

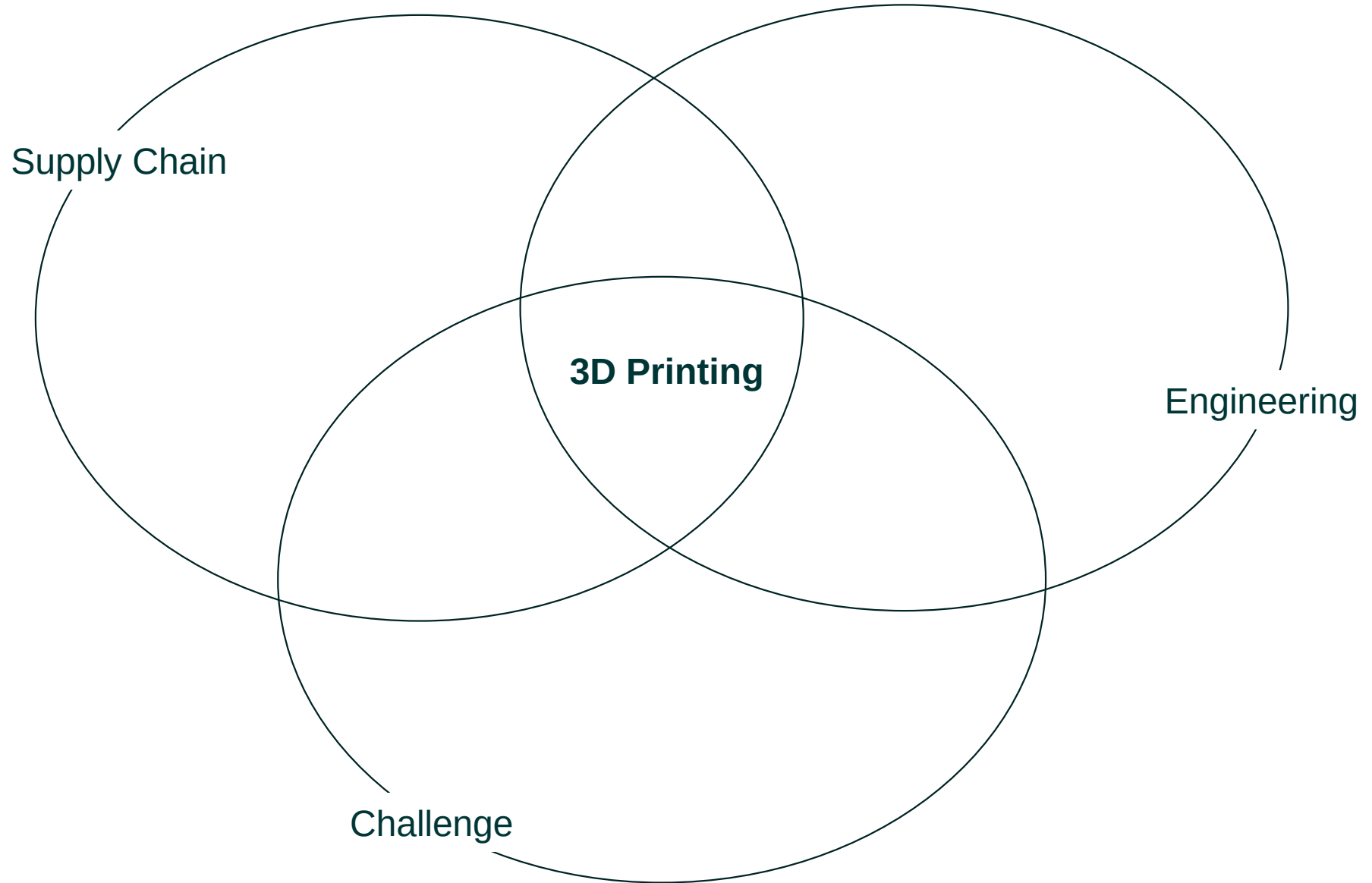


Supercharging Supply Chains with 3D Printing

26th September 2018



Who is Len Pannett?





- Widespread
- Established brands
- Good quality
- Midrange prices

- Teenagers
- New brand
- Low quality
- Cheap

Harvard Business Review, July 1995



Disruptive
Technologies:
Catching the Wave



Performance

Disruptive Technology

Most demanding

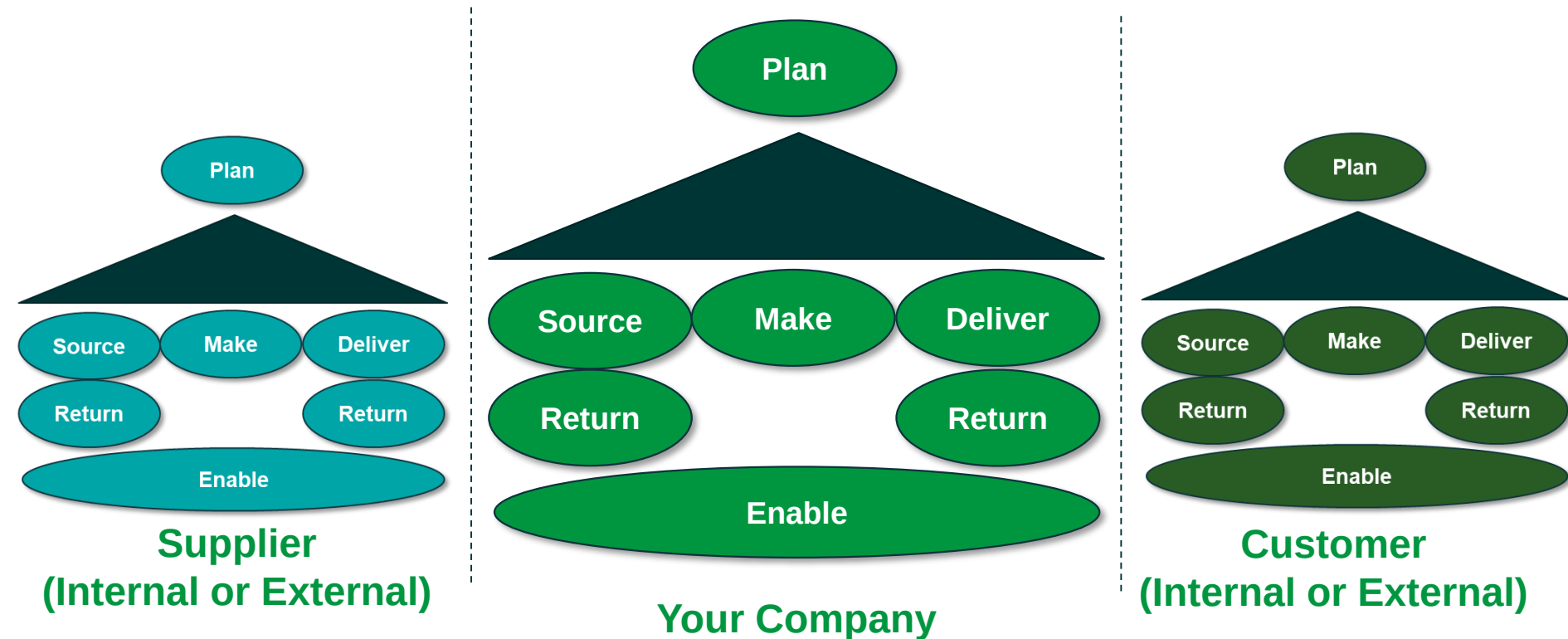
3D Printing is a disruptive technology

React accordingly!

- 1.
2. Has other features that fringe (or new) customers value
3. Most profitable customers generally don't want/cannot use it
4. Steadily improves in performance
5. Eventually displaces the dominant technologies



Reminder: What is the Supply Chain?



The Supply Chain Operations Reference Model



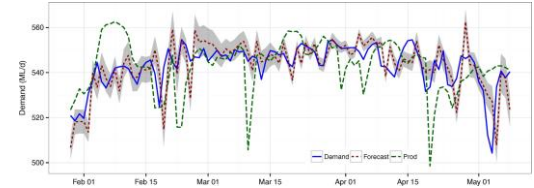
**Customization/
Personalization**



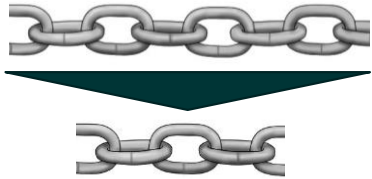
**Intolerance for
waiting**



**Shorter
Product Life
Cycles**



**Complex
Demand Forecasting**



**Shorter
Logistics Chains**



**Managed
Supply Chain
Risk**



**Digital
Transformation**



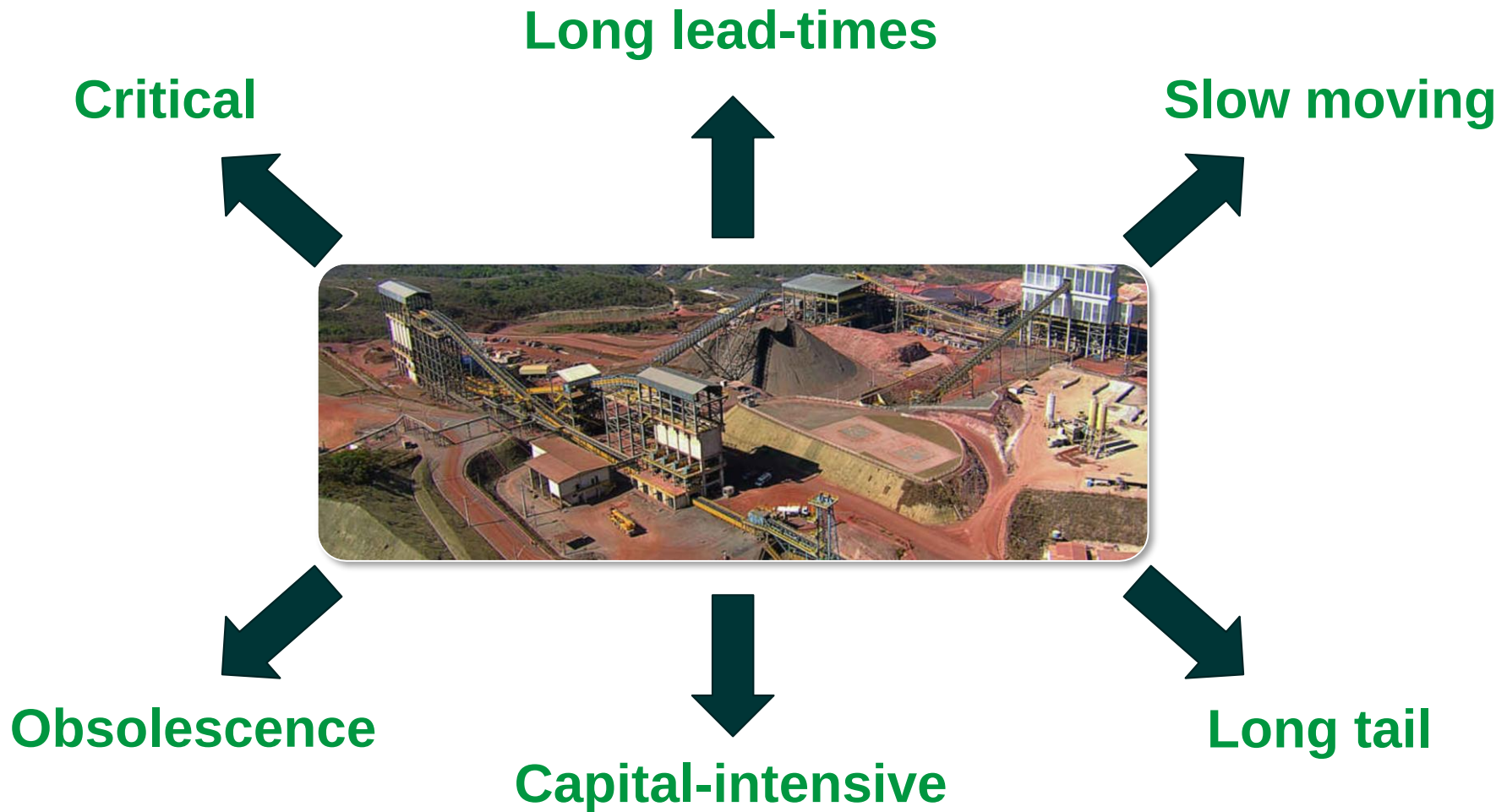
**Agile
Manufacturing**



**Processes
Automation**

The Changing Dynamics of Supply Chains

The Spares Parts Dilemma



Impacts on Supply Chains

Make



- Faster tooling times
- Increased manufacturing flexibility
- Faster assembly
- Low volume competitiveness
- Increased efficiency of materials
- Lower costs of manufacture

Deliver



- Faster lead times
- Fewer transport requirements
- Reduced storage costs
- Reduce costs of inventory insurance
- Reduced transportation costs
- Reduced tariffs

Source



- Elimination of MOQs
- Increased design optimization
- Reduced costs of procurement

Return



- Reduction in wrong orders
- Reduction in obsolescence
- Increased reuse/recyclability



**"3D PRINTING SAVES 17% FOR
NAVANTIA SUPERTANKER PARTS"**



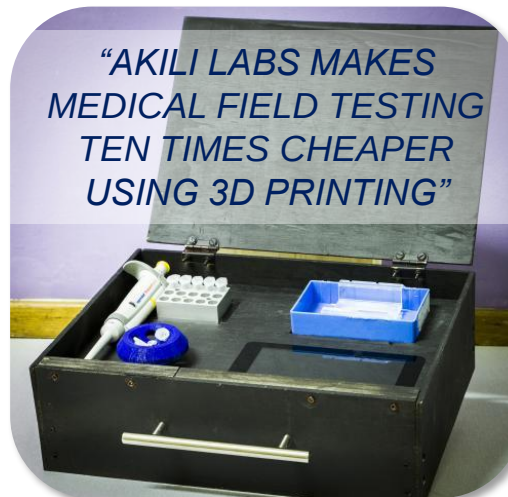
**US MARINES' 3D PRINTED
DRONE IS 200X CHEAPER THAN
PRODUCTION VERSION**



**"VOLVO TRUCKS CUTS
PRODUCTION TIME BY 94%"**



**"MOOG AVIAION LOWERS
JSF PARTS COSTS BY 10X
WITH 3D PRINTING"**



**"AKILI LABS MAKES
MEDICAL FIELD TESTING
TEN TIMES CHEAPER
USING 3D PRINTING"**



**"LATÉCOÈRE
LOWERS AIRBUS
PARTS LEAD TIMES
BY 95%"**

Impacts on Supply Chains

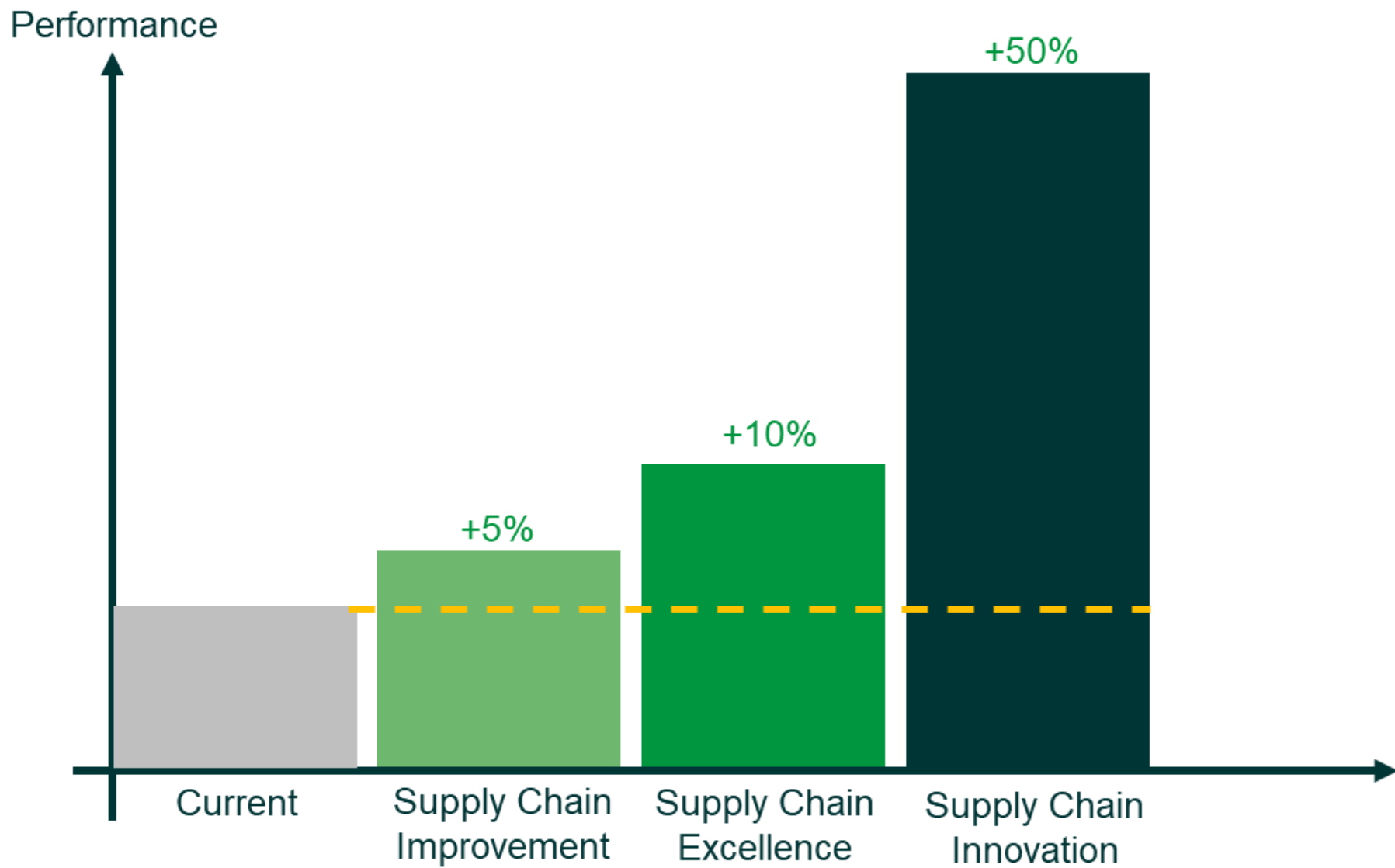


Impacts on Supply Chains

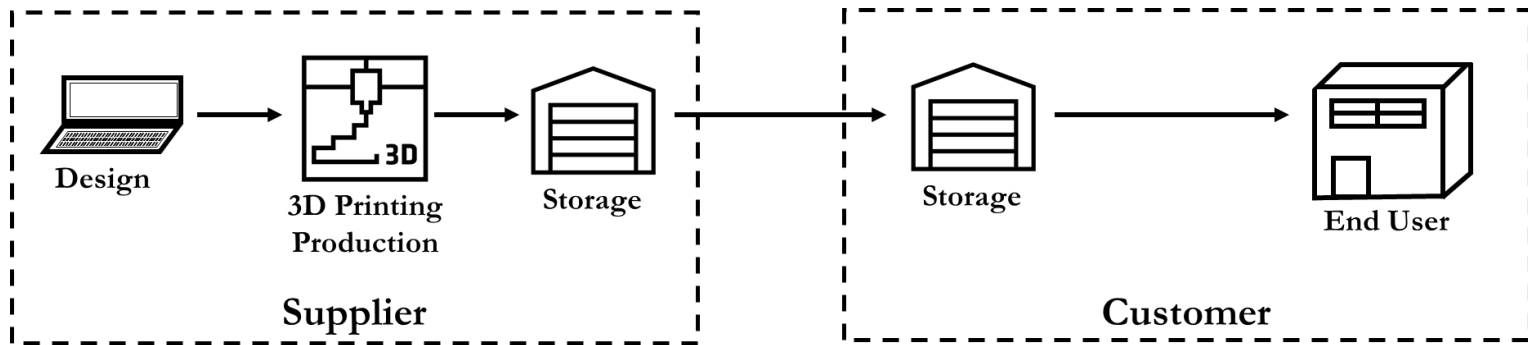
Plan



- Short supply chains
- Smaller networks
- Reduced risk of disruption
- Competitive differentiators
- **New supply chain models**

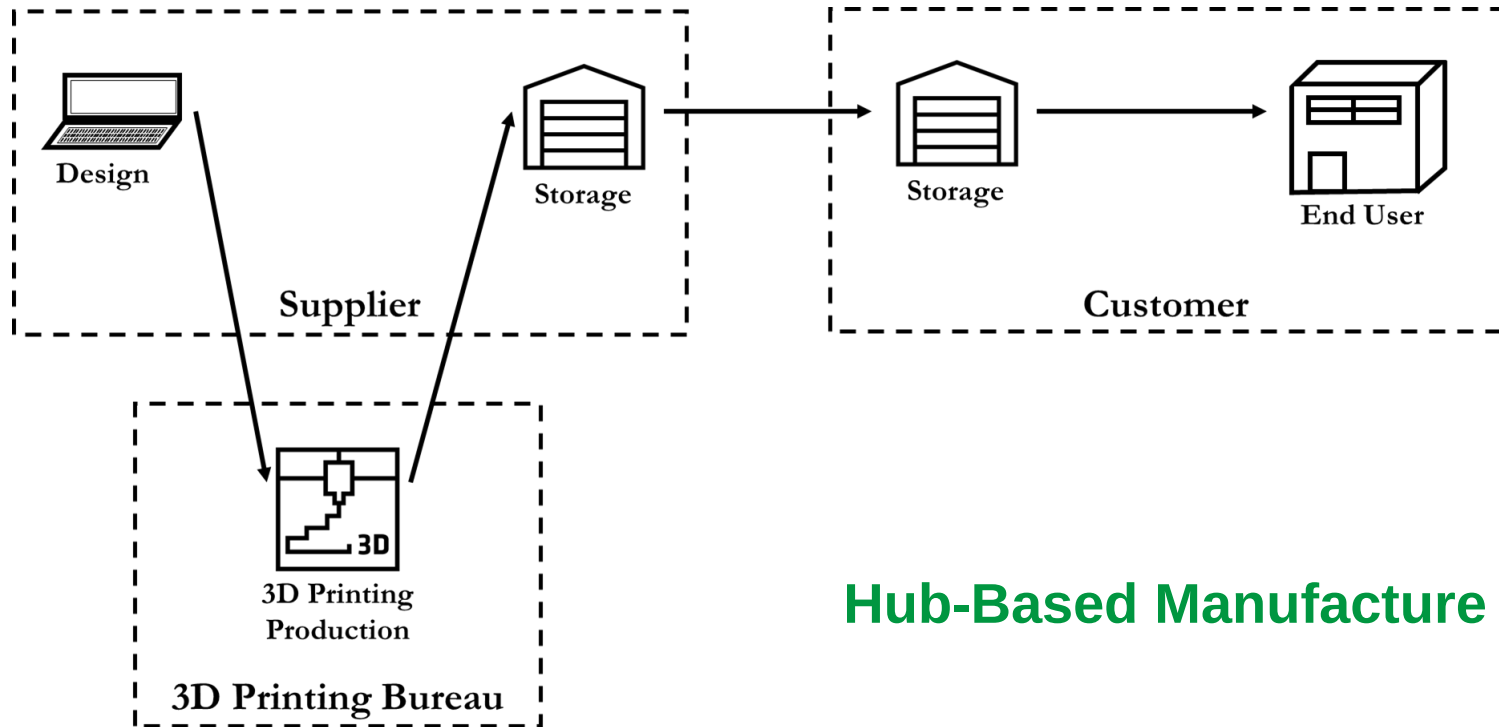


New Supply Chain Models



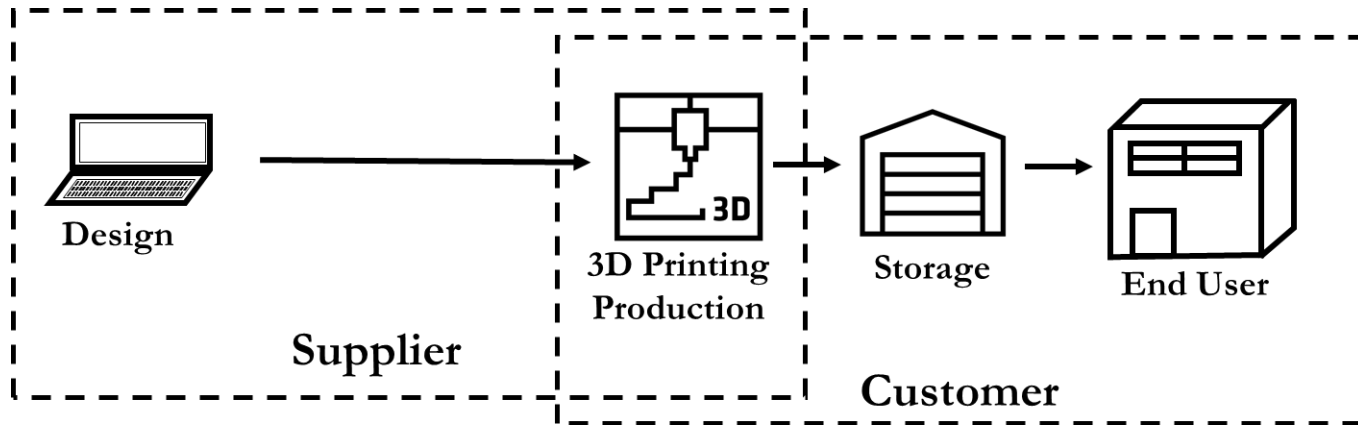
In-House Manufacture

New Supply Chain Models



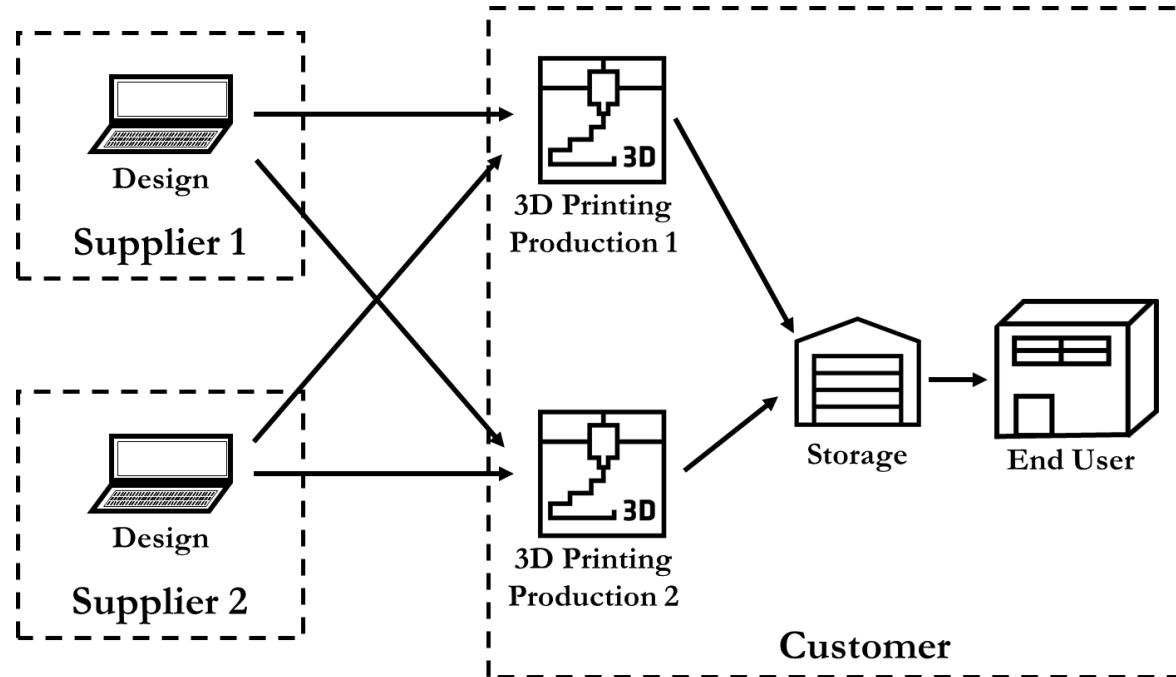
Hub-Based Manufacture

New Supply Chain Models



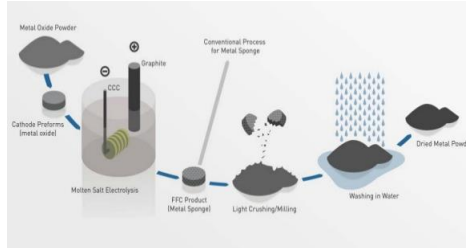
Customer-Located Manufacture

New Supply Chain Models



Customer-Located Manufacture

METALYSIS



Thank You



For more information:

Book

Supercharg3d: How 3D Printing Will Drive Your Supply Chain (Published Mar/Apr 2019)

Website

Supercharg3d.com