Sharing for Agility

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“Age of Smart Iron”

...Driving the Increasing Need for Agility

- Competitive battlefield is increasingly “outside the machine”
- Machine is a platform
- Globally responsive production capability
  - Product Availability is KING
Manufacturing Footprint – Static, does not respond to volatility
The Market

- Constantly Changing
- Subject to Swings in volume and region

![Caterpillar Dealer Retail Sales By Region](chart)

**Demand/Capacity**

Location

1

2

3

4

5

- Utilized Capacity
- Demand Beyond Capacity
- Unutilized Capacity

Source: CS, filings, Zero Hedge
Increased Global Agility
...through “Sharing” Enabled by Technology

- Workers: Reducing training times to near zero
- Suppliers: Improved responsiveness and resilience
- Equipment: Massively redeployable equipment
- Knowledge: Manufacturing engineering transformation

Innovation and Technology Development Division
Massively Redeployable Equipment

...Supporting Incremental Capacity Investments

Distributed, Intelligent Machines

Self-Programming

Predictive performance via data analytics
Near Zero Training Times

…Information Anticipating Demand

In-situ Work Instructions

Role-Based Guidance

Workers
Manufacturing Engineering Transformation

...Efficient Knowledge Generation for Execution

Knowledge

Automated Artifact Generation

Machine Learning
Agile and Resilient Supply Networks
...Fully Leveraging Global Capabilities

Suppliers

Temporary Competitive Marketplaces
Thank You

• Many emerging technologies can dramatically improve production agility

• Challenge for all of us
  – Deploy them at SCALE