

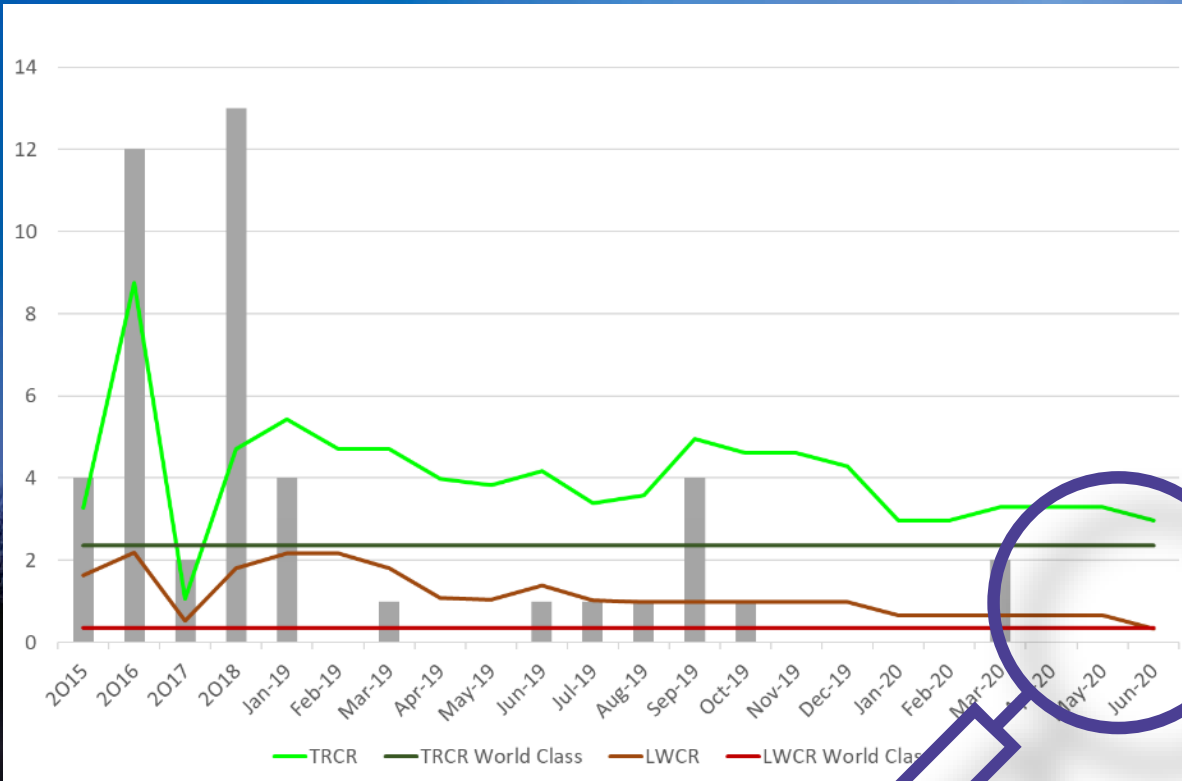


MANAGING AND INFLUENCING SUBFAB SAFETY

Alan Ifould
Head of Marketing, Operational Excellence
SESHA SYMPOSIUM, July 2020



BREAKING NEWS



June 2020 Field Operations
LWCR at World Class Benchmark



Challenges in the SubFab environment



The SubFab can be a dangerous place

A large space where people interact with machines and processes

Many suppliers often competing for the same workspace (e.g. overhead)

Challenging environments: toxic chemicals, restricted spaces, heavy equipment

Longevity of equipment lifecycle: design changes are slow to propagate

Time pressures: tool downtime

Where have we come from?

2016 History Lesson

12 Recordable Cases
Including 3 Lost Time Cases

3 Evacuations
Including 2 Fab Evacuations

**1 Customer
Property Damage**

**2 High Potential Near
Misses**

Key challenges
– what lies beneath the iceberg?

Health & Safety Organisation
Disproportionate field service representation

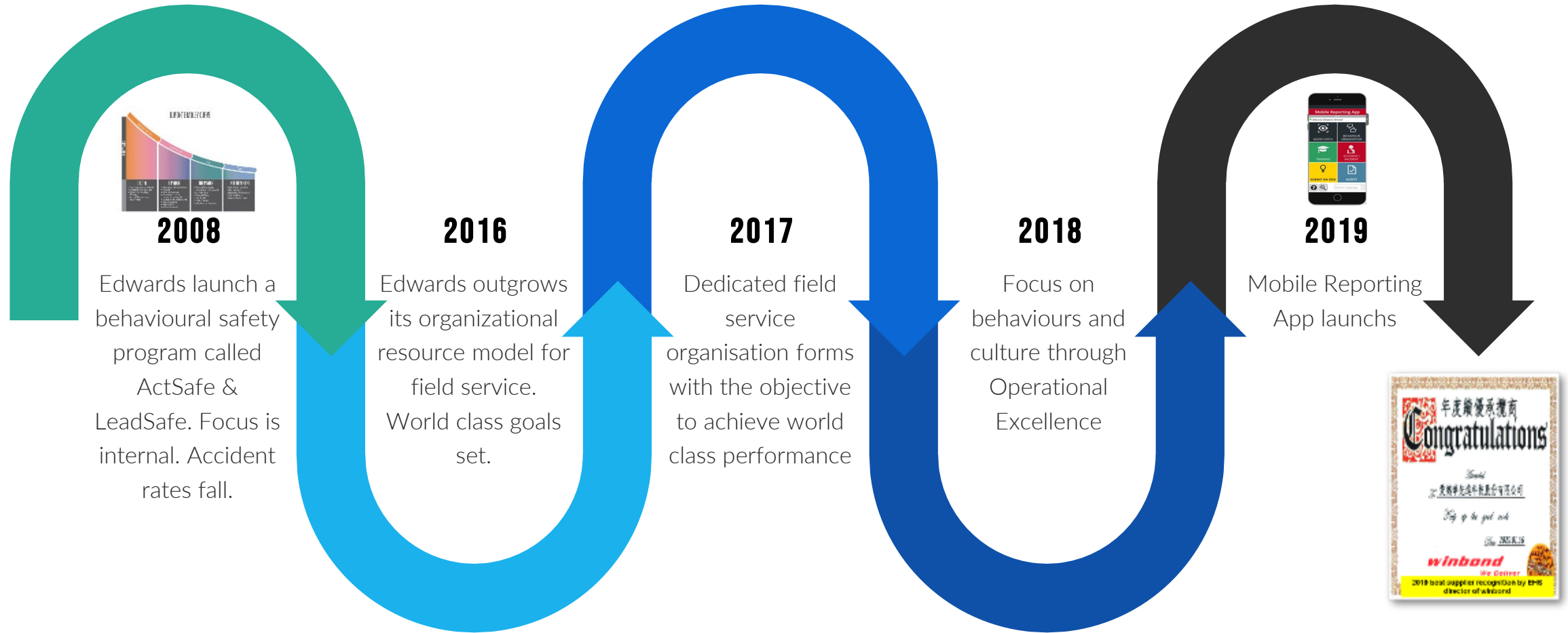
Visibility of Data
Inadequate near miss reporting

Behaviours
100% recordable cases cite human behaviour

Growth and Ramps
Diluting our talent pool

Our journey to world class

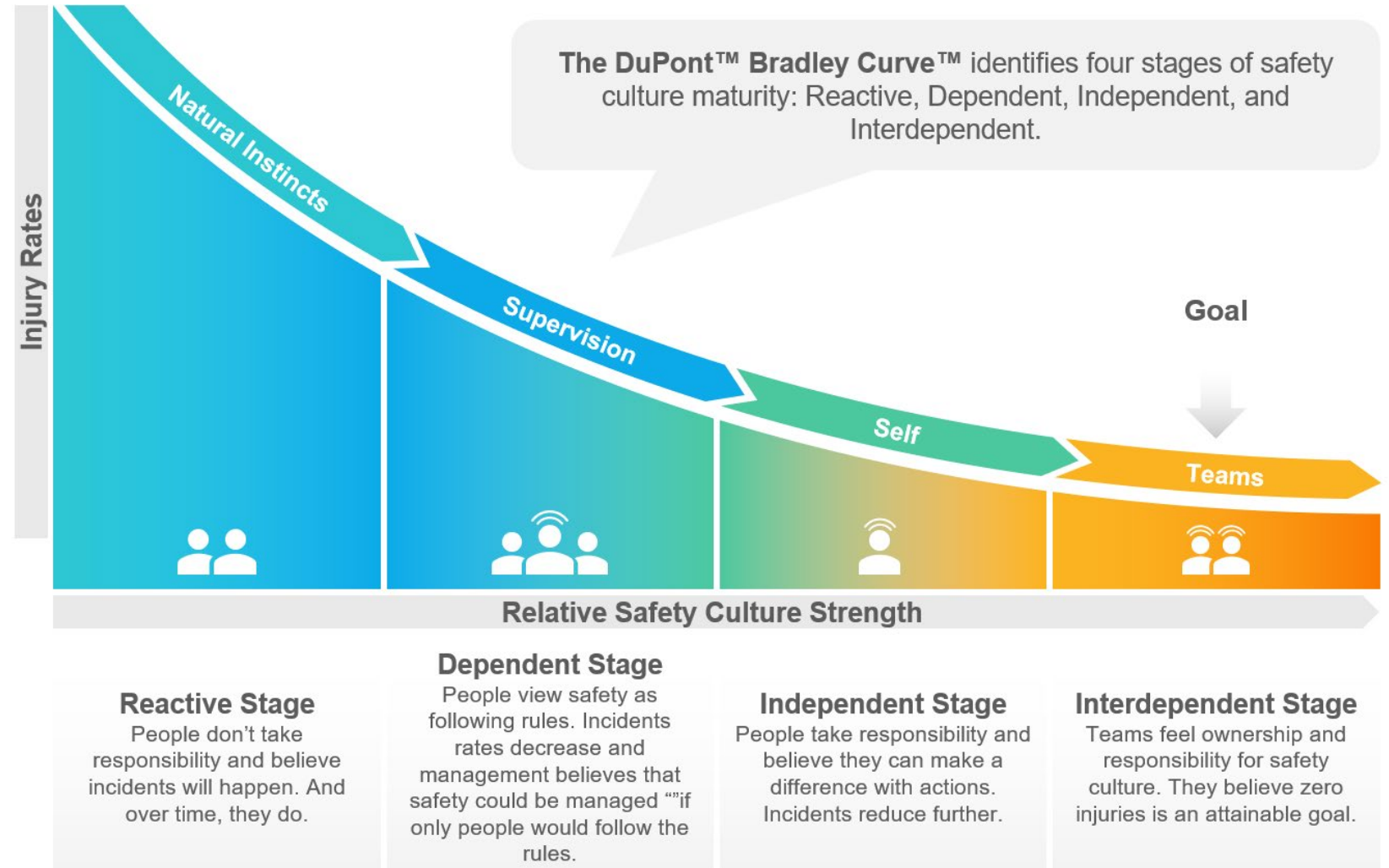
History Lesson 2008 to 2019



Our chosen destination: world class

An interdependent safety culture seeking zero injuries

Benchmarks set against the safety performance and cultures of leading semiconductor fabs using widely recognised OSHA metrics



Case study: rapid expansion



CHALLENGE

China 2016 Semiconductor industry growth boom

Insufficient Field Service Engineers with industry experience

Field Service Engineers recruited from other industries

Staff turnover rate in 2017 increases to 25% >> organisational risks

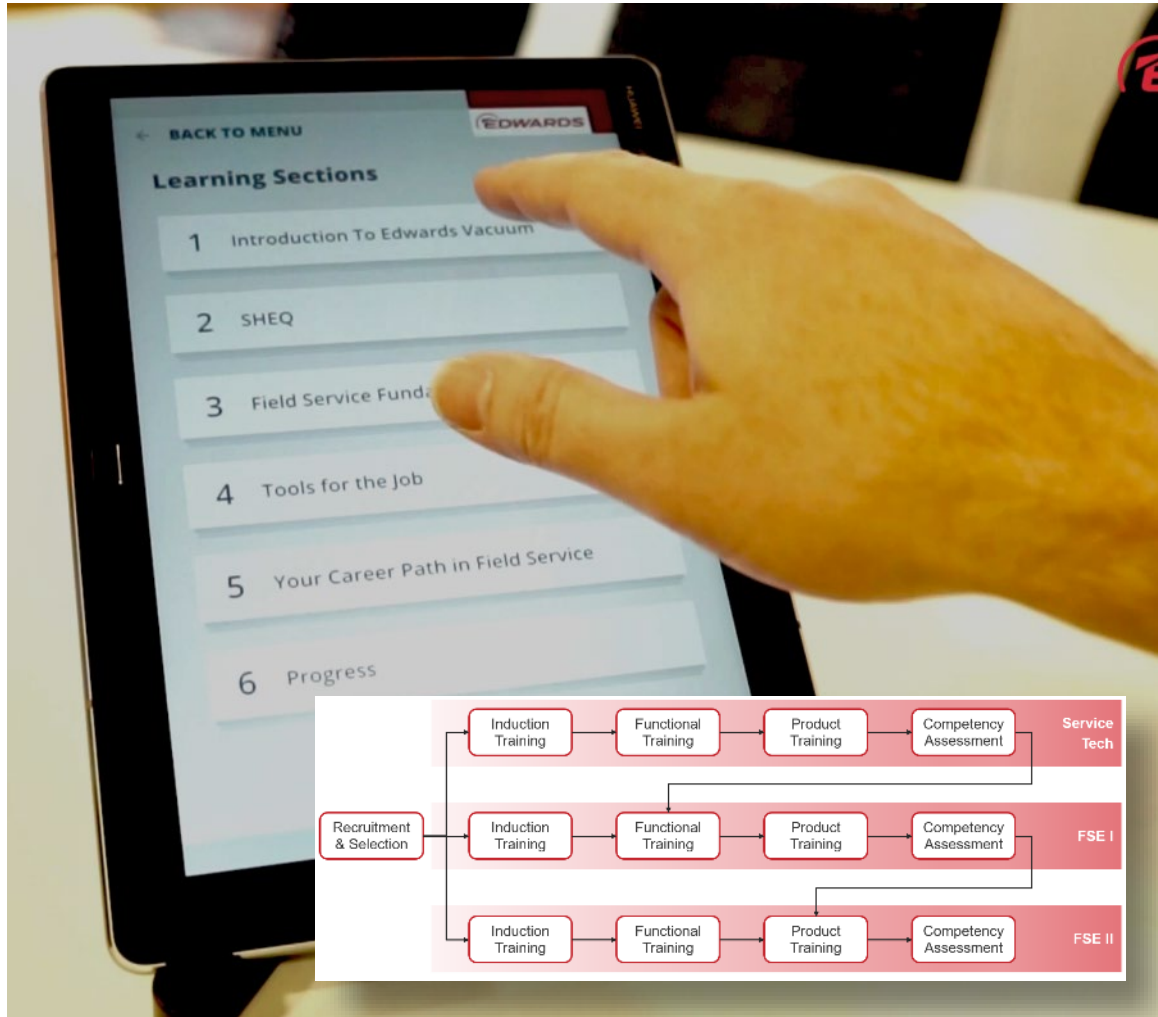
Experienced talent pool is diluted

Y2017



■ Better Prospect
 ■ Better Salary
 ■ Family Reasons
■ Low Performance
 ■ Work Load/pressure

Case study: rapid expansion



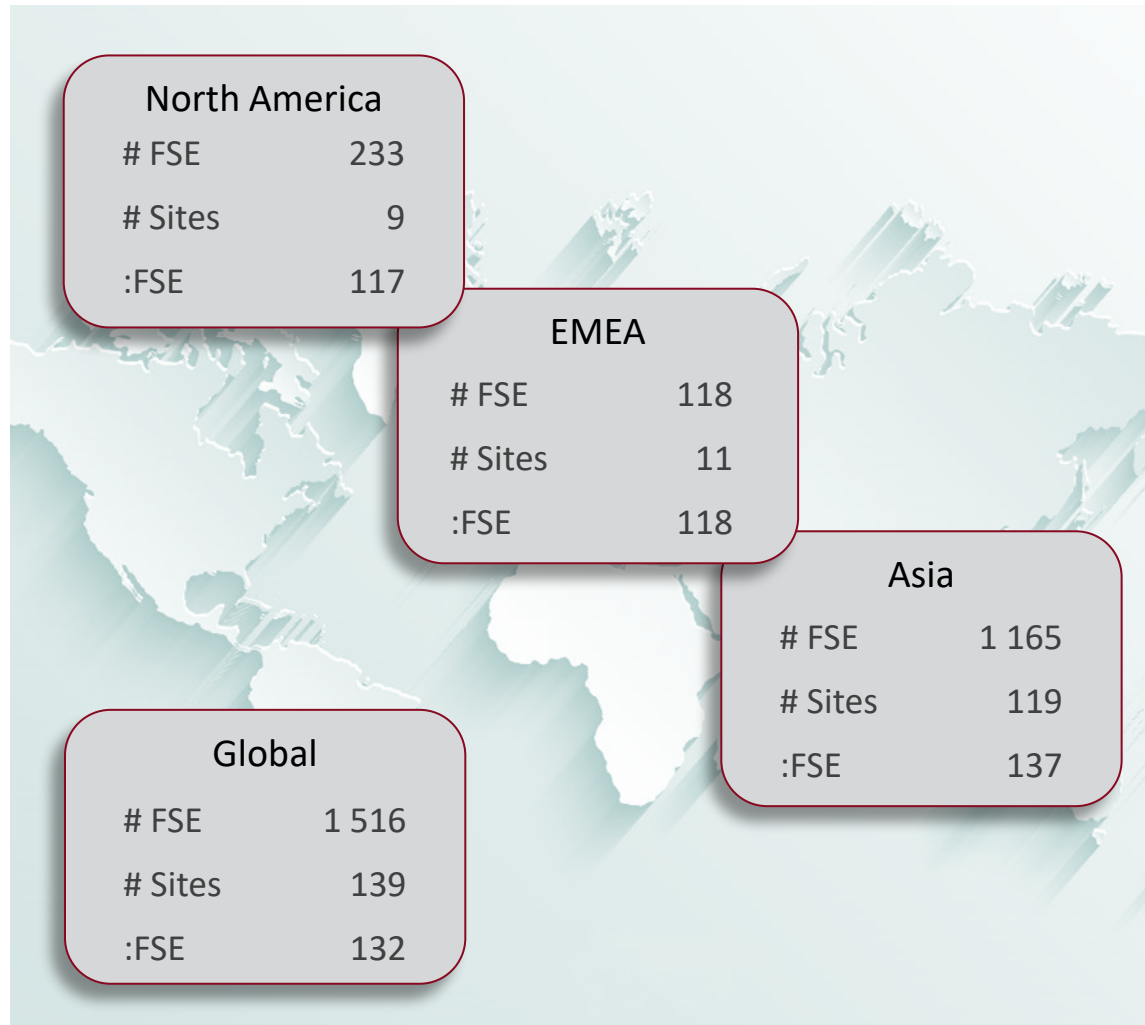

SOLUTION

Employee motivation programme delivering clear career prospects, formal progression, structured training and onboarding improvements to increase inclusion, employee value and belonging


OUTCOME

2019 turnover rate falls to 10% and continues to fall in 2020 reducing the likelihood of accidents caused by inexperience

Case study: driving safety focus



CHALLENGE

Unbalanced focus of organisation: factory rather than field



SOLUTION

A fully resourced team focussed on field operations.

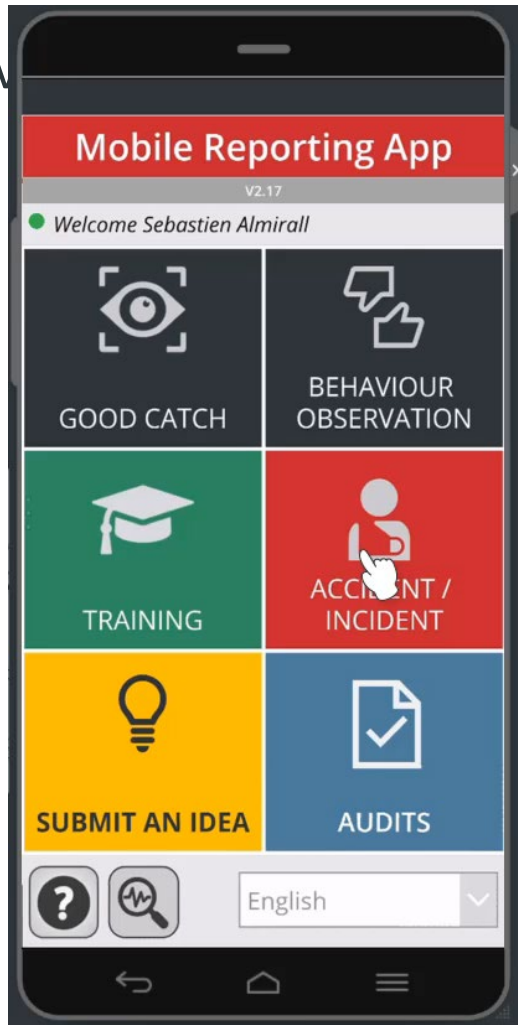
To be extended with champion network



OUTCOME

Created the foundation of a world class safety culture that has this year delivered world class performance

Case study: using technology to improve safety culture



CHALLENGE

Our behavioural safety business process did not work: Field Service staff had to wait to connect via VPN to report. Process engagement was low.



SOLUTION

Our solution was to put safety reporting literally “in the hands” of our employees. A simple, easy to use mobile reporting app enabling “as it happens, where it happens” safety observation reporting

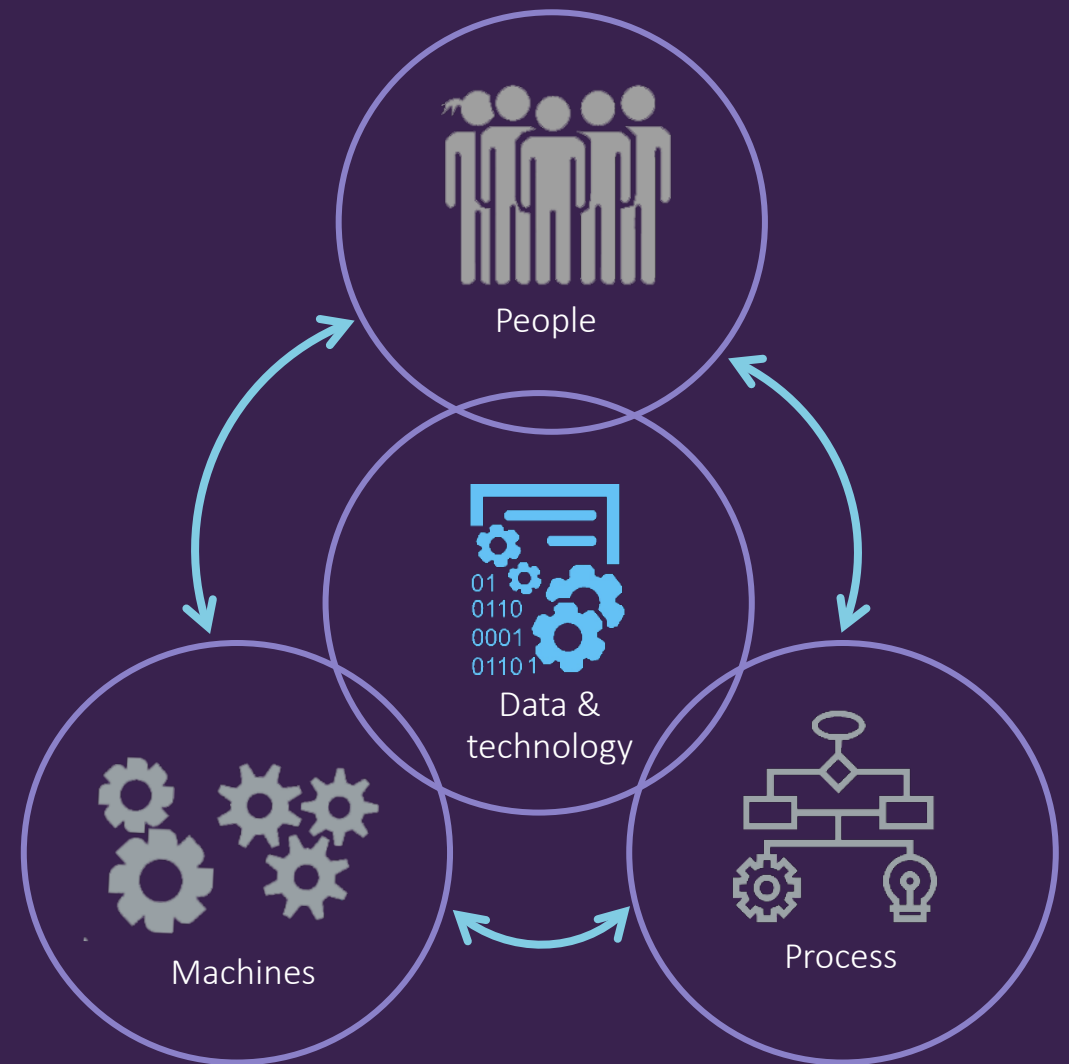


OUTCOME

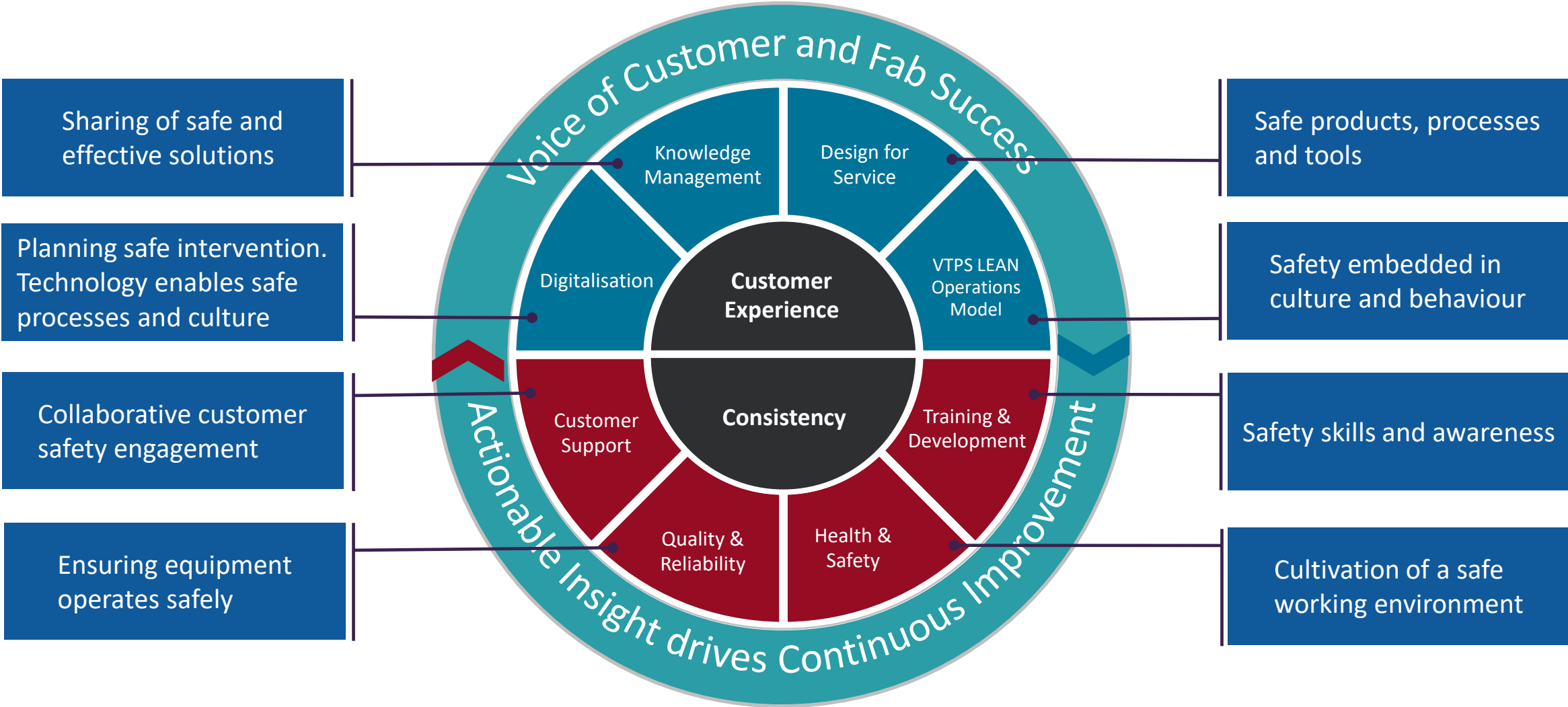
Global rollout repeats the results of an overwhelmingly positive trial. Improved reporting drives visibility, response and continuous safety improvement. Acceleration of the culture shift and our progress towards interdependence: individual ownership and influence on health and safety

Safety benefits from a holistic approach

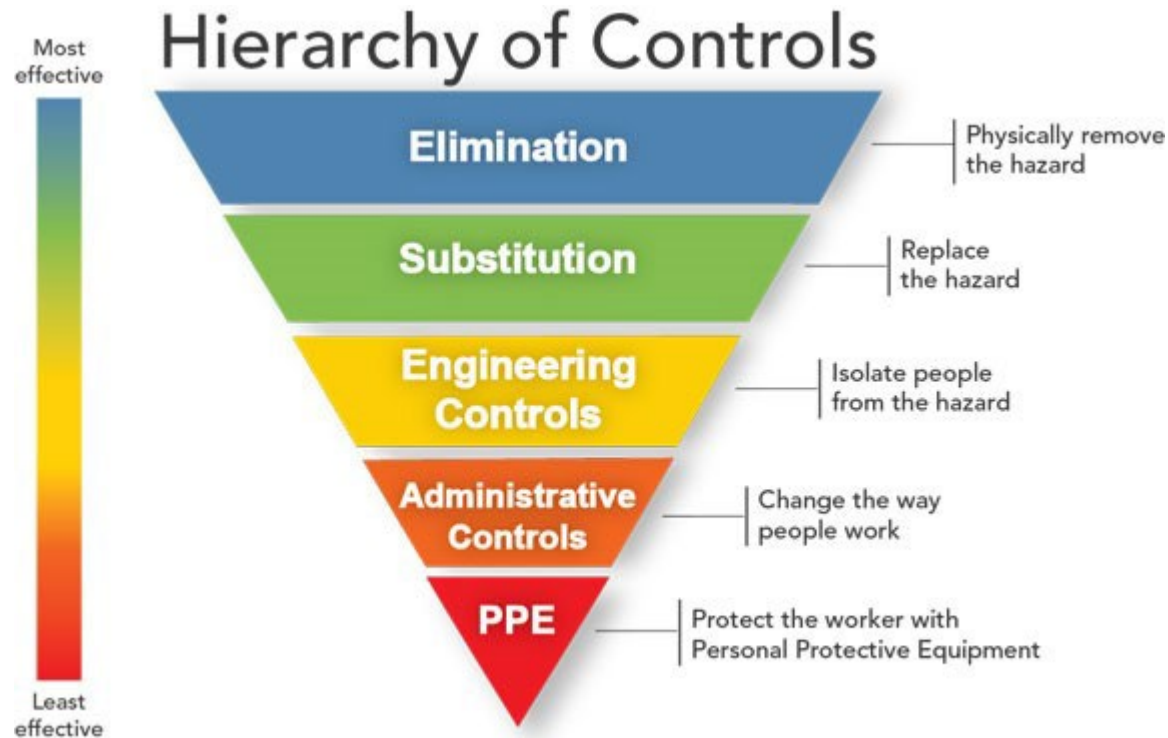
The SubFab is a complex environment where people machinery, data, technology and processes interact closely



Operational excellence enables world class safety performance



Case Study: Semi S30, Energetic Materials & Operational Excellence



(Source: National Institute for Occupational Safety and Health)



CHALLENGE

Energetic materials can injure personnel, damage equipment, and cause significant loss of production if not handled properly



SOLUTION

Semi Standard Semi S30 recommends best practice

Operational Excellence practice enables robust implementation



OUTCOME

Best practice risk management where hazards are eliminated or substituted

True world class performance can only be recognised externally



The proof of the pudding...

We are proud to be recognised by our customers for the success our safety programme is delivering

At a number of customer operations, the Edwards approach and culture is held as an example to be followed

Our journey continues



Our plans to build on solid foundations

Managing & promoting positive mental health & wellbeing

- Surveys, action plans, accredited training

Empowering Safety Champions

- Coordinating, coaching & leading subfab companies
- Accredited Health & Safety Training

Operational Excellence

- Focus on design for safety to improve service ergonomics
- Technology to mitigate hazards

Case study: exploring technology to improve safety culture



CHALLENGE

Moving equipment around the subfab is a hazardous task and results in recordable incidents.

Tooling and procedures delivered improvements, but incidents still happen.

How can we reduce risk further?



SOLUTION

Use technology to reduce the need for human effort to move heavy equipment



OUTCOME

Autonomous prototypes are working and soon to be field trialled.



MOVING HEAVY OBJECTS

Alan Ifould
Head of Marketing, Operational Excellence
SESHA SYMPOSIUM, July 2020



In conclusion

World class performance means striving to improve no matter how good you are, is hard to achieve and even harder to maintain

Safety is an organisational priority outside of the full control of Health & Safety teams, and therefore behaviour is a keystone of subfab safety

It is difficult, but not impossible, to influence 139 onsite teams over 3 continents if the organisation is right-sized and individuals feel empowered

The importance of safety is critical to the onboarding process, setting correct behaviours early and maintaining staff retention

Technology is core to continuous improvement, enabling elimination of hazards, adapting to changing workforce expectations, and empowering individuals

A holistic operational excellence approach encourages safe behaviour in everything the organisation does and drives continuous improvement

Further information and resources

Market Insights

edwardsinnovation.com/operational-excellence/

The image shows a 2x2 grid of promotional cards. Each card has a background image and text. The top-left card features a close-up of a curved, ribbed structure, possibly a dome or a large pipe. The top-right card has a dark background with a person's face partially visible. The bottom-left card shows a close-up of industrial machinery. The bottom-right card has a background of a clock face and a person's hand.

COVID 19: Support for the essential Semiconductor Industry
The COVID-19 pandemic is front and centre of everyone's minds as we understand more about the human and economic impact
[Learn more](#)

Webcast: Operational Excellence enables the Smart SubFab
Alex Smith, VP of Field Operations and Neil Condon, Head of Technology join Alan Ifould in how Operational Excellence enables the smart SubFab.
Watch now.
[Watch now](#)

Blog Series: The future of the SubFab
When you think about the future of manufacturing, what's the first thing that pops to mind? What about the future of the SubFab? Or the future of the big industrial?
[Read more](#)

Executive view: Smart Manufacturing in the SubFab at the tipping point
Troy Metcalf, President of Edwards' Semiconductor Service Division shares his views on the future of the SubFab in Semiconductor Digest
[Read more](#)

Email questions:

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LinkedIn:

<https://www.linkedin.com/in/alanifould/>

The image is a screenshot of a LinkedIn profile for Alan Ifould. It shows a circular profile picture of a man with short brown hair. To the right of the picture is the LinkedIn logo. Below the picture and logo, the name 'Alan Ifould' is followed by '1st' and a green checkmark. Underneath, his title is listed as 'Head of Marketing, Service Solutions at Edwards | Enabling the Smart Future'. To the right of the title, there are two small icons: one for 'Edwards' and one for 'Oxford College of Marketing'. At the bottom right of the profile section, there are two buttons: 'Message' and 'More...'. The background of the profile banner is a blue network diagram.



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