Three ’V’s:
Virtual learning
Vision systems
Value chains

Ben Peace
Sustainability Director
29th November 2022


SCALE
DIGITAL VENTURES


fitfactory


DNA.am

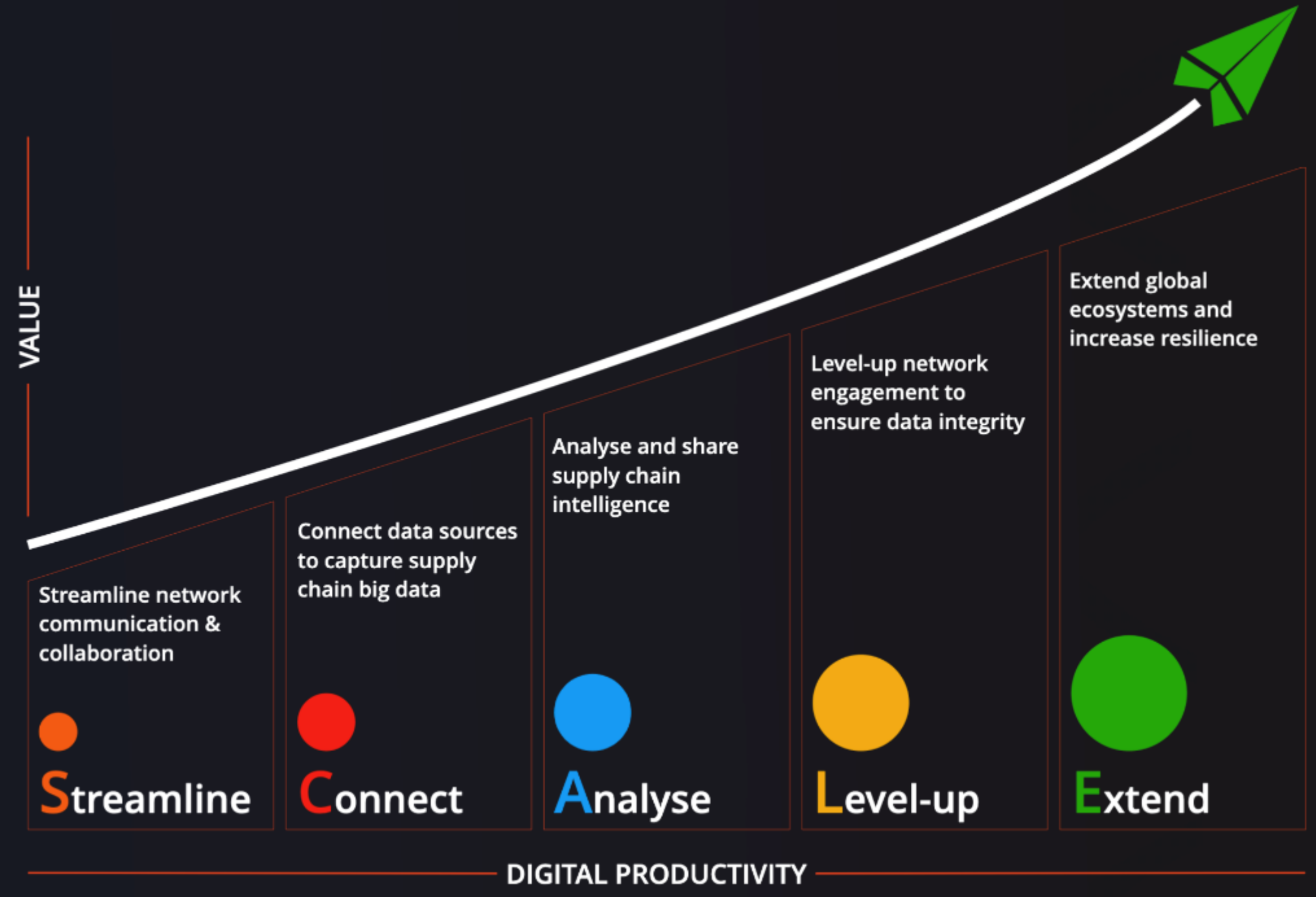

paperless


machine
monitor


sfdc


tricorn


dnasp


VALUE
Streamline network communication & collaboration
Connect data sources to capture supply chain big data
Analyse and share supply chain intelligence
Level-up network engagement to ensure data integrity
Extend global ecosystems and increase resilience
Streamline
Connect
Analyse
Level-up
Extend
DIGITAL PRODUCTIVITY

Supporting 400+ companies

valuechain

"We've grown from a start-up to an order book of £5m in 7 years. We couldn't have done it without Fitfactory's software & support."

Weymouth Precision Engineers

"Everyone can see our plan, achievements and issues and act on them accordingly. This has seen an uplift in OEE, taking us from 28% to 35% within the first few months."

AE Aerospace

"Fitfactory is more suitable for engineers to understand and use than other systems we have used in the past. We chose Fitfactory because of the continuous development of the system."

Cambridge Rapid

COLOUR ANODISING
BENTLEY
POETON EST. 1898
KW ENGINEERING
LYNDHURST PRECISION
metafin
GMO SPRINGS.AERO
KERLOCH OIL TOOLS
KPL
AMF
METSPIN

What we do...

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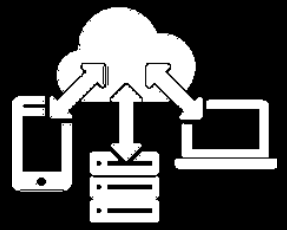
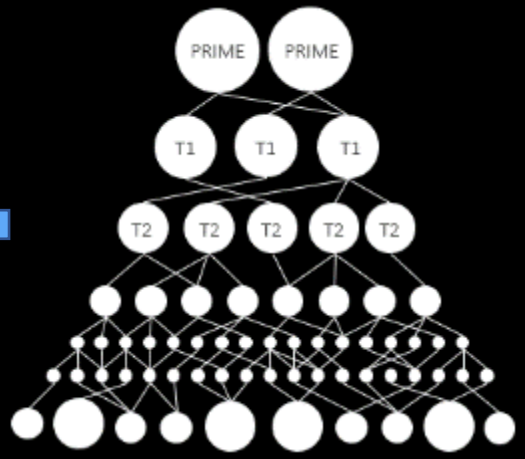
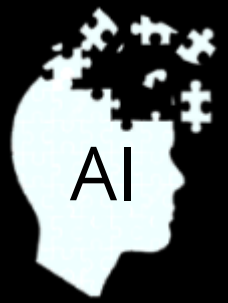
smart manufacturing software





connect & visualise multi-tier supply chains



big data analytics with embedded artificial intelligence

reduce risk

ensure compliance

optimise performance

The manufacturing iceberg – manual work is a Black Box

Factories have very little visibility of manual production processes; Information from 50m factory workers globally is immediately lost or hidden altogether from factory analytics.

Loss of manual skill
+
Varied human capability
+
No traceability in manual work

=

"Our Right First Time is less than 70%, >50 Tonnes/year waste"
– OEM

"£2M in lost contracts we previously won"
– Tier 1

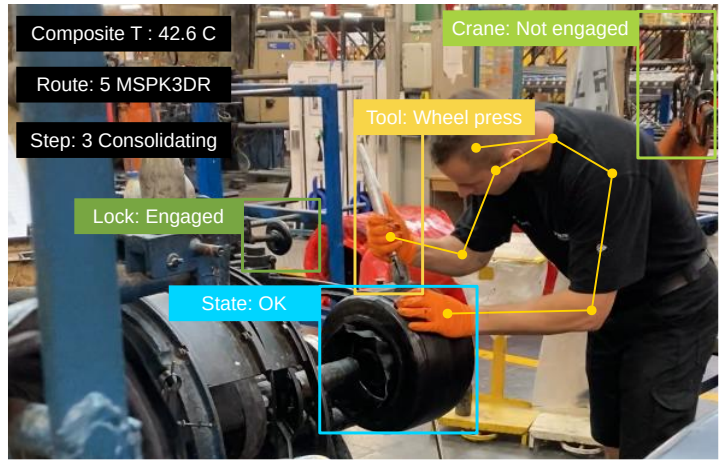
"If a lay-up is not Right First Time, there is no going back. This costs us over £540k per year"
– SME

How the technology works

BLACK BOX SITUATION

- ***Low Right First Time***
- ***No Route Cause Analysis ground truth***
- ***Long training cycles***

The technology digitises assembly stations using powerful AI and sensor technologies to provide granular insight into production operations



- ***Prevent mistakes***
- ***Trace non-conformities***
- ***Retain and retrain***

WITH VISION INTELLIGENCE

Technology benefits

IN-PROCESS ASSEMBLY QUALITY

Prevent mistakes

BENEFITS

Fewer defects

Reduced material waste

Reduced energy usage

Est. Value (per incident)

c.£2,000-£10,000

PROCESS & PRODUCT ASSURANCE

Trace non-conformities

BENEFITS

Reduce RCA from months to hours

Deep traceability

10 year quality assurance

Est. Value (per incident)

c.£100k-£2M

RETAINIING ASSEMBLY SKILLS

Retain and retrain

BENEFITS

Rapid on-the-job skill transfer

Efficient training

New skills ramp-up

Est. Value (annually)

c.£175k

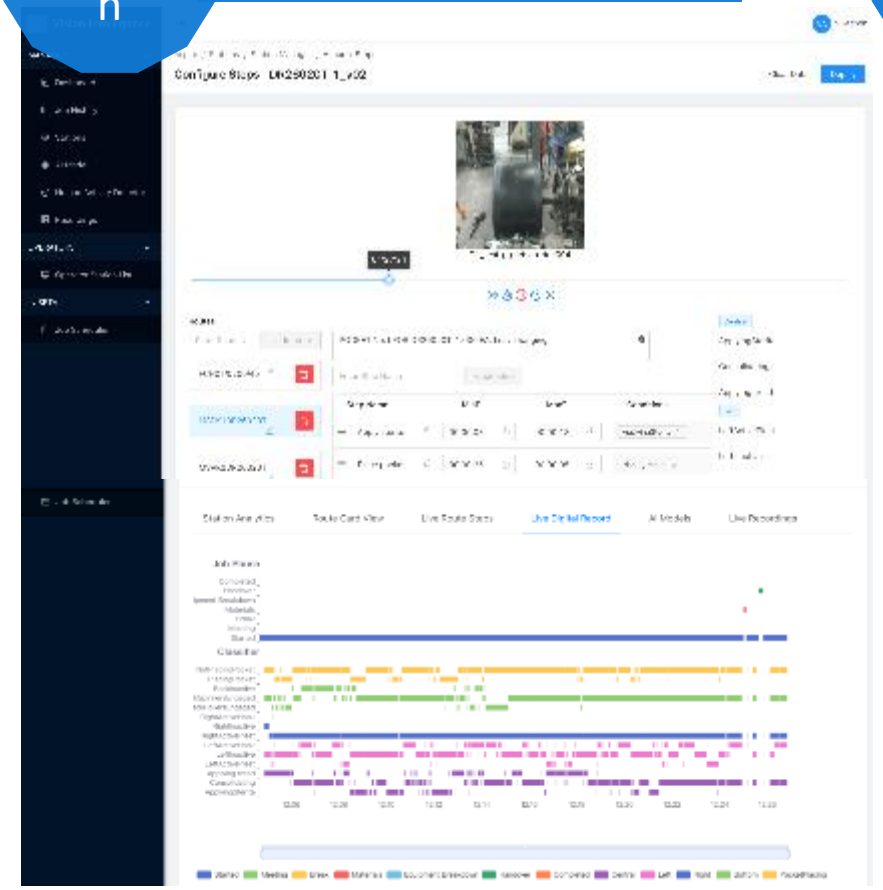
ROI starts in a matter of days

30 min

Shop Floor Set-up (per Station)

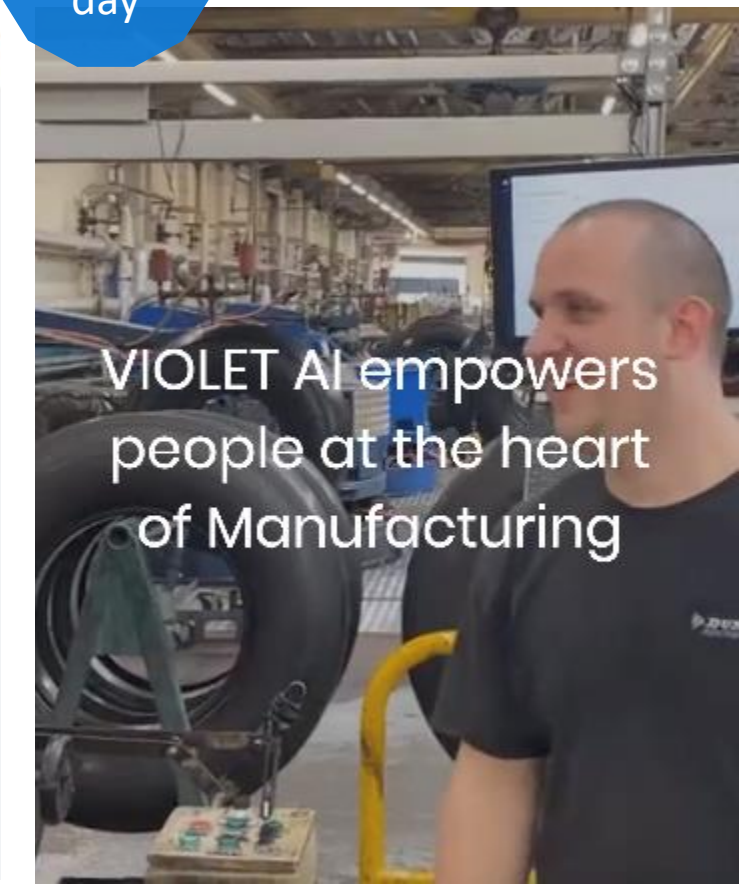
2-4 h

System set-up

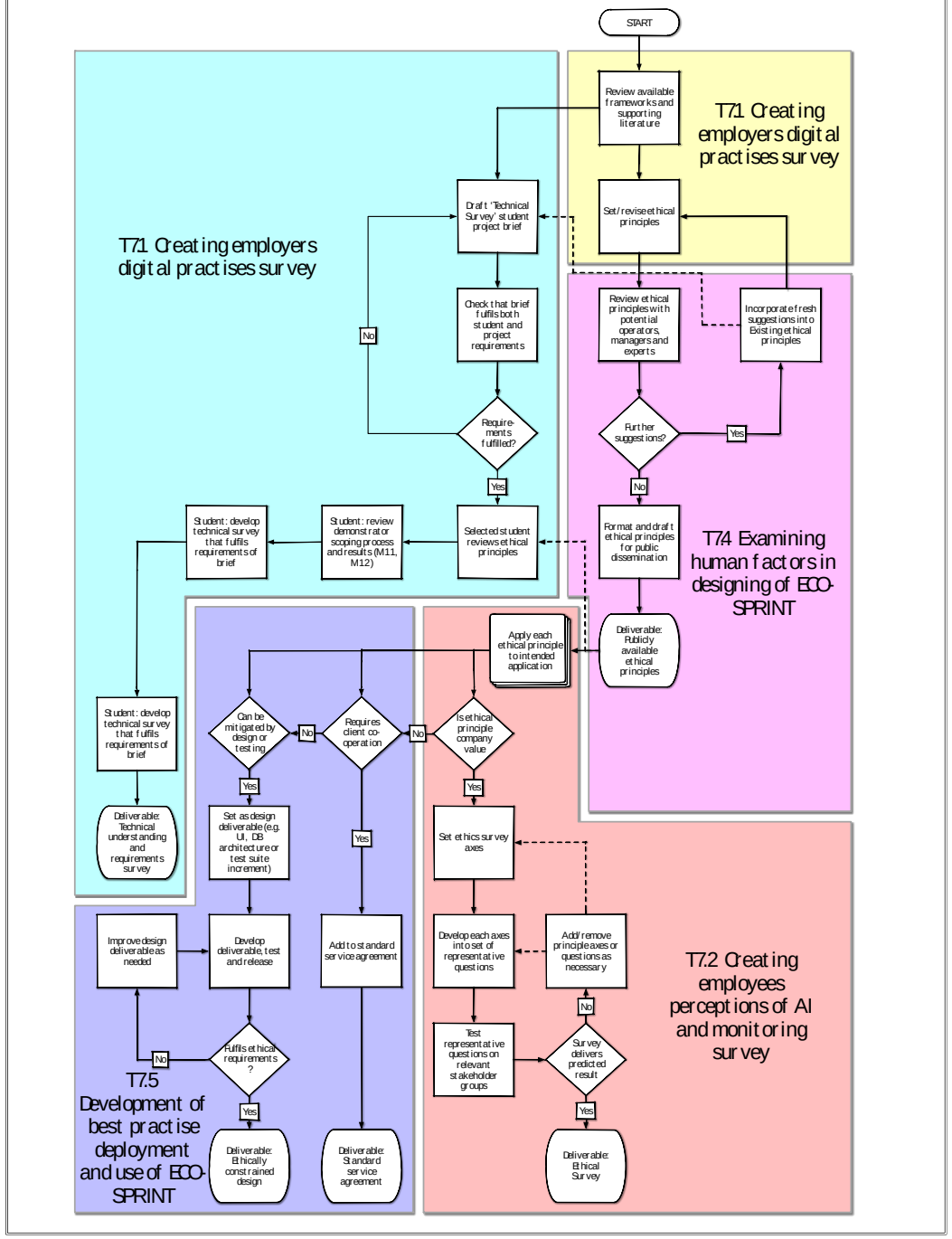


<1 day

Go LIVE!



WP7 Activity plan



UKRI Innovate UK

ECO SPRINT

MADE SMARTER

Environment Centred Optimisation of SME Productivity using Realtime INTelligence

POETON EST. 1898

METAL ASSEMBLIES LTD

WEAF

Ulster University

valuechain

VISION INTELLIGENCE

fitfactory

DECADE

ECO SPRINT

Challenges

- Lack of formalised training
- Aging workforce
- Variability in demand
- Compliance & legislation
- Rising energy & resource costs
- Lack of data – OEE, energy consumption

Outcomes

- Target >30% improvement in energy efficiency
- Carbon footprint reduction of over 20,000 tonnes CO2e/year
- Target improvement in productivity 35%
- New skills
- New jobs
- Commercial opportunity for the technologies

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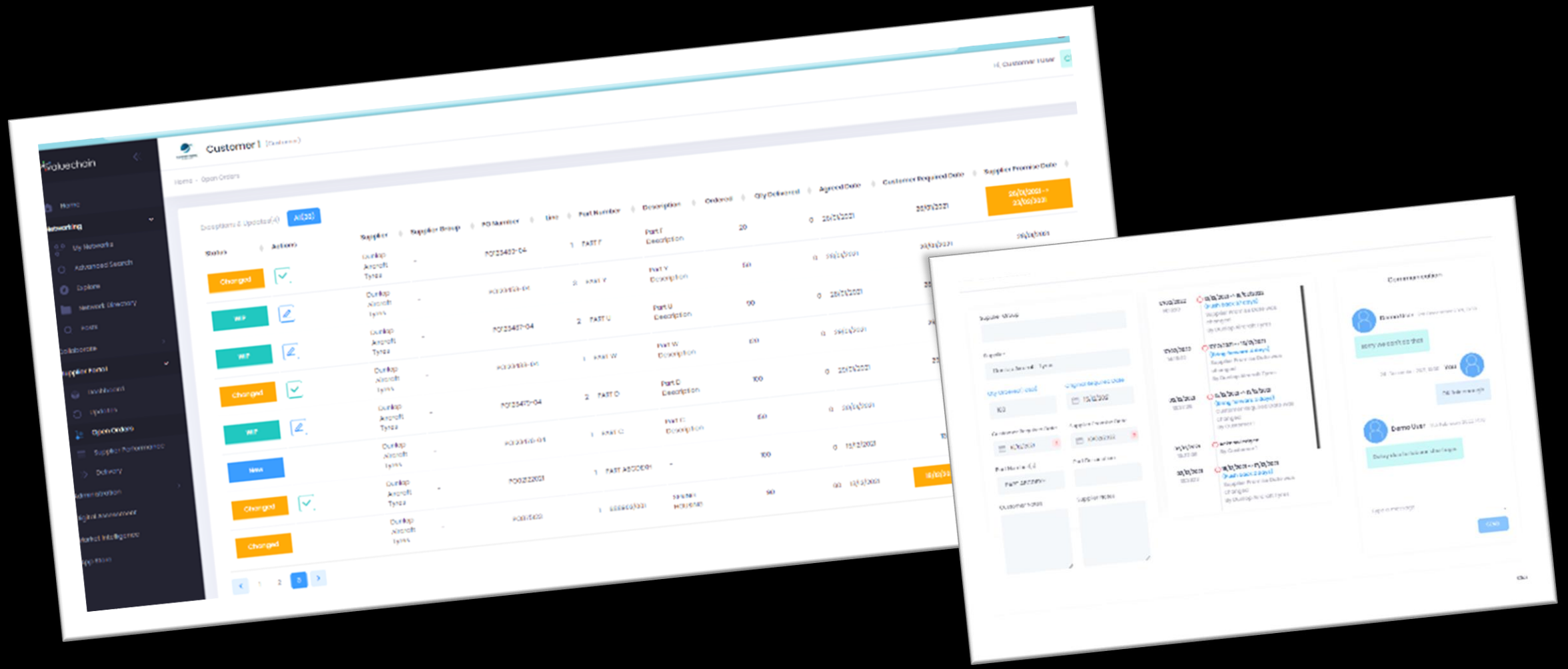
CUSTOMER PORTAL



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Digital Infrastructure

In this section we will ask questions which provide an insight into your company's digital infrastructure.

Company Profile

In this section we will ask questions which provide an insight into your company's commercial profile.

DIGITAL PRODUCTIVITY

Digital Maturity

Business Priorities

Home

Section 1 - COMPANY PROFILE
4/5 - 80% Completed

Section 2 - BUSINESS PRIORITIES
2/8 - 33% Completed

Section 3 - DIGITAL MATURITY INDEX
15/73 - 21% Completed

- SALES, MARKETING & ACCOUNT MANAGEMENT
- ENGINEERING & OPERATIONS
- QUALITY MANAGEMENT
- LOGISTICS & STORES
- HSE MANAGEMENT SYSTEM
- HR
- FINANCE
- DIGITAL INFRASTRUCTURE
- DIGITAL DESIGN, TESTING & ENGINEERING

Do you have a process to manage incoming purchased items?

This is not applicable for our business	We are considering using these techniques	We manually manage this process using shared files	Yes, and we have implemented various digital solutions to achieve this.	We are planning to invest in improving our digital management processes	Yes, and we have a business wide digital system which shares the data	Yes, and we have a business wide SD digital system & have integrated customer access to..

Do you monitor shelf life expiry of finished items?

This is not applicable for our business	We are considering using these techniques	We manually manage this process using shared files

Do you manage stock on a first in first out basis?

This is not applicable for our business	We are considering using these techniques	We manually manage this process using shared files

Back

- Business Priorities
- Digital Maturity & Benchmarking
- Top 10 Priorities
- Heat Map
- Battery Indicator
- Export PDF Report

Version 1 - 22/06/2022

+ Start Another Assessment

virtual learning factory

valuechain Simulanis UFI VocTech Trust

Digital manufacturing/ “industry 4.0”

- 58% of companies lack sufficient resources or time
- 50% didn’t have the culture to implement digital successfully
- Digital skills gap: 75% of organisations plan to upskill workers to bridge the gap, while 50% intend to hire new additional skilled workers

(“The Manufacturer” magazine, 2020)

£120bn
skills gap in the UK by 2030

69%
UK employers experiencing skills shortages

Challenges

- Ageing workforce – not “digital natives”
- Young “digital natives” lack industry knowledge
- Ever changing market needs
- Capacity constraints
- Range of different training needs at different levels

01 High equipment and capital costs.

02 Underutilization of industrial assets.

03 [illegible]

04 Lack of knowledge transfer

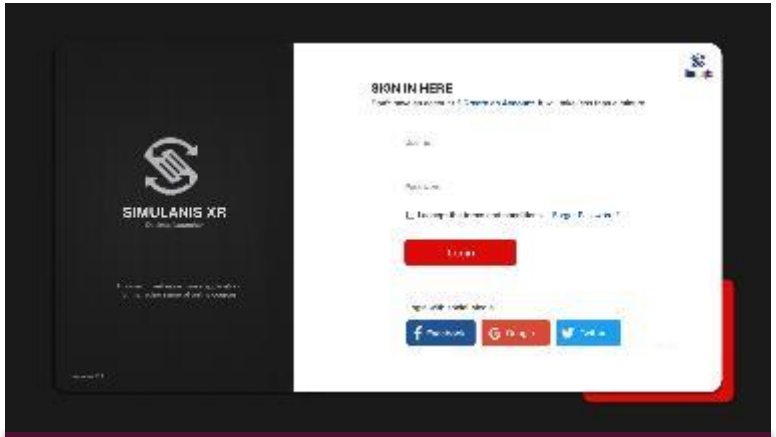
05 Delays and downtime due to ineffective training leading to high costs.

Why VR?

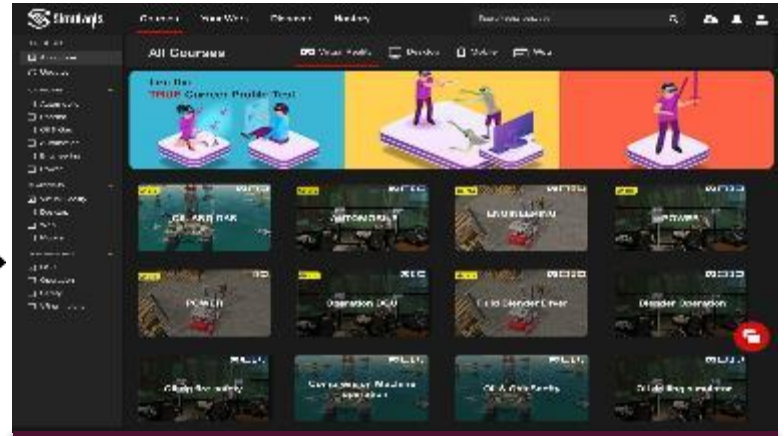
Training using virtual reality (“VR”) has been shown to:

- increase retention by 75%
- train people up to 4x faster
- cost up to 64% less than equivalent training systems
- reduce distractions
- provide controlled environments – no cheating!
- improve engagement
- inherent data capture capability on the learning journey
- ability to represent environments and scenarios that would not otherwise be accessible – eg. due to health and safety, proximity, costs, etc.

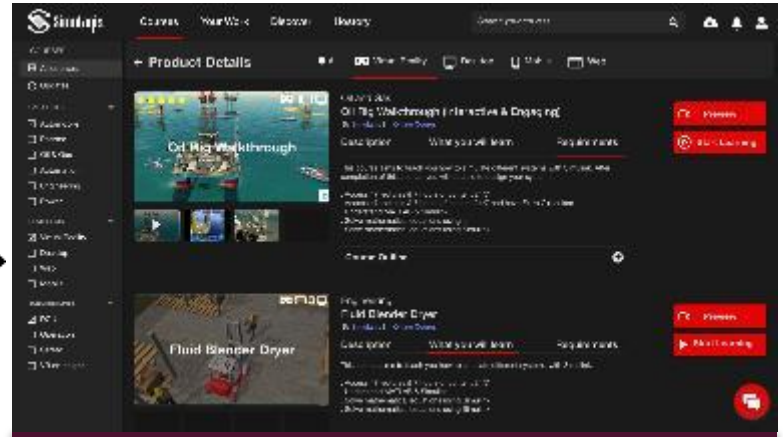
How it works



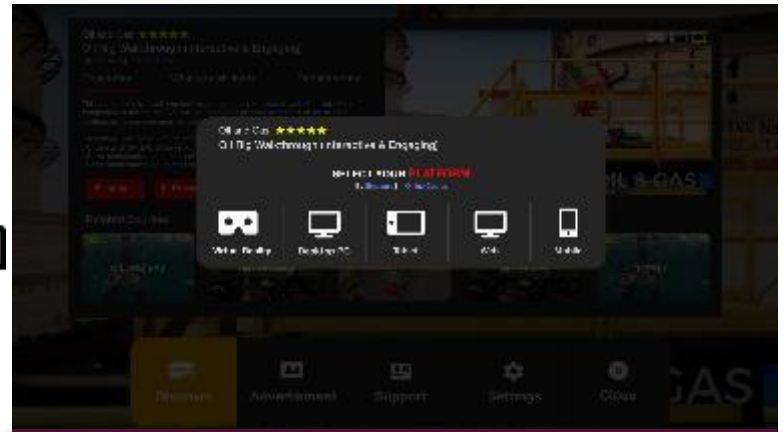
1. Register to the Skilling Portal



2. Get access to your Learning Dashboard

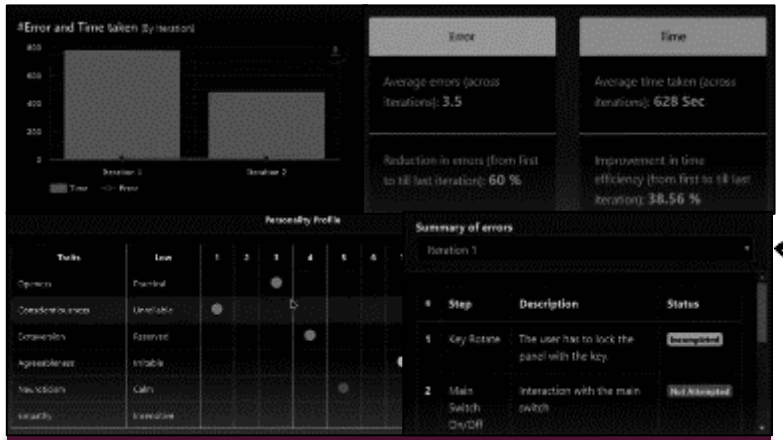


3. Choose from a range of courses



4. Select course and platform

5. Get skilled on industry validated content



6. Get real-time analytics and feedback

Module library

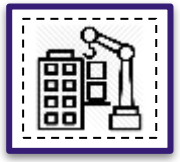
Topics spread across multiple industries, covering Life Sciences, Automobile, Oil & Gas, EHS and Construction sectors.

Life Sciences

Automobile

Oil and Gas

EHS

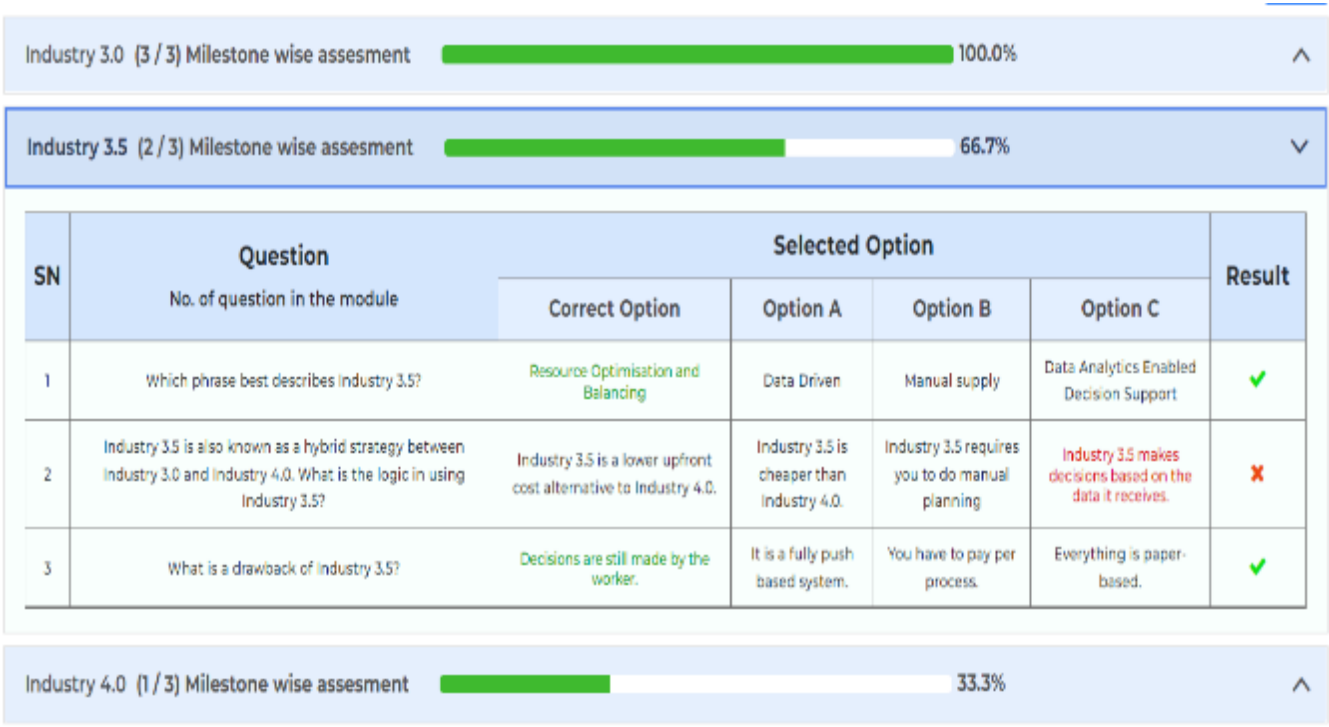


Construction Safety

Fluid Bed Dryer	General Check up	High Volume Long Range	Chemical Spillage	Site Traffic Safety
Rapid Mixer Granulator	Wheel Balancing	Rim Seal	LOTO	Fall from height
Co-Mill	Brakes Pad Cleaning	Foam Pourer	Choking	Falling objects
Dispensing Booth	Brakes Shoe Replacement	Tank Trunk Decantation	Breathing Difficulty	Fire during welding activity
API Reactor	Sparks Plug Replacement	Retail Outlet Retail Safety	Disaster Management	Fire during welding activity
Tablet Coating Machine	Engine Oil and Filter	LPG Mechanics	Generic EHS	Confined Space
20+ modules	**10+** modules	**10+** modules	**5+** modules	**5+** modules

Target the skills gaps

- Track user training and progress.
- Realtime user performance assessment and milestone based trainings.
- Access to study materials, quizzes and SOPs.
- Leaderboards to view scores and compete across the training ecosystem.



Industry 3.0 (3 / 3) Milestone wise assesment — 100.0%

Industry 3.5 (2 / 3) Milestone wise assesment — 66.7%

SN	Question No. of question in the module	Selected Option Correct Option	Option A	Option B	Option C	Result
1	Which phrase best describes Industry 3.5?	Resource Optimisation and Balancing	Data Driven	Manual supply	Data Analytics Enabled Decision Support	✔
2	Industry 3.5 is also known as a hybrid strategy between Industry 3.0 and Industry 4.0. What is the logic in using Industry 3.5?	Industry 3.5 is a lower upfront cost alternative to Industry 4.0.	Industry 3.5 is cheaper than Industry 4.0.	Industry 3.5 requires you to do manual planning	Industry 3.5 makes decisions based on the data it receives.	✘
3	What is a drawback of Industry 3.5?	Decisions are still made by the worker.	It is a fully push based system.	You have to pay per process.	Everything is paper-based.	✔

Industry 4.0 (1 / 3) Milestone wise assesment — 33.3%

Benefits over current training methods

Decision Driver	Virtual Learning Factory	Traditional Methods
Scalability	Across platform and devices	Classroom/device bound
User Report	Real-time deep analytics	Paper based assessments
Time	Saves time	Time consuming
Instructors	Stand alone	Instructor-led
User guidance	End-to-End support	Human dependency
User Management	Complete management and reporting	Limited reporting

Real World

Virtual World

Final thoughts

1. Visibility is key
2. Collaborate with academia & funded programmes etc.
3. Digital revolution should be overlaid with sustainability
4. Adopters raise appetite and ambition when once they see the benefits
5. Combined solutions can be greater than the sum of their parts
6. Developing technologies & engaging Virtual Learning Factory use cases is hard!
7. Engage with users, test your assumptions
8. Embrace failure

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VISION INTELLIGENCE

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