SC21 Manufacturing Excellence
December 2013

Process Overview

Prepared by:-
The SC21 Performance, Development and Quality (PDQ) Special Interest Group (SIG)

Acknowledgement
The scoring methodology used in the Management Commitment element of the SC21 Manufacturing Excellence Assessment is based on the EFQM RADAR® scoring matrix.
ADS Group acknowledges the EFQM copyright and is grateful for the permission granted to reproduce the RADAR® scoring matrix within this document.
Participating companies should be provided with or obtain a copy of EFQM Excellence Model:-
ISBN: 978-90-5236-670-8 to be used in conjunction with this document.
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1. SC21 Manufacturing Excellence overview

The Manufacturing Excellence approach has been developed from 'Lean Manufacturing' / 'Just In Time' philosophies. The approach is equally applicable to large or small organisations in both high and low volume manufacturing environments. The approach should also be complementary to other Lean approaches being deployed within Industry.

Manufacturing Excellence is based on a set of widely established suite of tools and techniques, which together make up a framework for Lean Manufacturing:

- **Diagnostic** - The practical application of Lean in specific areas, usually Work Areas, Cells or production lines.
- **Management Commitment** - To understand how the organisation’s senior management team are enabling Lean and deriving business results across the boundaries of the company, including customers and suppliers.

The number of Practitioners involved in an assessment will depend on the size of the organisation and the recognition level to be achieved, refer to the table below, these numbers are mandated by the PDQ SIG.

<table>
<thead>
<tr>
<th>Company size</th>
<th>Bronze</th>
<th>Silver</th>
<th>Gold</th>
</tr>
</thead>
<tbody>
<tr>
<td>Micro &lt;10 employees</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Small &lt;50 employees</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Medium &lt;250 employees</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Large &gt;250 employees</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

The Manufacturing Excellence assessment is used to understand and support organisations who want to drive business results through Lean tools, techniques and philosophies.
2. Diagnostic

<table>
<thead>
<tr>
<th>SC21 Performance, Development &amp; Quality</th>
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</table>

### 2. Diagnostic

The diagnostic is based on recognised core Lean tools and techniques. Within each box the Diagnostic are ‘low adoption’ and ‘high adoption’ scenarios. These summarised cases are supplemented by detailed expectations which indicate progression from low to high adoption. Each of the boxes within the diagnostic is rated from a score of 0 to 4 (the higher score being for the high adoption). The maximum score from each diagnostic is 80 (20 boxes x 4points). If a particular box within the diagnostic is agreed as ‘not applicable’ it is not included in the scoring and the diagnostic is rated on a maximum of 76 (or 72 if 2 boxes are excluded).

The diagnostic is used in work areas.

Before using the diagnostic it should be fully explained to the work area representative(s). The work area team should be given the opportunity to ask any questions relating to any part of the assessment process.

The time taken to complete a diagnostic within each work area is usually between 2 and 3 hours.

The diagnostic is used typically in a systematic way, usually working through each of the boxes from left to right. Any of the items within the diagnostic that are agreed as not applicable to a certain area are not evaluated. Throughout the process any relevant terminology or points of interest should be explained. The check sheet and associated score is evaluated by looking for tangible evidence and listening to responses from questions.

Notes should be taken throughout, to assist in scoring and offering areas for improvement.
improvement (AFI).

The scores given for each element are dependent on the degree of effective application. The “look for’s” (contained within the detailed expectation sheets) can be used to explore further detail. They can also be used to provide additional areas for improvement and in some circumstances may have a bearing on the score – particularly if it’s judged they have a strong or priority relevance to the area in question.

After each of the elements has been rated, an overall Diagnostic Score for the work area assessed is produced. These steps then need to be repeated on any further work areas that have been agreed to be within the scope of the activity.

Experience should be used to ensure the areas for improvement offered are real and will drive Cost, Quality and Delivery improvements.

**Note:**
The terminology used within a Diagnostic may not align directly with the commodity, product or service being assessed.
In these instances the Practitioner will need to interpret the diagnostic to match the situation and then provide realistic and valued feedback of Strengths and AFIs.
3. Management Commitment

The Management Commitment element is focused on understanding the managerial processes which enable Lean Operations within a company and what results are being achieved as a consequence.

To ensure consistency in the scoring methodology it is essential that this document is supported by a management commitment presentation to the organisation to provide examples of various approaches.

There are 2 methods to conducting a Management Commitment assessment based on the size of the organisation and/or their familiarity with Lean techniques.

3.1 Guidance for Management Commitment assessment

- An SME (Small to Medium sized Enterprise) or an organisation that has recently started with ‘lean’ implementation should use the Questionnaire based approach Method 2. This is acceptable for recognition at Bronze SC21 award.

- A larger organisation or one which has implemented a ‘lean’ approach and would benefit from a detailed evaluation would be encouraged to deploy a Management Commitment assessment using Method 1.

- All organisations to be recognised for Silver SC21 award must deploy a Management Commitment assessment using Method 1.

- All organisations to be recognised for Gold SC21 award must deploy a Management Commitment assessment using Method 1.

- Gold and Silver SC21 award winners will be role models for Excellence, accordingly an in depth assessment against the RADAR® concept associated with the EFQM Business Excellence Model is required to validate this level of recognition.

3.2 Method 1

The assessment ‘toolset’ for Management Commitment is based on the RADAR® concept associated with the EFQM Business Excellence Model. A copy of the EFQM Excellence Brochure ISBN: 978-90-5236-670-8 should be given to or bought by participating companies.

The checklist for the RADAR® based Method 1 is contained within the Manufacturing Excellence Assessment Toolset.

Within the process there is an amount of flexibility regarding the allocation of ‘scores’ allowing the assessors to exercise their experience, knowledge and judgement.

The principle for the RADAR® method is described in below.
Enablers
An Approach is the overall way by which something is made to happen and comprises of processes and structured actions within a framework of principles and policies. The approaches are Deployed in a structured way to ensure implementation. Assess and Refine ensure the approaches and their deployment are achieving the desired result. Organisations are asked to provide ‘evidence’ of how they address the activities relevant to approach, deployment and assess and refine.

Results
The Results section measures the excellence and scope of what the organisation is delivering in terms of value to its stakeholders through Manufacturing Excellence.

The Management Commitment methodology is usually conducted by interview with a broad representation of an organisation’s senior management team (ideally the Board of Directors are involved). It is usually scheduled to take place after the work area diagnostic element, so that a comprehensive view of the practical deployment of Lean Manufacturing has taken place prior to interviewing the senior management team.

At the start of the interview, the process to be followed and the objectives should be explained. The Senior Management representatives should be given the opportunity to ask any related questions at any point during the interview.

Typically this method takes approximately 3 hours.

The depth of questioning should be such that sufficient non-anecdotal evidence is collated to gain an understanding of the current situation.

Using the information received (verbal / documented), notes should be taken. These notes will assist in determining the score and defining strengths and areas for improvement.

When the scores have been determined for both Enablers and Results, an overall Management Commitment score can then be produced. The maximum score available is 100 for enablers and 100 for results (200 in total). In conjunction, and more importantly, areas for improvement should be established which the organisation can consider for inclusion in their CSIP.
3.3 **Method 2**

This method should also take place after the Diagnostic element. It uses a questionnaire approach and supporting workshop which is facilitated by the Manufacturing Excellence Lead Practitioner.

The questionnaire comprises 23 questions which address the elements of the EFQM RADAR® concept – 6 questions on Approach, 6 on Deployment, 5 on Assessment and Refinement and 6 on Results.

The format follows the principle of that used in a Determining Excellence assessment where scoring is based on A, B, C, D or E and a percentage achievement attained which is multiplied by the weighting factor of 650 to give the Management Commitment score.

*It is expected that the Practitioner delivering this questionnaire approach will be also be experienced in the RADAR® approach, as it is necessary to understand the background from Results, Approach, Deployment, Assessment & Refinement to facilitate the workshop.*

*Typically this method takes approximately 2 hours.*

The checklist for the Method 2 is contained within the Manufacturing Excellence Assessment Toolset.

**Note:** In Methods 1 & 2, **Results** are those achieved from implementation of a Lean philosophy and **not** those of the overall business.
4. Outcome of the Manufacturing Excellence assessment

The output of both the Diagnostic assessment and Management Commitment are Strengths and Areas for Improvement (AFI). Strengths can be used as standards or examples of best/good practice and cascaded to other cells or parts of the business. Areas for Improvement (AFI) can be analysed for benefit to the business, action planned or taken and incorporated in the Continuous Sustainable Improvement Plan (CSIP).

It may be appropriate to note “Comments” for activities that have started recently or need further deployment.

The overall score is calculated as shown below.

The examples above demonstrate how the scores from the Diagnostic and the Management Commitment are combined to produce one overall score for Manufacturing Excellence. Within the overall Manufacturing Excellence process, the diagnostic element of the process accounts for 35% of the overall score whereas the management commitment part of the process accounts for 65%.

<table>
<thead>
<tr>
<th>Manufacturing Excellence Method 1</th>
<th>Manufacturing Excellence Method 2</th>
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<tbody>
<tr>
<td><strong>Diagnostic: 35% weighting</strong></td>
<td><strong>Diagnostic: 35% weighting</strong></td>
</tr>
<tr>
<td>Cell No 1</td>
<td>Cell No 1</td>
</tr>
<tr>
<td>44 / 80</td>
<td>44 / 80</td>
</tr>
<tr>
<td>Cell No 2</td>
<td>Cell No 2</td>
</tr>
<tr>
<td>44 / 76</td>
<td>44 / 76</td>
</tr>
<tr>
<td>Cell No 3</td>
<td>Cell No 3</td>
</tr>
<tr>
<td>42 / 80</td>
<td>42 / 80</td>
</tr>
<tr>
<td><strong>Diagnostic</strong></td>
<td><strong>Diagnostic</strong></td>
</tr>
<tr>
<td>130 / 236 x 350 = 192</td>
<td>130 / 236 x 350 = 192</td>
</tr>
<tr>
<td><strong>Management Commitment: 65% weighting</strong></td>
<td><strong>Management Commitment: 65% weighting</strong></td>
</tr>
<tr>
<td>Enablers Score</td>
<td>% achievement</td>
</tr>
<tr>
<td>37.5 / 100</td>
<td>0.283</td>
</tr>
<tr>
<td>Results Score</td>
<td>Management Commitment</td>
</tr>
<tr>
<td>19 / 100</td>
<td>0.283 x 650 = 184</td>
</tr>
<tr>
<td><strong>Management Commitment</strong></td>
<td><strong>Management Commitment</strong></td>
</tr>
<tr>
<td>= 56.5 / 200 x 650 = 184</td>
<td>= 0.283 x 650 = 184</td>
</tr>
<tr>
<td><strong>Manufacturing Excellence</strong></td>
<td><strong>Manufacturing Excellence</strong></td>
</tr>
<tr>
<td>Assessment Score</td>
<td>Assessment Score</td>
</tr>
<tr>
<td>= 192 + 184 = 376</td>
<td>= 192 + 184 = 376</td>
</tr>
</tbody>
</table>
5. Feedback report

Strengths, Comments, Areas for Improvement and the overall score are presented back to the organisation at the end of the activity.

In addition, a detailed assessment report will be prepared by the Assessment Team. The Lead Practitioner will collate the final version and send to the organisation. The report should be segmented by:-

- Diagnostic Checksheet, Summary Strengths & Areas for Improvement (AFI)
- Diagnostic Checksheet, Detailed Strengths & Areas for Improvement and Score for each work area assessed
- Management Commitment, Summary
- Management Commitment, Scoring
- Assessment Score
- Benchmarking

The Assessment Report should be sent to the company within two weeks of the workshop.

Benchmarking
The score and feedback can be used for future target setting and benchmarking (as below).
6. Preparing for a Manufacturing Excellence Deployment

Preparation is key to a successful deployment. It ensures that all the right people have an input and all the appropriate information is available and understood.

Below are the main steps to prepare for the deployment of the process:

- SC21 and Manufacturing Excellence awareness presentations given to the Organisation.
- Agree Work Area(s) to be assessed and representatives to be involved for Management Commitment.
- In liaison with the organisation, consider other SC21 stakeholders by referring to the SC21 National Status Report and agree their role within the assessment.
- Obtain relevant information relating to doing business with the organisation
  - Product Ranges and Build Rates
  - Scope of business
  - Performance information (Delivery and Quality)
  - Issues / Concerns
  - Ongoing Improvement Activities
- Prepare Manufacturing Excellence Material
  - SC21 Overview
  - SC21 Manufacturing Excellence Overview
  - Assessment Material
  - Feedback Presentation
  - Feedback Report.
- Commence activity.