

The Age of Customer Centric Manufacturing

The challenges are real, how they translate matters, but they're not new

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“It is not the strongest of the species that survive, nor the most intelligent, but ***the one most responsive to change***”

--- Charles Darwin



QCDSM: the 5 forces of manufacturing

Quality

- Manufacturing: quality of conformance
- Research & Marketing: quality of design/product features

Cost

- Manufacturing & purchasing: cost of goods
- Marketing and finance: price and program

Delivery

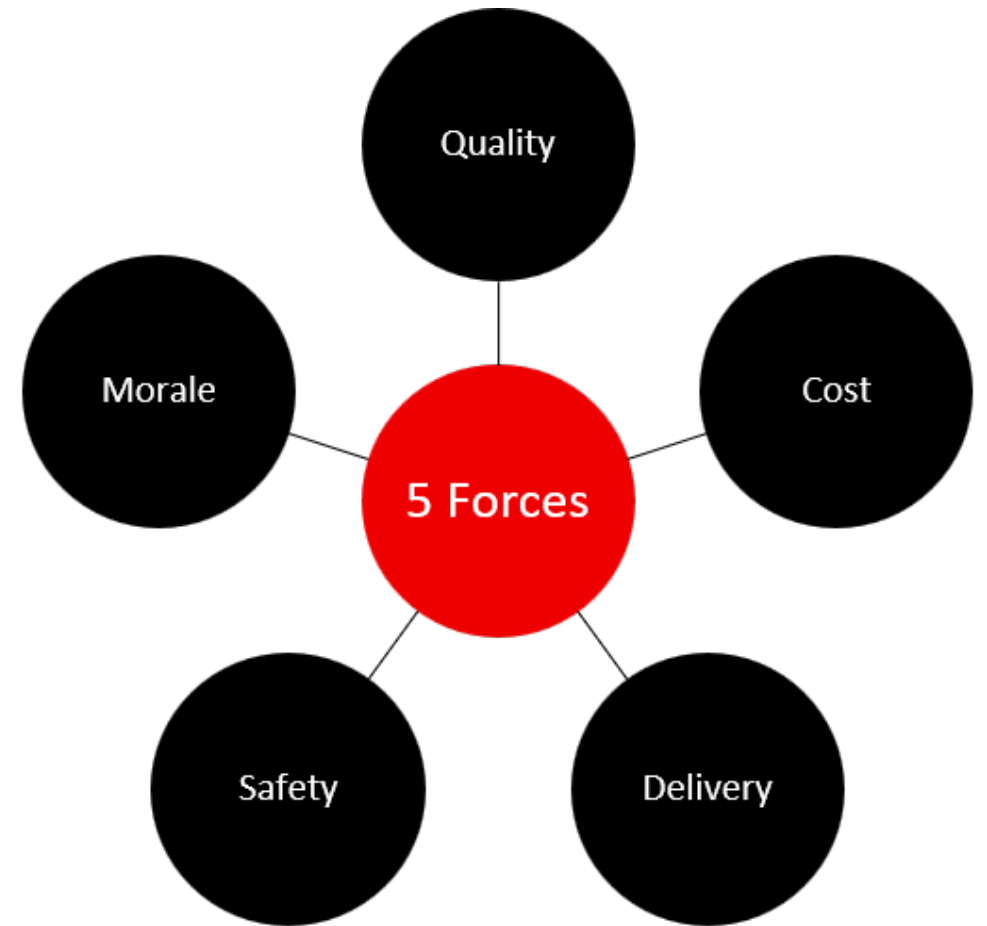
- Manufacturing and logistics: traditional customer service
- Sales and marketing: revenue and profit growth

Safety

- Manufacturing: employee safety
- Research: product safety

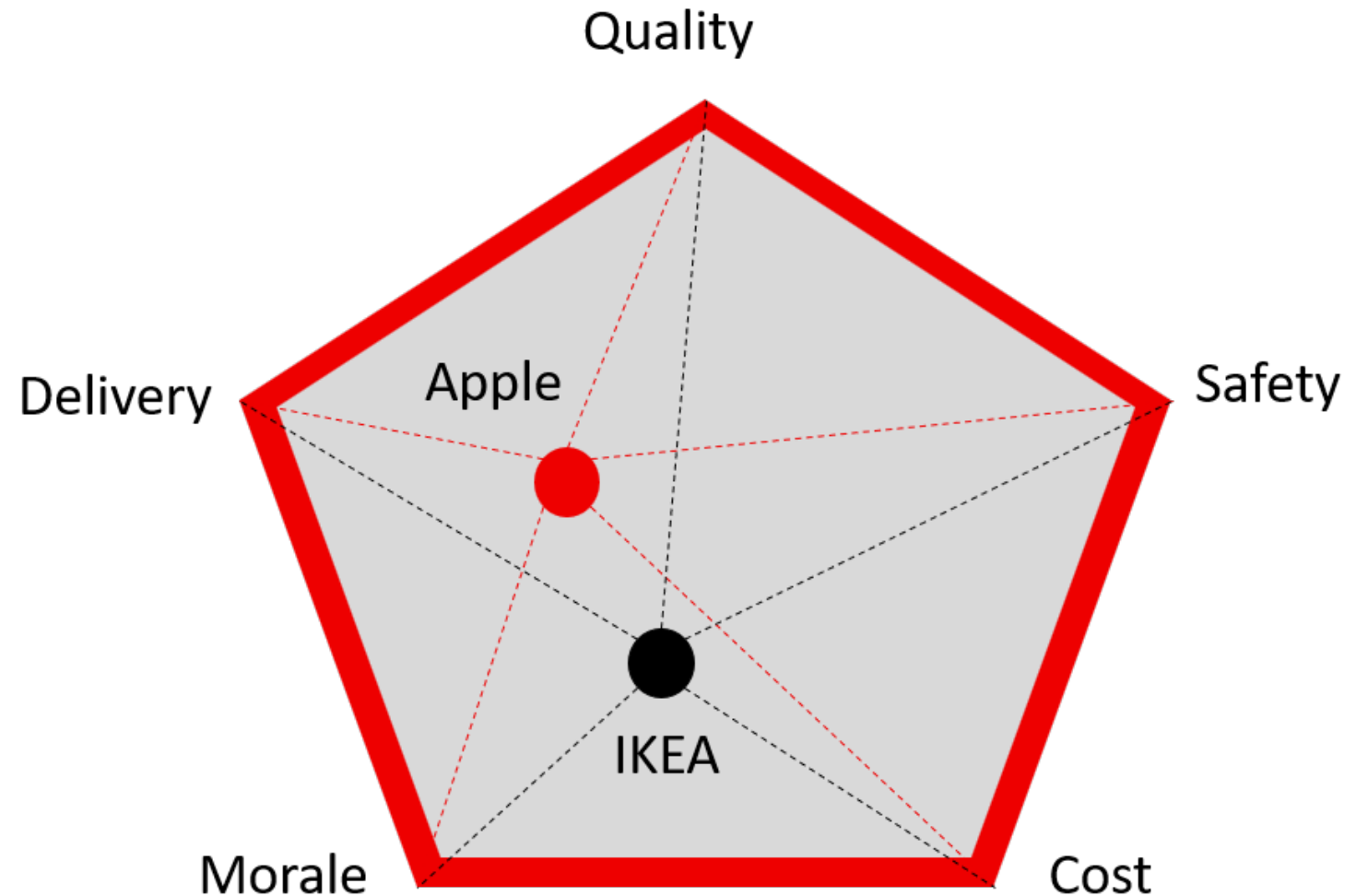
Morale

- Manufacturing & purchasing: employees and suppliers
- Marketing & sales: customers and consumers



Strategy determines the priority order of the five forces

Every decision must align with the forces in proportion to their priority



In the 1930's the world of manufacturing changed forever...

***“A car for every purse and
purpose”***

--- Alfred P Sloan



...and it's still reverberating today

***“The CEOs of nearly 200 companies just said
shareholder value is no longer their main objective”***

---- CNBC, August 19, 2019

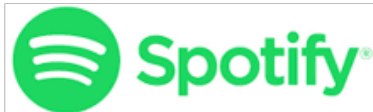


Digital Transformation is about personalizing the business mission



Economy of One

facebook



How do we deliver personalized products from a manufacturing ecosystem designed for scale?

Manufacturing at
Scale



Personalization
of Product

“If I'd asked customers what they wanted, they would have told me, 'A faster horse!’”

--- Henry Ford



Mapping current trends to the five forces

<i>QUALITY</i>	<i>3D Scanning, AI Enhanced Design, Rapid Prototyping, Collaboration</i>
<i>COST</i>	<i>Skilled Labor Shortage, Utilization Optimization, Forecasting, Scheduling, Predictive Maintenance, Release Management, Licensing, Manufacturing as a Service, Factory in a Box</i>
<i>DELIVERY</i>	<i>Self-serve, A/B Testing, Franchising, Personalized Product, Low Volume Manufacturing</i>
<i>SAFETY</i>	<i>360° Safety, Robotics, AR/VR</i>
<i>MORALE</i>	<i>Supply Chain Transparency, Shift Scheduling, Training</i>



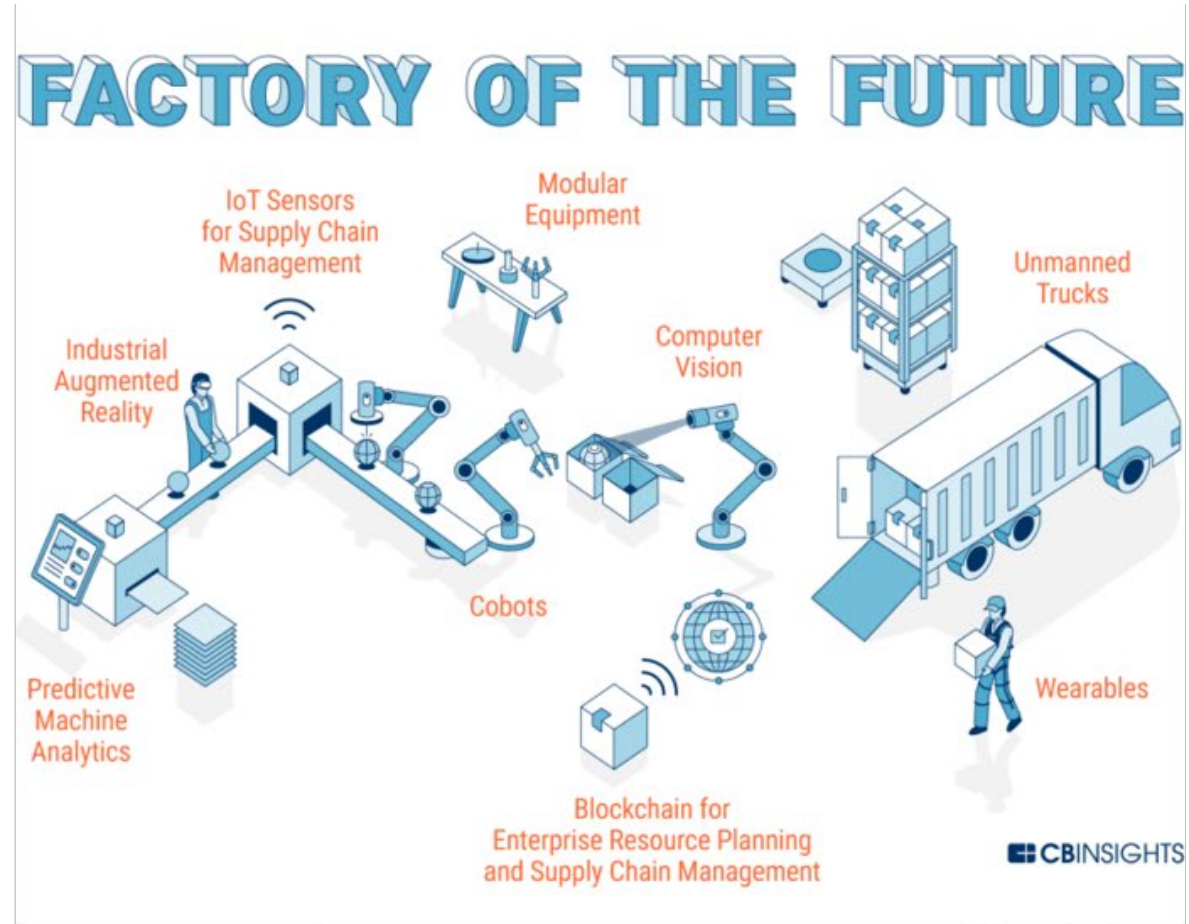
Where is manufacturing heading?

Real Time
Enterprise

+

Economy of
One

=



- More data
- Improved flexibility
- Finer control
- Smaller footprint
- Better quality
- Less impact



Has manufacturing changed?

- Tesla's Gigafactory woes (Morale)
- Kraft Heinz Merger goes astray (Quality)
- Samsung Galaxy Note 7 recall (Safety)
- Nike 'Betsy Ross' sneaker hubbub (Morale)
- GM Electric & Driverless car future (Cost)
- Apple In China, Can't Move Out (Delivery)



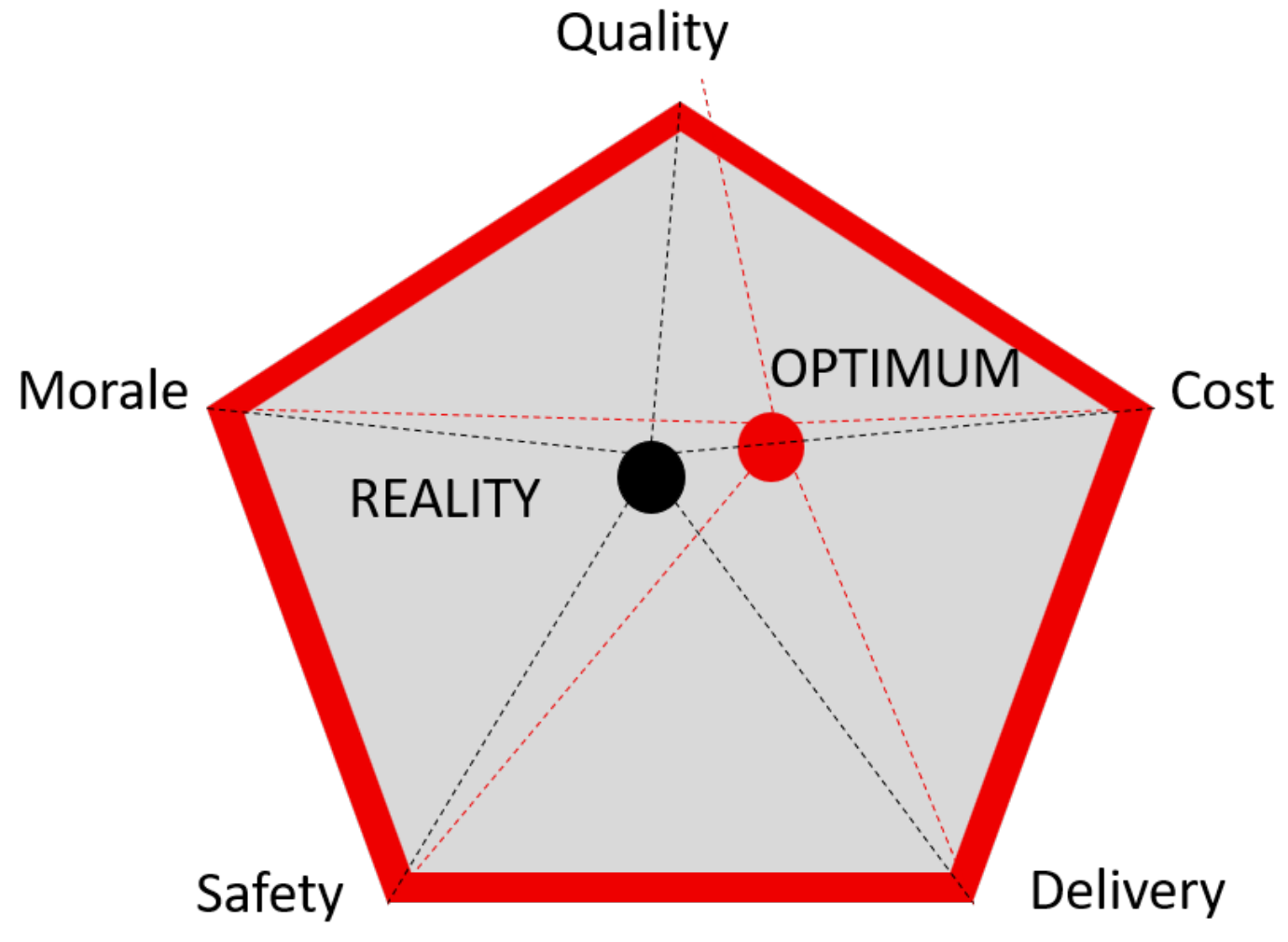
Oh, and one more thing:

***Supply Chain is the DevOps of
Manufacturing***



An effective Supply Chain finds the optimum balance of the five forces

Friction arises when participants focus on being optimal, instead of being part of an optimal arrangement



Thank-you

