Overview of the Common & Specific Objectives of the 10 TPM^3 Improvement Activities

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TPM^3 is an Australasian version of TPM & Lean developed by CTPM recognising the critical role of finding and rectifying problems at the earliest possible time through the engagement of the entire workforce.

It is an Operations Excellence Improvement Strategy that also minimises Operational Risk by engaging and developing the skills of the frontline workforce (operators and maintainers) so that they can identify equipment, process and quality problems at the earliest possible time and ensure their prompt rectification. This result, not only in a more stable plant operation but most importantly maximises productivity and capacity, minimises costs and creates a safer workplace.

Contents

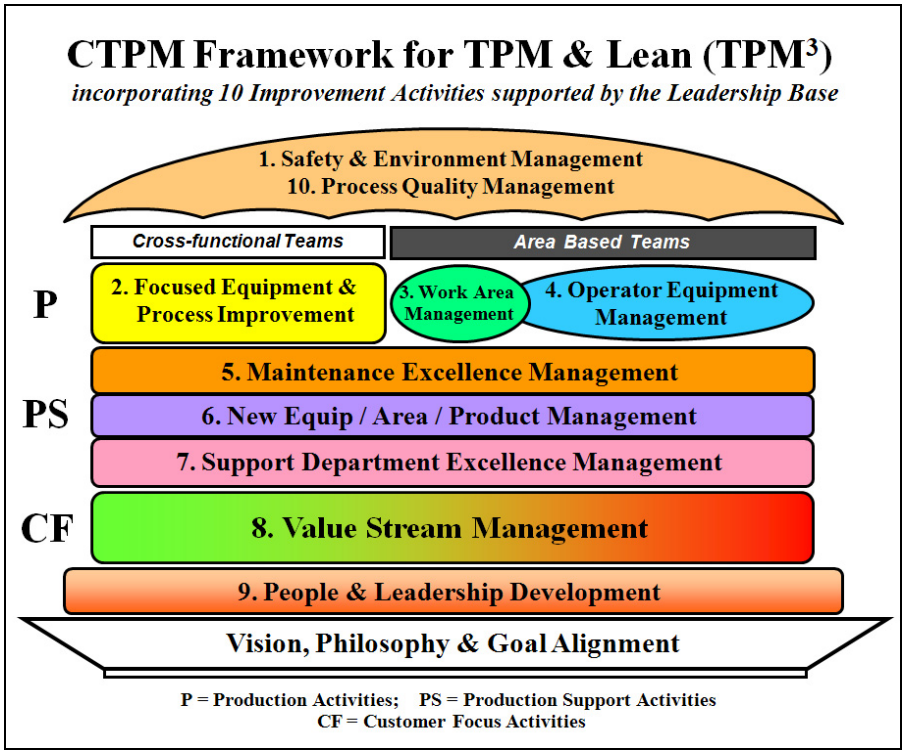
For further information about TPM^3, TPM & Lean, Operational Risk Minimisation, or the 5 Level Milestone TPM^3 Excellence Award, please phone Ross Kennedy – President, CTPM Australasia on +61 2 4226 6184 or email him on ross.kennedy@ctpm.org.au, or visit the CTPM web page at www.ctpm.org.au

1. Background

After the initial education on TPM & Lean including an outline of the Leadership Base and 10 TPM³ Improvement Activities which make up CTPM's conceptual synergistic Hamburger model, a Site Leadership Team or Business Improvement Leadership Team is established. Their goal is to plan out the initial cycle of improvement activity spanning 3-4 months, as well as start the process of creating a Master Implementation Plan typically spanning 5 years with the aim of achieving their Improvement Vision.

Example Improvement Vision: Within 5 years be a site that has achieved:

- World Class targets for all our Key Success Factors / Goal Aligned Performance Measures and Ratings (Operations, Maintenance, Culture)
- All people on site engaged at least 10% of their normal working time in On-going Improvement activities (5% Cross-functional Team and 5% Area Based Team)
- Recognition as World Class in On-going Improvement by gaining Level 5 of the 5 Level Milestone TPM³ Excellence Award



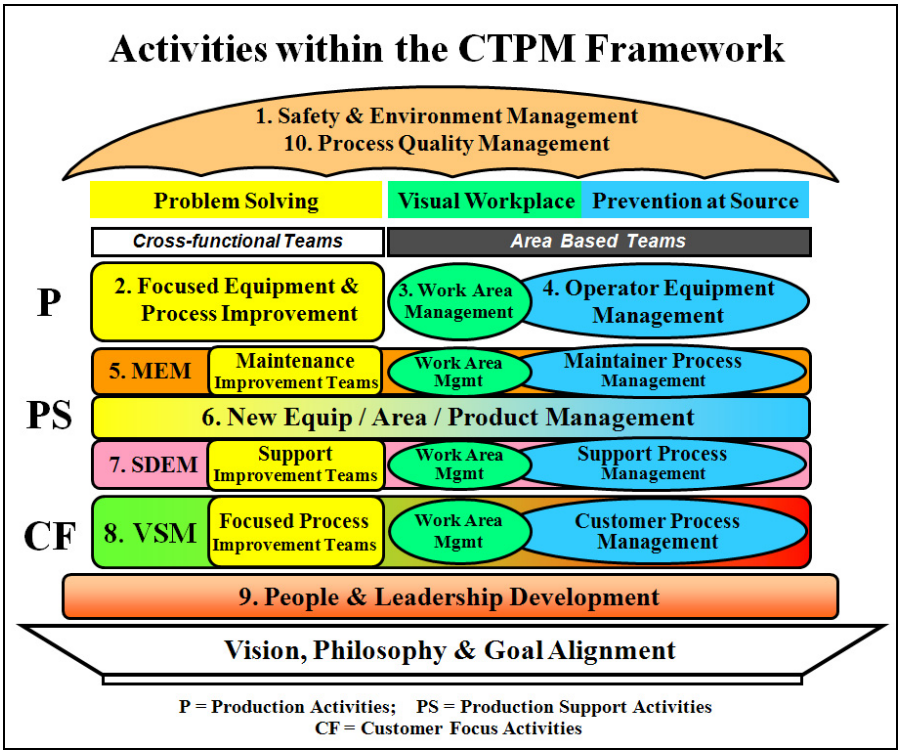
To allow clarity of focus, the TPM³ Framework is broken up into 3 main types of activities covering 7 of the 10:

Production (3);
Production Support (3); and
Customer Focus (1) activities as outlined above.

The remaining 3 activities – Safety & Environment Management and Process Quality Management at the top and People & Leadership Development at the bottom are represented as buns holding the hamburger together with the Leadership Base acting as the plate.

The Hamburger analogy is trying to get the message across that TPM & Lean (TPM³) is not a lot of separate activities, but rather an integrated approach where each activity interlinks with the other activities to achieve the synergistic outcome of world class performance.

In order to further clarify the workings of the TPM³ Framework, we have created an expanded version of the Hamburger model which divides the 3 main types of activities (Production, Production Support and Customer Focus) into the 3 key skill sets of Problem Solving, Visual Workplace and Prevention at Source required to be developed by all people at the site or in the business to achieve world class performance. The 3 main types of activities times the 3 key skill sets, is where the cubed (3 x 3) part of our TPM³ came from.



Planning the first Cycle

To assist in the selection of the pilot areas, the site / business is divided into Defined Areas such as Defined Production Areas, Defined Maintenance Areas, Defined Support Areas, Defined Office Areas etc, and Defined Value Streams based on Product Families, Customer Location or Type etc.

For example, a Defined Production Area is typically defined as a production area where you are able to measure OEE (ie input and good output) or Lead Time and there are at least 4 permanent people per shift to allow the future formation of an Area Based Team.

Then using the 80:20 rule, the 20% of Defined Areas and / or Defined Value Streams causing the most pain (bottlenecks, low Overall Equipment Effectiveness, long Lead Times, high Quality or Maintenance costs etc) are the target of the initial TPM³ Improvement Activities to ensure there will be a significant initial impact on business performance.

To assist in the selection of which TPM³ Improvement Activity to commence with, we have created a checklist:

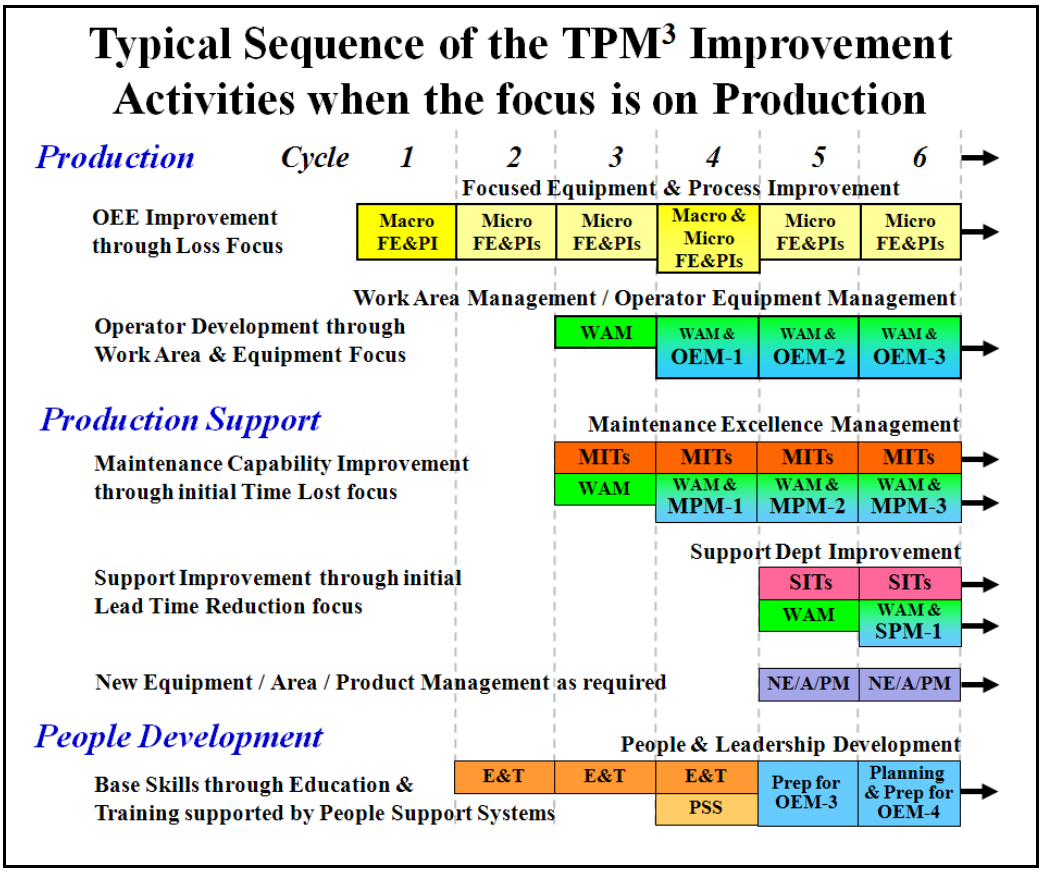
Checklist for Starting TPM & Lean in an Australasian Workplace

Implementing TPM & Lean in an Australasian Workplace needs an approach that is tailored to suit the specific situation however in many cases we have found the approach often needs to address the following questions to ensure the foundations are in place for sustained success.

#	Issue	Reason	Yes	No	Action Req'd if Yes
1	Do you need to break down barriers and build relationships between Production & Maintenance	May result in poor support from Maintenance			Start with Cross-functional Focused Equipment & Process Improvement teams looking at losses with mandate to understand all losses and improve Overall Equipment Effectiveness (OEE) by at least 10-25%
2	Do you need to break down barriers and build relationships between Management & Shopfloor	May impede support for the improvement initiative			
3	Do you need to better understand the entire equipment & process losses in the target area	Will identify where performance can be improved to create time for Area Based Team improvement activities			
4	Do you need to understand whether the equipment & process losses in the target area are related to technical or people issues	Will assist in justifying the benefits of Work Area Management and Operator Equipment Management			
5	Do you need to improve equipment performance to free up required time for operator development through regular (eg weekly) WAM / OEM education & training activities	Regular Work Area Management (WAM) and Operator Equipment Management (OEM) activity time is required to sustain the gains			
6	Do you need to improve Communications between shifts to promote sharing of learnings	Reduce the issue of shifts doing things 'their way' and increase acceptance of improvements			Establish Area Based Teams and commence Work Area Management (refer Preparation for Area Based Teams & Work Area Management booklet from CTPM)
7	Do you need to establish agreed standards across all shifts to reduce variation in operation and sustain improvements	Will make it easier to identify the root cause(s) of problems			
8	Do you need to establish stability of the production plan to enable regular allocated time for Improvement activities	Improve sustainability if activities are not randomly cancelled due to unplanned changes in Production Plan			Initiate a Cross-functional Team to look at P&S with a focus on Flow and Customer Usage versus Customer Demand.
9	Do you need to create a maintenance support capability that can respond to small problems and issues identified by the operators while still doing their normal maintenance work	Without this support operators will become discouraged and may stop finding and reporting defect / problems as nothing appears to get done			Introduce Maintenance Excellence Management activities to address Time Lost by Maintenance
10	Do you need to train the operators to identify at the earliest possible time safety, quality and equipment problems at the source	Will have significant impact on reducing maintenance and quality costs			Introduce Operator Equipment Management Stage 1 (Steps 1-3) with capable Maintenance and Quality support (refer Preparation for OEM-1 booklet from CTPM)
11	Do you need to change the equipment so it is easy for operators to find the problems	Will allow Operator Equipment Management activities to be done in minimal time			
12	Do we want to create Operators who understand the functioning of their equipment to allow early diagnosis of problems	Will lock in the culture change and lead to Operator Excellence			Introduce Operator Equipment Management Stage 2 (Steps 4-5)

Planning the Journey

To assist in determining the sequence of the 10 TPM³ Improvement Activities we have created a model that outlines a possible pathway, however we believe it is the role of the Leadership Team to monitor progress and impact of the journey and reflect on learnings some 2-3 weeks before the end of each cycle to plan out the next cycle of activity, recognising the need to keep people engaged on the journey once they start. For example once a person has been a member of a Cross-functional Team then they should continue to be a member of one Cross-functional Team each on-going cycle.



2. Common Objectives of the TPM³ Improvement Activities

- Use improved performance to not only benefit the business but also to free up everyone's time to do on-going improvement activities;
- Create a positive environment to allow employees from different departments eg Production, Maintenance, Technical Support etc to gain a greater understanding of each others' situation and build relationships;
- Create a positive environment to allow management and employees to gain a greater understanding of each other's situation and build relationships; and
- Create a learning environment within the workplace to allow employees to experience the success and value of being Cross-functional Team and Area Based Team members and develop their Problem Solving, Visual Workplace and Prevention at Source skills along with Team Skills.

3. Specific Objectives of the TPM^3 Improvement Activities

3.1 Leadership Base

Site or Business Improvement Leadership Team

- Establish the **Vision** - Improvement Vision, Operator Excellence Vision, and Operations Vision that will set the challenge for the site to be great;
- Establish the **Philosophy** for Decision Making that will guide the site to its Improvement Vision;
- Establish the Key Success Factors and **Goal Alignment** Performance Measures that will be cascaded through all levels of the site;
- Establish the measures of Overall Equipment Effectiveness (**OEE = A x R x Q**) and Lead Time (LT = Value Add Time + Non Value Add Time) as the "drivers" for focusing improvement activities;
- Establish a scoreboard for each Defined Area which provides weekly / daily feedback on agreed holistic goal aligned performance measures linked to the business Key Success Factors under the following typical headings:
    - Safety & Environment Performance;
    - Customer Satisfaction Performance (eg Achievement of Production Plan, Delivery In Full-On Time-to Quality Spec);
    - Quality Performance (eg Right First Time);
    - Inventory Performance (eg WIP levels);
    - Plant & Equipment Performance (eg OEE);
    - People Performance (eg Productivity, Morale);
    - Supplier Performance; and
    - Financial Performance (eg Costs).
- Establish the Site Baseline to allow monitoring of progress;
- Establish World Class targets and timeframe (eg 5 yrs) along with annual targets;
- Determine Improvement Policies that will guide all improvement activities;
- Set the Mandate and Boundaries for all Improvement Teams reporting to the Site Leadership Team;
- Monitor the progress of all Improvement Teams and ensure those teams reporting to the Site Leadership Team are successful (achieve their Mandate);
- Ensure Baseline measures are established by all Improvement Teams;
- Ensure effective communication to all stakeholders; and
- Acknowledge / recognise achievements – reinforce the positives.

3.2 The Top of the TPM^3 Framework or Hamburger

We have 2 activities in the top of the TPM^3 Framework. Number 1 activity – Safety & Environment Management and number 10 activity – Process Quality Management.

Technically Quality should be number 9, and Safety number 10 as perfect Quality and perfect Safety can only be achieved once the equipment, processes and people and all working perfectly. However, if we were to present Safety as number 10 to the Australasian marketplace where Safety is always number 1, we would have serious trouble promoting our TPM^3 Framework.

These 2 activities are a consolidation of the other 8 activities and as such are applied towards the end of the journey to ensure the objectives listed below have been achieved through the other 8 activities.

Safety & Environment Management (1)

- Safety standards and procedures, based on the site / company standard, are in place, fully understood and followed during all TPM^3 activity;
- Safety Analysis is effectively used by Area Based Teams to identify and address safety risks during all TPM^3 activities;
- A Safety Observation System is used by all Area Based Teams to monitor and address any unsafe conditions or behaviours during TPM^3 activities;
- Suitable charting such as radar charts are effectively used by each Area Based Team to monitor progress on developing Safe behaviours within their workplace;
- Safety Observation performance is displayed on each Area Based Team's Scoreboard;
- Visual Controls are used to indicate safety risks and help promote safe behaviours;
- TPM^3 Improvement Sheets are used to record safety improvements where appropriate;
- Impact on safety is considered in all TPM^3 activities and improvements;
- Impact on safety is evaluated by all TPM^3 Improvement Teams in their decision making process; and
- Safety issues are addressed properly and with a sense of urgency by all TPM^3 Improvement Teams on a continuous basis.

Process Quality Management (10)

- All people who work regularly at the site (employees, contractors etc) have demonstrated their competence at Frontline Problem Solving (competently completed at least 3 A3 Frontline Problem Solving Summary Sheets);
- Any deviations to expectation in performance are rapidly investigated to root causes (within 24 hours);

- All customer complaints are rapidly investigated to root causes (within 24 hours of notification);
- All variables associated with information are understood and controlled so no defective information is processed or used;
- P-M Analysis (phenomenon - mechanism) is used when required to ensure zero quality problems;
- All intervention points for processes are known and monitored to ensure errors do not lead to quality problems;
- Quality problems are now a thing of the past eg the site has achieved zero quality problems;
- All required quality inspections and actions across the site achieve 100% compliance within the documented timeframe;
- Problem Solving, Visual Workplace and Prevention at Source is embedded in the culture at the site; and
- Where practical and feasible, mistake proofing has been applied to eliminate human error.

3.3 Production Improvement Activities

Focused Equipment & Process Improvement Cross-functional Teams (2)

There are 4 types of Focused Equipment & Process Improvement Teams that are used to improve the performance of a Defined Production Area depending on the focus of the team.

	Type	Focus
1	**Macro**	Entire Defined Production Area
2	**Micro**	Specific Section of Defined Production Area
3	**Special Micro**	Specific Loss / Waste across the Defined Production Area
4	**Mini Micro**	Small Loss / Waste within a section of a Defined Production Area

The team parameters are mostly common across the 4 types of teams with the Macro team being at the top end of the options and the Mini Micro team being at the bottom end often with a short duration such at 4-8 weeks:

Make-up 4-8 members from different disciplines
Skills Develop Problem Solving skills
Impact Understand and improve losses and frustrations
Meeting Time 1.5 or 1 hour at a regular fixed time
Support Time 1 to 1.5 hours between meetings
Culture Impact Build relationships
Life of Team Up to 12-14 week cycle then disband

Macro Focused Equipment & Process Improvement Team (9 Step Process)

- Establish a Baseline or "stake-in-the-ground" for the Defined Production Area by documenting current performance;
- Understand all the equipment and process losses within the Defined Production Area;
- Identify everyone's frustrations with the equipment and processes;
- Divide the Defined Production Area equipment into say 4 or 5 sections then identify all equipment losses through the development of a 1st and 2nd Level OEE Improvement Matrix;
- Create a 12 month and 3 year vision for OEE improvement based on documented assumptions for best practice performance;
- Identify possible cost-effective solutions to agreed important losses identified;
- Implement approved solutions so as to achieve the agreed target increase in performance (eg **25% increase in OEE**);
- Recommend further Cross-functional Team and Area Based Team improvement activities so as to achieve the 3 year Vision for best practice performance; and

- Provide a foundation of loss analysis to allow the Leadership Team the opportunity to create future Micro and Mini Micro FE&PI teams to achieve further Cross-functional Team improvements.

Micro Focused Equipment & Process Improvement Team (9 Step Process)

- Support the Defined Production Area in improving the performance (eg OEE) by more fully understanding losses associated with a specific section of the equipment;
- Identify possible cost-effective solutions to agreed losses;
- Implement approved solutions so as to achieve target improvement in performance (eg **25% reduction of losses**); and
- Recommend further improvement activities based on cost-benefit analysis.

Special Micro Focused Equip & Process Improvement Team (9 Step Process)

- Support the Defined Production Area in improving a Specific OEE Loss eg Set-up Downtime, Quality, Speed etc;
- Identify possible cost-effective solutions;
- Reduce the loss by say 50% and identify other actions required to eliminate or minimise the loss; and
- Recommend further improvement activities based on cost-benefit analysis.

Mini Micro Focused Equip & Process Improvement Team (7 Step Process)

- Support the Defined Production Area in improving the performance (eg OEE) by more fully understanding a Small OEE Loss associated with a specific part of a section within the Defined Production Area;
- Identify possible cost-effective solutions;
- Reduce the loss by say 80% and identify other actions required to eliminate or minimise the loss;
- Recommend further improvement activities based on cost-benefit analysis;
- Create a positive environment to allow employees from different departments eg Production, Maintenance, Technical Support etc to gain a greater understanding of each others' situation and build relationships; and
- Create a learning environment to allow employees to develop their problem solving skills.

Work Area Management involving Area Based Teams (3)

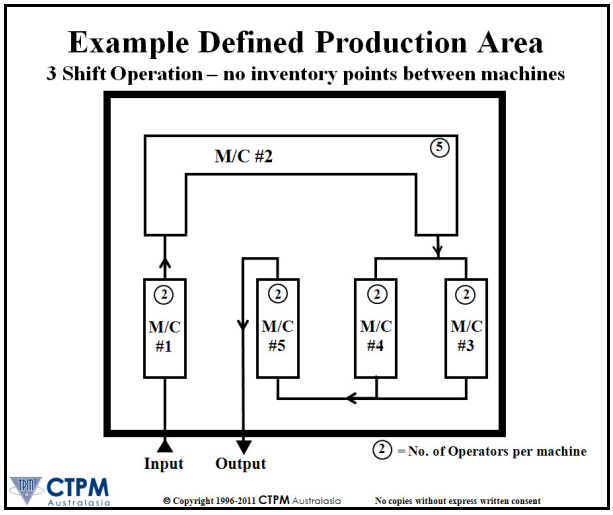
Establishing Improvement Areas for Area Based Teams

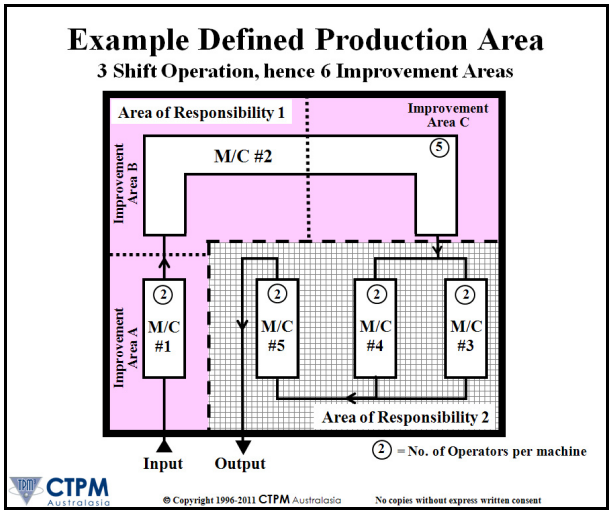
Before commencing Work Area Management in a Production Area, there is a need to ensure effective Area Based Teams of 4-8 operators including a designated working Team Leader have been established across all shifts in each targeted Defined Production Area.

As mentioned previously a Defined Production Area is a production area where you are able to measure OEE (ie input and good output) or Lead Time and there are at least 4 permanent employees per shift.

If the Defined Production Area has sufficient employees to create more than 1 team of 4-8 per employees per shift then we suggest the Defined Production Area be divided into Areas of Responsibility where an Area Based Team becomes responsible for achieving the production plan within their Area of Responsibility rather than the whole Defined Production Area.

For example (see slide below) if there are 13 operators working in the Defined Production Area, then it may be decided to create 2 Areas of Responsibility per shift with 7 in one area and 6 in the other. Both Area Based Teams would have designated working Team Leaders and the operators would rotate within their Areas of Responsibility rather than rotate throughout the entire Defined Production Area so as to create flexible Area Based Teams.





If there is more than 1 shift involved in the Defined Production Area, then **Improvement Areas** need to be created and allocated to each shift. An **Improvement Area** is the area the team is responsible for Area Based Team improvement activities (ie Work Area Management / Operator Equipment Management).

Work Area Management Specific Objectives

- Introduce formal improvement activities involving everyone within the Defined Production Area by establishing Area Based Teams of 4-8 employees with a designated working Team Leader across all shifts with clear responsibilities and boundaries for agreed Improvement Areas;

- Establish a communications Noticeboard to support sharing of information between shifts to gain agreement and buy-in on improvements;
- Establish a Scoreboard for each Area Based Team to provide feedback to the team and everyone else at site on the progress of their improvement activities;
- Improve safety, productivity and morale by establishing "a place for everything and everything in its place" within the Defined Production Area;
- Standardise practices to support a more consistent approach to achieving the production plan across all shifts within the Defined Production Area via defined Improvement Areas for each team;
- Introduce the practice of Area Based Team self-assessments to develop the discipline to maintain standards;
- Improve communications and standard practices between shifts by having all teams within the Defined Production Area sign-off on every other team's improvements; and
- Create time and reduce the frustrations of all Area Based Team members so that there will be a desire (pull) to support on-going improvement activities eg introduction of Operator Equipment Management.

Operator Equipment Management involving Area Based Teams (4)

Operator Equipment Management is broken up into 4 Stages involving 7 Steps which typically span 2-3 years of Operator and Maintainer development relying on weekly half-hour lessons / planning sessions supported by activity time (the doing) in the workplace. The objective is to:

- Support the Defined Production Area in improving OEE along with the agreed holistic goal aligned performance measures;
- Restore equipment to its "ideal" state by establishing Basic Equipment Conditions;
- Reduce accelerated or early deterioration through daily checks and proper operation;
- Identify and initiate the improvement of any Design Weaknesses;
- Make use of equipment as a means of teaching employees new ways of thinking and working;
- Create a positive environment to allow maintenance and production to gain a greater understanding of each others' situation and build relationships;
- Provide everyone with the training, systems and opportunities to care for their own equipment & workplace;
- Establish the necessary conditions and systems to allow equipment to be properly maintained;
- Develop self-managed world class operators competent in:
    - Frontline Safety (self & others) & Environment
    - Frontline Quality (input, process, output)
    - Frontline Equipment Care
    - Frontline Energy Management

- Achieving the Production Plan
- Formal Continuous Improvement

who can:

- Recognise equipment defects or problems at the earliest possible time
- Initiate and ensure rectifications are promptly carried out
- Understand equipment functions and mechanisms
- Detect causes of defects or abnormalities
- Carry out minor servicing of their equipment where appropriate
- Understand the relationship between equipment and quality (eg yield loss)
- Predict problems in quality (eg yield loss) and detect their causes
- Manage own workplace

- Develop synergistic mature Area Based Teams recognising the 4 stages of Team Development;
- Create the environment where Production and Maintenance work in harmony; and
- Create a failure-free, trouble-free, safe workplace.

Stage 1: Cleaning for Inspection Activities to identify equipment defects

Step 1 Continue WAM activities and introduce clean for inspections (typically 1-2 hours per week per shift) so as to identify & rectify equipment defects.

Step 2 Continue Step 1 activities and focus on reducing the cleaning for inspection time by addressing the sources of contamination.

Step 3 Continue Step 2 and introduce education on lubrication so team can establish perfect Lubrication and Clean for Inspection Standards & Procedures so as to lock in Basic Equipment Conditions (no looseness, no contamination and perfect lubrication) and thus reduce variation in component life to allow more accurate preventive / predictive maintenance activities.

Stage 2: Training for Inspection Activities

Step 4 Continue Step 3 and introduce structured on-the-job education using One Point Lessons etc so as to develop an understanding of Equipment Functioning by the operators (typically 6 modules over 3 cycles) so they can identify and diagnose equipment problems at the source.

Step 5 Lock-in Steps 1-4 by reviewing and finalising Inspection Standards & Procedures for both the work area and the equipment.

Stage 3: Consolidate Quality Analysis Activities

Step 6 Continue Step 5 and now that equipment is in perfect condition, focus on understanding the Quality and Equipment relationships so as to identify what causes product quality problems and what equipment conditions are necessary to ensure perfect quality output.

Stage 4: Consolidate Ongoing Improvement Activities

Step 7 Continue Step 6 and lock in Zero Breakdowns, Zero Quality Problems, Zero Accidents or Incidents by monitoring and managing their workplace as an effective mini-business.

3.4 Production Support Improvement Activities

Maintenance Excellence Management (5)

- Establish an effective Maintenance Excellence Leadership Team (MELT) or in the case of small sites that have less than say 10 maintenance people, have the Site Leadership Team take responsibility for the Maintenance Excellence Management (MEM) activities;
- Engage all maintenance employees through a comprehensive maintenance self-assessment process to allow them to reflect on the Leadership, Capability and Processes of Maintenance Excellence along with defining the nature of their work and identifying the time lost each week due to the environment they work in (typically 35%);
- Establish the measure of Time Lost as the "driver" for initially focusing MEM improvement activities;
- Establish the MEM Vision & Strategy (including Mission and Key Success Factors), Performance Measures and Organisation Structure to support TPM^3; and
- Progressively, over say 3 quarters (3 month periods) of improvement activities, create and implement a MEM Improvement Plan that will:
    - Achieve the strategy within 2-3 years;
    - Free up maintenance resources to support TPM^3 as it cascades across the site;
    - Engage all Maintenance employees through Work Area Management and Maintenance Process Management so as to reduce frustrations and Time Lost from not being able to finds things, and improve processes within their maintenance;
    - Transform the nature of work to a pro-active learning stable domain; and
    - Achieve at least an 80% rating for each of the 10 elements of the MEM matrix within 2-3 years through strategically focused Micro Maintenance Improvement Teams, Work Area Management and Maintenance Process Management Teams.

New Equipment / Area / Product Management (6)

- Provide everyone the framework, systems and opportunity to input into new equipment, new areas or new products being introduced into the site;
- Establish the concept of Life Cycle Cost (**LCC**) as the "driver" for focusing new equipment / area / product improvement activities;
- Ensure Design, Engineering and Operations work together as a team in the design of new equipment / area / product;
- Apply the TPM^3 experience to new equipment / area / product designs through Prevention at Source Design Activities so as to minimise Life Cycle Costs utilising a Macro and Micro team approach; and
- Apply the TPM^3 experience to new equipment / area / product in order to maximise TPM^3 Friendliness utilising a Mini Micro team approach.

Support Department Excellence Management (eg Quality Dept or Laboratory etc) (7)

- Establish an effective Support Department Excellence Leadership Team (SDELT) or in the case of small sites that have less than say 10 support department people, have the Site Leadership Team take responsibility for the Support Department Excellence Management (SDEM) activities;
- Reduce waste and improve customer service by improving processes;
- Create the capability to support an OEE improvement (increased throughput) and / or Lead Time Reduction within the plant;
- Reduce employee frustrations by improving the work area through Work Area Management and Support Process Management Teams;
- Progressively review all processes throughout the support area;
- Establish the Support Department Excellence Vision & Strategy (including Mission and Key Success Factors), Performance Measures and Organisation Structure to support TPM[3]; and
- Progressively over 3 quarters (3 month periods) of improvement activities create a Support Department Excellence Management Plan that will:
    - Achieve the strategy within 2-3 years;
    - Free up time of everyone in the Support Department to allow their support for TPM[3] as it cascades across the site;
    - Engage all Support Area employees through Work Area Management and Team Process Management so as to reduce frustrations and Time Lost from not being able to find things; and
    - Achieve at least an 80% rating on the elements of the Support Department Excellence Matrix within 2-3 years through Micro Support Improvement Teams, Work Area Management and Support Process Management Teams.

3.5 Customer Focus Improvement Activities

All businesses are composed of interrelated processes. Unfortunately over the years as companies grow and expand their product and service range, they create functional departments which tend to act in Silos focused on making their department efficient rather than looking at the holistic picture of the various Value Streams within the business and their impact on the customer.

The Value Stream Management activity involves both Cross-functional Teams (Macro, Micro, Special Micro and Mini Micro Focused Process Improvement) and Area Based Teams (Work Area Management and Customer Process Management) to identify Value Streams then improve Flow, reduce Waste, and create Pull thus eliminating the impact of the Silos resulting in reduced Lead Times, improved Quality, improved Customer Response and reduced Costs.

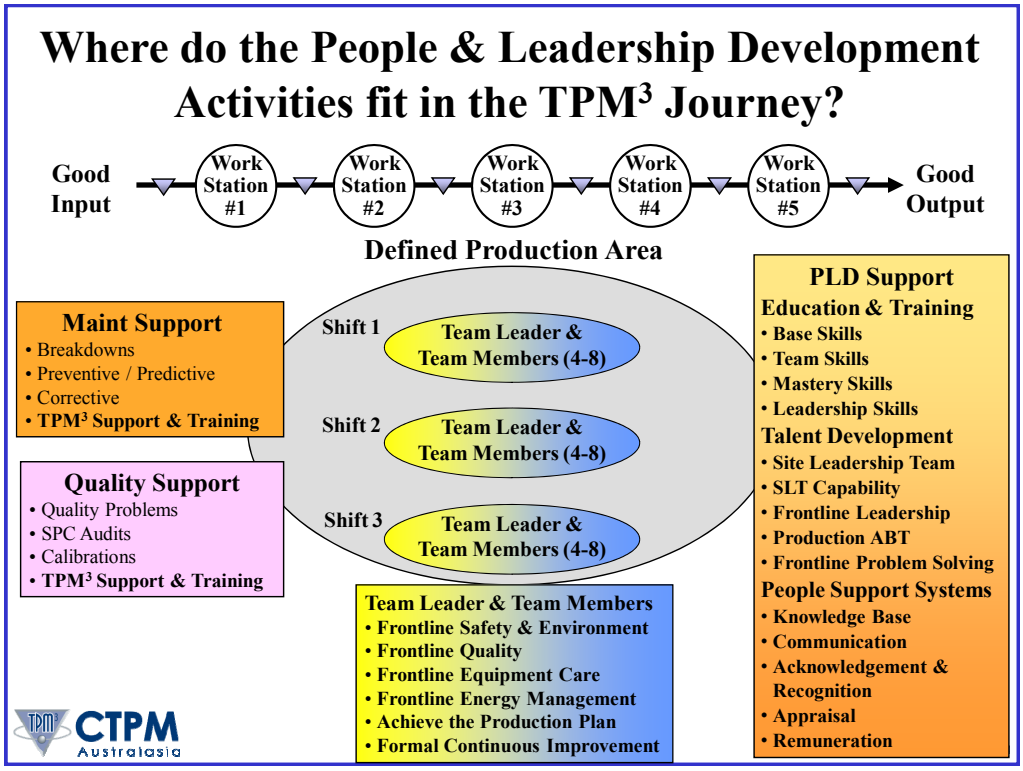
Value Stream Management (8)

- Identify all Value Streams within the business and progressively map commencing with the dominant streams;
- Establish the measure of Lead Time as the 'driver' for focusing Value Stream improvement activities;
- Reduce complexity through product stream rationalisation, process simplification etc;
- Stabilise Flow and reduce Waste within all Value Streams;
- Address production planning & scheduling issues which may impact on the smooth flow of materials throughout the plant or impede equipment performance improvement activities;
- Create the capability for all Value Streams to support an OEE improvement (increased throughput) within the plant; and
- Reduce employee frustrations by improving work areas through Work Area Management and Customer Process Management Teams.

3.6 The Bottom of the TPM³ Framework or Hamburger

People & Leadership Development is the very important TPM³ Improvement Activity at the bottom of the TPM³ Framework. All the activities above are structured to develop people as well as obtaining performance improvement. The full potential of these activities often cannot be realised unless there is a focused best practice and timely Education & Training framework supported by Talent Development and good People Support Systems. We have learnt that effective People & Leadership Development activities are critical for the success of your TPM³ On-going Improvement journey.

People & Leadership Development (9)



- Establish an effective People & Leadership Development Leadership Team (PLDLT) or in the case of small sites have the Site Leadership Team take responsibility for the People & Leadership Development (PLD) activities;
- Assist the Site Leadership Team to develop an Operator Excellence Vision and Operations Vision for the site;
- Document the role and responsibilities of Production Team Members, Team Leaders and Supervisors and identify how the skills required will be developed eg Base Skills, Team Skills, Mastery Skills etc (refer to CTPM's **Developing Competent and Engaged Production Team Leaders** paper and **Preparation for Area Based Teams & Work Area Management** paper);
- Establish Micro Education & Training – Base Skills Teams (initially focusing on the pilot Defined Production Areas) to conduct a detailed analysis of the Education & Training requirement to ensure the Base Skills required to achieve the Production Plan

are identified and a process established to progressively develop those skills within each Area Based Team;

- Establish Micro Education & Training – Team Leader Skills Team (initially focusing on the pilot Defined Production Areas) to conduct a detailed analysis of the Education & Training requirement to ensure the Team Leader skills required for On-going Improvement are identified and a process established to progressively develop those skills within each Area Based Team;
- Support the Preparation for Operator Equipment Management Step 3 by establishing Micro Education & Training – Lubrication Skills Team(s) initially focusing on the pilot Defined Production Areas;
- Support the Planning for Operator Equipment Management Step 4 by establishing Micro Education & Training – Planning for OEM-4 Team (initially focusing on the pilot Defined Production Areas) to identify the equipment modules required including the preferred sequence of introduction;
- Support the Preparation for Operator Equipment Management Step 4 by establishing Micro Education & Training – Equipment Skills Teams (typically 1 for each agreed equipment module) initially focusing on the pilot Defined Production Areas; and
- Evaluate the current capability of the site's Talent Development and People Support Systems using the CTPM People & Leadership Development Innocence to Excellence Matrix as a guide (eg review and adjust to your site requirements) and create a plan of team activity to work towards best practice (greater than 80% rating for each element) typically using Micro Education & Training Teams and Micro People Support Systems Teams.

People & Leadership Development Innocence to Excellence Matrix elements

Part 1: Talent Development

1. Site Leadership Team Development
2. Frontline Leadership Development
3. Production Area Based Team Development
4. Site Leadership Team Capability Development
5. Frontline Problem Solving Capability Development

Part 2: People Support Systems

6. Knowledge Base System to Support Improvement
7. Communication System to Support Improvement
8. Acknowledgement & Recognition System to Support Improvement
9. Appraisal System to Support Improvement
10. Remuneration System to Support Improvement

Purpose of the People & Leadership Development Innocence to Excellence Matrix

The purpose of the PLD Innocence to Excellence Matrix is to outline what we believe is best practice for a Level 5 site, however we do appreciate every site is different and the top line of the Matrix may need to be adjusted for site specific issues.

It is for this reason that we suggest the Site Leadership Team review the Matrix before using it, and makes any adjustments they feel are appropriate on the basis they fully understand why we described best practice the way we have.
We are happy to provide deeper explanation for each element as required.

When should People & Leadership Development Improvement Activities be introduced into the TPM³ On-going Improvement Journey?

To assist in determining the sequence of the 10 TPM³ Improvement Activities we have created a model that outlines a possible pathway, however we believe it is the role of the Site Leadership Team with the assistance of support Leadership Teams to monitor progress and impact of the journey and reflect on learnings some 2-3 weeks before the end of each cycle to plan out the next cycle of activities, recognising the need to keep people engaged on the journey once they start. For example once a person has been a member of a Cross-functional Team then they should continue to be a member of one Cross-functional Team each on-going cycle.