What is it?
How do we achieve it?

What are the basic premises of Manufacturing Excellence?
What are the major involvement inputs required?
What are the major structural inputs required?
What are the major challenges or barriers?
What are the three most important factors leading to success?
What is Manufacturing Excellence?

Manufacturing Excellence can be summed up as minimal variation and can be measured by a set of quantifiable performance criteria.

The output measures or KPIs (Key Performance Indicators) of excellence are straightforward and simple in concept.

Manufacturing Excellence is a combination of:

- disciplined process control (minimum Cpk > 1.33);
- process capability and equipment reliability;
- 100% on-time delivery to customer request; and
- a priority focus on safety.

What is the basis of Manufacturing Excellence?

The central premises of manufacturing excellence are:

- That operating performance is a direct result of detailed technical knowledge and performance discipline.
- Daily production performance is a direct result of each employees’ personal and collective knowledge and experience.
- That all people want to do an excellent job and will do so if given the capability and the opportunity.
- That a culture of the importance of every individual is required to achieve and maintain performance excellence in any field. Individual employees’ self-respect, dignity and feeling of control of their environment are key factors in achieving excellence.
- That a knowledge-driven performance culture can only be achieved by a leadership passion for excellence. Continuous improvement, while a part of every process, is a maintenance philosophy only.
- That every organization’s performance and cost structure is primarily the result of past and current management decisions. Therefore, any significant cost or performance change must be driven by significantly different management decisions.
- That the managers of every business must set the example by providing the behavioral role model. Behavior is learned by example.
What are the major Involvement Inputs required to achieve Manufacturing Excellence?

A High Performance Involvement Culture is a base driver of performance excellence.

Successful involvement can be delivered only through a process design that accepts that all employees can and will excel if provided with the required knowledge, information and experience … and a positive work environment that encourages individual excellence.

Such a basic belief requires the highest degree of management responsibility and accountability to develop and encourage all employees.

Successful employee involvement requires an environment that assumes and requires management acceptance of the importance of every employee.

There are five basic drivers of truly effective performance involvement. They are:

1. Recognising the importance and value of every employee.
2. Recognising the importance of ‘every shift’ performance.
3. Discipline and excellence in all aspects of ‘critical thinking’.
4. A commitment to disciplined process control and reduced process variation.
5. A focus on key business results.

Further, there are eight elements of successful involvement. They are:

• Technical competence – routine and predictable technical upskilling.
• Process control and variation reduction.
• A risk assessment and prevention mentality – a pro-active rather than a reactive focus.
• Leadership role model.
• Full-time process support – to lead critical thinking excellence.
• Importance of visible feedback.
• Importance of every shift.
• Weekly focus on costs.
What are the major Structural Inputs required to achieve Manufacturing Excellence?

Under a ‘Critical Few’ management operating strategy, an organization must have the capacity to:

1. accept specific management accountability for structural cost as a result of their decisions, and
2. discipline an organizational focus on structural cost and manufacturing excellence.

Managers must accept the accountability for current organizational performance. Therefore, any significant change will require a significant individual behavioral change on the part of each manager.

The basic elements are:

• Individual managers’ acceptance of cost accountability.
• A need to limit our focus to those critical few performance elements.
• A commitment to data accuracy and integrity.
• An understanding and commitment to Manufacturing Excellence:
  - Process Control
  - Equipment Reliability
  - 100% On-time Shipping
  - Priority Focus on Safety
• A commitment to critical thinking excellence.

What are the major challenges to implementing a culture of Manufacturing Excellence?

There are many challenges or barriers to instilling a culture of Manufacturing Excellence. Some of the most significant are listed below.

• The lack of management consensus for the need for Manufacturing Excellence. It seems that most drives for excellence are received as a negative reflection on current performance rather than a legitimate challenge to the future competitiveness of the marketplace.
• Few managers know how to provide a ‘passion’ leadership for excellence and change while continuing to celebrate past and current performance.
• Many managers underestimate both the commitment and the level of effort required to achieve performance excellence. Excellence is something that requires extreme discipline of daily activities. Both are extremely difficult to achieve and maintain.

• There is often a lack of experience and understanding of the power of a high-involvement performance culture. Few managers have actually experienced a work environment in which central performance measurement (KPI) is carried out regularly to increase each employee’s ability to perform and excel.

• There is a general discomfort with input performance expectations and evaluation. Most organizations are output focused and are uncomfortable rewarding input as a primary performance measurement.

• The lack of confidence that technical knowledge is a key to performance excellence. Many managers look on technical training as a luxury investment. They believe that operators only need to know how to run the process.

In many cases the organization’s technical employees believe that line leaders and operators are incapable of understanding the ‘Why’ behind their mechanical actions. The technical aspect of what they are doing belongs to the engineers.

• The lack of knowledge and experience in how to achieve true process control and equipment reliability. Process control is often looked on as a generic or generalized measure of quality rather than the technical driver of variation and cost reduction. Many managers also challenge the concept that there is only one right way to run a machine. Their only experience with capability studies and process control have been extended and impractical statistics that have produced few, if any, results.

• The daily repetitive discipline required for manufacturing excellence is often viewed as limiting one’s creativity and ‘right to manage’, rather than as a mandatory basic of good manufacturing.

• Most managers rely on what they have done in the past. Often there is a general resistance to change. Any outside-encouraged change is perceived as a negative evaluation of current performance instead of a means to augment past and current success.

• Most managers vastly underestimate the importance of their ‘role model’ performance. This is especially true when employees can see their leader’s thinking and decision-making processes.

• The central challenge or barrier to manufacturing excellence, however, comes from a lack of leadership experience in
implementing manufacturing discipline and performance excellence.

Few manufacturing managers have actually run machines, have experienced the importance of equipment reliability and process control, or run a capability study or a statistically designed set of experiments.

Few have ever managed a process within six sigma control, nor have they experienced the required discipline to achieve such performance.

The word ‘discipline’ is often viewed as a negative instead of as the quintessential ‘critical element’ of performance excellence. Process control is viewed as a technical function instead of the central drive of daily quality production and involvement.

What one has not experienced is extremely difficult to accept.

**What are the three most important success factors in achieving Manufacturing Excellence?**

- **A full management commitment to the importance of technical knowledge and critical thinking excellence.**

  Any organization that regularly up-skills the knowledge and ability of each employee displays a commitment to the most important critical variable to manufacturing performance excellence.

  Such a culture of individual respect and capability sets a clear standard of leadership.

- **A full commitment to manufacturing discipline (process control, equipment reliability, safety and 100% on-time shipping).**

  The entire culture of manufacturing excellence can be summed up in two words – variation reduction. This is true on both the mechanical and human side of the performance equation.

  In its simplest terms; there is only one right way to run a machine. With discipline and knowledge, it can be statistically verified and consistently maintained.

  On the human side, the more consistent the increase of technical knowledge, the more consistent the daily feedback, the more consistent and accurate the information, the more consistent the performance system, the more consistent the positive encouragement ... the less the performance variation.
• The importance of role model leadership.

In an organization where the leaders are true role models, employees see and feel the consistency of leadership. They see and feel expectations.

Where the leader ...

- is constantly learning,
- is providing predictable and consistent skill enhancement,
- is consistently listening and seeking others’ advice,
- is consistently treating all employees as important,
- is consistently providing a predictable daily performance system,
- is consistently practicing and seen to be using critical thinking skills,
- is committed, knowing the specific basics of manufacturing excellence, and
- has a passion to ensure the highest quality input for others to excel

... there is excellence.

Kepner-Tregoe helps clients focus on the human element of their organizations. For more than 20 years we have led the field of process consulting, becoming a leading consulting firm in strategic and operational improvement.

Kepner-Tregoe has various processes and tools to help organizations achieve Manufacturing Excellence.

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