Consultancy • Innovation • Technology



# Bridging the gap between OT and IT

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# Two cities – Scenario 1

Both sides build their own bridge





# Two cities – Scenario 2

Both sides agree to build half of the bridge





# Two cities – Scenario 3



Both sides work together and build a bridge they can use



## What are we going to talk about?





**Integrating IT and OT systems** 

How to make it a reality?

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# Why build a bridge?

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- Operational technology encompasses the systems that control and execute processes on the shop floor
- Priorities include minimising downtime and delays, safety of the plant and efficiency
- Requires in-depth knowledge of the equipment, manufacturing processes, applications and technologies for process-specific operations
- Devices often remain unchanged for a long time



- IT manages the laptops, desktops, servers, network and business applications across the organisation
- Priorities are cyber security, scalability and manageability
- IT has a broad enterprise-wide view that includes data, computing and networks
- Frequent changes to apply security patches and upgrades

# Why is there a gap?



Believe Ops do not follow IT best practices

Better understand of core technologies such as cloud computing, networks and databases

Accountable for cyber security

Believe IT doesn't challenges of running manufacturing processes 24x7

ΟΤ

PLCs, VFDs, and sensors that do not exist in an office environment

OT solutions and infrastructure are becoming more like IT

Different operational priorities and approach to risk

Lack of trust, lack of communication and a bit of turf protection



 Siloed approach means data can't easily be shared from the shop floor to the top floor

 Remain competitive whilst delivering the best products and services to customers



- Necessity is the mother of invention often at the cost of cyber security
- Secure remote connectivity to machines to monitor usage and diagnose problems
- Remove the need for USB memory sticks to manually move data between systems

# Why now?







•Smart factories continuously collects and shares data

- Data can be used across the organization to proactively address issues
- •By connecting the physical and digital world, smart factories can monitor the entire production process

# Industry 4.0 Technologies



- •IIoT Industrial Internet of Things
- Cloud and Edge Computing
- Analytics and Machine Learning
- Digital Twins





# Integrating IT and OT systems

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- Smart factories are highly connected and require both IT and OT networks
- •Networks need to be reliable and have sufficient bandwidth



#### **Data Sources**





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# Integration Industry 3.0





# Integration



#### How it evolves







# 3 How to make it a reality?





- Identify the desired outcomes
- Define the requirements to achieve these outcomes
- Understand where the biggest benefits can be obtained quickly







- Start from the top of the organisation
- Explain benefits to stakeholders and be receptive to feedback

2

3

4





•Create a roadmap to be delivered incrementally



Making it a reality Step 4 – Networks and Cyber Security



Create an Operational Technology network

 Define a baseline standard that network connected devices must meet

 Create multiple layers of cyber security to protect both the IT and OT networks

3

4



# Making it a reality Step 5 – Delivery

- Connect machines and production systems to the OT network
- Create a trusted integration platform for sharing data
- Integrate the producers and consumers of the data using the platform

5

## What are the challenges?



Legacy devices

•Trying to do too-much too-soon

•People and processes



### What have we covered?









#### Why build a bridge

Integrating IT and OT systems How to make it a reality



## What questions do you have?







- Ripley Solutions can bridge the gap between your IT and OT systems
- •Visit us on stand G36
- •Visit our website www.ripleysolutions.com

