How to eat the elephant Journey with Fusion Lifecycle

Steve Howse

Program Manager Spirax

Saoirse Colgan

Implementation Consultant

Key Messages

Content

- Intro to Sxs
- Background, why SxS needed PLM
- How to eat the elephant (how we defined the scope)
- Project Structure
- Implementations
- Lessons learnt

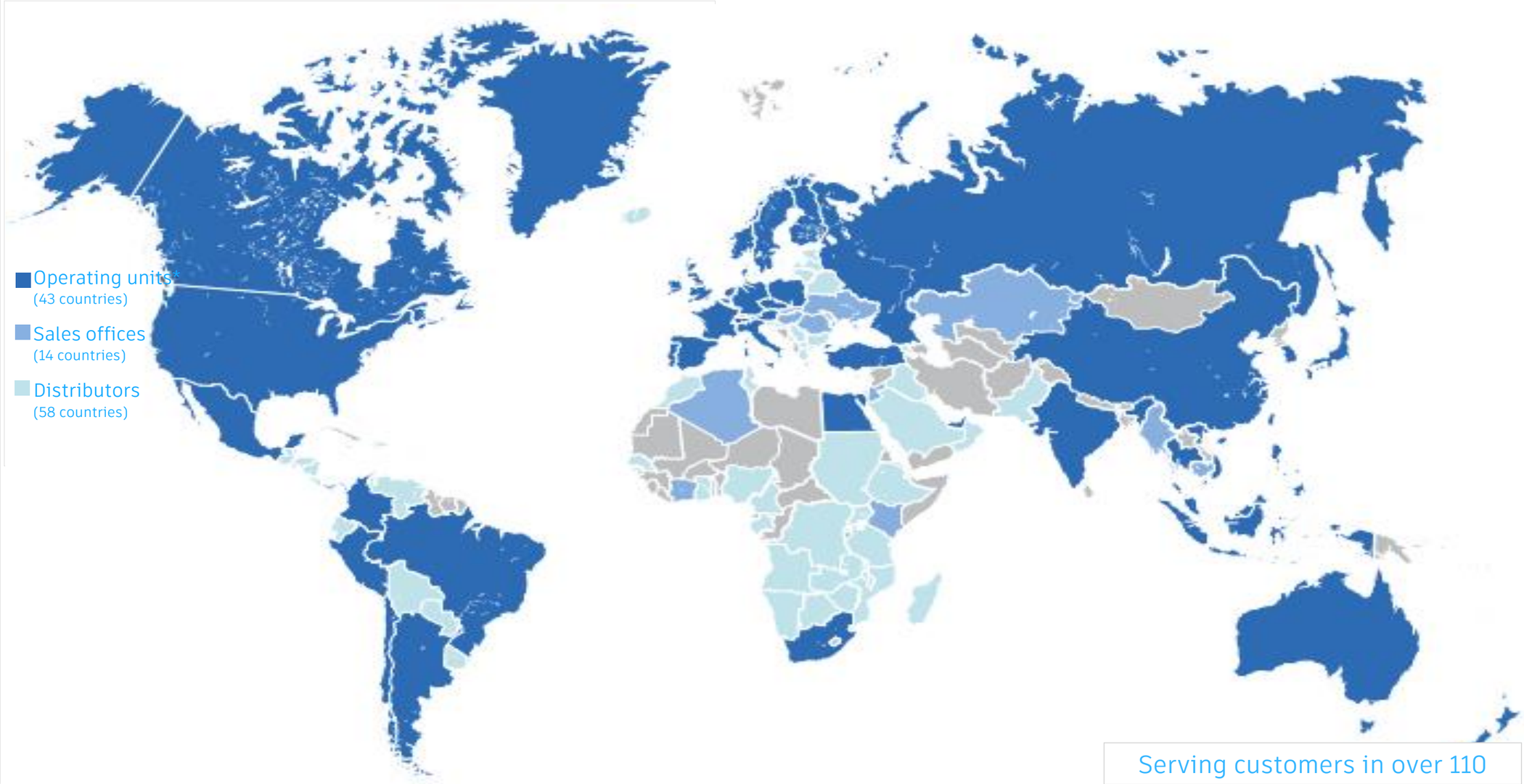
Intro to Sxs

Our global coverage and expansion

- 77 operating units* in 43 countries

** Operating units include operating companies, branches and Associate, at time of publication*

- **New operating companies, 2011-2016:**
  - Asepco, USA (WMFTG)
  - Austria (WMFTG)
  - BioPure, UK (WMFTG)
  - Chile (SxS) (WMFTG)
  - Colombia (SxS)
  - Egypt (SxS)
  - Flow Smart, USA (WMFTG)
  - India (SxS) (WMFTG)
  - Indonesia (SxS)
  - Japan (WMFTG)
  - Middle East (SxS)
  - Netherlands (SxS)
  - Peru (SxS)
  - Philippines (SxS)
  - Poland (WMFTG)
  - Russia (WMFTG)
  - Singapore (WMFTG)
  - Taiwan (WMFTG)
  - Vietnam (SxS)
- **New territories opened for direct sales, 2011-2016:**
  - Algeria
  - Cambodia
  - Ivory Coast
  - Jordan
  - Kazakhstan
  - Myanmar



Serving customers in over 110 countries

Steam industry dynamics

- Widely used in most industrial processes

Steam is a preferred heat transfer fluid	Used in most manufacturing processes	Steady market growth
High energy content	Heating and curing in most manufacturing processes	Industrial production and GDP key market drivers
Easy to control – *temperature proportional to pressure*	Also used for space heating, sterilisation and humidification	Energy costs
Environmentally safe – *clean and sterile*		High replacement demand
		Outsourced maintenance and engineering

Business resiliency from diversity of revenue generation, high percentage of replacement products and small maintenance-led projects for plant and energy efficiency

Plant-wide applications

- Broad product range

Our product range includes: steam traps; pressure and temperature control valves; condensate recovery pumps; strainers; separators; humidifiers; flow meters; and boiler controls









Pre-fabricated engineered packages for heat transfer & recovery and clean steam generation

Clean steam generator

Heat exchange package

Flash steam heat recovery

We are a one-stop shop for industrial and commercial steam systems

Our diverse markets

Food
Steam is widely used in the production of packaged foods for blanching, cooking, baking, packaging, cleaning and sterilising. Our pumps and associated equipment are used to meter ingredients, deliver food to process lines and tr[illegible]te.

Beverage
Steam is essential for brewing and distilling processes. It is used to protect product quality and flavour, and ensure compliance with industry standards. Pumps are used to transfer fruit, juice, concentrates, yeast and other additives

Pharma/Biopharm
Clean steam reduces the risk of product and process contamination, and our peristaltic pumps, valves and single-use components enable precise flow control and fluid isolation in the Pharmaceutical and Biopharmaceutical industries.

OEM Machinery
Original Equipment Manufacturers (OEMs) are companies that build and supply machines for use in industry. Our activities with OEMs vary from simple product supply to advising on machine performance improvements and p[illegible]esign.

Oil & Petrochemical
Our steam system products and services enable optimum performance in steam and condensate systems, and reduce energy use during oil and petrochemical production.

Healthcare
Steam is used in hospitals and clinics for space heating, hot water production, humidification and sterilisation. Pumps and associated equipment are used in the manufacture of products for the Healthcare industry.

Chemical
Steam is widely used as an energy source in chemical production and product processing, while our pumps are used to safely and accurately transfer and dose critical chemical components.

Buildings (HVAC)
Our steam products are used to provide space heating, humidification and hot water to create comfortable working conditions for employees and visitors in public and private buildings.

Water & Wastewater
Peristaltic pumps are used to accurately dose chemicals during water treatment processes and efficiently transfer viscous and abrasive slurries.

Mining & Precious Metal Processing
Peristaltic pumps reduce water, energy and chemical use and increase reliability and productivity while moving and processing highly abrasive ores and slurries.

Pulp & Paper
Our steam and pump products facilitate the accurate control of critical processes, such as washing, bleaching, dyeing, drying and finishing, in the manufacture of paper and a wide range of domestic and industrial tissues.

Power Generation
Superheated steam is an ideal fluid to transfer chemical energy in fuel into electrical energy through steam turbines. Steam is also used to distribute and re-use waste heat formed during the power generation process.

Why the need for PLM

A broad product range and distributed manufacture network has made a complex landscape

550 Product Groups

100,000+ finished products
600,000+ item codes

89+ unconnected information repositories (in UK alone)

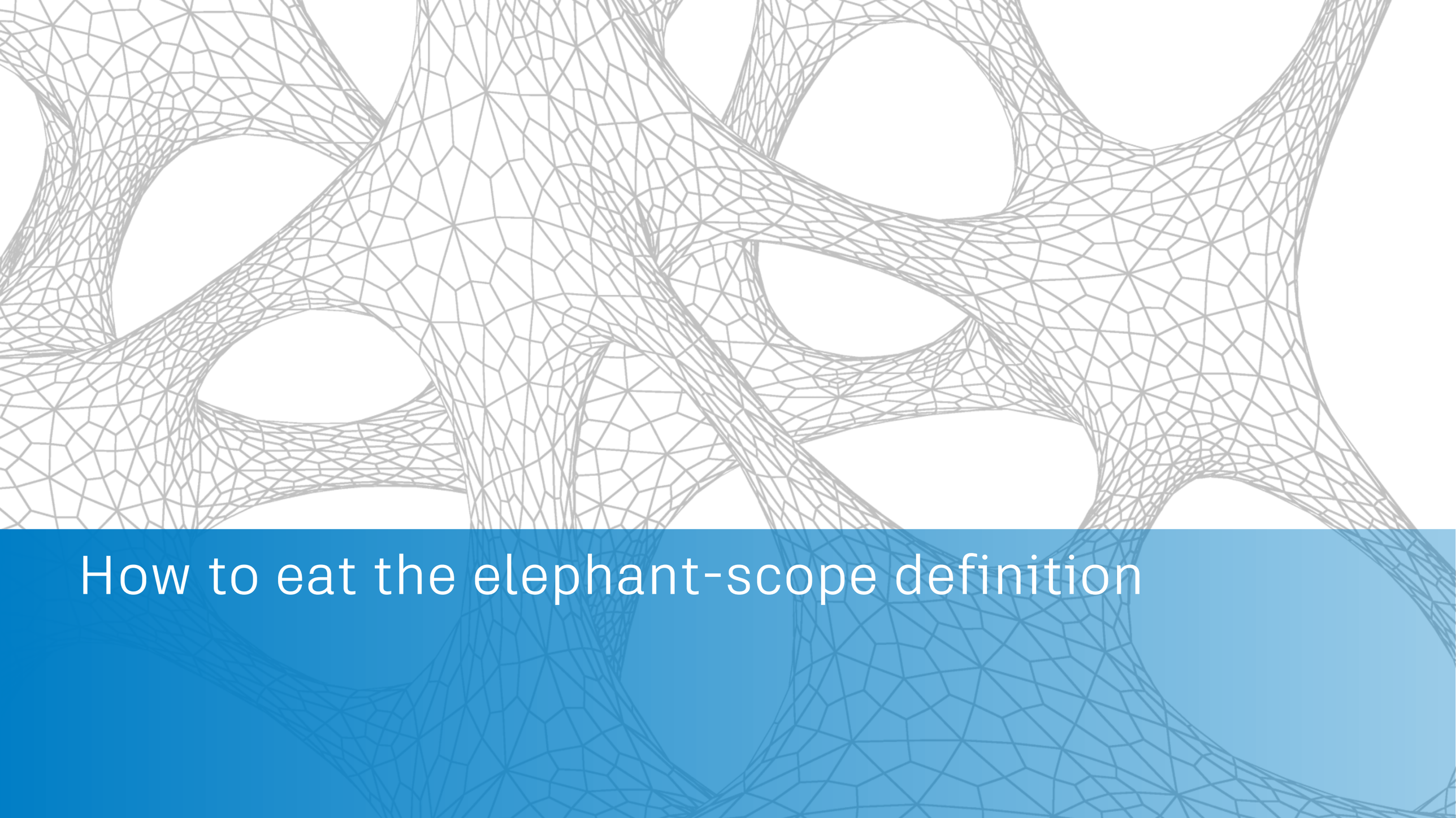
7 Product Development Centres

12 Manufacturing / Configuration Centres

37 Operating Companies

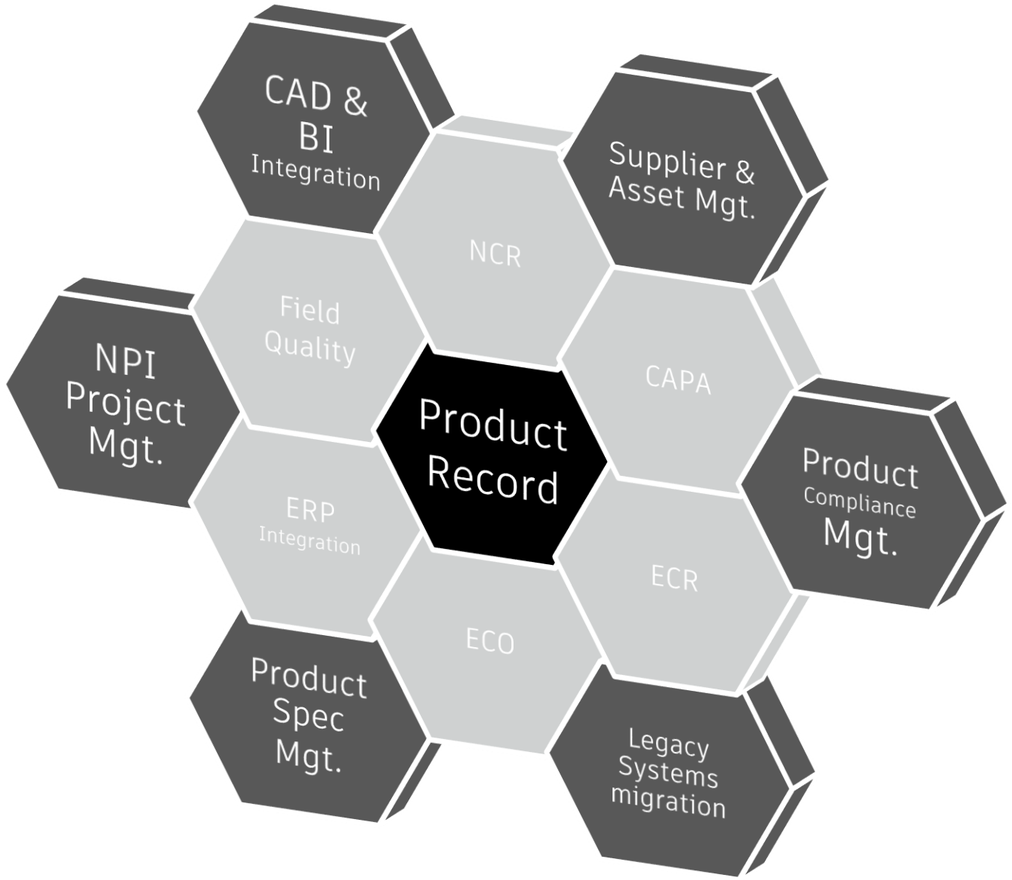
New processes, organisation and a technology platform is required to manage this complexity

Do we have a common understanding



How to eat the elephant-scope definition

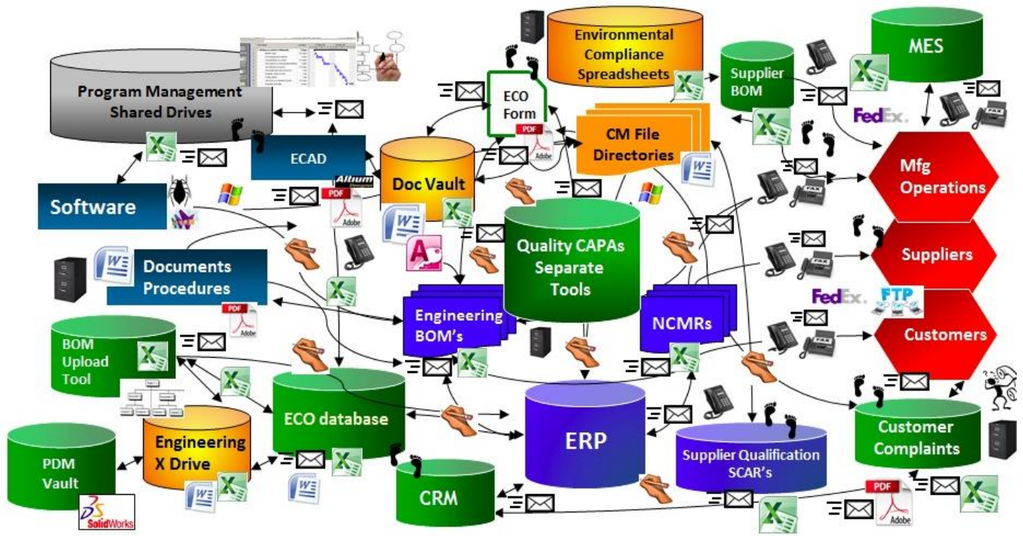
Financial justification was hard and therefore pulled in many areas to make the business case.



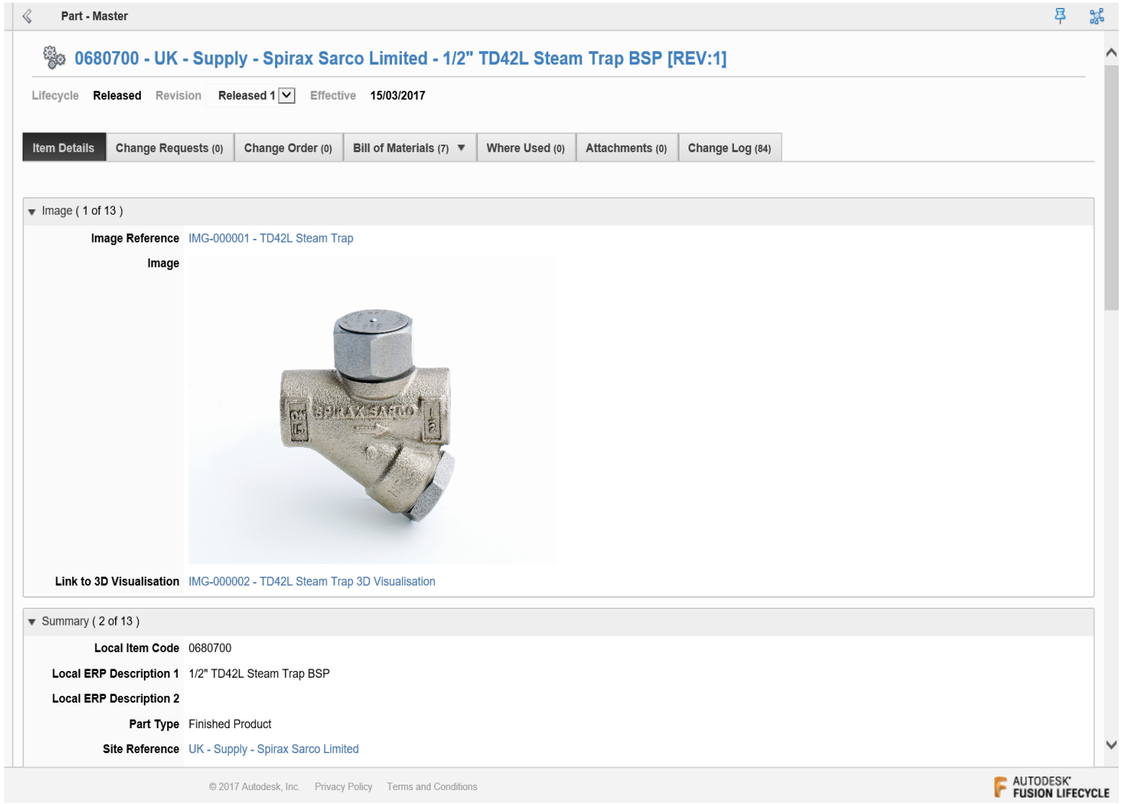
We soon realised the centre core would be a tough foundation to deliver and drive many changes we had not considered..

Product Record Hub,

From chaos to clarity in……

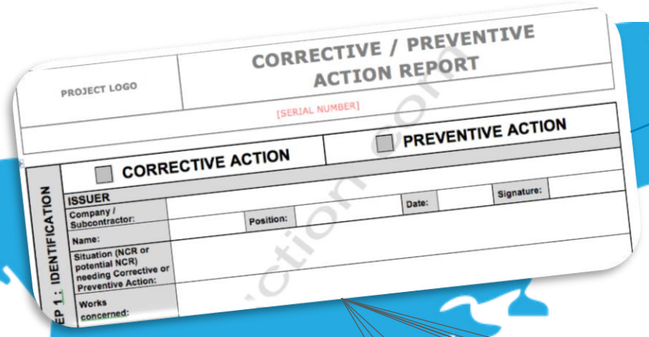


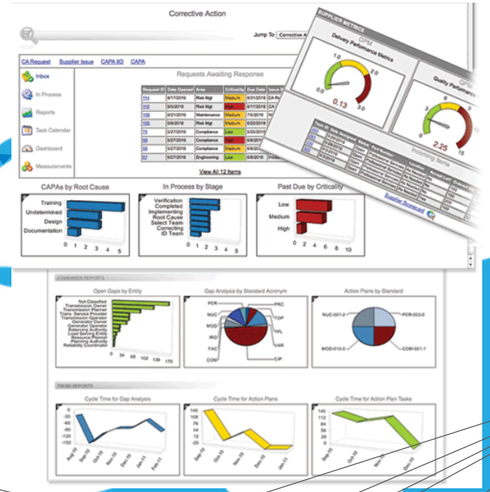
We have recognised our data is not very well defined, so we are prioritising. But we have learnt what's important.



Quality Management

Standard solution group wide for reporting quality issues



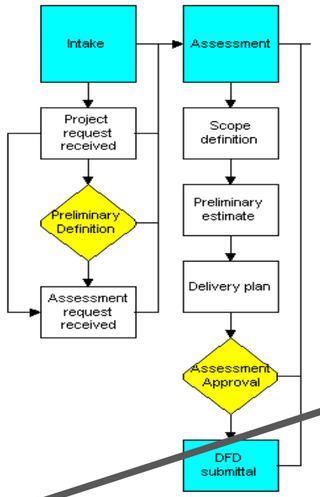


Non Conformity

Quality management can stand alone, and will show if your company really needs PLM

Engineering Change

A focus on basic change and alignment of functional responsibility.



ORing Engineering Change Notice

Issue Date:2012/1/12

Affected Models：	IES-3082GP , IES-3080, IES-3062GT, IES-3062FX, IES-3062GF, IES-1080, IES-1062GT, IES-1062FX, IES-1062GF, and IES-1082GP IES-2060, IES-2042, and IPS-2042 series IDS-5042 series IAP-320 and IAP-120 series, IAR-320 and IAR-120 series
Effective Date：2012/4/1	

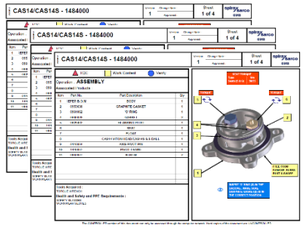
Dear Customers：

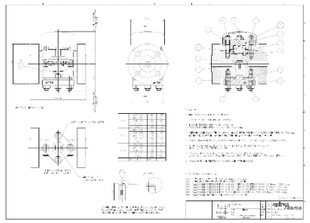
ORing appreciates your daily support on industrial Ethernet business.

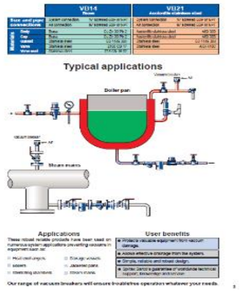
To maximize production efficiency by minimizing wear and tear on the manufacturing mold, the models mentioned above will have the following changes:

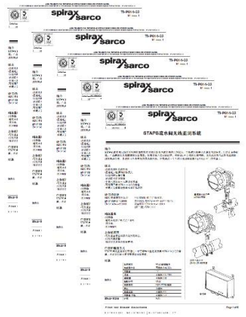
■ I. Housing appearance and dimension change：

From **52(W)x106.1(D)*144.3(H)mm to 54.2(W)*106.1(D)*145.4(H)mm**





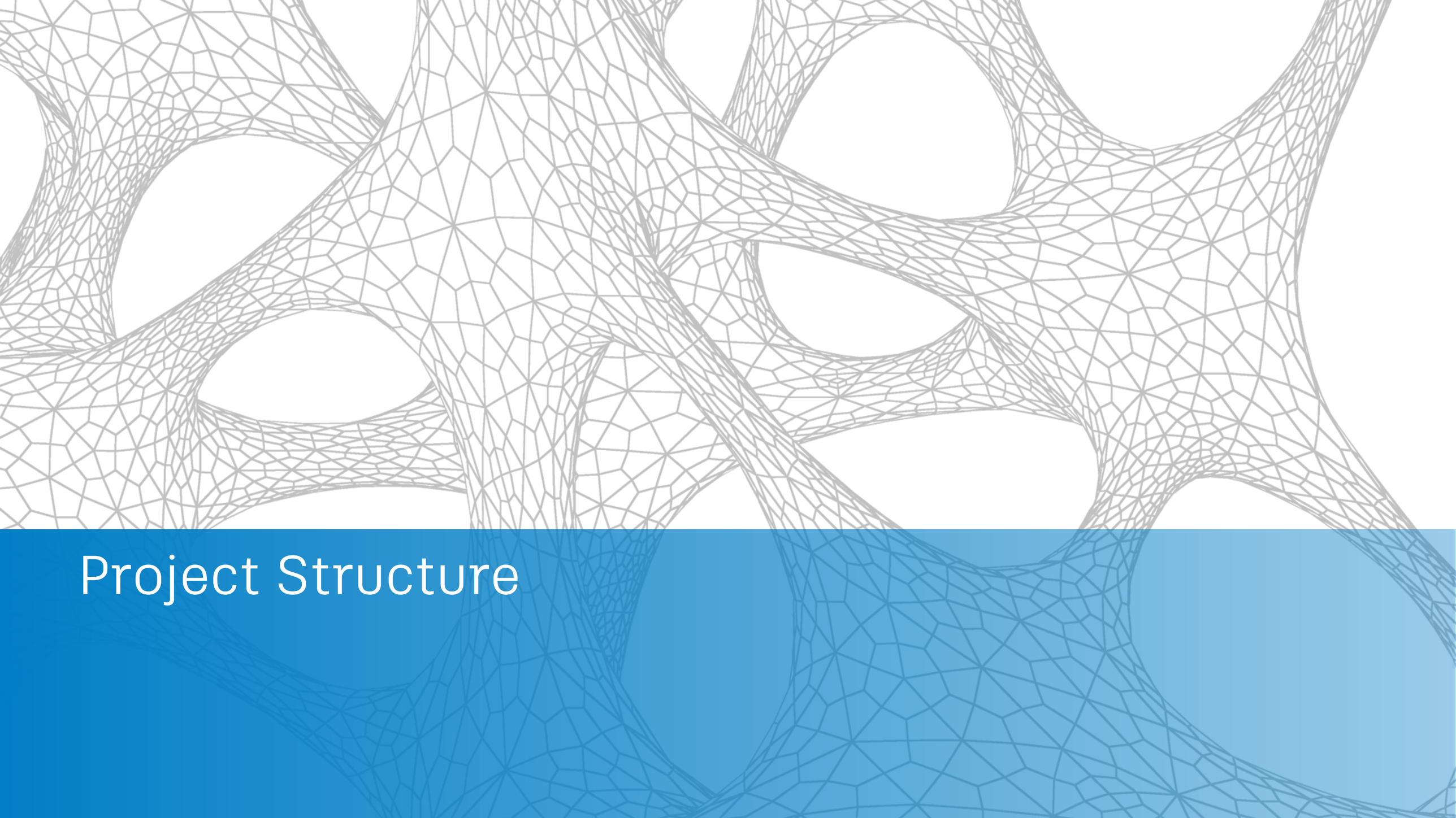




We have recognised a long and progressive road map is necessary to fully lock down and control all aspects of design and manufacturing

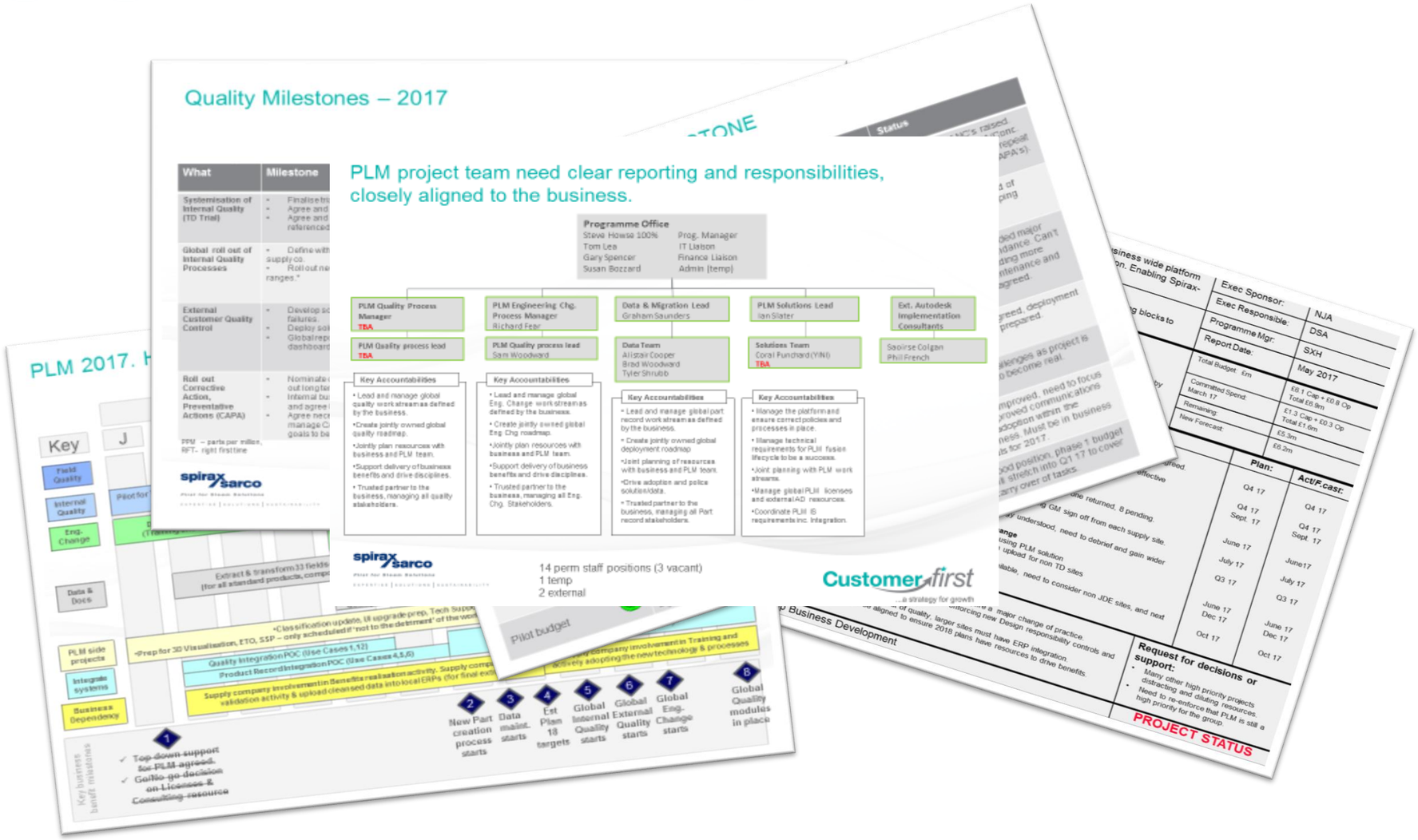
THINK **BIG**

START ***small***

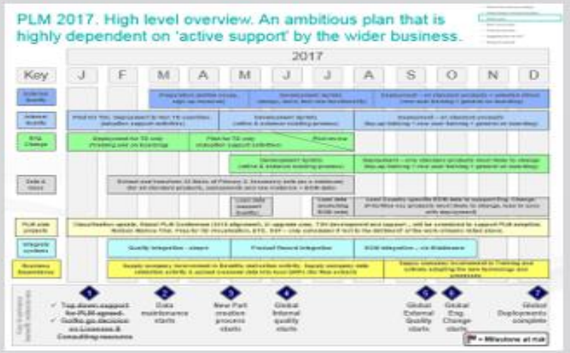
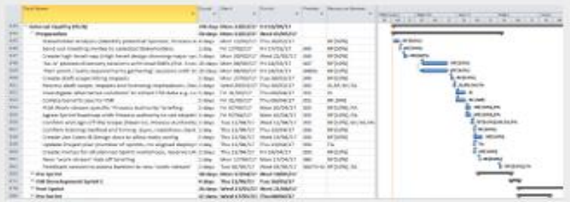


Project Structure

Clear, concise documentation, are vital to help engagement on complex topic’s



PLM planning overview. The complexity of the PLM project is being managed at 3 'synced' levels (from work-stream plan through to task delivery).

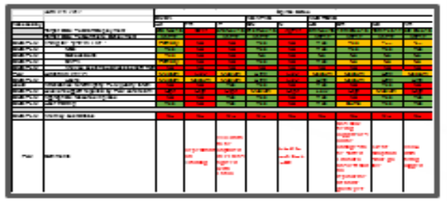
LEVEL		EXAMPLE DOC	PURPOSE	FORMAT
HIGH	**Program Overview**		• Exec communication. • Exec tracking of key business benefit milestones. • Communications with wider business.	PowerPoint slide (1 page)
MID	**Program Plan**		• Resource allocation. • Resource utilisation. • Project pace setting. • Ensures timely delivery.	Microsoft Project plan (700+ lines)
DETAILED	**PLM Build Manager**		• Tracking of detailed work-stream deliverables. • Mini stage-gate reviews. • Storage of work-stream deliverable documentation.	Managed in PLM itself (Autodesk Fusion Lifecycle workspace)

PLM Governance structure overview. 3 'synced' levels, each meeting monthly.

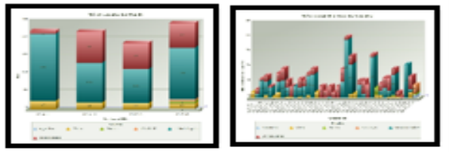
‘Engineering Change’ Work Stream Board. Each work-stream will have its own operational board.

Topics

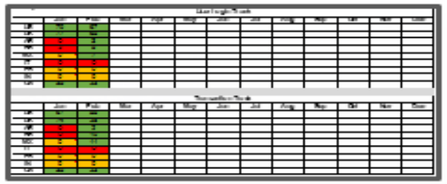
Adoption Tracker



Process Usage Stats



System Usage Stats

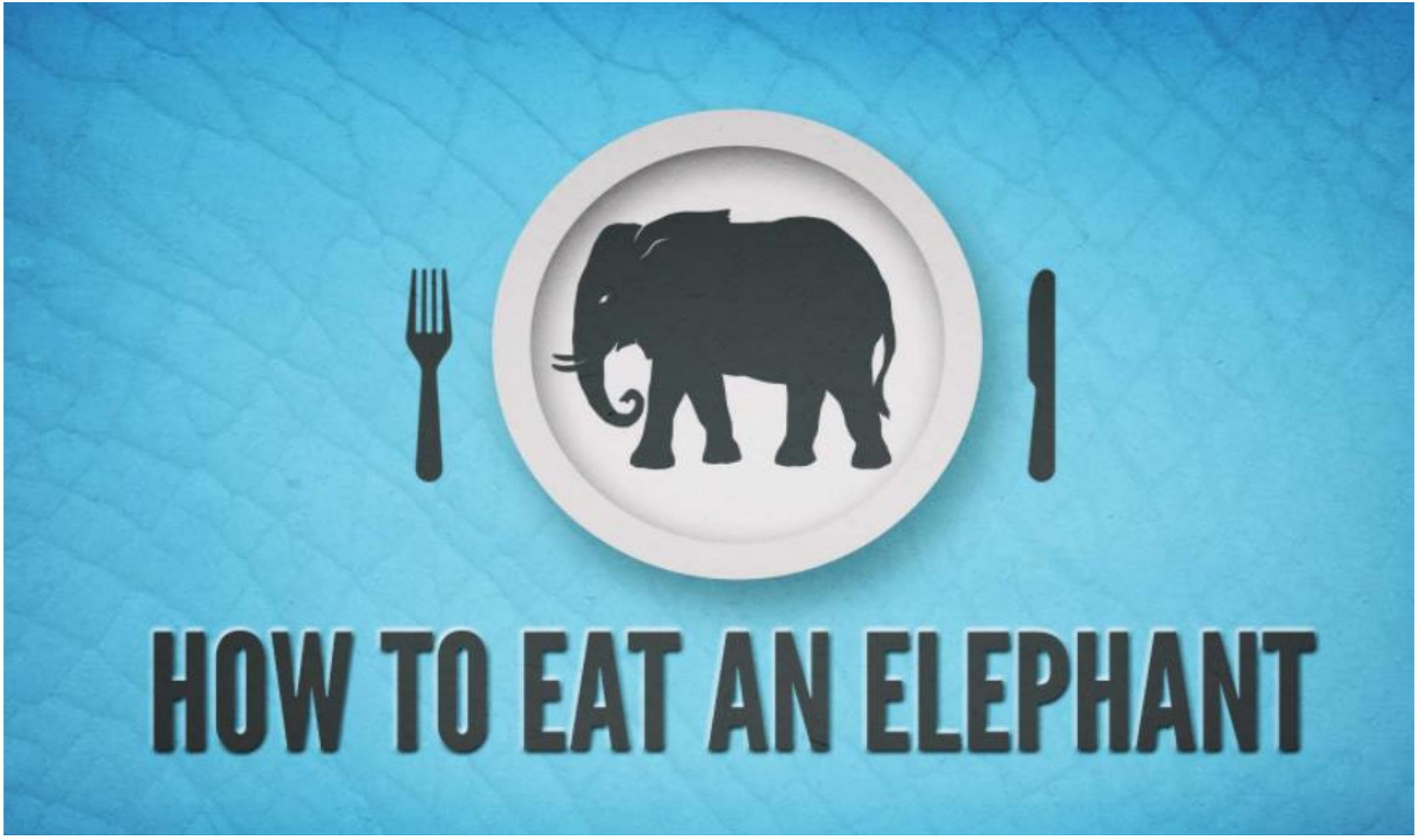


Project Plan

Road map

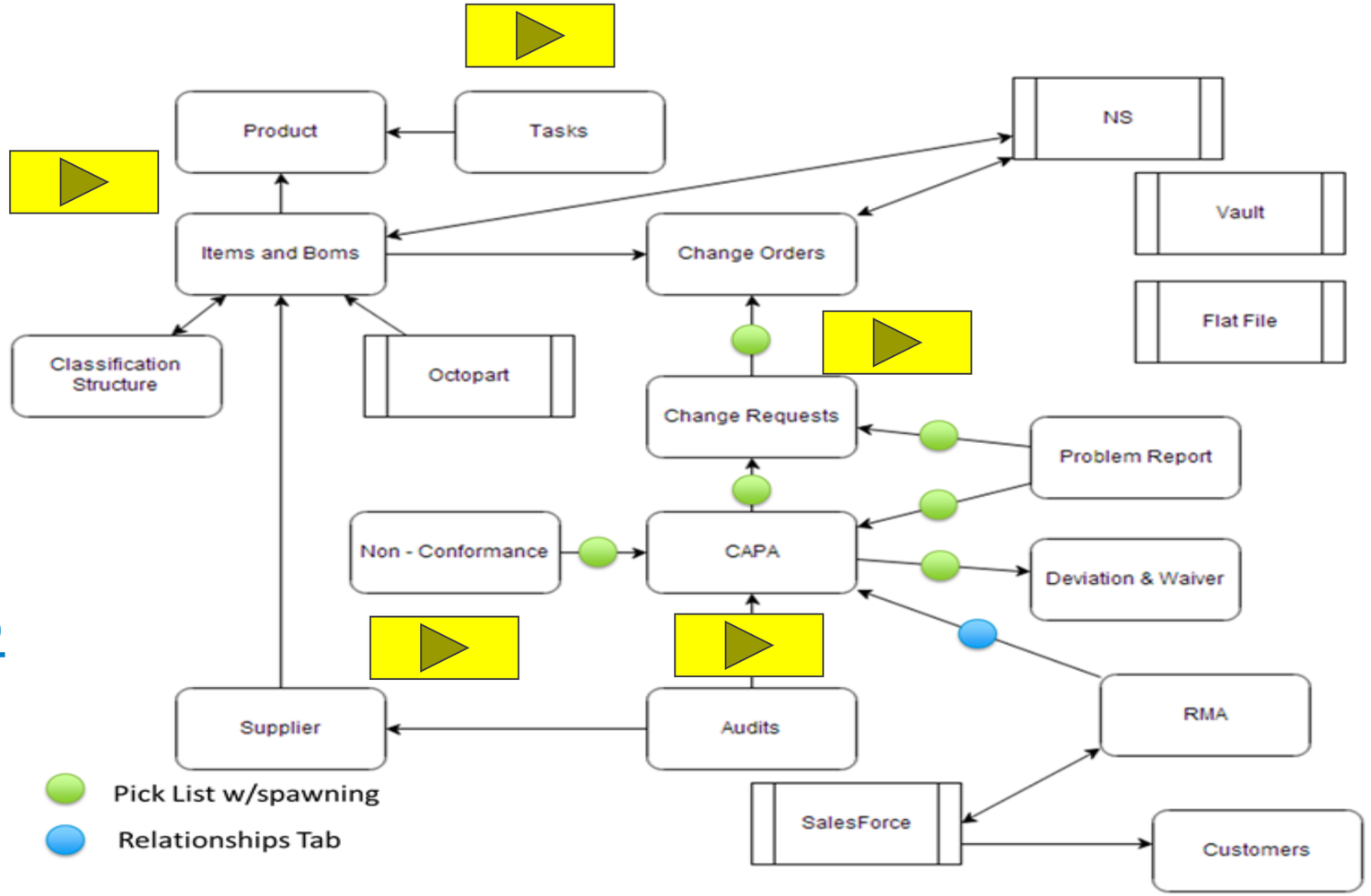
Resource Challenges

Risks Issues


HOW TO EAT AN ELEPHANT

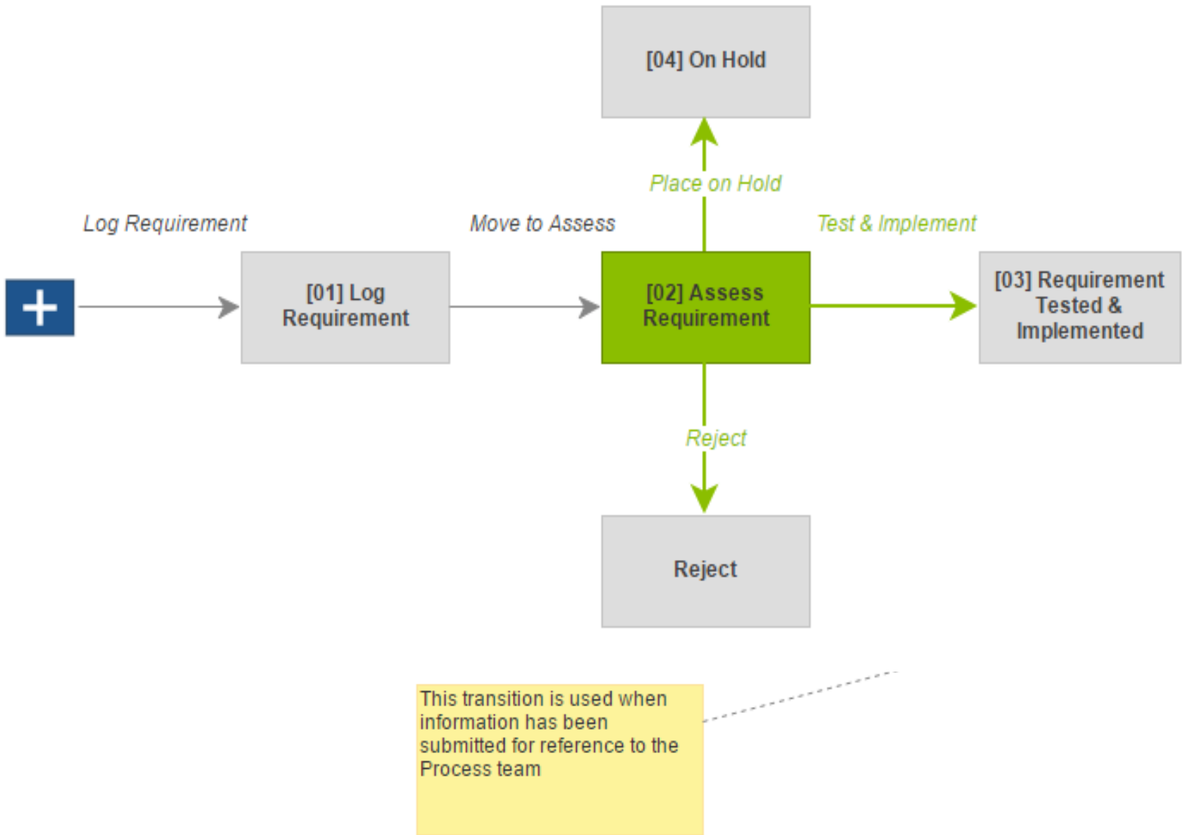
Workspace Map

8 Sites




WATERFALL
Discover
Plan
Build
Review
START
FINISH
AGILE
Discover
Plan
Build
Review
Discover
Plan
Build
Review
Discover
Plan
Build
Review
START
ITERATION
ITERATION
FINISH

FLC as an aid to deployment

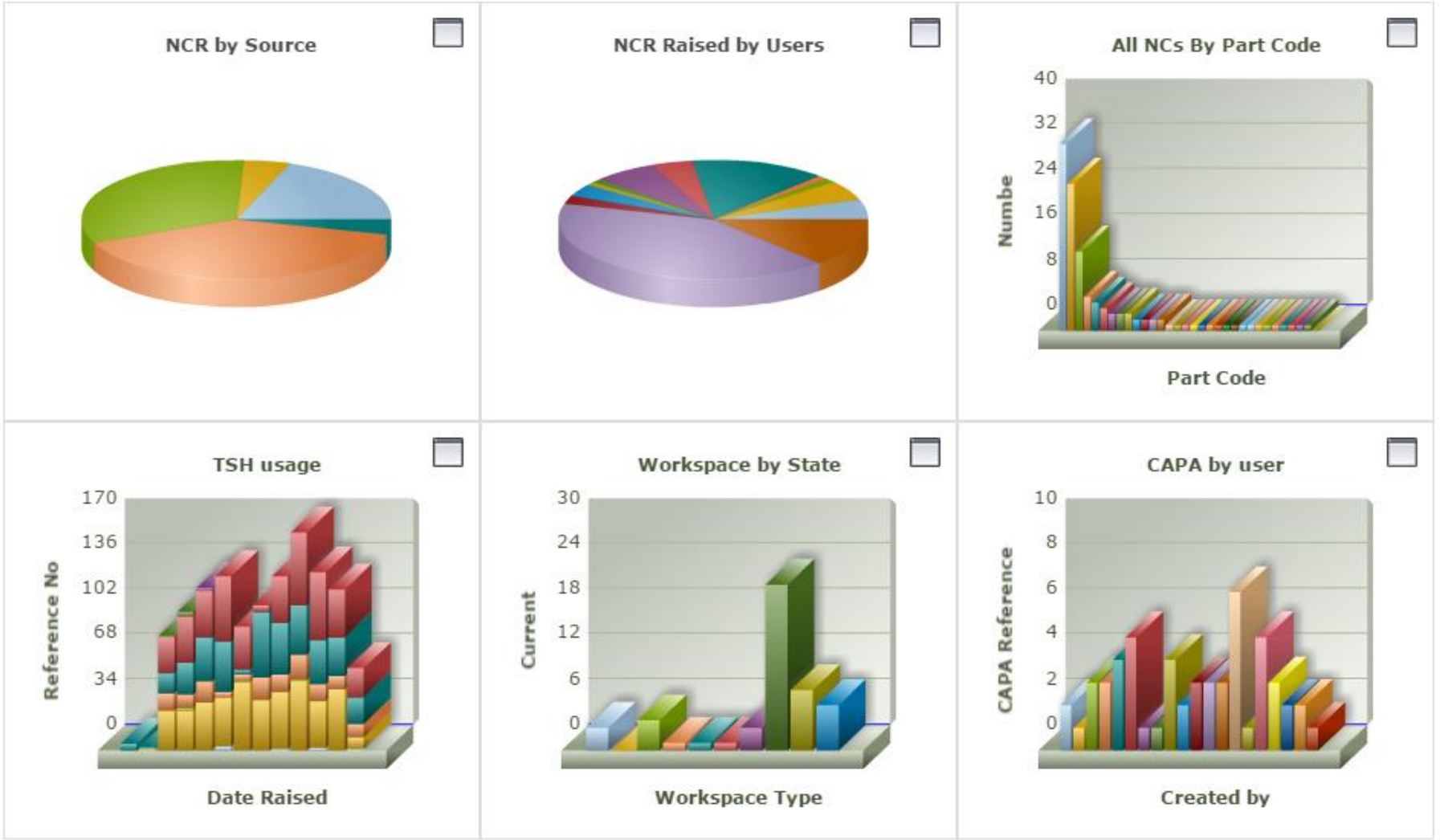


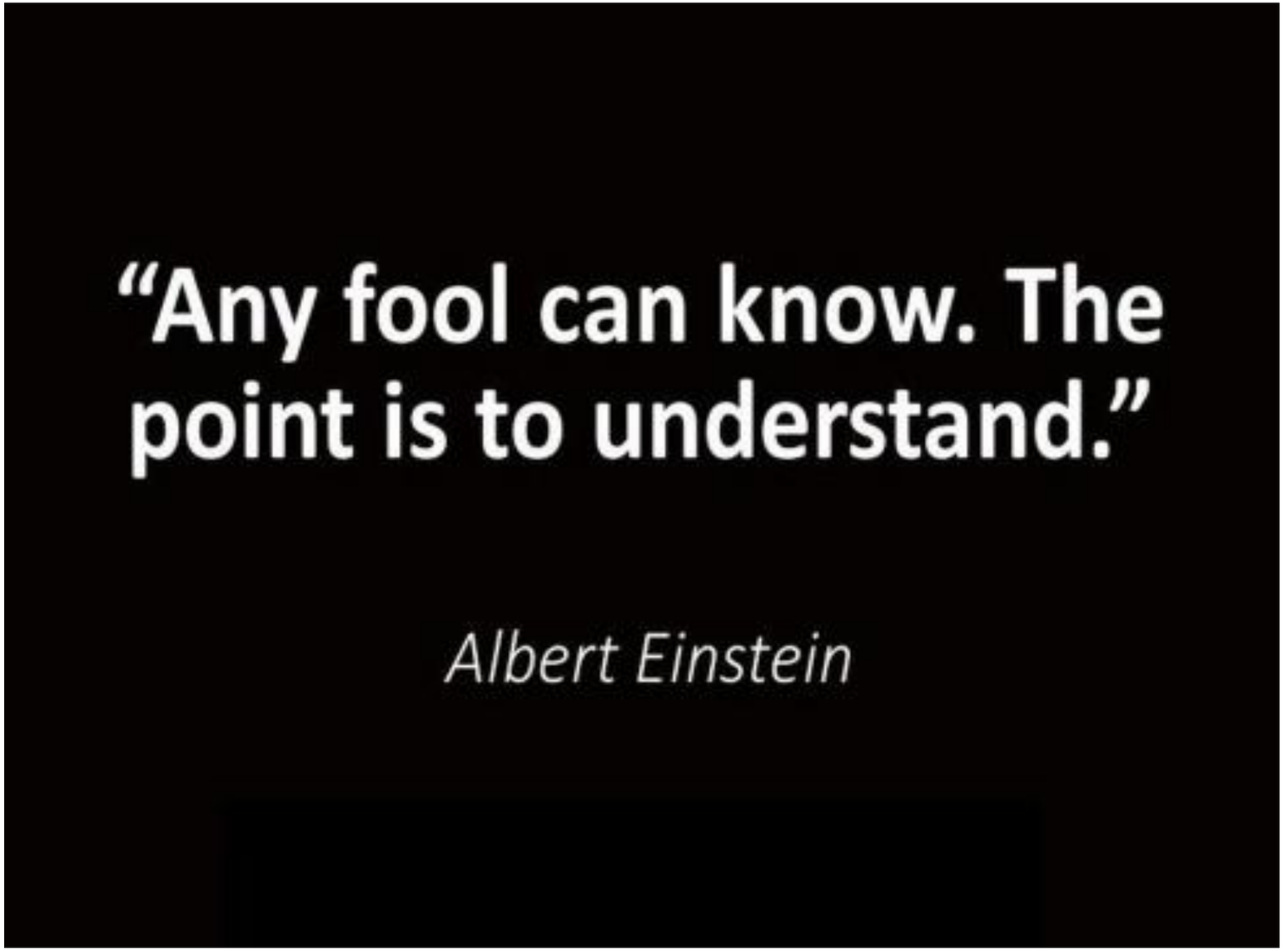
Quality as a quick win

- Less training
- Low configuration complexity
- Little data requirements
- Strong advocates
- High visibility with valued reporting
- Early delivery builds trust

Repeatable play –Lessons Learnt Early

Visibility


NCR by Source
NCR Raised by Users
All NCs By Part Code
40
32
24
16
8
0
Numbe
Part Code
TSH usage
170
136
102
68
34
0
Reference No
Date Raised
Workspace by State
30
24
18
12
6
0
Current
Workspace Type
CAPA by user
10
8
6
4
2
0
CAPA Reference
Created by


“Any fool can know. The point is to understand.”
Albert Einstein

Lessons Learnt

Takeaway Messages

- All work streams needed a road map.
- Structural org changes take time.
- Use FLC to justify the need for PLM.
- FLC has no magic button to fix org problems.
- Crawl-Walk–Run.
- The bigger prizes will take time

Quality

Key Learnings

- More quality problems than most people expected.
- Range of issues is broad and finding a silver bullet is not simple.
- Org structure did not support continual improvement
- Quality measures today focus on £ scrap and this does not necessarily drive a “quality culture”.

Eng Change

Key Learnings

- Concept of Design authority not clear today.
- Currently decision are being made without appropriate consultation or authority.
- Doing full engineering change will be a lot more work than what we do today.
- Manufacturing controls are not considered as changes, these should be brought under control in the future.

Data

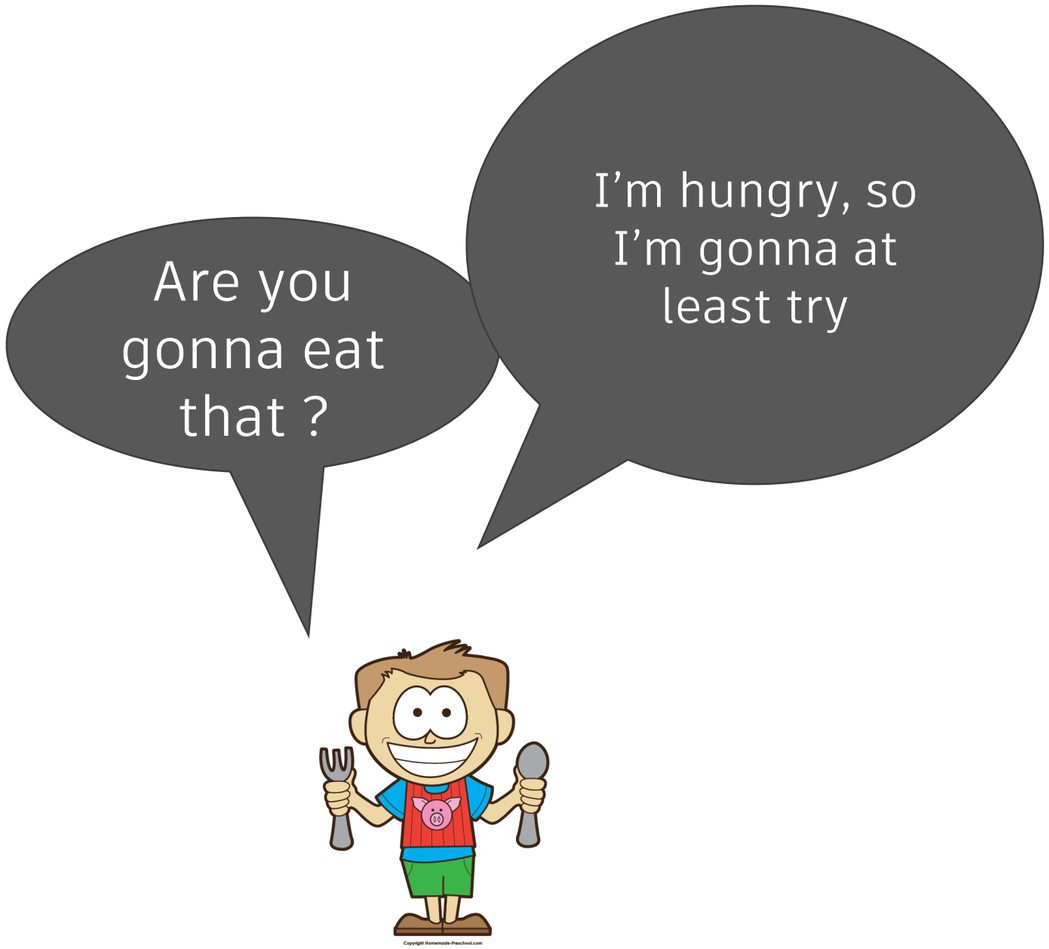
Key Learnings

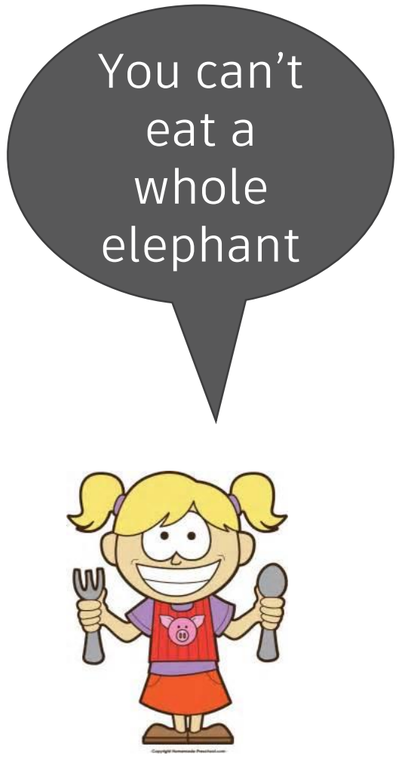
- Insufficient consistency with our data or documents between sites.
- Too many gaps in our data.
- Too much knowledge in long serving employees
- Lack of clarity as to who owns data today.
- Range of PLM benefits require a broad range of data (not easy to do 80/20).

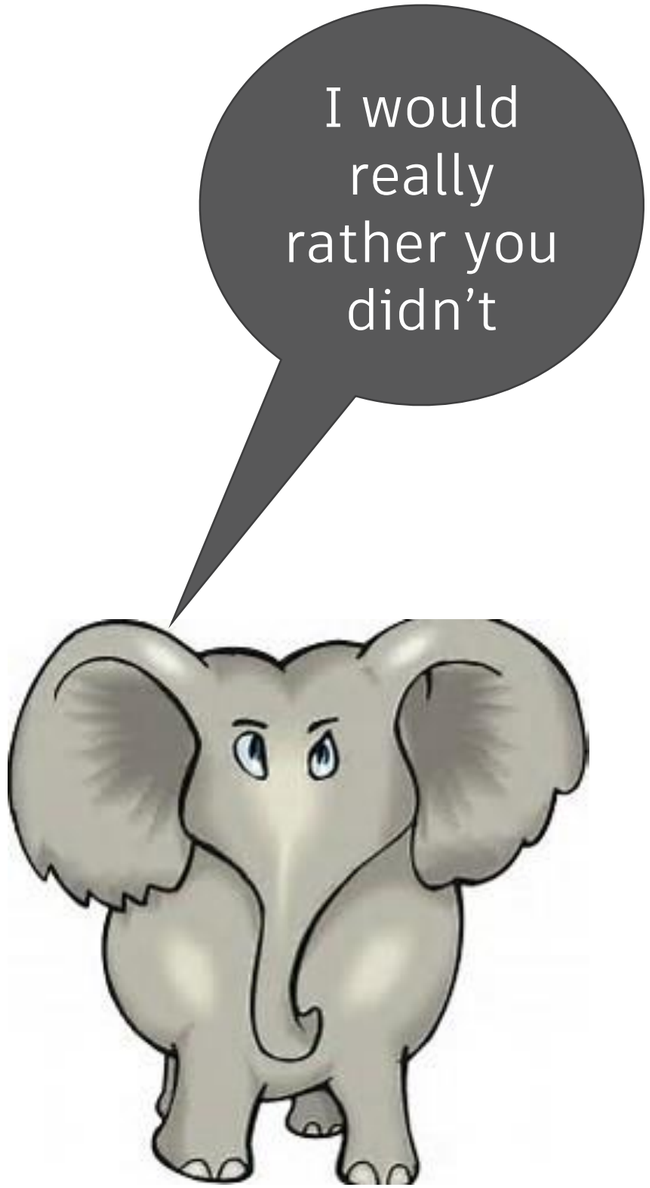
My personal Goal of PLM is

“right Person,
right Responsibility,
right Data,
right Decision”

Start your journey with conviction,







AUTODESK®

Make anything.