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
Experiencing Industry Trend is Toward Customization, Smaller Lot Sizes
Effectively, Each Order is Different, Significantly Impacting Efficiency
Manufacturing Problem

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

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.
Why Not An IT Department Solution?

- Good Security Costs Money
- You Can't Defend it All
- Short Lifecycles
- Software is (mostly) Exempt From Liability
- "Normal Failures": Complexity vs Simplicity
How Does David Beat Goliath?
Reframe The Problem
Reframe the Problem

*Increases(!!)* complexity and overhead
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% of the typical ratio – of the processing time to the throughput time – in a non-digitally-networked production environment.

Ecosystem:

Production Step

Order 1 2 3 4 5 Dispatch

Required Time

27 0 0 0 0 0 0 0 0 0

27 Min

© 2019 Irdeto, All Rights Reserved. – www.irdeto.com
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
### 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%** is typical of the processing time to the throughput time – in a non-digitally-networked production environment.

### Ecosystem:

![Production Step](image)

- **Required Time:** 27 Min

### Solve For:

- **Trust**
Reframe the Problem

Solving for Trust is Solving for Efficiency:

Towards Plug & Produce
Take-Aways
THANK YOU!
evan.oregan@irdeto.com