### **Continuous Improvement Toolkit**

### **Prioritization Matrix**



#### The Continuous Improvement Map

| Managing                         | Decidi                       | ng & Selecting                       |            | Planning 8      | . Project        | Management*        |
|----------------------------------|------------------------------|--------------------------------------|------------|-----------------|------------------|--------------------|
| Risk PDPC                        | Decision Balance Shee        | et Importance-Urgeno                 | cy Mappir  | g Daily Pl      | anning           | PERT/CPM           |
| FMEA RAID Log*                   | Force Field Analysis         | Cost Benefit Analys                  | sis        | MOST RAC        | <u>CI Matrix</u> | Activity Networks  |
| Risk Assessment*                 | Break-even Analysis          | Voting TPN Analysi                   | is         | SWOT Analys     | <u>is Stal</u>   | keholder Analysis  |
| Fault Tree Analysis              | ecision Tree Pick Cha        | rt Four Field Matrix                 | Pro        | oject Charter   | Improv           | vement Roadmaps    |
| Traffic Light Assessment         | Critical-to Tree QFD         | Portfolio Matrix                     |            | PDCA Pol        | icy Deploy       | ment Gantt Charts  |
| Lean Measures Kar                | no Analysis Matrix Diagrai   | m Paired Comparison                  | DMAI       | C<br>Kaizen Eve | ents Co          | ntrol Planning     |
| Bottleneck Analysis** C          | Cost of Quality* Pugh Matrix | Prioritization Matrix                | A3 Thir    | nking Stand     | ard work         | Document control   |
| OE<br>Process Viold              | E <u>KPIs</u> Pareto Ana     | lysis C&E Matrix                     | arstand    | ing Cross       | s Training       | Implementing       |
| Des<br>Canability Indiana        | scriptive Statistics ANOV    | A Chi-Square Cau                     | se & Eff   | ect Value       | e Analysis       | Solutions**        |
| Pi                               | robability Distributions Hy  | pothesis Testing Desig               | an of Expe | eriment Mist    | ake Proofi       | ng Ergonomics      |
| Gap Analysis*<br>Histo           | ograms & Boxplots Multi      | vari Studies Confider                | nce Interv | als Simulati    | on TPN           | Automation         |
| Reliability Analysis Gra         | aphical Analysis Scatter F   | Plots Correlation                    | Rearessia  | on Pull         | Flow             | Just in Time       |
| Understanding<br>Performance MSA | Run Charts 5 Whys            | Root Cause Analysis                  | Data Sno   | oping Visu      | al Manage        | ment 5S            |
| Benchmarking** Co                | ontrol Charts Fishbor        | e Diagram Tree Diagra                | am* si     | POC* Waste      | Analysis         | Quick Changeover   |
| Data collection planner*         | Sampling Morphologica        | Analysis How-How D                   | Diagram**  | Process R       | edesign          | Time Value Map     |
| Check Sheets Interviev           | ws Brainstorming SCAN        | MPER** Attribute Ana                 | lysis S    | paghetti Diagr  | am Valu          | e Stream Mapping   |
| Questionnaires                   | Groups Affinity Diagram      | Relationship Mapp                    | ing* I     | Flow Process    | Charts           | Service Blueprints |
| Data                             | Mind Mapping                 | <ul> <li>Lateral Thinking</li> </ul> | Flowch     | arting IDI      | EFO P            | rocess Mapping     |
| Collection Observ                | Ations Suggestion system     | s Creating Ideas                     |            | Designing       | & Analyz         | ing Processes      |

Prioritization is an essential skill that needs to be mastered to make the best use of your own and your teams time and effort.



- A Prioritization Matrix provides a way to prioritize a diverse set of items into an order of importance.
- Allows the team to select the most appropriate option from several alternatives based on a predefined criteria.



#### Uses:

- □ To prioritize a list of items to select and decide a further action.
- Often used in the project selection process.

### **Examples:**

- A project that you need to start.
- An issue that you need to resolve.
- A solution that you need to implement.



- □ It helps reduce options to the most effective and least costly.
- It allows the team to agree on the priorities and move toward the action collectively.
- It helps make use of time and resources to focus on the things that really matter.



#### **Assessment Criteria:**

- Developing them is the first step before prioritizing.
- Help narrow down the discussion.
- Provide a constant basis for comparison.
- Should cover all the aspects of the study to ensure that the selected option will be effective.
- Should be measured easily and objectively.

Brainstorming Affinity diagrams Voting

- $\rightarrow$  Generate criteria
- $\rightarrow$  Organize criteria
- $\rightarrow$  Reduce criteria



### **Questions That may Help:**

- □ Will the solution solve the problem permanently?
- Will it improve customer satisfaction?
- What are the cost for implementing the solution?
- □ How easy is it to do?
- How much time it will take?
- Are there any potential problems or risks that can arise in future?
- Are there any potential regulatory or safety issues that need to be considered?



### Weighting Criteria:

#### **You may weight up your assessment criteria by:**

- Totaling the scores collected during the assessment criteria development session.
- Allowing your team to distribute a certain number of points between the selected criteria.

| Criteria / Name        | Adam | Emir | Sara | Zekaria | Total |
|------------------------|------|------|------|---------|-------|
| Cost effective         | 40   | 55   | 20   | 40      | 155   |
| Decreased defects      | 15   | 20   | 30   | 15      | 80    |
| Increased productivity | 40   | 10   | 50   | 30      | 130   |
| User friendly          | 5    | 15   | 0    | 15      | 35    |
|                        | 100  | 100  | 100  | 100     |       |

#### **Example of a Prioritization Matrix Template:**

| Criteria                   |  |  | Weighted score | Rank |
|----------------------------|--|--|----------------|------|
| Solution – Option / Weight |  |  |                |      |
|                            |  |  |                |      |
|                            |  |  |                |      |
|                            |  |  |                |      |
|                            |  |  |                |      |

| Criteria                   | Cost<br>effective | Decreased<br>defects | Increased productivity | User<br>friendly | Weighted<br>score | Rank |
|----------------------------|-------------------|----------------------|------------------------|------------------|-------------------|------|
| Solution – Option / Weight |                   |                      |                        |                  |                   |      |
| New equipment 1            |                   |                      |                        |                  |                   |      |
| New equipment 2            |                   |                      |                        |                  |                   |      |
| New equipment 3            |                   |                      |                        |                  |                   |      |
| New equipment 4            |                   |                      |                        |                  |                   |      |

### How to Construct and Use a Prioritization Matrix:

- Explain the purpose for constructing the prioritization matrix.
- □ Agree on the items that need to be prioritized.
- Ensure that the criteria and their weightings are set and agreed by all.



- Allow each member to score each item against each criterion.
- □ Calculate the final weighted scores for each item.
- □ Sort the items by their ranks to make them clearer.

**Example –** Project Selection:

In the example below, the team has to select the most profitable among five candidate projects.

| Project Title             | Cost \$  | Savings \$<br>(1 <sup>st</sup> year) X3 | Months to complete |
|---------------------------|----------|---|--------------------|
| Energy reduction          | \$36,000 | \$43,000                                | 10                 |
| Spoilage reduction        | \$30,000 | \$120,000                               | 12                 |
| Reduce strap width        | \$5,500  | \$11,000                                | 3                  |
| Reduce stretch wrap usage | \$7,000  | \$4,000                                 | 5                  |
| Reduce over varnish usage | \$20,000 | \$66,000                                | 8                  |

#### **Example –** Project Selection:

They agreed that savings should be given a weight of 3 as it is relatively more important than the other criteria.

| Project Title             | Cost \$ | Savings \$<br>(1 <sup>st</sup> year) | Months to complete | Weighted score | Rank |
|---------------------------|---------|--------------------------------------|--------------------|----------------|------|
| Weight                    |         | X 3                                  |                    |                |      |
| Energy reduction          | 1       | 3 <mark>X3</mark> = 9                | 2                  | 12             | 4th  |
| Spoilage reduction        | 2       | 5 <mark>X3</mark> = 15               | 1                  | 18             | 1st  |
| Reduce strap width        | 5       | 2 <mark>X3</mark> = 6                | 5                  | 16             | 3rd  |
| Reduce stretch wrap usage | 4       | 1 <mark>X3</mark> = 3                | 4                  | 11             | 5th  |
| Reduce over varnish usage | 3       | 4 <mark>X3</mark> = 12               | 3                  | 18             | 1st  |

### **Example -** Select the Most Efficient Data Collection Method:

| Project Title | Cost effective | Response<br>time | Quantity | Weighted<br>score | Rank |
|---------------|----------------|------------------|----------|-------------------|------|
| Weight        | 0.4            | 0.2              | 0.3      |                   |      |
| Questionnaire | 4              | 1                | 5        | 3.3               | 1    |
| Interview     | 1              | 4                | 1        | 1.5               | 4    |
| Observation   | 3              | 2                | 2        | 2.2               | 2    |
| Focus group   | 1              | 4                | 2        | 1.8               | 3    |



### **Further Information:**

- Prioritization matrix is often used when simple voting is not enough to make an informed decision.
- Pilot studies can be used to check the effectiveness of a solution in practice before full implementation.