

# PIT Process

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LBSPartners was founded in Limerick in 2002 to educate and assist companies in the development of operational excellence through Lean, Lean-Sigma & 6-Sigma.

We are a hands-on business improvement consulting firm with extensive Lean and management experience. Our customer base includes SMEs, Multinationals and Public sector clients in food, engineering, life sciences, services and software.

LBS has a proven track record of delivering measurable and sustainable results to our clients through significant Lean transformations to hundreds of clients. Projects are typically delivering improvements in cost, cycle time, quality and customer service.

Published by: **LBSPartners**  
Nexus Innovation Centre  
Tierney Building  
University of Limerick  
Limerick, Ireland

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Publication date: December, 2011

Printed in Ireland

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ISBN: 978-0-9570203-1-3



# PIT Process

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## PIT and Performance Monitoring

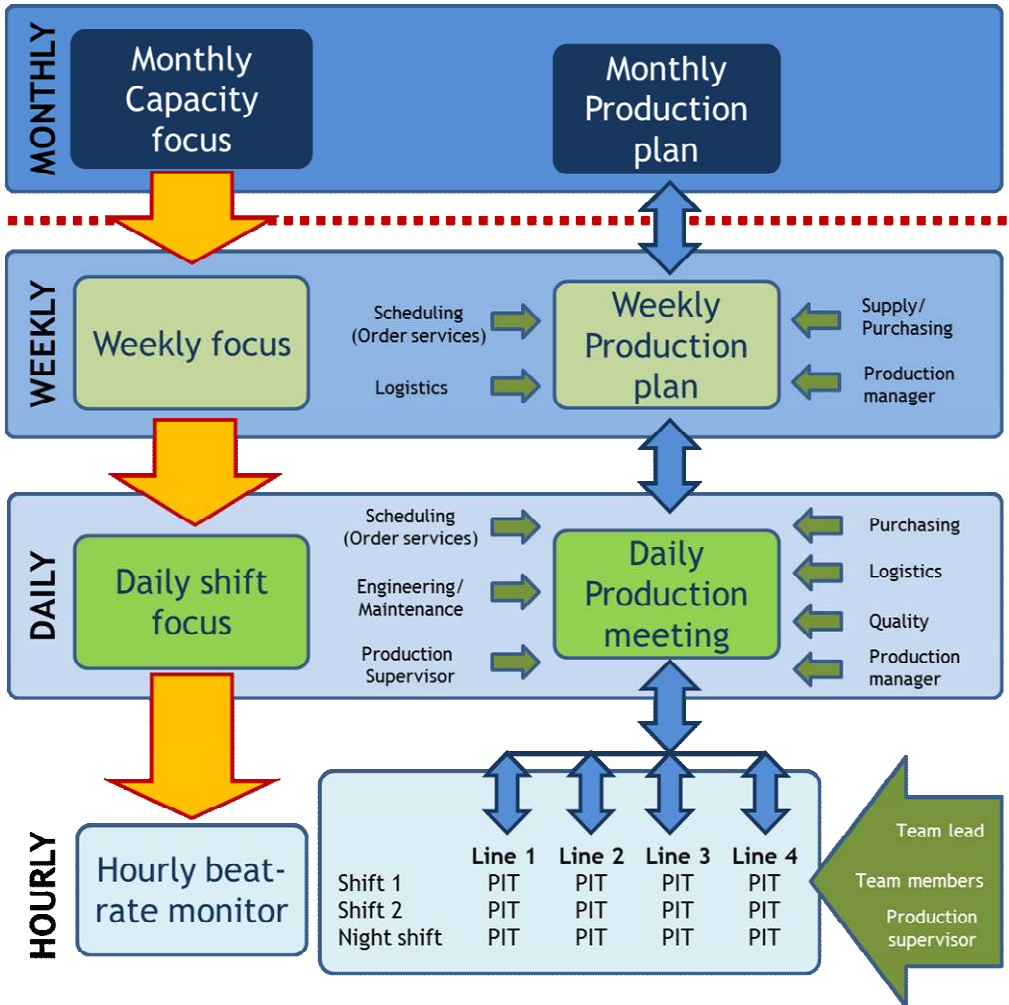
An organisation's sustained success is dependent on continuous monitoring of its performance to ensure its business goals are achieved. Where targets are not being met, remedial action must be identified and implemented promptly to bring operations back-on-track.

The PIT process provides a mechanism for performance monitoring versus the stated plan and allows for:

- Identification of the appropriate actions required to remedy any variance immediately
- Escalation of issues if the determination of the root cause is outside the team's control.

The framework depicted in Figure 1 illustrates how performance is monitored at different time intervals and by different levels of the organisation. The task at each level is to resolve the issues within the team's control and request help for those issues which have been identified but can not be resolved by the team. This may be due to time constraint (resources, customer lead time), lack of capability (analysis tools, complexity) or budgetary considerations. The framework lists the function of each forum with respect to process and attendees. The scope of the current document includes the Hourly, Daily and Weekly review cycles.

# PIT Process



**Figure 1** Framework for monitoring organisational performance



# PIT Process

At the cutting edge of the framework is the PIT meeting, the role of which is to monitor daily production, to ensure issues are resolved in a timely manner and to capture real-time verifiable data for validation or escalation. The PIT meeting feeds data to the overall daily production meeting which in turn feeds up to the Weekly production planning forum.

Depending on the complexity of the operation, a separate PIT meeting may be required for each shift and each line to fully capture all the performance data to allow management to make the appropriate decisions.

The PIT facilitates feeding information such as line performance, material shortages, quality issues and any schedule changes - in short any issues negatively affecting production.

This information forms the input to the Daily production meeting, the outputs from the meeting (process) are:

- A revised plan for the day
- Clear communication of any changes and the reason for these changes
- Open actions requiring immediate attention
- Priorities for the day clearly set and communicated

This information forms the basis for the PIT for the next day.

## What is PIT?

PIT is a quick production focused review aimed at ensuring that the agreed production target for an area is achieved consistently. The scope of the PIT meeting is the current production period to focus on the daily target, the determination of the root cause for recurring issues should be addressed through other forums.

The name “PIT” is an acronym drawn from the following three words:

### **Performance**

PIT involves a review of the performance of the current operation i.e. progress with respect to a stated goal. For example it could just as easily be yield, uptime as much as productivity.

### **Issues**

PIT identifies the issues currently impacting performance, and how these issues are being addressed. Immediate action must be taken to contain the issue and protect output. However, the frequency and impact of the issues should be captured for escalation to the appropriate level for root cause analysis and resolution which could feed into a longer term Continuous Improvement effort.

### **Targets**

PIT involves setting clear unambiguous goals which meet the business needs and asks the best of the team.

Production data for review is recorded during the production shift on a visual display board in the production area. The PIT meeting takes place around this board and is chaired either by the production supervisor or the appropriate line lead. The attendees will be the supervisor, line lead, relevant team members and support staff (e.g. Engineering, Planning, Quality, Purchasing, Logistics etc.).

# PIT Process

The following activities occur at the meeting:

- Progress against the plan is measured
- Performance gaps are highlighted
- Issues which adversely affect production are identified and containment defined
- The target for the next production period is set

PIT is analogous to a Formula 1 pit-stop, where the current condition of the car and driver is assessed and appropriate adjustments made immediately, to stay in the race and deliver the best overall performance consistently. The objective is to win the race; everyone works as a team to keep the car in the race.



# PIT Process

To continue the analogy, the table in Figure 2 compares the PIT stop in a motor race to the PIT as operated in a production situation.

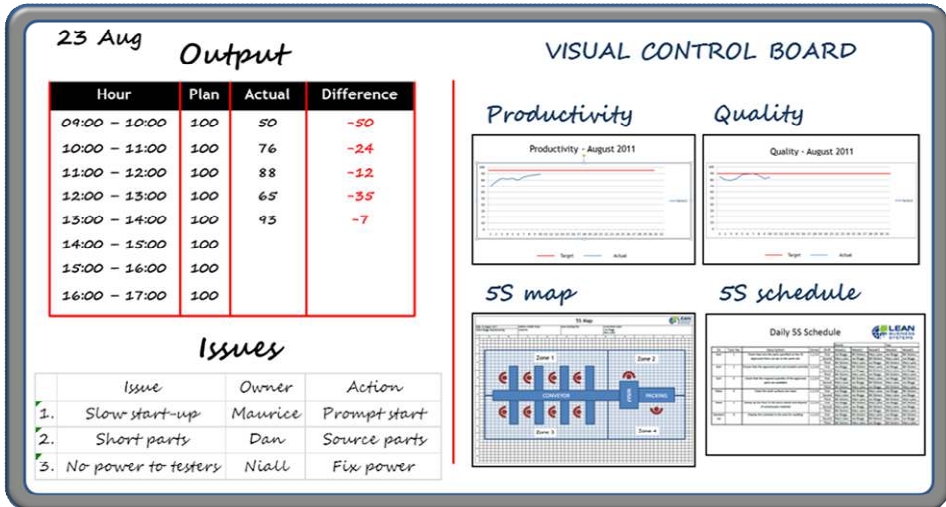
	MOTOR RACING	PRODUCTION
Leader	Team Manager	Line supervisor
Front line staff	Engineer	Line lead
Information/data source(s)	Driver feedback	Issues highlighted by team members
	Vehicle performance data	Performance with regard to KPI
Sample data collected	Driver condition Vehicle velocity Tyre condition Fuel left in tank Lap times	Productivity Performance to target Materials availability Production/reject rate
Suggested actions	Adjust engine Replace tyres Fill fuel tank	Engineering support Machine maintenance Operator training
Targets	Win the race	Production target achieved

**Figure 2** PIT in production

In production, the PIT process is implemented by the area team members, line leader and line supervisor. While completing process related activities, they must collect data to monitor performance vs. the plan. The PIT meeting serves to review this data, highlight issues and take appropriate action to ensure that any performance gaps are closed with immediate effect, so that the daily output is protected.

# PIT Process

This is best done in the production area in front of a white board which displays the KPI information (see sample layout in Figure 3).



**Figure 3** Sample visual control board layout

In this case, the board clearly states what the output should be for each hour of the shift. Beside this, the actual output is stated and the difference highlighted. The reasons for not meeting the target are listed on the lower left hand side of the board and the action required to fix the issue is identified. These actions must be acted on swiftly to ensure the output is achieved.

# PIT Process

The inputs (performance, information) to and outputs (actions, results) from the PIT meeting are illustrated in Figure 4.



**Figure 4** PIT meeting summary

**NOTE:** KPI is an acronym for Key Performance Indicator, a means of measuring an organisation's performance against a pre-set business goal or target. The purpose of using KPIs is to understand the current performance, identify areas where performance does not meet expectations and to use these areas as opportunities to drive improvement.

The inputs are supplied by the line lead and team members, who bring information about the current line performance to the meeting. There should be a clear understanding of the current situation i.e. has the planned output been achieved, or is it behind the target. If the output has not been achieved, why has it not been achieved, what are the issues which have prevented the line meeting the output figure and what needs to be done to fix these issues.

By the end of the PIT meeting, the plan should be revised as necessary, the activities required to protect the output for that day should be understood and immediate action taken to meet the new plan.

# PIT Process

The main aspects of the PIT review are summarised in the table below.

PIT Review	
What is the purpose of the review?	<ul style="list-style-type: none"><li>• Real time data collection</li><li>• Hourly performance monitoring</li><li>• Intervention to protect output</li></ul>
Who participates in the review?	<ul style="list-style-type: none"><li>• Team members</li><li>• Line leader</li><li>• Line supervisor</li></ul>
When does the review occur?	<ul style="list-style-type: none"><li>• Frequency to be determined by the production team</li></ul>
How is the review conducted?	<ul style="list-style-type: none"><li>• Review of the relevant KPI, with regard to the established target</li><li>• Identification of issues impacting the KPI</li><li>• Implementation of countermeasures to ensure target is achieved</li></ul>
Where does the review take place?	<ul style="list-style-type: none"><li>• In the work area where the value is added</li></ul>

## Principles of the PIT process:

The key principles of the PIT process are summarised in the table below.

KEY PRINCIPLES OF THE PIT PROCESS	
1.	The review must take place in the workplace where the value is added
2.	A pre-determined set of factors is reviewed to: <ul style="list-style-type: none"><li>• Assess the current level of performance</li><li>• Understand the issues currently being experienced</li><li>• Provide direction by setting the targets for the next production interval</li></ul>
3.	All issues which impact production are identified
4.	The line leader/supervisor must understand what corrective measures are available
5.	The line leader/supervisor looks for options or proposals from the team members

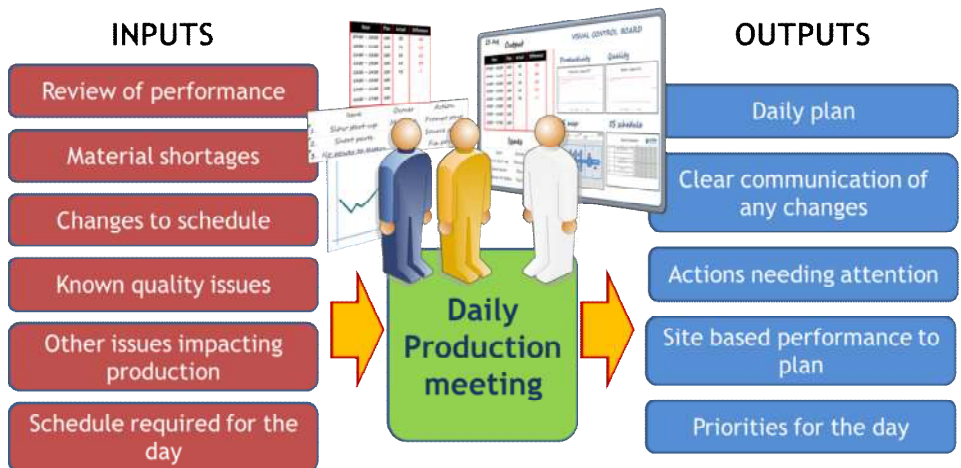
The PIT engages the staff in the production area in problem identification and resolution, however it can't address all the issues as the root cause may relate to the process inputs provided by external suppliers and internal suppliers (i.e. Materials, Engineering, the Paint line or IT etc.). This is why the Daily and Weekly meeting are essential.



# PIT Process

## DAILY PRODUCTION MEETING

This meeting resolves issues, removes ambiguity, communicates a clear direction to production and provides inputs to the Weekly review; specifically data on production requirements (in terms of the current customer demand and the on-hand stock), any changes to the capacity of the line, open actions and feedback on performance to the daily plan.



### Attendees:

- Scheduling
- Engineering/Maintenance
- Production supervisor
- Logistics
- Purchasing
- Quality
- Production manager

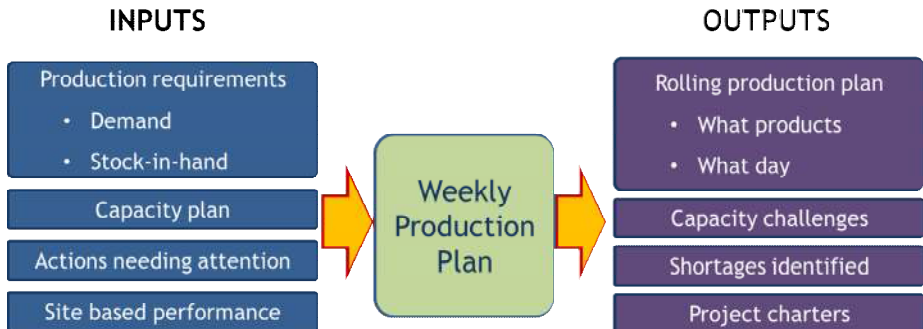


# PIT Process

## WEEKLY PRODUCTION PLANNING MEETING

The purpose of the weekly planning session is to give clear direction to the production teams in terms of:

- The rolling production plan (by day or appropriate production interval), i.e. clear direction on what products are to be produced, on what day
- Deficiencies in terms of capacity or material shortages have been identified and contingencies put in place to address them
- This forum is where cross functional improvement projects are defined, chartered, approved and reviewed. This underlines the organisation's commitment to properly resourcing the project and contributing to its completion and success.



### Attendees:

- Scheduling
- Logistics
- Purchasing
- Production manager

# PIT Process

## PIT SUMMARY:

- PIT is a quick, output focused review aimed at ensuring the planned output is achieved
- PIT is an acronym, which stands for Performance, Issues and Targets
- Performance refers to the output from the previous production period
- Issues are those experienced in the current production period
- Targets are the production goals set for the next production period
- The PIT meeting happens in the production area, near a whiteboard displaying the data collected during production
- Keeps all team members aligned, focused on the production schedule
- PIT facilitates collection of production data to drive data based decision making to ensure production goals are met
- The PIT is the core element of the Performance Monitoring and more importantly at the “coalface” of continuous improvement. The earlier an issue is addressed and resolved the more likely it is to be related to root cause and the less likely it will be to re-occur

## TEMPLATES

A selection of standard forms are presented on the succeeding pages, to assist in any PIT implementation, as follows:

**Planned vs. actual output Log** – Used to track the actual output achieved versus the planned output in each hour of the production shift, to highlight the difference, also to record why the production target may not have been met.

**Issue Log** – Used to record the issues encountered during the work period in more detail, listing the corrective action required, the name of the person who will complete the action, the date by which it must be completed and the current status.

**Downtime Log** – Used to record for each process the production time was lost and the reason why the loss occurred. A corrective action may be assigned here.

**Weekly Output Performance Metric** – Collects the performance data for each day of the week, which is used to track progress to the plan over the week making the trend in the level of performance easier to see.

**Monthly Production Tracker** – Similar to the weekly report but summarises the data over the current month. These reports establish the current performance or baseline. The ultimate aim is to manage the losses and improve productivity.

**Efficiency**– The example graph displayed is used to track the line efficiency across a month to illustrate the underlying trend.

Please note that the original templates are available from [www.lbspartners.ie](http://www.lbspartners.ie)

# PIT Process

## 1. Planned vs. Actual Output Log

Date:	Planned v's Actual Output Log				Comment
	Hour	Planned output	Actual output	Difference	
	08:00 - 09:00				
	09:00 - 10:00				
	10:00 - 11:00				
	11:00 - 12:00				
	12:00 - 13:00				
	13:00 - 14:00				
	14:00 - 15:00				
	15:00 - 16:00				
	16:00 - 17:00				
	17:00 - 18:00				
	18:00 - 19:00				
	19:00 - 20:00				

## 2. Issue Log

[illegible]



# PIT Process

## 4. Weekly Output Performance Metric

Weekly Output Performance Metric:																	
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Week No:		Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		Sunday		Total Week	
Target																	
Actual																	
% Performance																	
Variance %																	
Variance Acc %																	
Comments:																	

# PIT Process

## 5. Monthly Production Tracker

Monthly Production Tracker

Month:

Target

Actual

% Performance

Week 1

Week 2

Week 3

Week 4

Week 5

Total Month

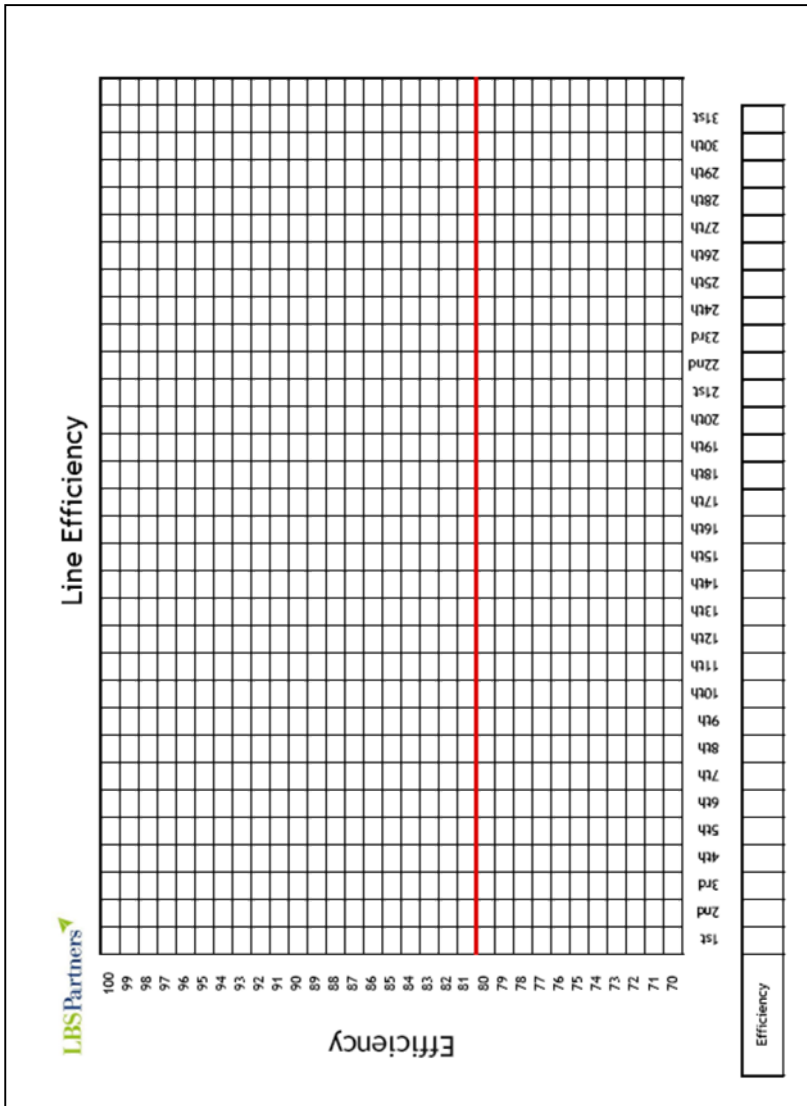
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Comments:



# PIT Process

## 6. Efficiency









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