Smart solutions for efficient water networks
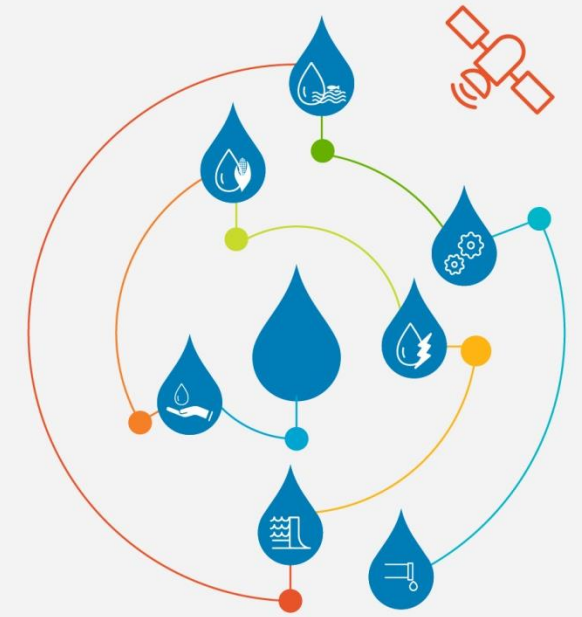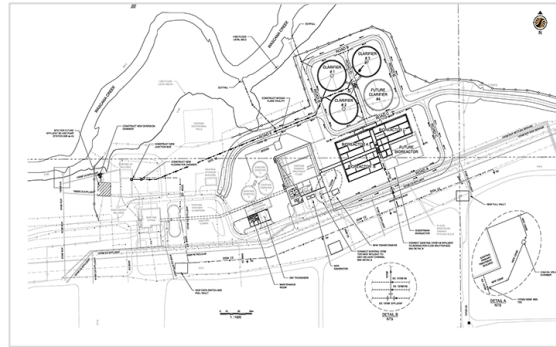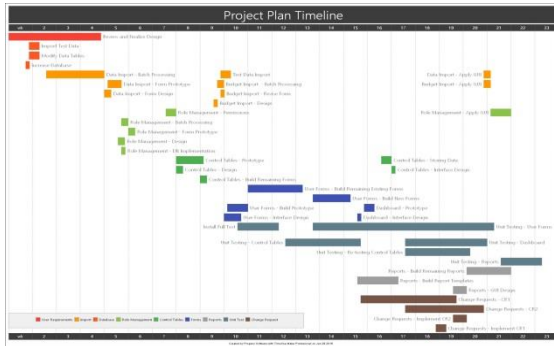
Sanjay Patel

GF Piping Systems Ltd, Switzerland

October 2018

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Typical sequence of steps for most construction sites

| Planning
Specifications & tenders | Tendering
Project preparation | Preparation
Material, ordering and delivery | Implementation
Execution of project | Commissioning & Operation
Testing & assessment |

- ☐ **Planning**
- ☐ **Organizing**
- ☐ **Specifications**

- ☐ **Logistics**
- ☐ **Installation**
- ☐ **Data Collection**

- ☐ **Archiving**
- ☐ **Testing**
- ☐ **Validation**

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Jobsite concerns on Quality, Time, Data and Cost

- ❑ **Manage my assets and costs**
- ❑ **Manage time and quality**
- ❑ **Manage data and information**

- ❑ **Accountability, Responsibility**
- ❑ **Security**
- ❑ **Traceability, Monitoring**

Changing priorities and growing demand for information

20% of projects take longer than planned*

80% of projects are over budget*

*Capital Projects and Infrastructure June 2016
McKinsey Productivity Sciences Center, Singapore

Digitalization

@

Safety

Saving
Money

Quality

Save
Time

Brute
Force

< 1900

1960

2000

2020+

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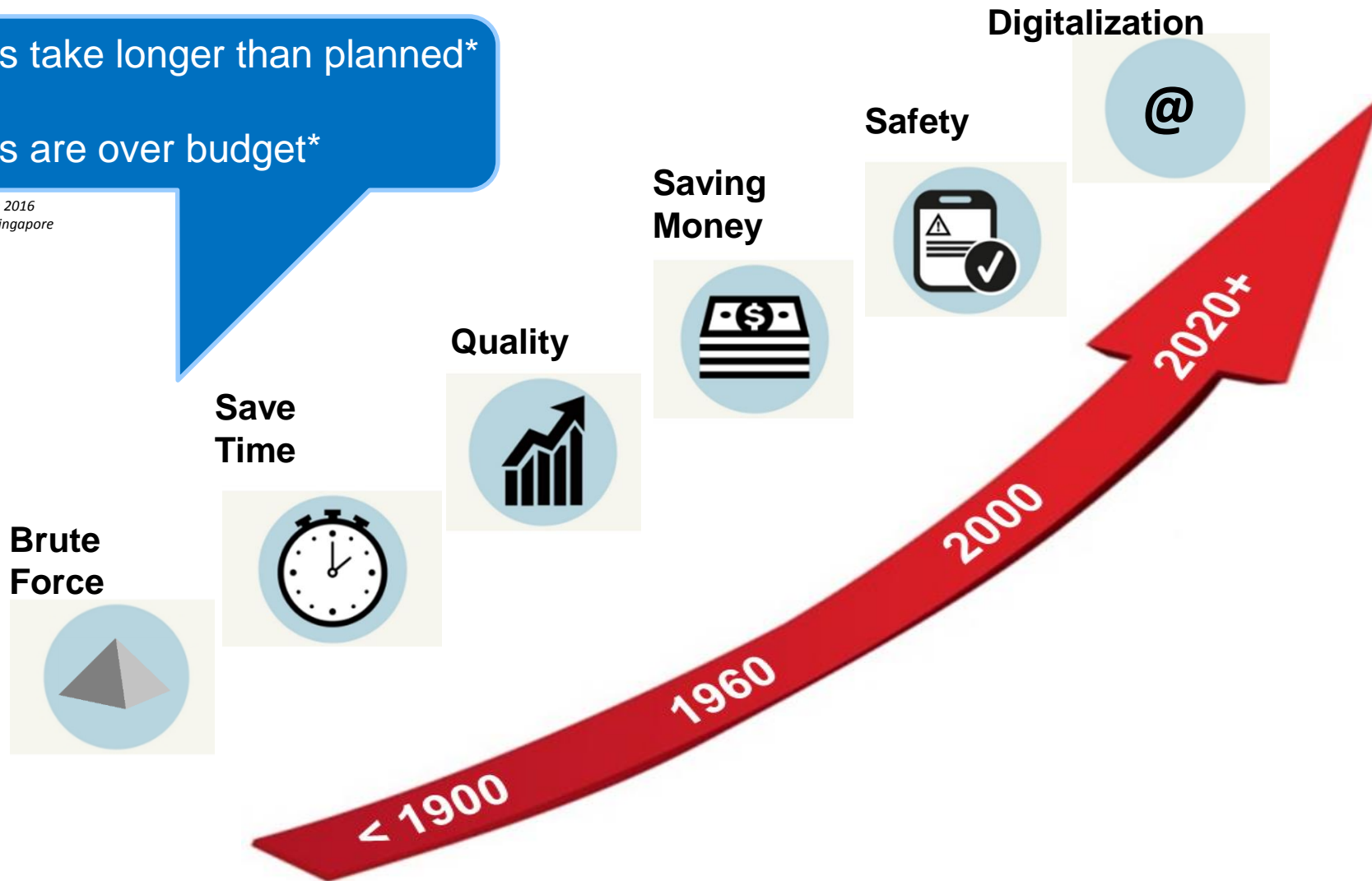
Technology brings simplicity to Quality Asset Management

- ❑ **Geo Positioning & Asset Mapping**
- ❑ **Cloud / Workforce Collaboration**
- ❑ **Modular Constructions (Pre-Fab)**
- ❑ **Integrated Services**

- ❑ **Quality Control / Predictive Algorithms**
- ❑ **Automated Logistics**
- ❑ **Building Information Modelling (BIM)**
- ❑ **3D Printing**

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Many companies creating emerging technologies used in piping

Features
Streamline Work Flow
Precise GPS location
Live Supervision Capability
Workforce Collaboration
Archiving Data Cloud
Job Site Management
NDT Quality Assessment
Image Logging
Unique Product ID's

LocusView

Trimble

control point

Leica Geosystems

PLASTITALIA Spa.

+GF+

+GF+

and many others…

ADB
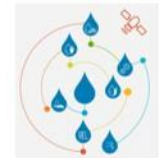
Addressing the practical objectives in the modern era

- ❑ **Effective installation management**
- ❑ **Facilitate data management**
- ❑ **Promote quality management**

- ❑ **Facilitate logistics processes**
- ❑ **Reduce paperwork**
- ❑ **Reduce costly mistakes**

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"Track & Trace" brings technology across your project cycle

Web Platforms

**Mobile Apps**

Live Monitoring and Remote Supervision

GPS location   GNSS location

Map Satellite

QUALIPET Center Schaffhausen

Würth

Bistro Im Ring Park

Strack

Centro Espa

Sec-id : PEU2O7XMI4FWAAAKE
Batch Number : 140500
Scan date : 2015-10-02 13:27:13
Art Id : 193131964
Status :DATA UPDATED
Construction site : Mas-01 Training
Installation company : Durand Piping
Order : JB0003
Welding sketch : SK21
Designation : Tapping saddle MB

Product ID

Quality Check Modules

753911611							
1234567							
4444		2017/01/05 10:11:12					
753911608							
222222							
100		2017/01/05 10:11:12					

Approved   **Not Approved**

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Ensuring better jobsite quality management is also critical
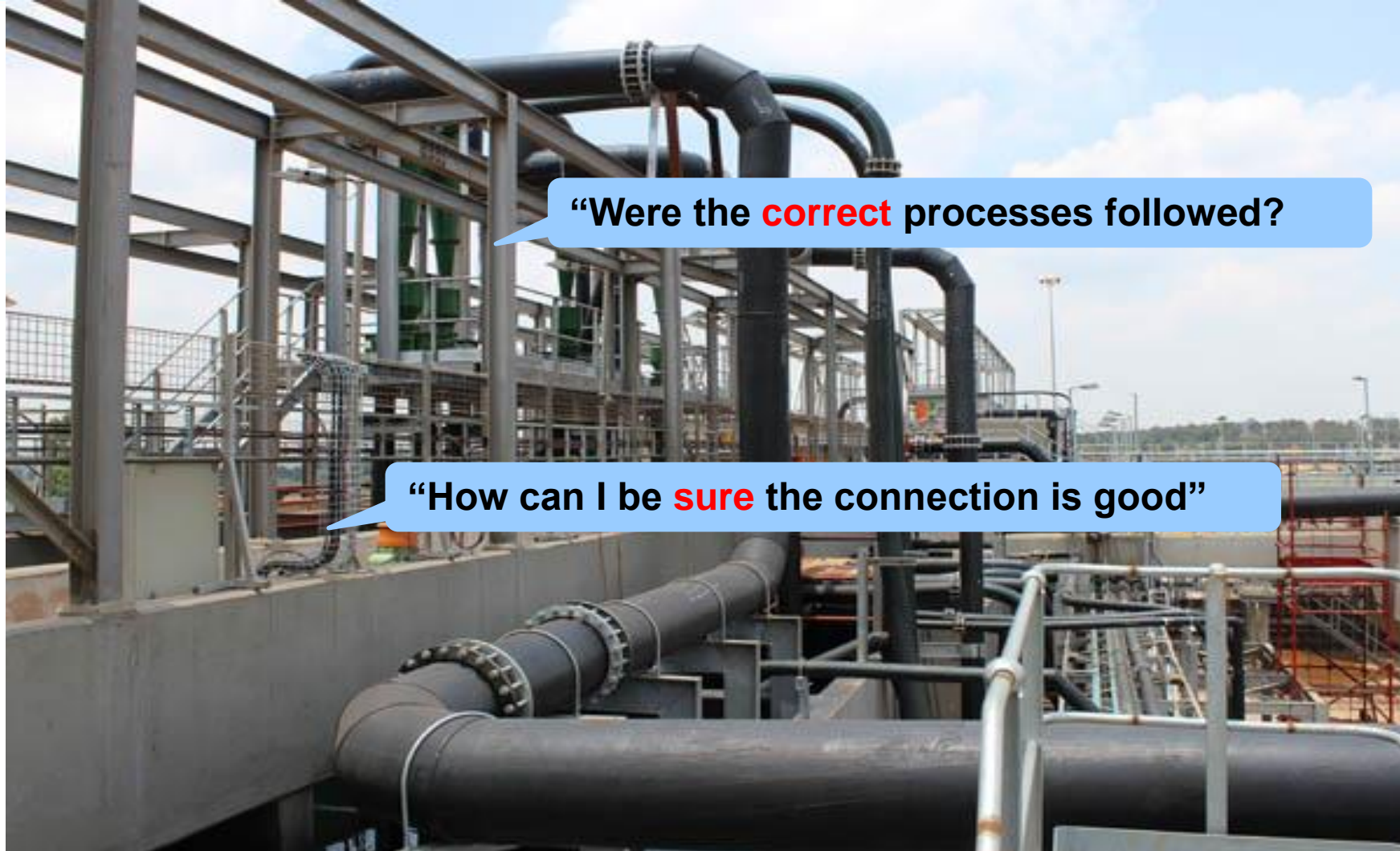
"Smart" algorithms augment value of NDT

Cross Section
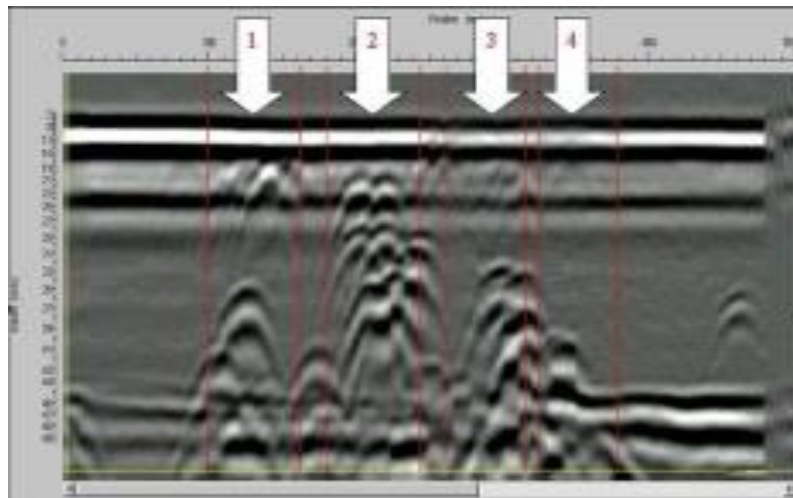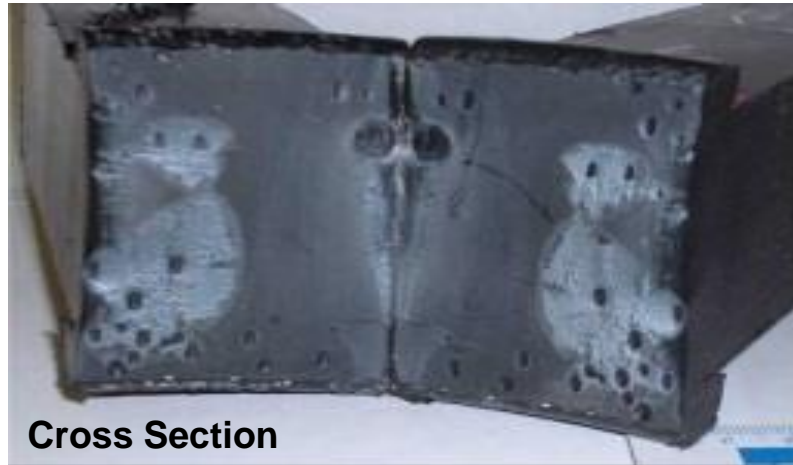
Ultrasound Scan

- ❑ **"Smart" Algorithms evaluate weld quality**

- ❑ **Multi-parameters image analysis**

- ❑ **Speed of analysis increased**

- ❑ **Accuracy / repeatability of Pass / Fail result**
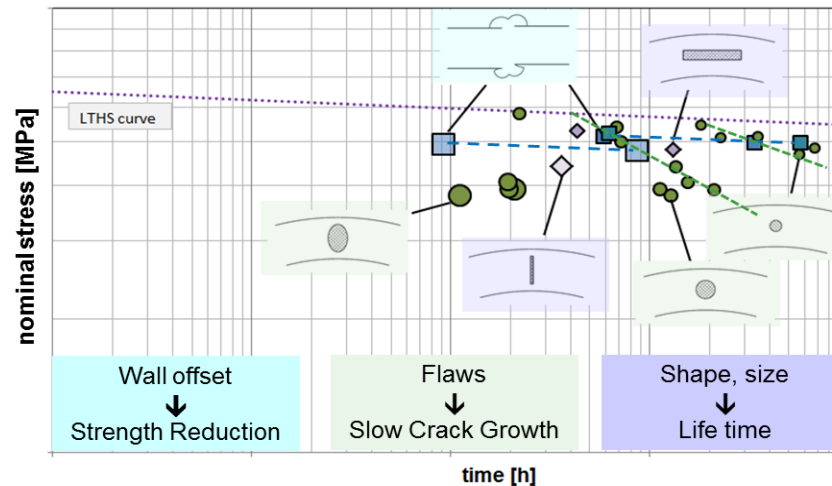
Science behind Algorithm

How technology can support you to deliver clean water

- **Manage projects efficiently**
- **Know where your assets are**
- **Be ready for audits**
- **Trace all products**
- **Minimize loss of data**
- **Piping Network warranty**
- **Eliminate costly destructive testing**

➢**Provide a leak free water system**

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Implementation of technology has started

- **Technology is new but built with over 50 years R&D know how**
- **Need to reach out network owners**
- **Demand quality management**

- **Operationally easy to use**
- **Minimal Training at local level needed**

Managing your teams the smart way

- ✓ **Reduce paperwork**

- ✓ **Save money and time**

- ✓ **Provide a leak free service to customers**

- ✓ **Simple and easy**

- ✓ **Innovation will drive change**