

IIC Trustworthiness Forum



Building a Secure Future.™

Case Study: Using Trust to Improve Efficiency in an Additive & Smart Manufacturing PoC

Evan O'Regan, Head of Connected Manufacturing



What to Expect Today

- Setting the Context
- PoC Case Study
- Key Take-Aways

Manufacturing Problem

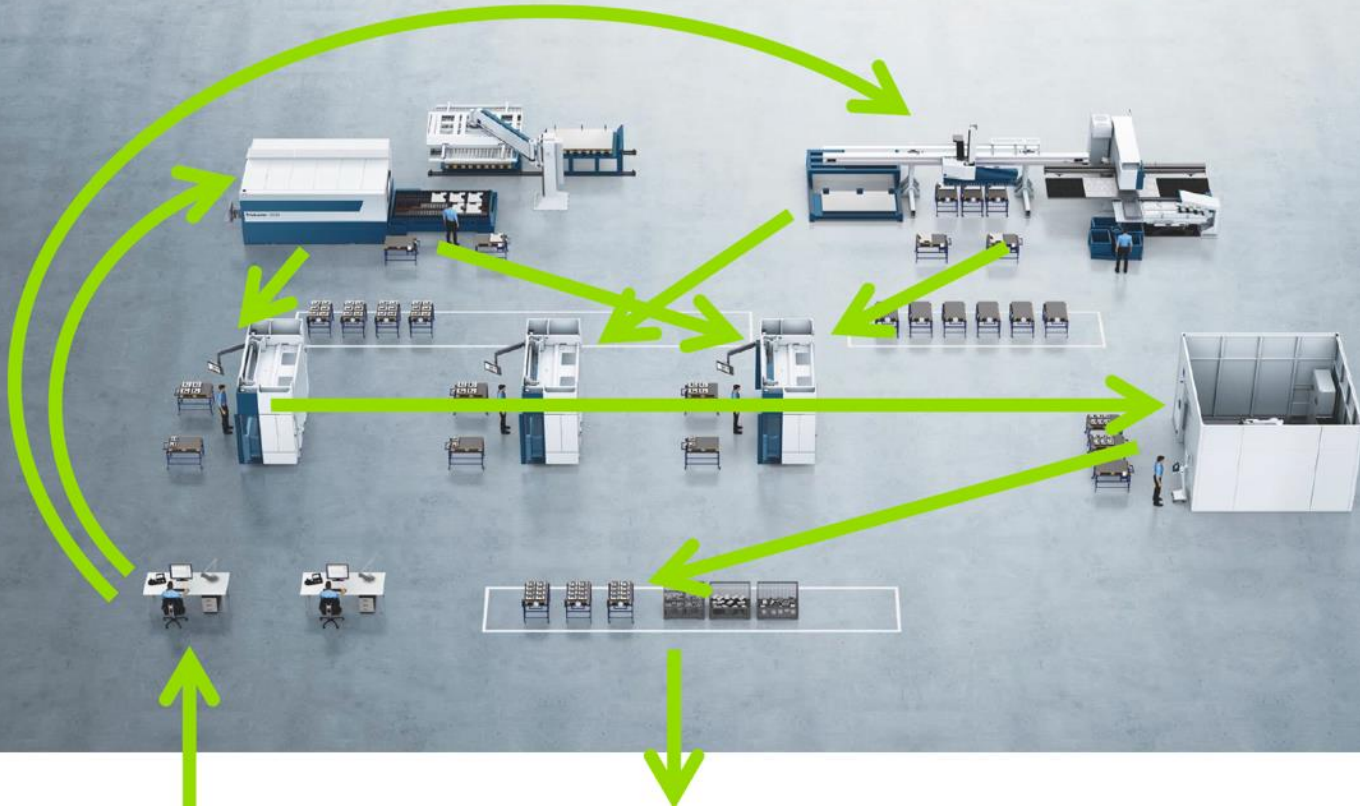
Manufacturing Problem

Experiencing Industry Trend is Toward Customization, Smaller Lot Sizes

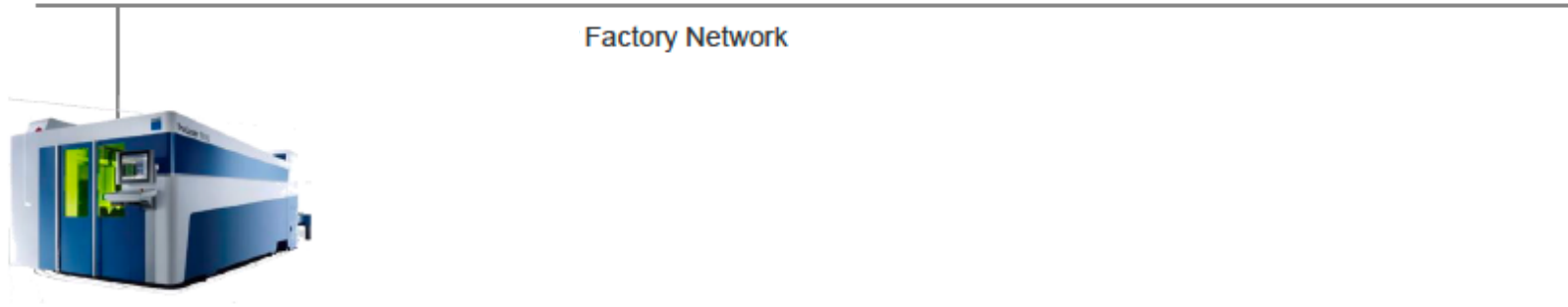


Manufacturing Problem

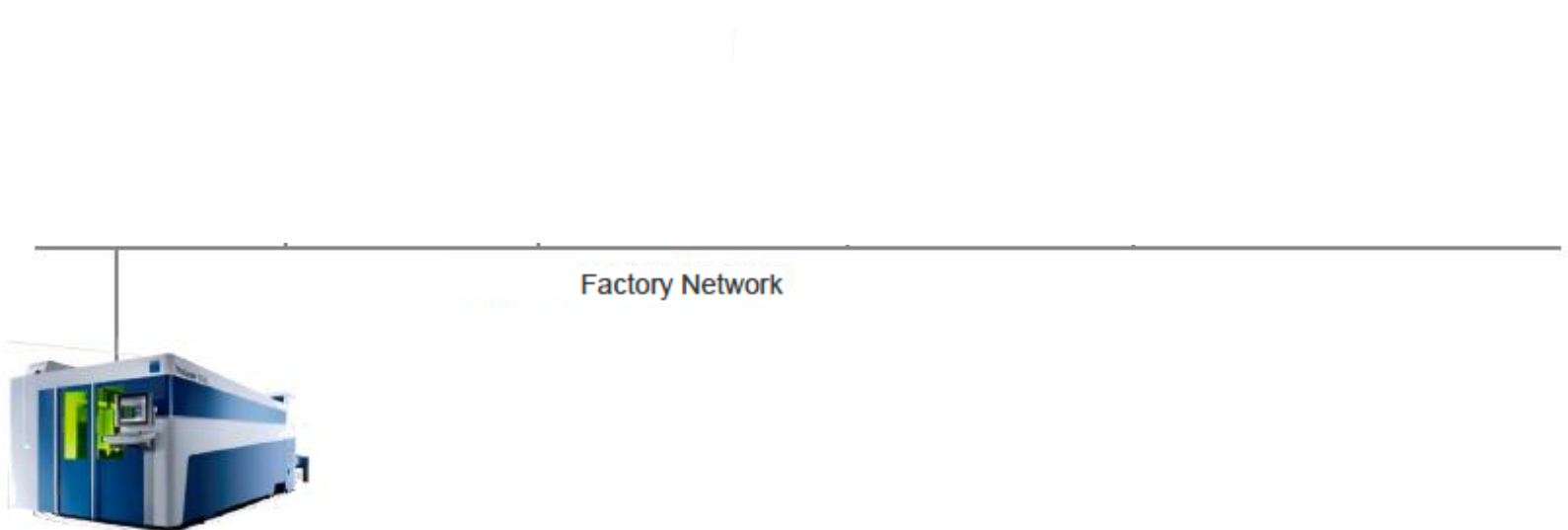
Effectively, Each Order is Different, Significantly Impacting Efficiency



New Additive & Smart Machines, Tools Connect to the Network (Edge)

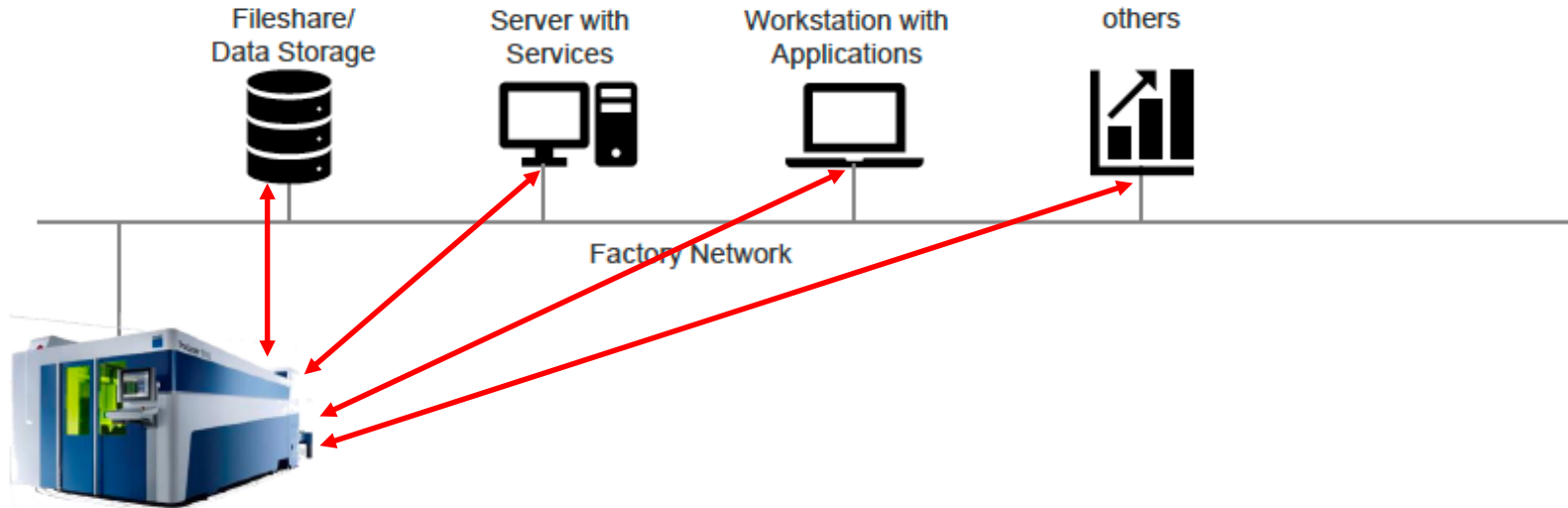


Additional Applications and Services are Needed to Run the Machine Efficiently



Manufacturing Problem

Increases(!!) Setup Complexity, Overhead, Administration

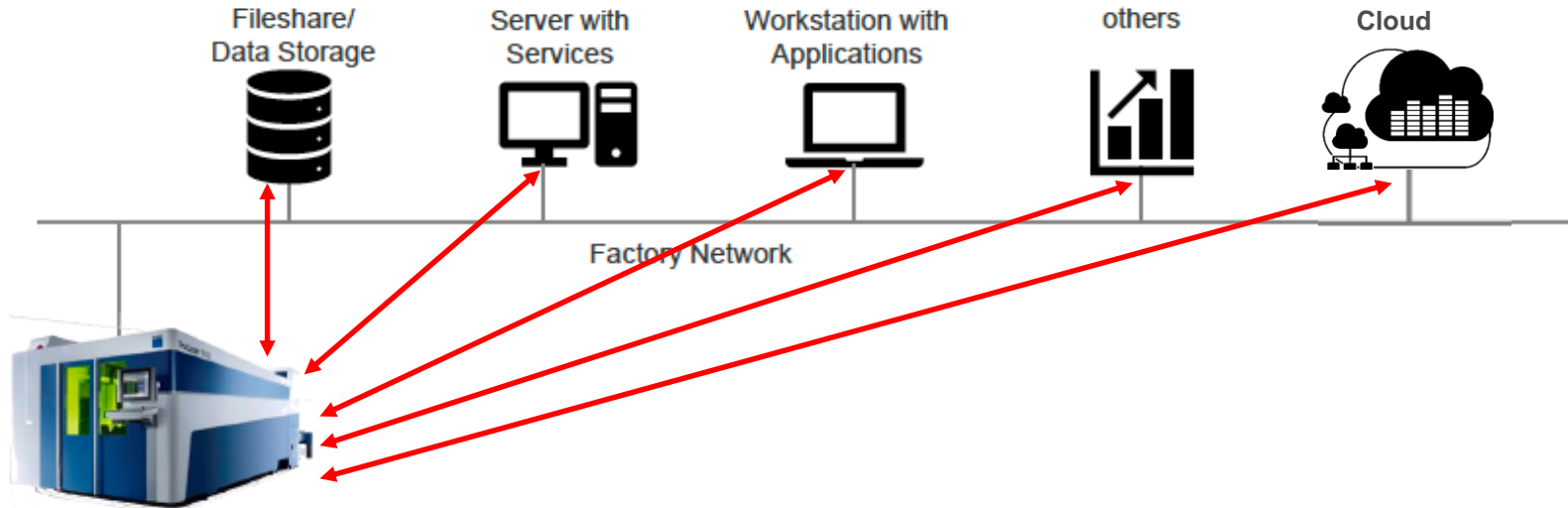


Manufacturing Problem

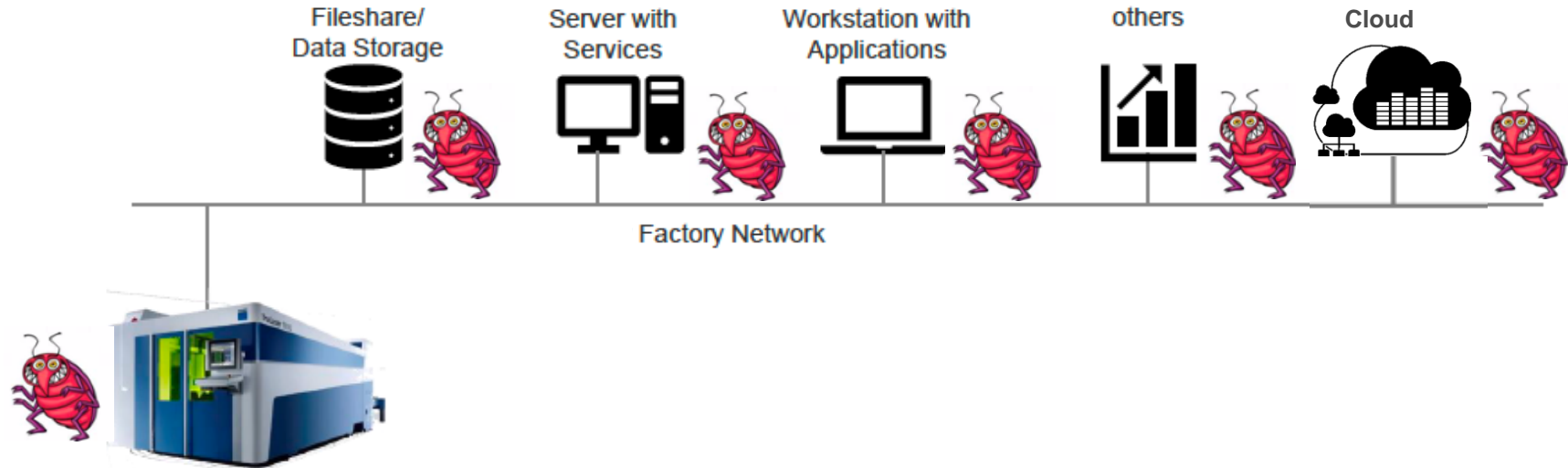
Not Just a Manufacturing Problem

Manufacturing Problem

Increases(!!) Complexity, Overhead and Administration



Potential Integrity Disruption Points



Why This Matters: Welcome To Your Nightmare

Random Quality Disturbances Introduced at Critical Points.



Part 1



Part 2



Part 3



Part 4

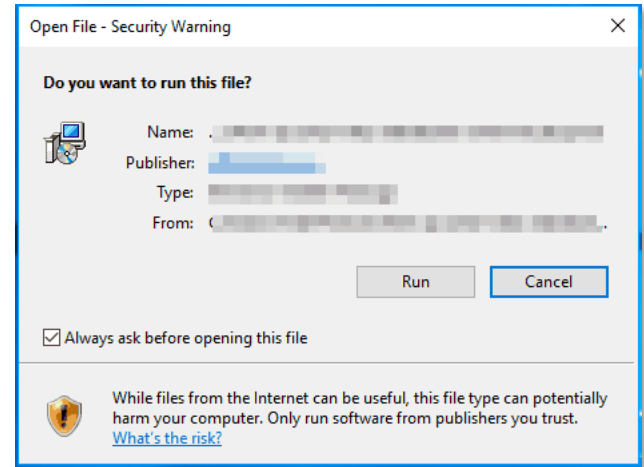


Part 5



Part 6

Why Not An IT Department Solution?

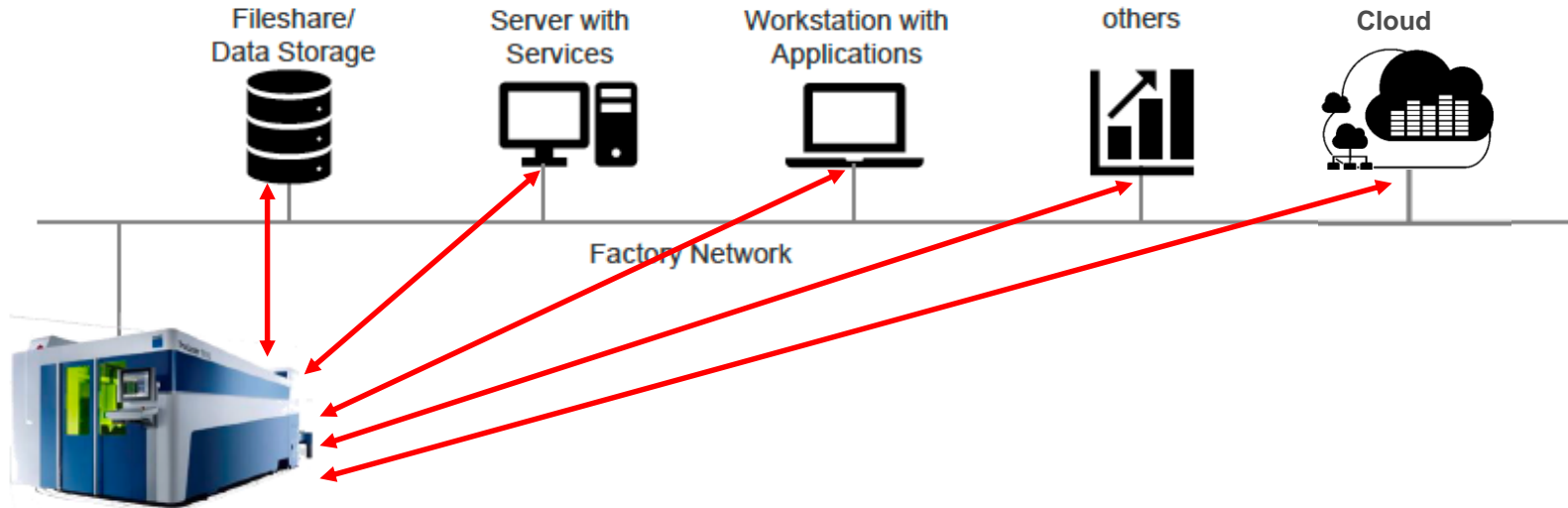


How Does David Beat Goliath?

Reframe The Problem

Reframe the Problem

Increases(!!) complexity and overhead



Manufacturing Problem

► Complexity Problem:

80 %

OF THE PROCESSING TIME

Is taken up by indirect processes – it is here that the greatest optimization potential can be found.

50 %

OF ALL ORDERS

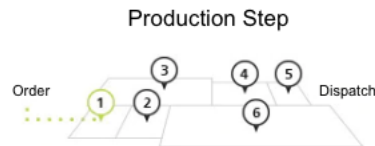
Have a lot size of four or fewer parts as the industry average.

1 %

TYPICAL RATIO

Of the processing time to the throughput time – in a non-digitally-networked production environment.

► Ecosystem:



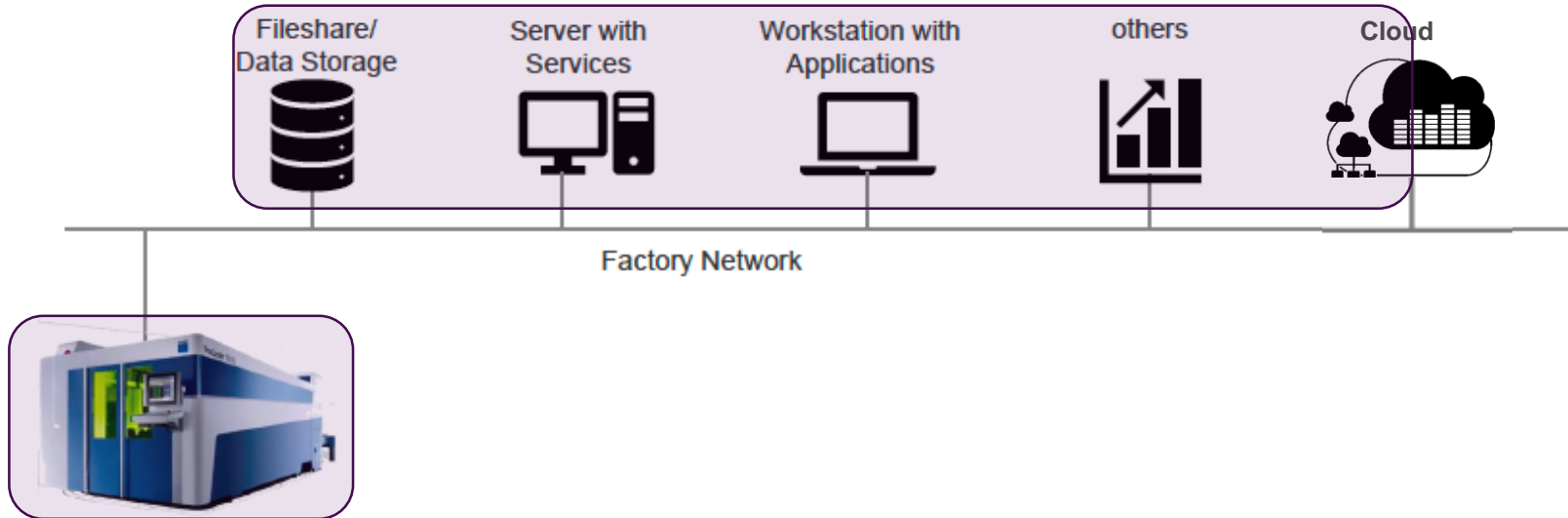
Required Time

27 0 0 0 0 0 27 Min

Experiment Concept: “Set-Top Box” for Additive and Smart Machines

Reframe the Problem

Solve for Trust: Secured Host Concept



Outcomes

❖ Secured Host Environment – Where Does The Efficiency Come From?

- ✓ Reduced complexity / maintainability
- ✓ Simplified -> Plug & Play (in setup and operation)
- ✓ Integrated update processes for applications
- ✓ Simplified license management
- ✓ Local and Online monitoring
- ✓ HW scaling and maintenance without time-consuming setup of services/applications/functionalities (sandboxing, decoupling of HW and application)
- ✓ Integrated application security
- ✓ IP protection
- ✓ Facilitated customer acceptance (IT, compliance, audit, security departments)
- ✓ Reduced requirement for skilled labor

Manufacturing Problem

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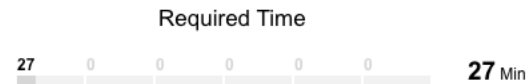
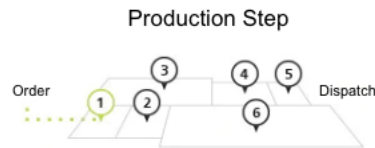
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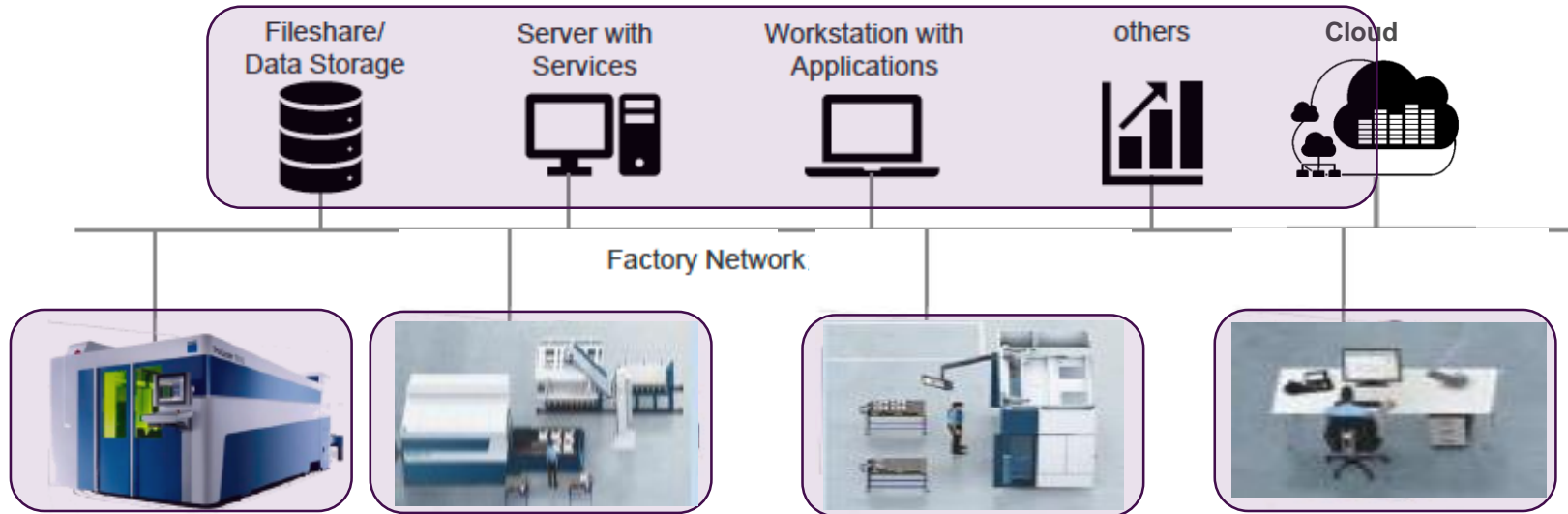
► Solve For:

Trust

Reframe the Problem

Solving for Trust is Solving for Efficiency:

Towards Plug & Produce



Take-Aways



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THANK YOU!

evan.oregan@irdeto.com