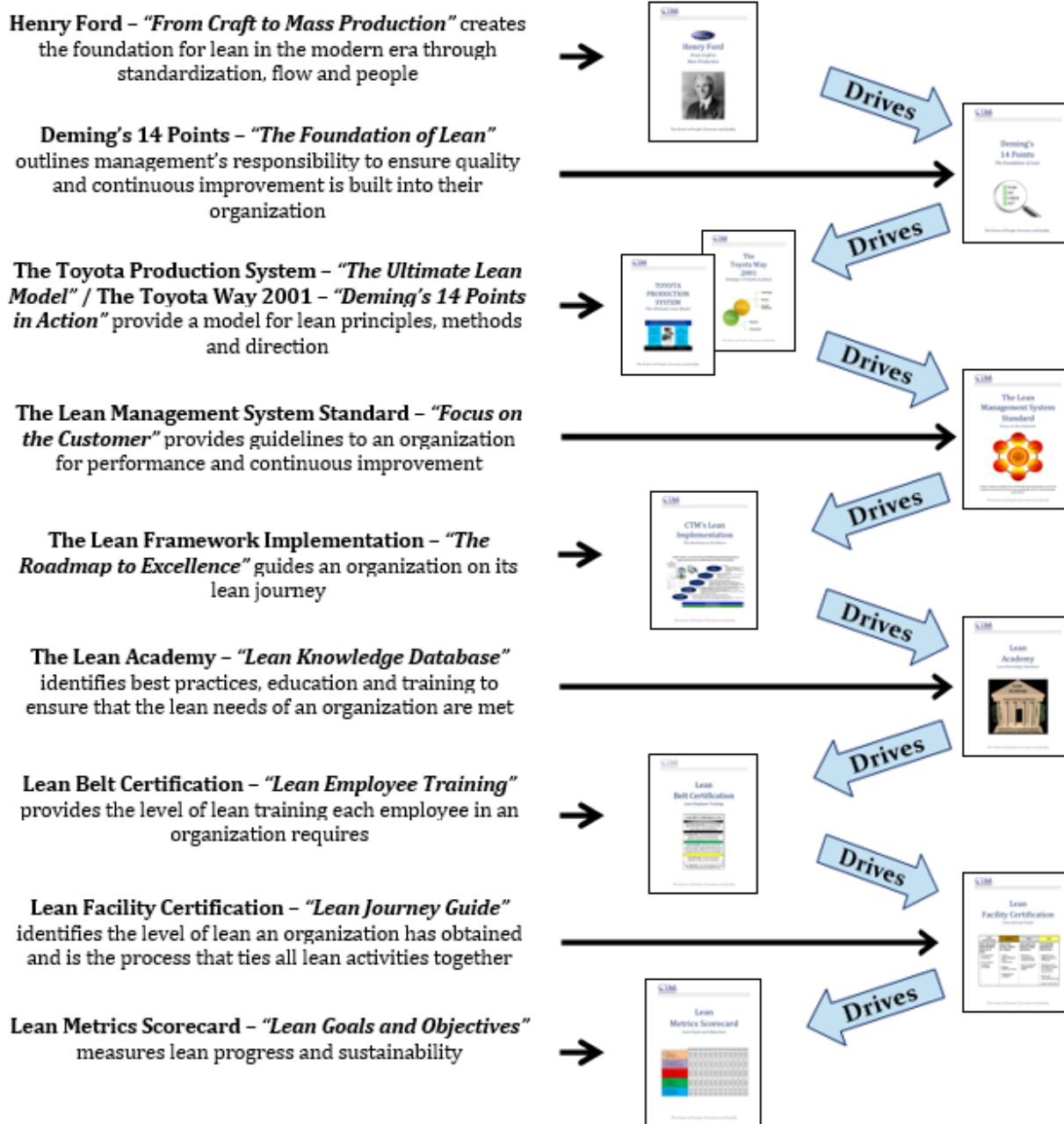




# Lean Framework Introduction

## ***“Understanding and Implementing Lean Manufacturing”***

The Lean Framework ensures that all Lean Initiatives are Developed and Guided in Unison



**H. Paul Hardy**

*The Power of People, Processes and Quality*

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## 1.0 Introduction

The Lean Framework is the pathway for companies wishing to begin, to continue or to re-start their Lean Journey, or:

*“The Pathway to Excellence”.*

### 1.1 Welcome

My name is H. Paul Hardy, and along with my partner Willian (Bill) Neeve, I would like to welcome you to ***The Lean Framework...***



*H. Paul Hardy*

**Combined:**

- 75+ years automotive manufacturing experience
- 60+ years management experience
- 60+ years Toyota Production System experience
- 60+ years Lean Manufacturing consulting experience



*William (Bill) Neeve*

If you are reading this introduction to The Lean Framework it means that your organization has embarked, or is continuing its journey to implement Lean Manufacturing, i.e. The Toyota Production System.

***Congratulations...***

This is not a program where you will try to emulate Toyota.

That would be impossible, they have a sixty-five year plus head start. But more important, every organization is unique, therefore every organization must find its own way to success and prosperity.

This journey by Toyota has lead to the development of the Toyota Production System and The Toyota Way 2001, combine to form Toyota's Management System, or as we refer to it "*Lean Manufacturing*".

By choosing the Lean Framework you have not only pick a tried and proven methodology to implement lean manufacturing, you will be following the "***Pathway to Excellence***" that Toyota has followed; from the devastation in Japan following the Second World War right through to today.

*And if you ask Toyota this is a never-ending journey that they have just started.*

### 1.2 An Initial Understanding...

I am starting this introduction with two pre-determined assumptions about your organization (I know, assumptions are not a basis for a good strategy, but sometimes that is all you have).

1. There is a genuine desire or need in your organization to improve performance and profitability.

I have been in business for many, many years at every conceivable level, and I have never been shy, reserved or hesitant to state that making a profit is extremely good; it provides the means for an organization to survive, grow, pay employees and stakeholders while strengthening the community that it lives in.

This is also true for non-profit, government or charitable organizations where cost reduction is the equivalent to profit.

2. Senior management made the decision to implement lean manufacturing.

Your organization is now at the most critical juncture in its lean journey that will dictate future success or failure.

There are two critical elements that must prevail:

### ***1. Senior Management must lead the lean journey***

***No Exceptions, Senior Management*** must lead the lead journey, or it will not succeed!

I have continually seen that the most common roadblock to a successful lean journey is the failure on the part of senior management to understand that lean manufacturing is a comprehensive approach to organizational and operational management.

Too often, an organization's senior leadership lacks the total commitment to, and understanding of, lean manufacturing, that is essential for a lean journey, and are unwilling to be involved in its day-to-day implementation and application. Lean manufacturing is not simply a set of concepts, techniques, and methods, which can be implemented by command and control.

Rather, lean manufacturing is a fully integrated management and business philosophy and system which must be implemented and practiced throughout the entire organization from top to bottom and consistently applied and improved day in and day out.

There are four groups of employees in an organization that are involved in an initial lean implementation and throughout the entire lean journey, in other words, forever.

These are:

1. ***Senior Management*** – Owner(s), Board of Directors, C-level executives, Senior Leadership Team
2. ***Middle Management*** – Vice President's / General Manager's / Plant Manager's / Department Manager's of Sales, Design, Purchasing, Production, Quality, Supply Chain, etc.
3. ***Line Management*** – Value Stream Manager's (*A Value Stream is the sequence of activities required to design, produce, and provide a specific good or service to meet a customer's expectation, and along which information, materials, and worth flows*) / Departmental Manager's / Supervisors / Team Leaders.
4. ***Employees*** – All Value Stream Employees in the organization.

### ***2. A Holistic Top Down Approach***

Another critical reason lean journeys fail is that organizations try to implement individual elements instead of the entire Lean Manufacturing approach. Since the elements of Lean Manufacturing are integrated and interdependent, any attempt to implement Lean Manufacturing only partially will produce very sub-standard results.

For Lean Manufacturing to work effectively, it needs to be adopted in its entirety, not piecemeal. It is the totality of the elements and the synchronized relationship to one another that make them most effective.

Likewise, it is the use and adoption of lean beyond one department such as manufacturing production control that make a lean journey most effective.

This holistic integrated and interdependent, approach to lean ensures that:

1. All functional departments act as one system.

2. The relationship and integration between a company's mission, vision, values, culture, practices, and principles.
3. The relationship between management and employees focused on "respect for people".
4. Holistically, everyone is focused on growing the organization, improving the organization, bettering the organization, and improving the community in which the organization operates.

Rolling out an organizational wide holistic top down approach can be viewed as having two essential elements:

1. **Organizational Learning** – The process of creating, retaining, and transferring knowledge within an organization from its stakeholders, senior management, management, and employees.

Organizational Learning improves over time as it gains experience. From this experience, it is able to create knowledge.

Organizational Learning in an organization creates its vision, mission and value principles and forms the foundation of its Lean Management System.

2. **Operational Learning** – Is the Lean Journey of integrating standardized work and continuous improvement into operational activities to improve an organization's marketplace competitive advantage.

### 1.3 The Role Of the 4 Employee Groups

#### 1. Senior Management Group Role

It is the primary responsibility of the senior management group to set the vision, mission, and values of the organization through the establishment of a long term strategic plan, at least 3 – 5 years out. The drivers for the strategic plan are 3 to 4 breakthrough objectives that will keep the organization on track.

Lean manufacturing continuous improvement projects are not usually initiated in the boardroom. However, they should still start at the senior leadership level. Without senior level support from the beginning, those working throughout the organization will become frustrated and far less effective if they feel like they are on their own.

My experience is that senior management's role is to be the "Lean Manufacturing Sponsor", the group that is driving the "Lean Bus", with the expectation that all other employees will want to get on the lean bus when they see who is driving.

To ensure that the lean journey stays on track the Lean Management Sponsor Group requires a Corporate Lean Champion. This individual is a member of the Senior Management team with a mandate and authority to drive the lean journey bus daily.

The senior management group must show their commitment as the lean journey sponsors by visiting the Gemba (Japanese for workplace) regularly, keep up-to-date with lean journey activities, and being vocal cheerleaders.

#### 2. Middle Management Group Role

Lean manufacturing continuous improvement projects are usually initiated at this level in an organization. Once the senior management group has established a long term strategic plan, it is the responsibility of the middle management group to deploy the current year's action plans or breakthrough lean initiatives required to support the long term strategic plan.

This is known as Hoshin Kanri (Japanese for policy or strategic deployment), that cascades the breakthrough goals and objectives of the current year strategic plan down throughout the organization to its lowest level. Then returning the results of these action plans as metrics that can be measured and acted upon by cascading new goals and objectives down throughout the organization.

The middle management group must align the organization's strategic plan to lean journey activities to ensure that the right action plans are been initiated at the right time to create the right results.

Depending on the scope, cost and resources required the middle management group may have to prepare and present lean journey action plan proposals to the Corporate Champion for final approval.

### **3. Line Management Group Role**

This is where the rubber hits the road.

It is the line management group that is responsible for the operational performance of an organization's value streams (*once again: A Value Stream is the sequence of activities required to design, produce, and provide a specific good or service to meet a customer's expectation, and along which information, materials, and worth flows*).

The line management group must drive the lean journey at the value stream level ensuring that standardized work and continuous improvement are established and maintained within their areas of responsibility within their value streams.

A line management group must ensure that the proper training programs exist and that each value stream employee receives the required training to be efficient and effective.

### **4. Employees Group Role**

This maybe the last level of employees in the organization, but it is by far the most critical group to the success of a lean journey. These are the employees that, day in and day out are charged with producing the products or services that your organization sells to its external customers.

In most organizations, there are usually more employees in this group than all other groups combined. In an initial lean journey an organization must establish its value streams, document each value stream's activities, standardize these activities, and control these standardized activities as the foundation of its lean management system.

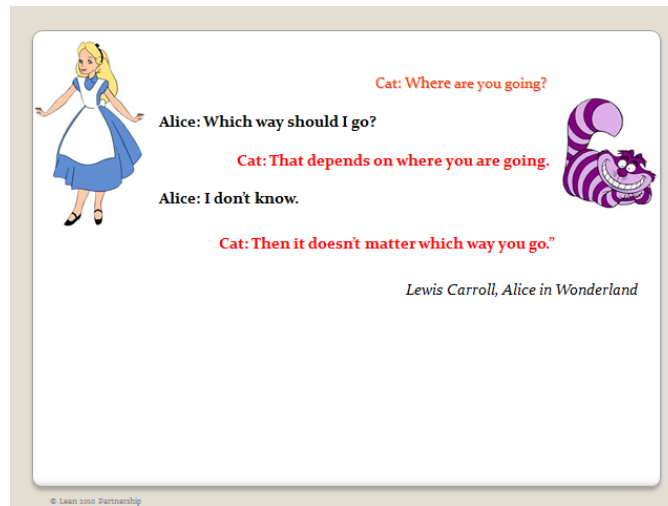
The only way that this can be accomplished in a timely manner is to cascade this responsibility down throughout the organization in a holistic all inclusive approach with every employee involved at the same time.

Where organizations that try to piecemeal implement lean take years to show limited results, a concentrated holistic top down lean framework approach can take several months to a couple of years depending on its size, number of locations, countries established in, etc.

The reason that this can happen so quickly is by having every employee, right from senior management to value stream employees, create their own documented processes.

Who better to write these than the person performing the work.

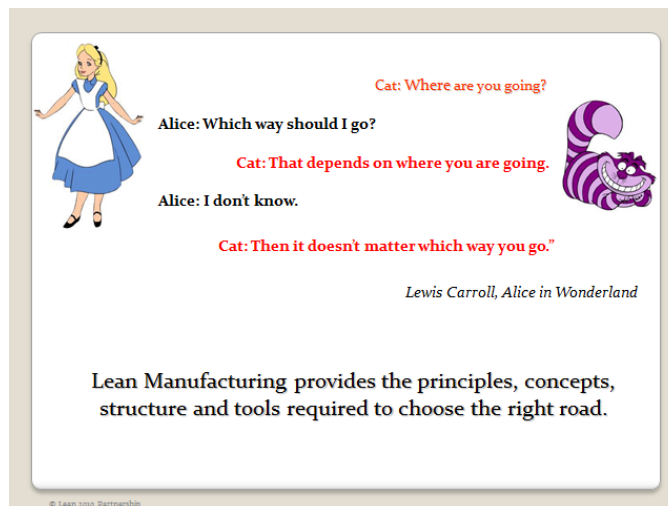
## 2.0 The Lean Framework



In this exchange between Alice and the Cat in Lewis Carroll's *Alice in Wonderland* Alice does not know which way she should go.

Unfortunately, many organizations today find themselves in this position. Not knowing where they want to go or how to get there.

The primary reason for this is that they spend a great deal of their time re-acting to situations that occur within their organization rather than pro-actively controlling these situations.



The transition from a re-active to a pro-active organizational focus can be treacherous unless a solid proven approach is used.

Lean Manufacturing provides this approach.

A successful lean implementation or "journey" requires lean training, understanding lean principles and concepts, a skilled implementation strategy and a good lean roadmap.

By implementing Lean, you will climb the Performance Pyramid.

On the way you will be challenged, reminded, and inspired.

The Lean Framework is the “**Pathway to Success**” for companies wishing to begin, to continue or to re-start their Lean Journey. It was the pathway that Toyota followed to create the Toyota Production System and The Toyota Way 2001 which combined forms Toyota’s Lean Management System.

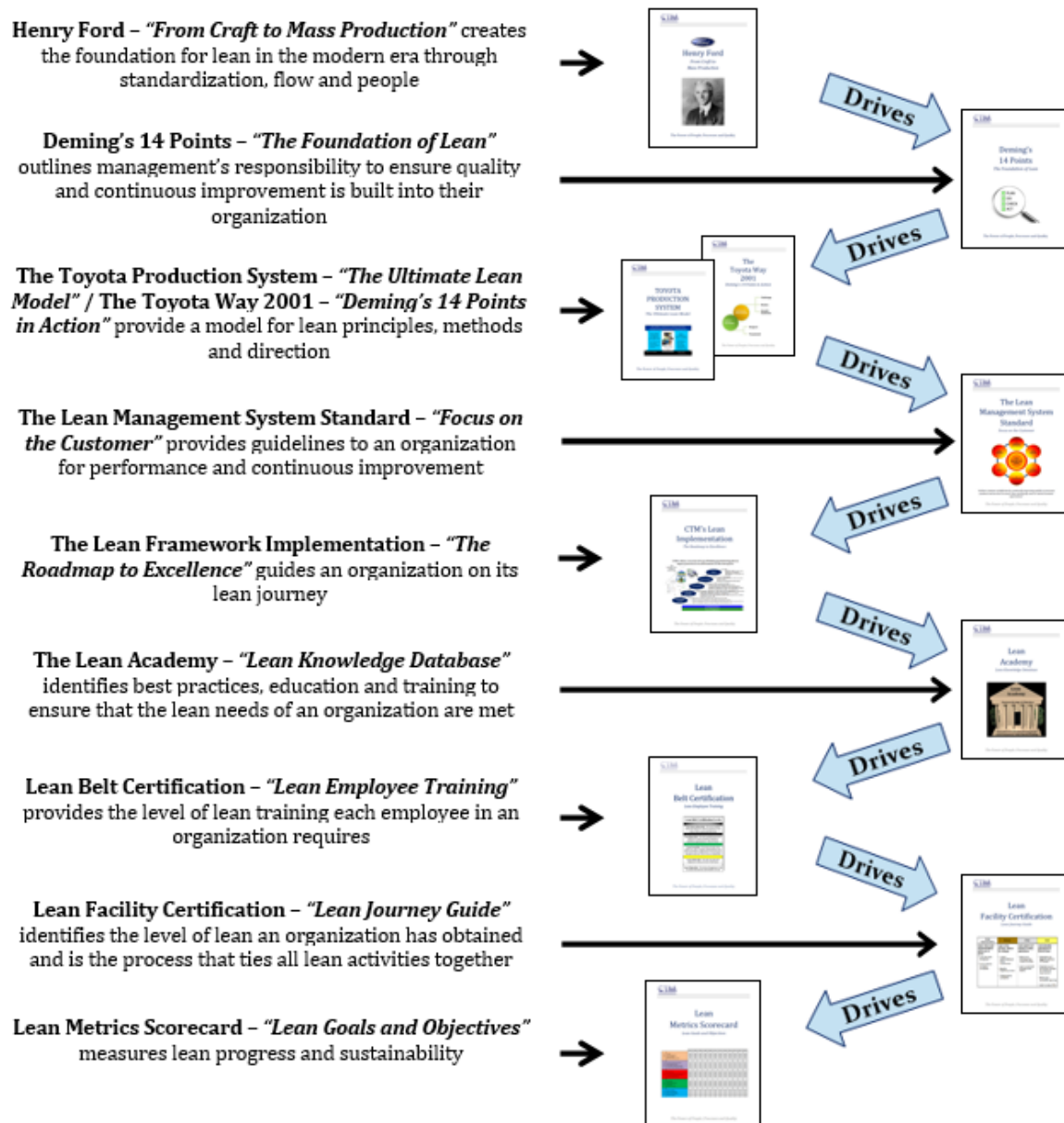
It is critical for **All Employees** to understand the evolution of Lean Manufacturing and the steps that an organization must take to ensure that they can commit to follow this evolution within their own organization.

The nine sections of The Lean Framework contain all the information, knowledge, training, and lean material that an organization will require for understanding and implementing lean.

## 2.1 The Sections of the Lean Framework

### **“Understanding and Implementing Lean Manufacturing”**

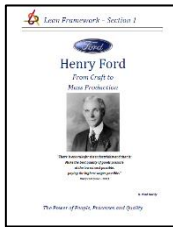
The Lean Framework ensures that all Lean Initiatives are Developed and Guided in Unison



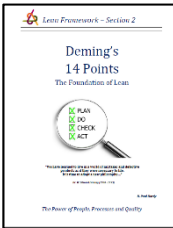
### **The Power of People, Processes and Quality**



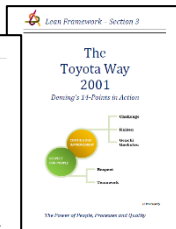
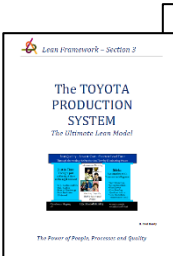
The first three sections of the Lean Framework provide a historical overview of the development of modern day Lean Manufacturing.



**Henry Ford – “From Craft to Mass Production” – The Production philosophy of Henry Ford (standardization and flow),**



**Deming’s 14 Points – “The Foundation of Lean” – The Quality philosophy of W. Edwards Deming (do it right the first time, every time),**

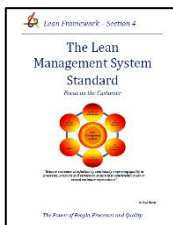


**The Toyota Production System – “The Ultimate Lean Model” – The Operational philosophy of Taciichi Ohno (elimination of the 7 wastes)**

**– And –**

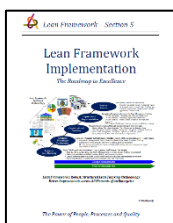
**The Toyota Way 2001 – “Deming’s 14 Points in Action” – The Management philosophy of The Toyota Way 2001 (Respect for People and Continuous Improvement),**

The fourth section of *The Lean Framework* introduces the *Structural* philosophy of *The Lean Manufacturing System Standard* which outlines a *Lean Management System* that must be created by any organization that is considering or has chosen *Lean Manufacturing* to give themselves a competitive advantage in their marketplace.



**The Lean Management System Standard – “Focus on the Customer” – Guidelines for performance and continuous improvement.**

Section 5 of *The Lean Framework* introduces the *Lean Framework Implementation* which must be followed by any organization that is considering or has chosen *Lean Manufacturing* to give themselves a competitive advantage in their marketplace.



**The Lean Framework Implementation – “The Roadmap to Excellence” – Guiding a lean journey.**

There are 4 key requirements that must be understood and followed for a *Lean Journey* to be successful

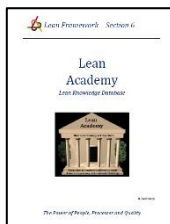
1. *All Employees must understand that implementing lean means implementing a new philosophy into their organization, a new way of doing business focused on the customer (both internal and external).*
2. *All Employees must lead the implementation, be involved, go-and-see what's happening, set goals and objectives, set and monitor metrics, be involved.*
3. *All Employees must continually communication with each other the direction that the organization is going and the role and responsibility that each employee must play to make it happen.*
4. *All Employees must then "Just-do-It"; there are no obstacles to overcome – only opportunities to capture.*

It may appear that the onus is on *All Employees* to make *Lean Manufacturing* work in their organization.

This is no appearance, it is reality. As outlined in *The Lean Management System Standard – Focus on the Customer* it is the responsibility of *Senior Management* to provide the management "System" for the organization that is designed to meet customer expectations every time.

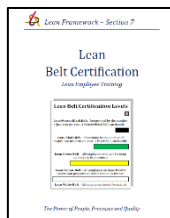
However, it is then the responsibility *all employees* to ensure that the "System" functions exactly as designed (*standardized processes*) plus be involved in the *continuous improvement* of "The System".

Section 6 of *The Lean Framework* contains the *Lean Academy* which is where an organization's Standard Operating procedures, lean tool training modules, lean posters, etc. will reside.



***The Lean Academy – "Lean Knowledge Database" – Identifying best practices, education, and training.***

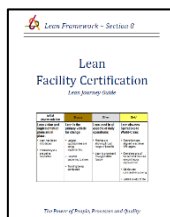
Section 7 of *The Lean Framework* contains the *Lean Belt Certification* which is where the lean belt training material resides.



***Lean Belt Certification – "Lean Employee Training" – Providing lean training.***

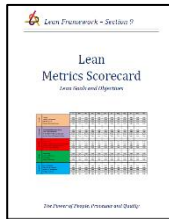
Section 8 of *The Lean Framework* contains the *Lean Facility Certification* which is where the level of lean that an organization has currently obtained resides.

This is especially important for organizations that have multiple facilities as it will also provide a comparison between facilities as they travel on their lean journey.



***Lean Facility Certification – "Lean Journey Guide" – Level of lean obtained.***

Section 9 of *The Lean Framework* contains the *Lean Metrics Scorecard* which is where the metrics that have been selected by an organization to measure lean progress and sustainability reside.

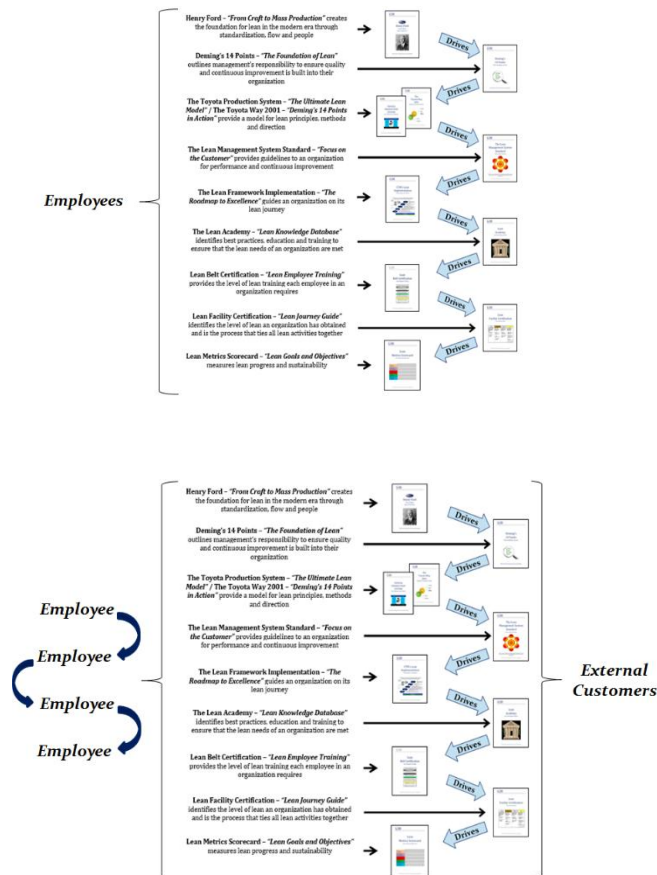


***Lean Metrics Scorecard – “Lean Goals and Objectives” – Measuring lean progress and sustainability.***

Together the 9 Sections of *The Lean Framework* truly is the ***Pathway to Success*** for organizations wishing to begin, to continue or to re-start their Lean Journey.

***\*\*\* Please print each of these documents as they will form the foundation of all you lean activities and should be read, understood and followed by all employees. \*\*\****

## 2.2 The Lean Framework Success



The key to successful implementation of lean manufacturing must be the total commitment on the part of every employee in an organization to make it work.

By that I mean, all levels of the organization, from employees to supervisors to managers to the senior management, must be aware of the fundamentals of lean and must make their best efforts to practice and improve them day-by-day.

One of the fundamental elements of lean that an organization must be fully committed to is the "customer-first" philosophy.

Typically, organizations envision the customer only in terms of the person who purchases the final product at the end of the process. Lean has a different view.

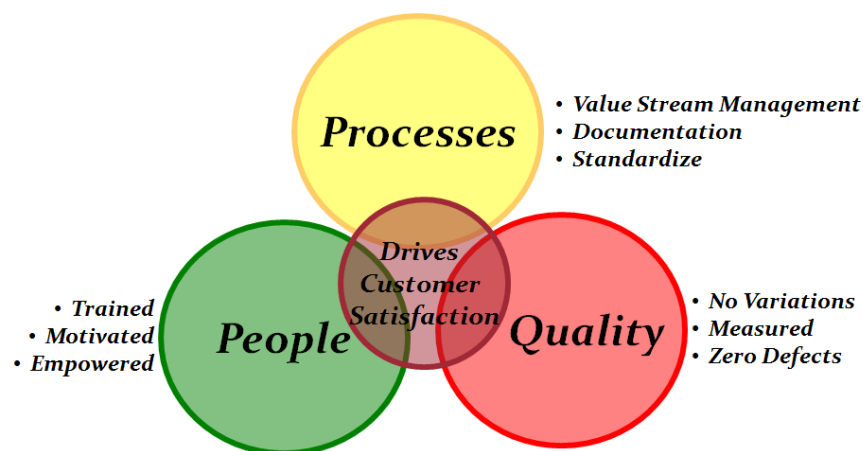
Essentially, each succeeding process or workstation or department is the customer. A lean organization must work very hard to ensure that all employees and all departments realize their dual role: they are at once the customers of the previous operation and the suppliers to the next operation downstream.

For this concept to flourish, there must be no artificial barriers walling off one area from another or one department from another. Rather, the entire organization shares problems and must work together to ensure that a solution is found. Therefore, it is critical for the successful implementation of lean that all employees support this idea and aggressively seek to solve problems, even if these problems are not directly within their scope of control. This all-hands-on-deck attitude is essential in a lean manufacturing environment.

There are 3 key drives to The Lean Framework – People, Processes and Quality, and when they join into a single lean framework you then have:

### ***The Power of People, Processes and Quality.***

## **2.3 The Lean Framework Drivers**



### **1. The first driver is People through training, motivation, and empowerment.**

The most valuable resource to any organization are the **People** who work for it. Without these people the business does not succeed.

An organization supporting a **Respect for People** philosophy will appreciate their workers' efforts and keep them in high regard.

### **2. The second is Processes through value stream management, documentation, standardize**

A process consists of 4 major elements:

1. Steps and Decisions – the value stream. A series of steps and decisions involved in the way a process is completed.
2. Variability of Processing Time and Flow — the pattern of processing times.
3. Timing and Interdependence — when the arrivals happen, when people work, etc.
4. Assignment of Resources — how many and where are they assigned.

A process describes the behavior of the current system. Using this information through value stream management, waste in the system can be identified and eliminated.

One of the secrets to lean manufacturing is to do simple things exceptionally well. In other words - great results can come from mastering a simple technique and applying it consistently.

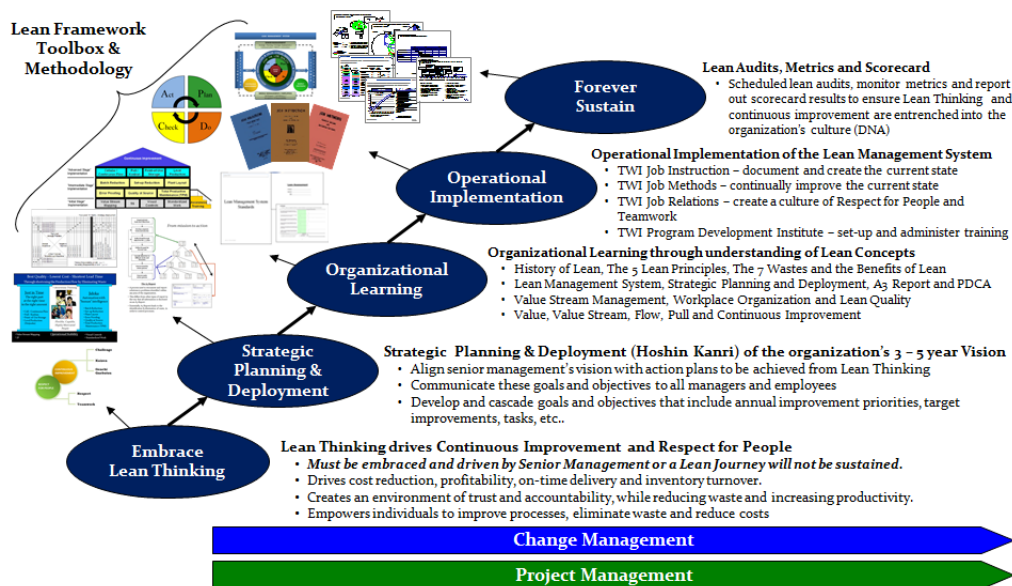
### 3. The third, Quality through no variations, measured and zero defects.

Quality makes sure you are doing the right thing, the right way, at the right time to ensure that the right service or product is produced every time by following the standard operating procedures of a process from customer need to customer fulfilment.

Together these three drivers “Drives Customer Satisfaction”.

## 2.4 The Lean Framework Approach

The Lean Framework’s robust, structured *Lean Manufacturing* methodology drives improvements across all elements of the enterprise



The Lean Framework Approach outlines Five Stages that an organization goes through on their Lean Journey.

This lean journey does not come with an exact science or cookbook type approach.

Although all five stages are critical to the success of the journey, each organization must determine the exact path that they will follow.

A small to medium family owned organization that is relatively successful will follow a different path than a similar organization facing serious financial stress.

As well, a national or international organization that is successful in their industry but wishing to improve their competitive advantage will follow a different path than the same organization that is struggling to be profitable and/or has quality issues with their products or services.

The Lean Framework Approach outlines the stages for success that any organizations wishing to begin, to continue or to re-start their Lean Journey must pass through providing guidelines for performance and continuous improvement.

Stage 1 – Embrace Lean Thinking – Lean Thinking drives continuous improvement and respect for people.

When one plans to take a journey by car, let's say driving from Toronto to Vancouver, there are 3 key things that should happen:

1. Ensure the car is in good running order
2. Get maps
3. Plan route, stops, hotels, etc.

This same thought process must take place for The Lean Implementation Process.

Stage 1 – Embrace Lean Thinking is equivalent to “Ensure the car is in good running order”. You must ensure that the organization is ready to start its lean journey by creating a focus on building a lean knowledge base.

Stage 2 – Strategic Planning and Deployment – Strategic planning and deployment (Hoshin Kanri) of the organizations 3 – 5 year Vision.

Once it is determined that the car is in good running order for the journey of driving from Toronto to Vancouver, there are still 2 key things that remain:

2. Get maps
3. Plan route, stops, hotels, etc..

This same thought process must take place for The Lean Implementation Process.

Stage 2 – Strategic Planning and Deployment is equivalent to “Get maps”. You must ensure that the organization knows the starting point of its lean journey as well as the destination as defined through its strategic planning. Where you are today and where you want to be some time in the future, say 3 to 5 years from now.

Stage 3 – Organizational Learning – Acquire Lean Manufacturing knowledge through the understanding of Lean Concepts.

Once it is determined that the car is in good running order and maps have been obtained for the journey of driving from Toronto to Vancouver, there is still 1 key thing that remains:

3. Plan route, stops, hotels, etc..

This same thought process must take place for The Lean Implementation Process.

Stage 3 – Organizational Learning is equivalent to “Plan route, stops, hotels, etc.”. You must ensure that the organization knows how to plan the route including all actions and activities required to ensure that its lean journey is successful through using its strategic planning to develop its hoshin kanri or strategic deployment plan.

Stage 4 – Operational Implementation – Lean Enterprise implementation.

Once it is determined that the car is in good running order, maps have been obtained and the route is known for the journey of driving from Toronto to Vancouver, the planning is over:

Now that the organization is comfortable with being on its lean journey, it is time to move forward to **Stage 4 – Operational Implementation**.

The lean journey is smoother and less hectic when done in manageable or “*baby steps*”. Just as you cannot “*eat an elephant*” at one sitting you cannot implement lean in one quick motion.

Lean is implemented by taking one small manageable step at a time over-and-over again. However, these baby steps can be rapidly increased through the development of all employees to be lean leaders within their work areas.

Lean is also implemented following the hoshin kanri strategic deployment plan to ensure that everyone in the organization is going in the same direction.

Stage 5 – Forever Sustain – Lean Audits, metrics, and scorecard to continuously measure and monitor Lean Manufacturing.

When an organization has implemented lean and developed its Lean Management System, it is time to move forward to Stage 5 – Sustain.

This is a critical point for implementing lean as an organization may believe that they have successfully completed their lean journey and take their eye off of the ball, in this case the lean ball.

Unlike our road trip from Toronto to Vancouver a lean journey is, in fact, never ending or a perpetual journey of continuous improvement.

Stage 5 – Forever Sustain consists of splitting our lean journey into two paths:

1. Audits – To ensure that the lean principles and lean management system are followed everyday by all employees they must be audited using a lean scorecard of key metrics on a regular daily, weekly, monthly and yearly schedule to ensure that the goals, objectives and benefits of lean are sustained.
2. Continuous Improvement – To stand still is to fall back. Therefore, it is critical for an organization to be constantly striving to improve to sustain their Lean Management System.

To ensure that this happens an organization must re-do The Lean Framework Approach by:

Stage 1 – Embrace Lean Thinking – Ensure that all employees have and are receiving the training that they require.

Stage 2 – Strategic Planning and Deployment – Re-visit and update the organization's strategic planning and lean deployment or hoshin kanri.

Stage 3 – Organizational Learning – Determine if current or new processes, products or services have been added that need to be updated or built into the Lean Management System.

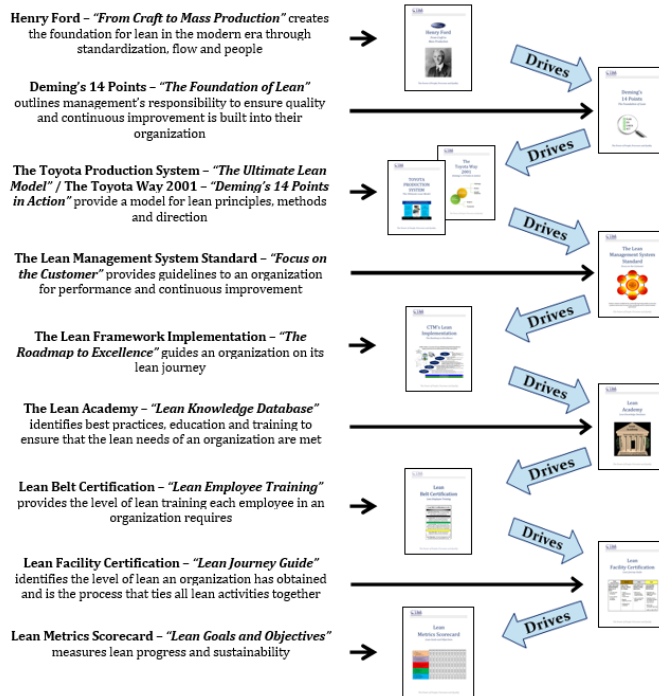
Stage 4 – Operational Implementation – Update the Lean Management System accordingly.

Stage 5 – Sustain – Re-do The Lean Roadmap again, then again, then again, etc..

### 3.0 The Road Ahead...

#### The Lean Framework – Understanding and Implementing Lean

The lean Framework ensures that all Lean Initiatives are Developed and Guided in Unison



#### The Lean Framework

Outlines the stages for success that any organizations wishing to begin, to continue or to re-start their Lean Journey must pass through providing guidelines for performance and continuous improvement.

In other words:

The “Pathway to Success”...

