

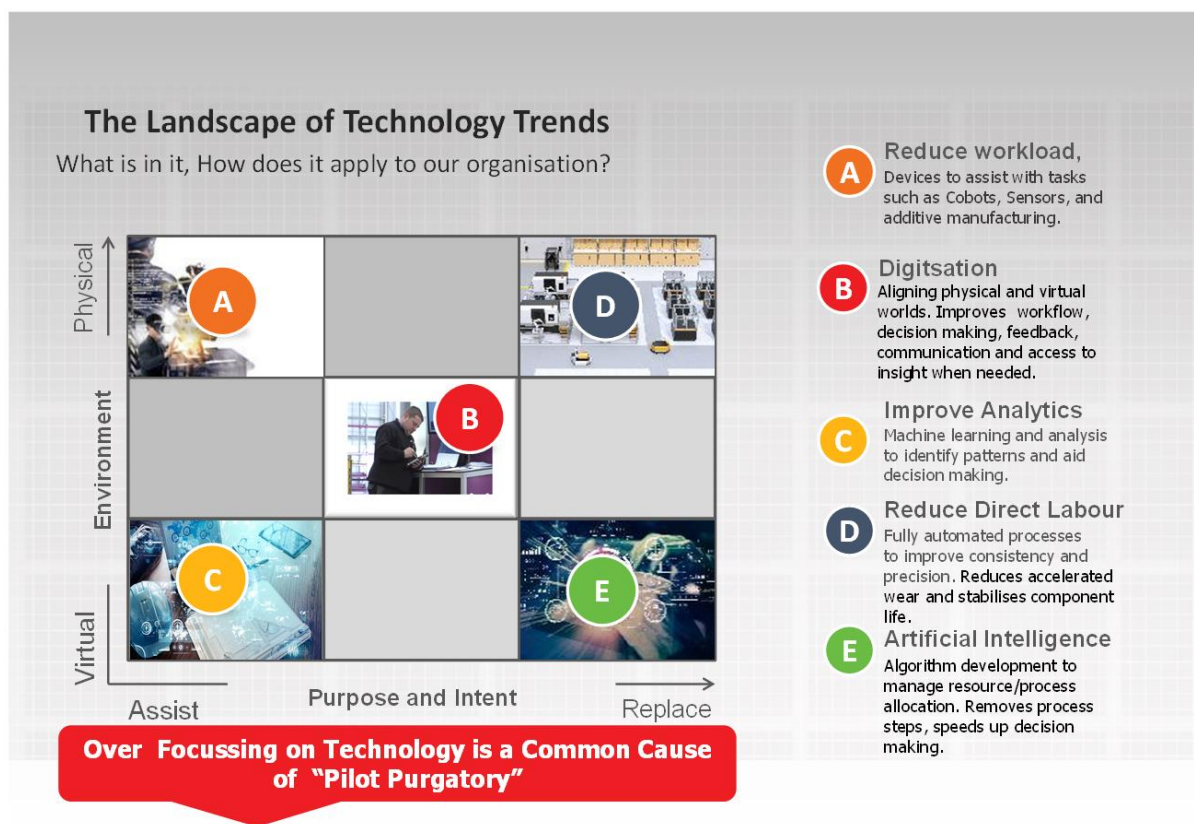


Digital CI *In focus*

This Management **Briefing Note** sets out the main messages from the four DAK Academy 30 minute webinar briefings on “ **The Changing Landscape of Manufacturing Best Practice**”.

The Technology Landscape

The best practice landscape is changing for a number reasons but the main underlying trends relate to advances in technology as set out in the matrix below.

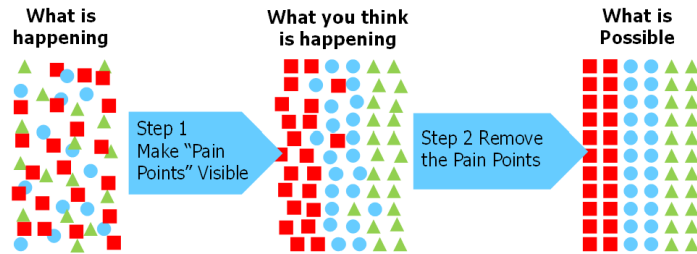


The vertical axis of the landscape spans Physical technology such as robots to Virtual technology such as data analysis. The horizontal axis spans technology to assist work to technology that replaces work. There are working examples for each of the 4 corners but the most successful approach involves the use of the improved connectivity to match the technology solutions to work processes. An approach referred to as **Digitisation**.

Where the gains come from

Digitisation delivers significant gains because even in the best run organisations there is a difference between what operating procedures state is happening, what actually happens and what could happen. In other words this is a journey not a destination.

Where the gains come from



Digitisation is a Journey not a Destination

Step 1 Make the "Pain Points" Visible

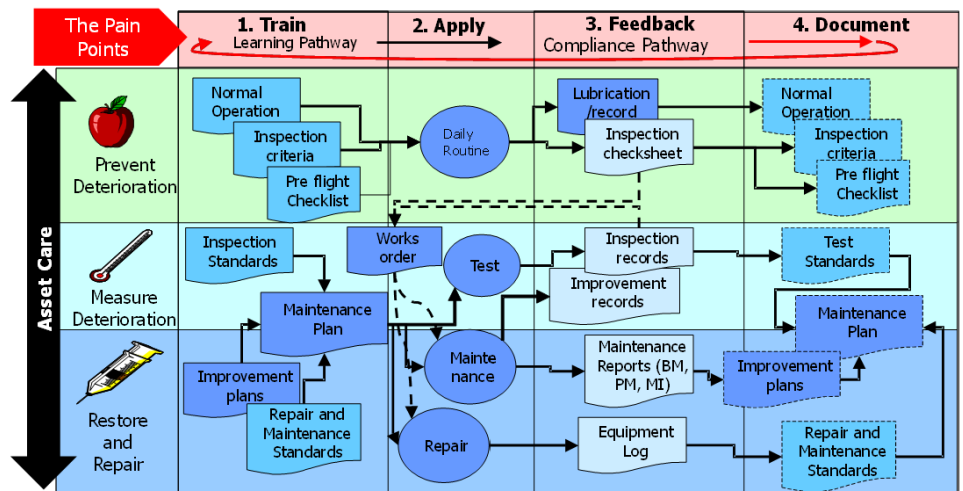
Start with developing a treasure map of pain points that inhibit the true drivers of cost and performance. Common areas include:

- Supply chain management causing excess stock or poor availability of materials.
- Daily management routines such that the causes of recurring problems are not dealt with.
- Training and skill development processes resulting in poor balance of skills and workforce flexibility.

The most common characteristics of successful digitisation involve the removal of pain points which typically occur at the boundaries of traditional business processes.

Take training and skill development. Experience shows that it takes 3 or more iterations to achieve a robust standard practice.

Barriers to Effective Maintenance Routines



The graphic here illustrates how the process of doing that is traditionally achieved through 4 separate processes. Pain points in this process loop are typically feedback and update of work routines.

Pain points typically occur at the interfaces of traditional accountabilities

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In some cases these are carried out by 2 or even 3 different personnel.

Step 2 Remove the Pain Points

Fixing this issue to lock in the gains is not the simple plug and play technology implementation we have come to expect from consumer technology advances.

The increased connectivity provided by digitisation makes it easier to capture lessons learned over a number of iterations. Each iteration providing better insights, to achieve sustained gains. It also makes it easier to share lessons learned and assure compliance.

Most Digitisation solutions change how people work together. As a result, the evolution of this new ecosystem works best when the front line personnel are involved with defining and refining the new ecosystem based on lessons learned through practical application.

To support that, often the performance management dashboard needs to be adjusted so that key performance indicators guide progress and recognise the efforts of those in front line team and team leaders improvement roles. In the example above, the gains from refining maintenance best practice translates into gains in:

- a. Improved Equipment Effectiveness
- b. Extended time between inspection
- c. Reduction in accelerated wear due to human error.

In addition to these asset performance gains, the outcomes include the release of management and specialist time to focus on more value added tasks.

The level and nature of the gains made, partly depend on the health of current business processes. When Deming reviewed his success at transforming Japanese Manufacturing industry, he commented that 90% of the problems solved were caused by weaknesses in business processes. The table below sets out the countermeasures to problems in a food processing and packing plant. Although these gains were not achieved as a result of a Digitisation initiative, the table illustrates the nature of issues that create the gap between what actually happens and what is possible.

The table also illustrates how 80% of the gains were delivered by improving processes to capture lessons learned and remove hidden losses that had been previously tolerated.

Food Processing and Packaging Plant Case Study

On their 5 year journey to zero breakdowns, this food processing and packaging organisations identified 5 causal factors that they had to overcome:

Tactic to Tame Technology for Good	Process Asset issues	Packaging Asset Issues
Resolve technology weak points	21%	2%
Standards to define normal deterioration	48%	31%
Improve work instruction	5%	29%
Remove the causes of accelerated Wear	22%	27%
Remove the causes of human Error	3%	11%
	100%	100%

Capacity +50%
Quality Cost and Delivery +30%

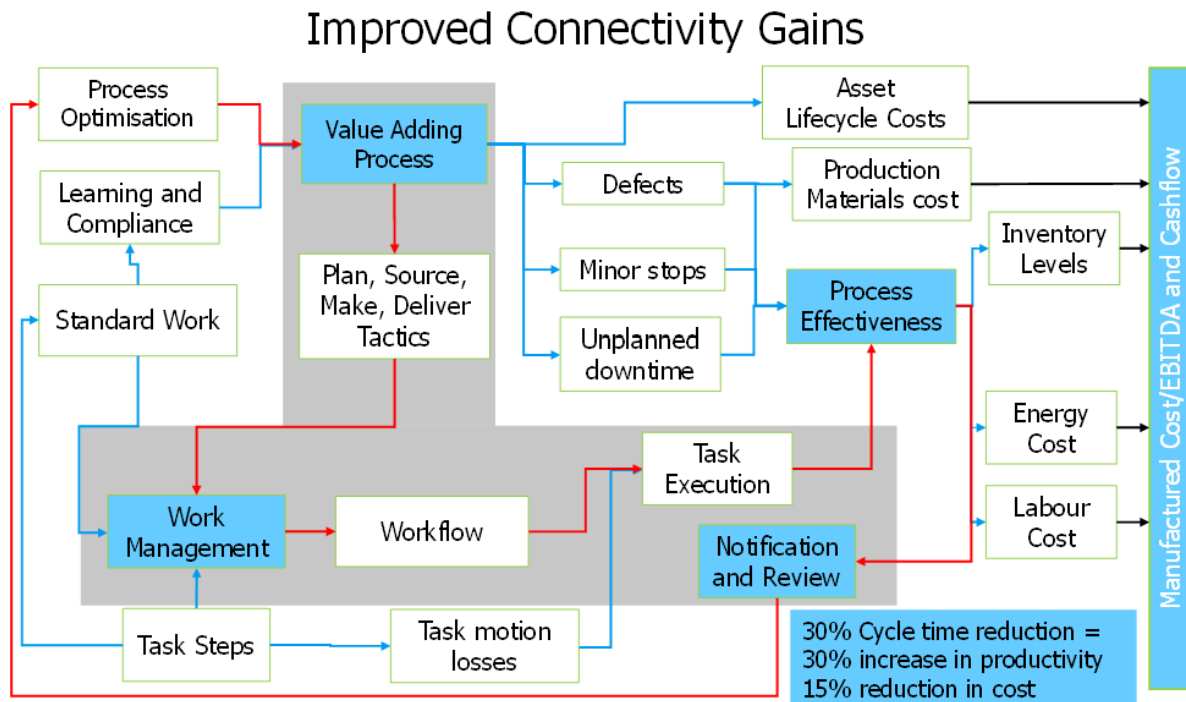
80% + of these gains were delivered by

- Systematically removing pain points by developing good practices
- Working across functions to refine and apply those good practices consistently
- Learning how to lock in those gains.

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The Gains from improved Connectivity

In addition to the performance gains, the above company also improved the quality of connectivity between what was planned to happen and what actually happened as shown by the shaded area in the loss tree diagram below. (A loss tree diagram illustrates the links between value drivers on the left and cost drivers on the right.)

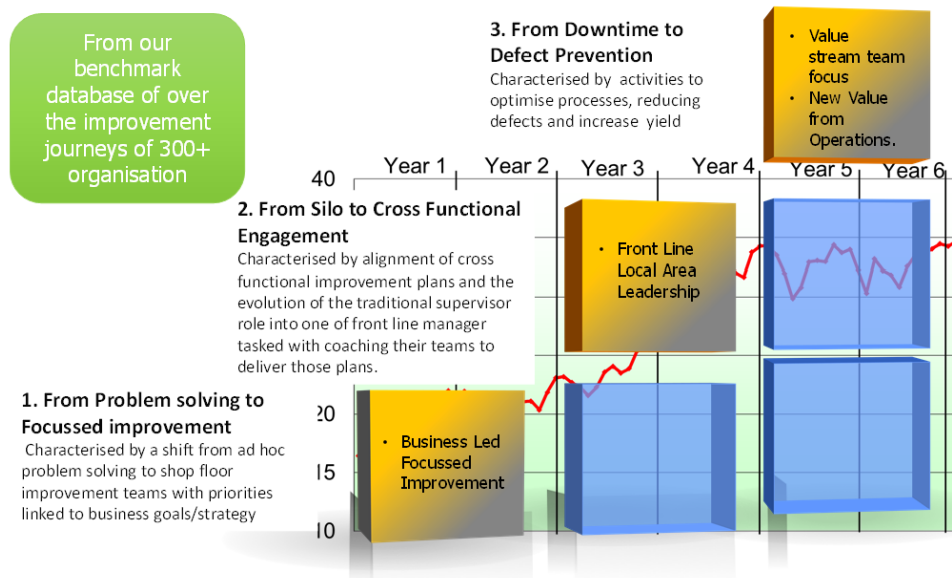


An interesting point to note is that this 5 year case study results would be achieved much faster with the improved insight provided through digitisation. The 30% gains shown here were achieved as part of a digitisation programme in around 2 years.

The Improvement Road Map

The gains achieved from improvement depend as much on leadership mindset as they do on the technology. The graphic below, based on LeanTPM benchmarks, illustrates the transitions of leadership mindset needed to sustain progress on the journey to industry leading performance.

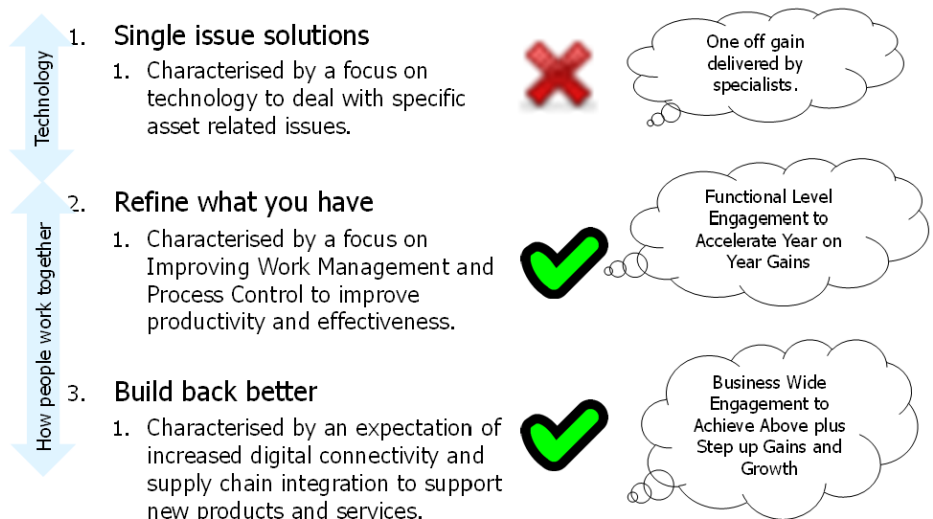
Improvement Journey Transitions



Leaders that fail to recognise the need to transition between goals to change mindsets and focus are doomed to repeat a cycle of improvement and decline.

This is also true of the Digital improvement journey where the biggest cause of failure is a lack of transition from a mindset around single issue technical solutions towards one of improving how people work together across the end to end process. A transition that matches steps 1 to 2 of the LeanTPM road map.

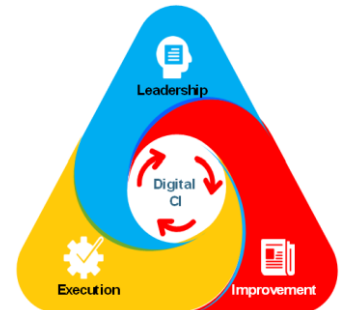
Leadership Mindset Transitions



Real Time Workplace Learning

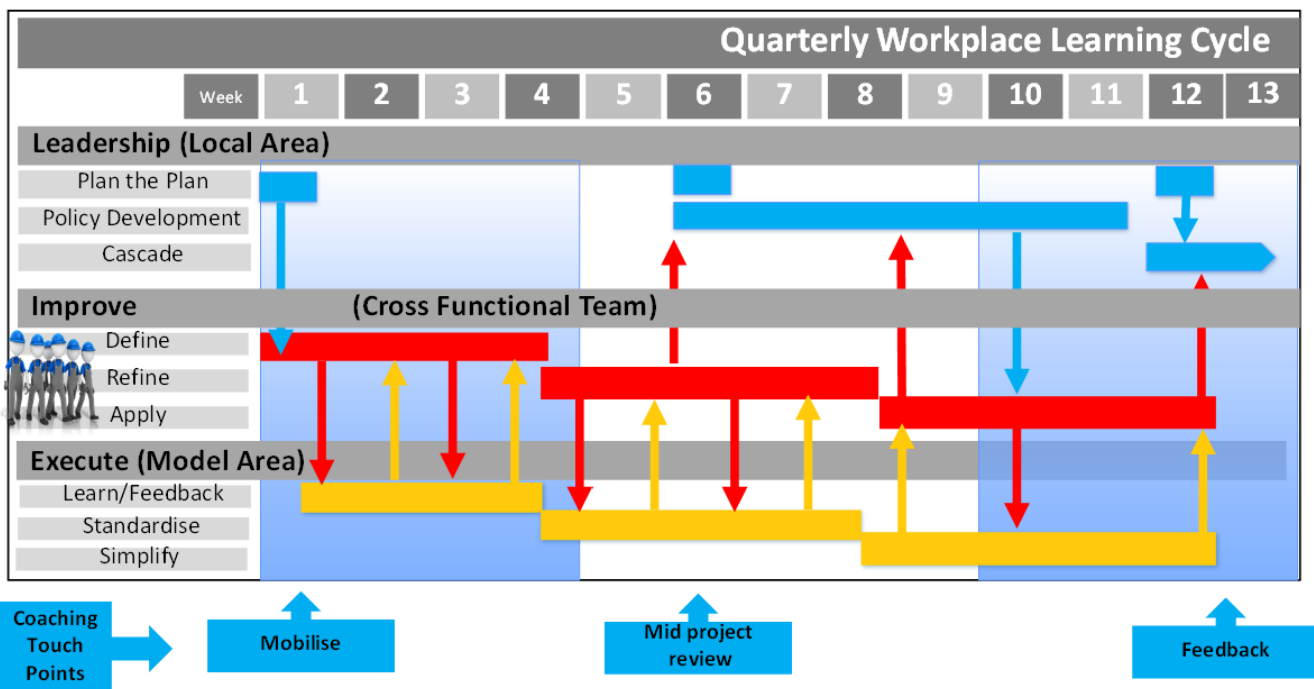
At the heart of this transition is real time **Workplace Learning** to simultaneously develop processes for:

- Leadership: on how to guide the transitions.
- Improvement: on how to match pain points with solutions.
- Execution: on how to adapt to real time task management and virtual teamwork.



The graphic below illustrates how a quarterly workplace learning cycle can be integrated into the daily management routine to align priorities, brief front line teams, capture lessons based on experience and cascade that as policy guidelines to other areas.

The Workplace Learning Cycle



This is a process that has been developed to support first line leadership role of delivering:

- Workforce Engagement.
- Technology understanding.
- Team based skill portfolio design.
- Standardised work routines.
- Integrated supply chain and workflow management.

Conclusions

The lessons learned from those who have successfully navigated the changing landscape of manufacturing best practices cover:

1. Leadership:

Develop a priority list of what your operation needs to deliver better customer value:

- Define a problem finding process that surfaces barriers to that value
- Start small, learn fast. (Digital CI)
- Create a road map (See poll results) to get the basics right, test and deploy (or kill off) ideas.

2. Improvement:

Adopt a simple rapid approval stage gate process

- Refine goals and metrics to engage the workforce with getting the basics right
- Identify legacy pain points and match to potential mobile solutions
- Use practical application to select and refine winning solutions

3. Execution:

Engage those in the workplace

- Engage users with refining the new ecosystem
- Encourage curiosity about what could be possible
- Use workplace learning projects to develop front line leadership and team capabilities.

DAK Consulting provide practical support for manufacturing and process operations who need to:

- Tame Technology to break out of reactive management.
- Ratchet up Performance to lock in gains and deliver new value from operations.
- Deliver better projects faster to deliver flawless operation from day 1 and systematic improvement of return on investment.

Support plans can range from

- Management briefings to Improvement programme design and delivery
- Personal development courses to Company wide workplace learning programmes

If you would like more information please

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