

SMART EICA & WATER 4.0

STANDARDS DEVELOPMENT

PUBLIC SHARE VERSION

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EICA Standards and Assurance
Chief Engineers – Severn Trent

WONDERFUL ON TAP

SEVERN

TRENT

AGENDA

Introductions

Industry 4.0 and the Challenges for the Water Industry

Severn Trent's Smart EICA

Industry 4.0 Deployment in Severn Trent

People, Process & Technology

The Future

CHIEF ENGINEERS

‘Bring People and Expertise Together to Solve our Biggest Challenges’

Mike Booth

- EICA Standards Focus Areas: ICA Hardware, Power Dist. & Motor Control
- 36 Years at Severn Trent
- Ex Everything with Electrical or ICA in the Job Title

Siobhan Millen

- EICA Standards Focus Areas: Software, Comms Networks & OT Security
- 15 Years at Severn Trent
- Ex Specialist ICA Team - Process Optimisation and System Support

INDUSTRY 4.0 & WATER 4.0

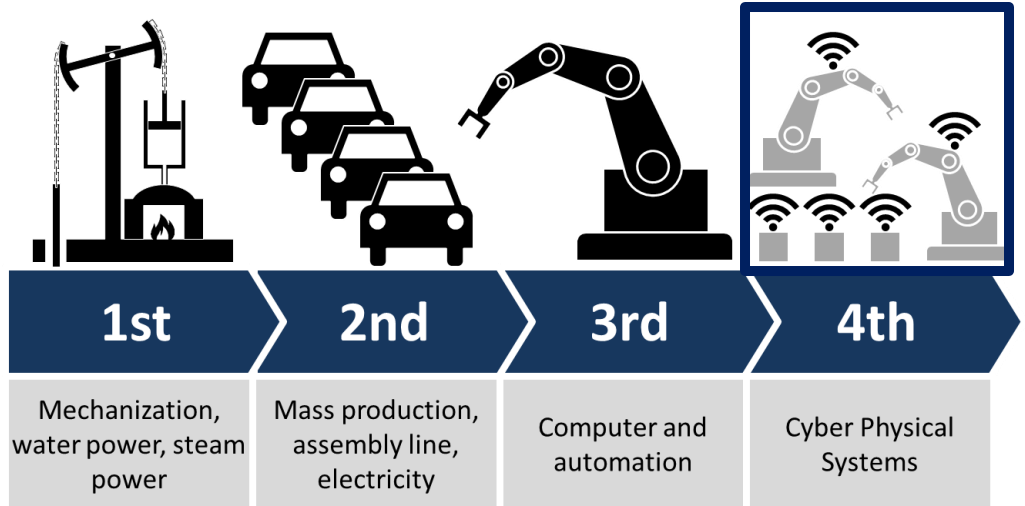
Interconnection

Visualisation

Decentralised Decisions

Security

People



THE CHALLENGES FOR THE WATER INDUSTRY

Remote Assets

Large Dispersed Organisations

Legacy Estate

Skills Shortage Across the Regions

Security

Achieving Interoperability

Volume of Data



Water 4.0: The Biggest Opportunity for the Water Industry?

OR

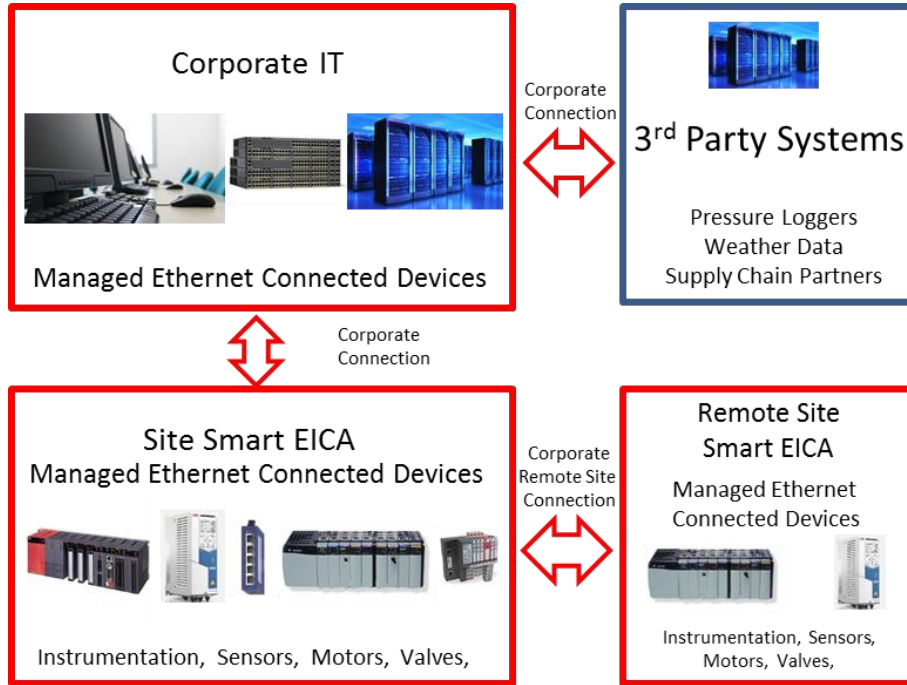
The Biggest Threat?

SEVERN TRENT'S

WATER 4.0 – 'SMART EICA' ARCHITECTURE

'SMART EICA' ARCHITECTURE

WATER 4.0 READY



- Cloud SCADA - Multiple Data Sources
- Ethernet - Site Wide and Device Layer
- Standard Components with Interoperability
- PLCs Function Blocks & IEC 61131
- Always on Connections to Remote Sites
- Layers of Protection IEC 61511
- Secure - Full Remote Control
- Competent Process & Software Engineers

What shall we do with this data?

WATER 4.0

SMART EICA APPS & FACTORY SITES

2018 - SMART EICA APPS



SMART EICA APPS

Variable Speed Drive – Auto Optimisation



Image of VSD Auto Optimisation App
HMI Screen Removed

Pumps run at the most efficient speed

Automatic duty bias

Warning below benchmark

13 Apps Developed and Deployed
on Sewage Pumping Stations

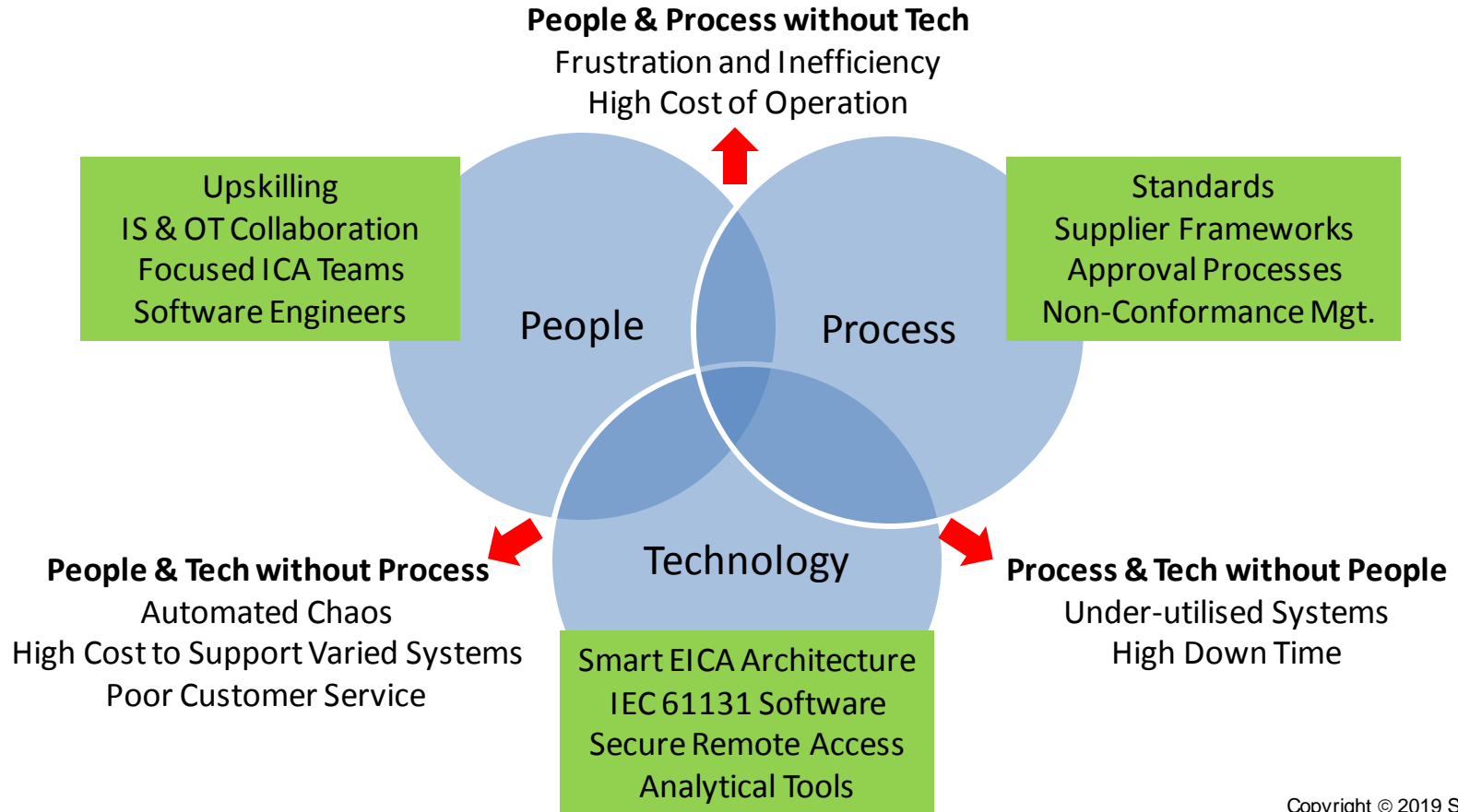
Apps for Boosters Trial Project

FACTORY SITES

Image of Factory Site Dashboard
Removed

PEOPLE, PROCESS & TECHNOLOGY

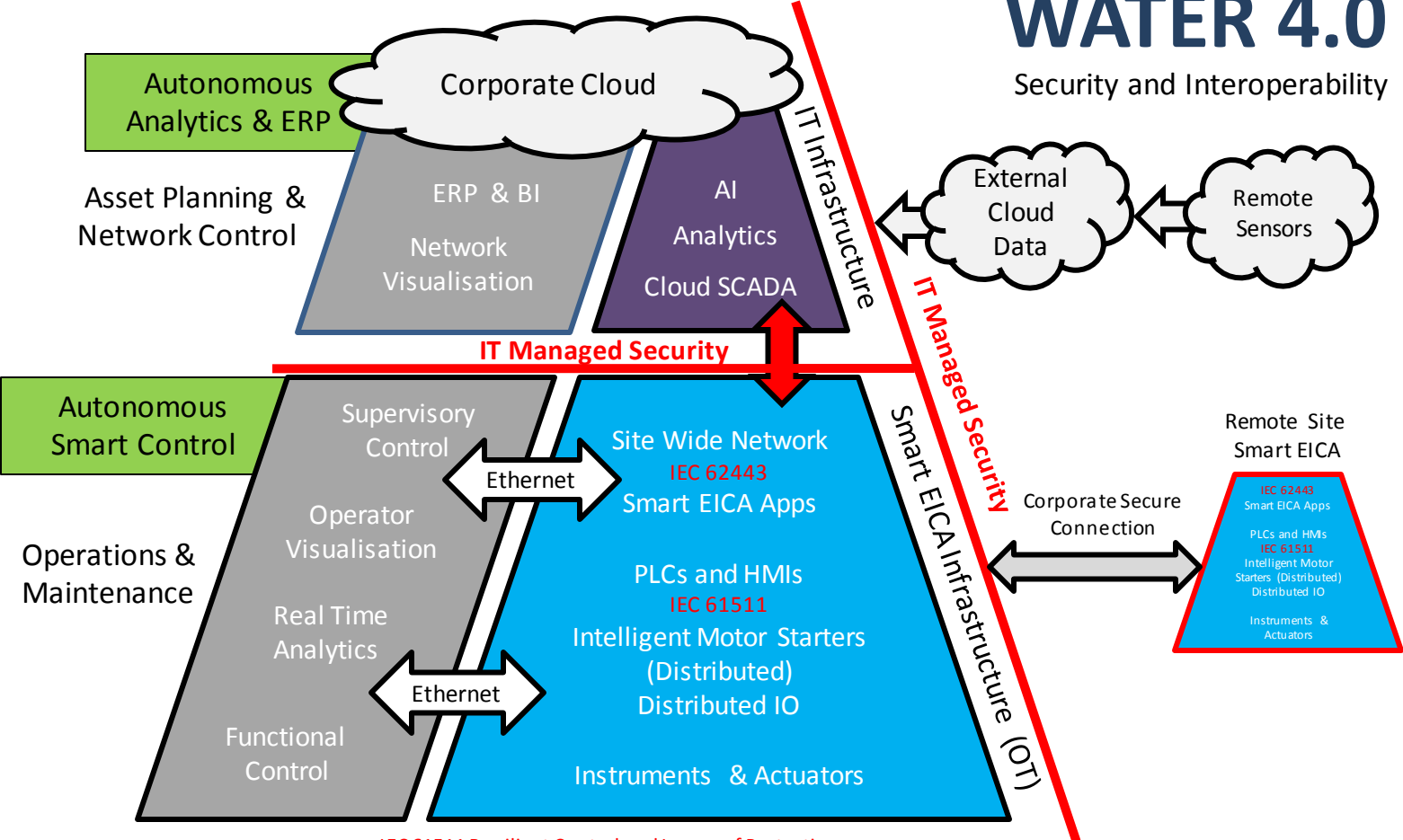
PEOPLE, PROCESS & TECHNOLOGY



THE FUTURE

WATER 4.0

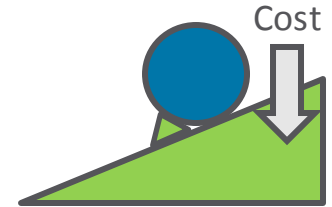
Security and Interoperability



IEC61511 Resilient Control and Layers of Protection
IEC62443 Cyber Security for Industrial Control Systems

THE FUTURE - WATER 4.0

- Devices that Influence Control Must be Secure and Future Proof
- UK Water 4.0 Standards
- Strategy - People, Process and Technology
- Smart EICA App Development and Deployment
- Roll out of Smart EICA Architecture
- Skills Development
- AI and Network Digital Twin



Customers Benefit – Lower Cost and Improved Service

ANY QUESTIONS?

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