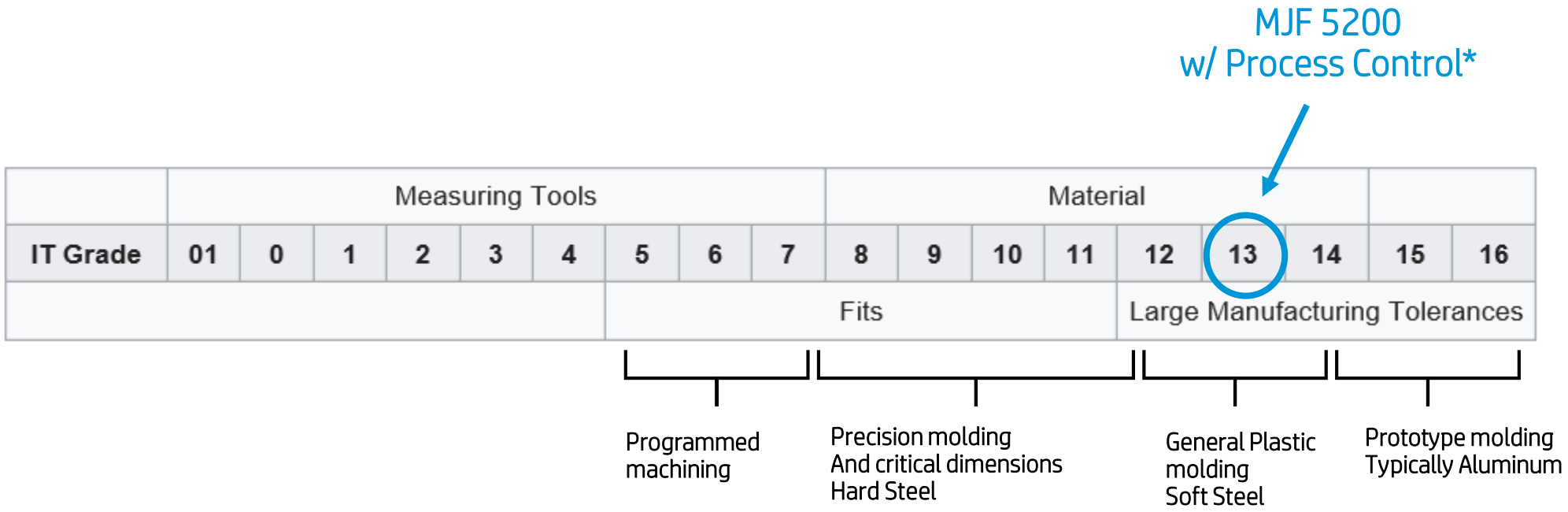
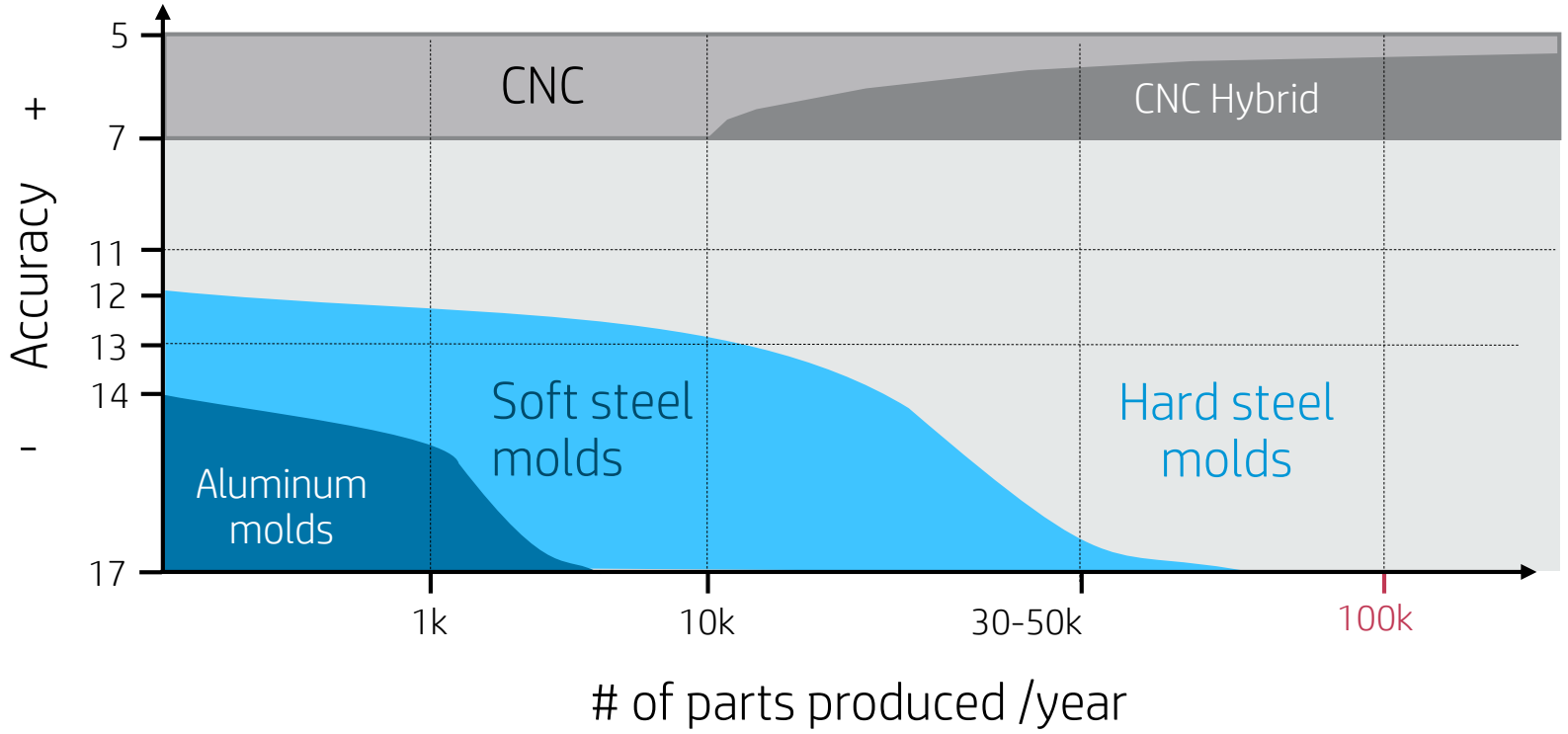
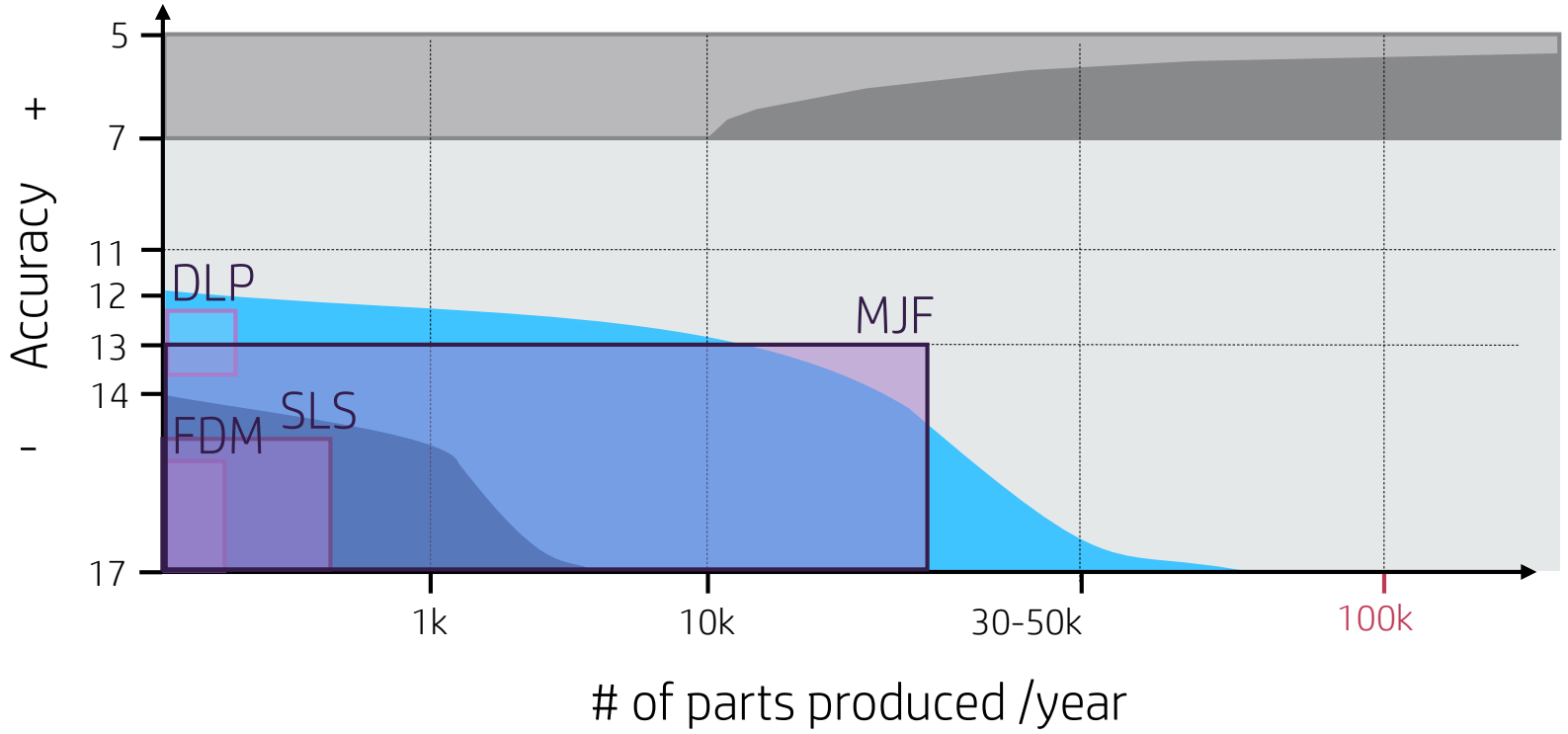
MJF for final parts & series production



MJF for final parts & series production



MJF for final parts & series production



HP has the ***technology***, the heritage of ***leadership in printing***, and the ***IP*** that comes along with that, as well as the synergies and global support services to revolutionize the AM market.

Powder Injection Moulding International, Vol.13, No.3, Sept 2019


keep reinventing