Lean Thinking for Self Reliance
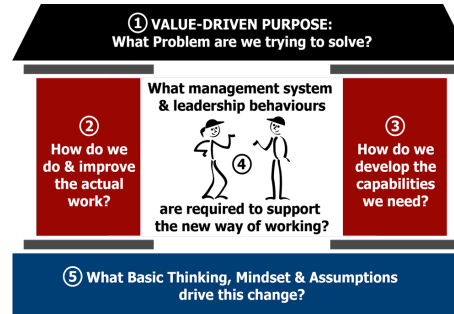
John Shook
Lean Global Network
Lean Enterprise Institute
& Dave Brunt
Lean Global Network
Lean Enterprise Academy

Lean Enterprise Institute

Purpose:
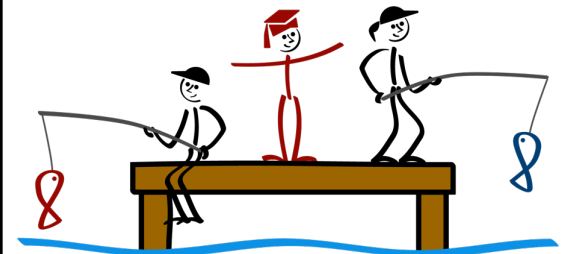To provide the Best Quality Learning Processes & Learning Materials to enable people to become self reliant in applying Lean Thinking & Practice to their situation.

Process:

① VALUE-DRIVEN PURPOSE:
What Problem are we trying to solve?

What management system & leadership behaviours

② How do we do & improve the actual work?

④

③ How do we develop the capabilities we need?

are required to support the new way of working?

⑤ What Basic Thinking, Mindset & Assumptions drive this change?

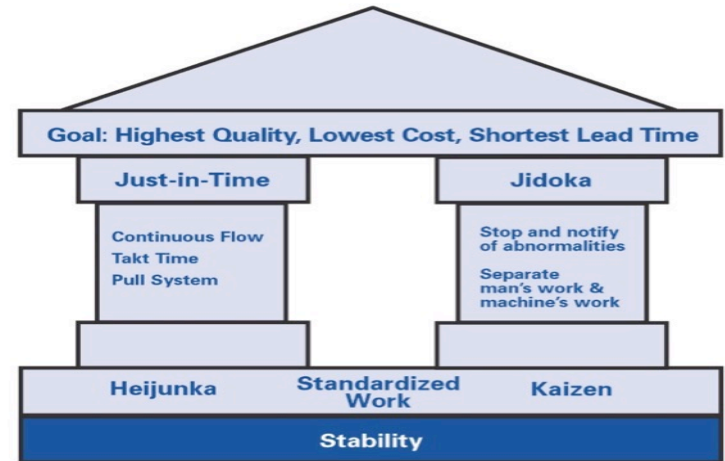The Lean Transformation Framework (LTF)

People:

Self Reliant

"Give a man a fish and you feed him for a day. **Teach** *him how to fish and you feed him for a lifetime"*
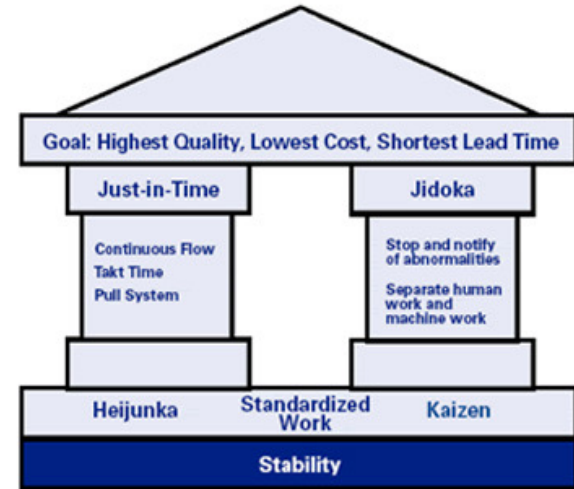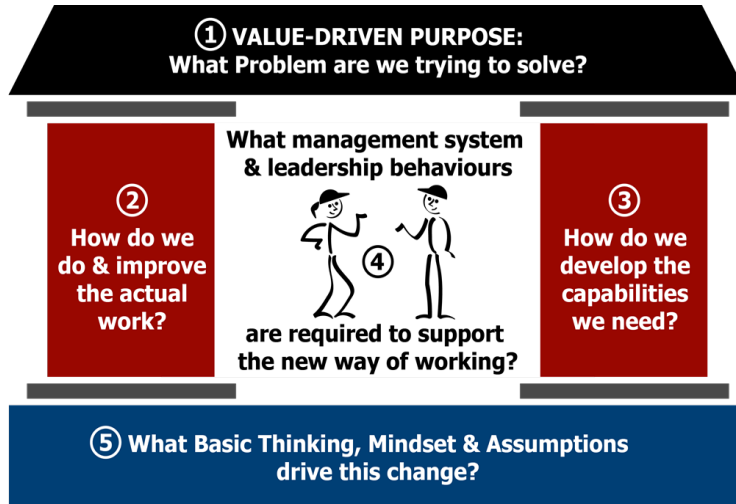– Lao Tzu

How was the Framework developed?

1. **Reflections on failure modes and success factors over years of working with and observing many organizations**

2. **Reflections on the teachings of a substantial collection of "master lean sensei"**

3. **Reverse engineered the thinking that went into the development of the TPS house...**
   - *Specific situational challenges drove the evolution of the TPS House!*

Toyota Production System "House".

① VALUE-DRIVEN PURPOSE:
What Problem are we trying to solve?

What management system & leadership behaviours

② How do we do & improve the actual work?

④

③ How do we develop the capabilities we need?

are required to support the new way of working?

⑤ What Basic Thinking, Mindset & Assumptions drive this change?

Goal: Highest Quality, Lowest Cost, Shortest Lead Time

Just-in-Time
Continuous Flow
Takt Time
Pull System

Jidoka
Stop and notify of abnormalities
Separate human work and machine work

Heijunka | Standardized Work | Kaizen

Stability

Toyota Production System "House."

Why not just use TPS, but applied to a situation?

Questioning Mind

"The scientific mind does not so much provide the right answers as ask the right questions."
— Claude Levi-Strauss
(Anthropologist)

"You can tell whether a person is clever by their answers. You can tell whether a person is wise by their questions." **— Naguib Mahfouz**
(Nobel Prize 1988)

Questions – Thinking – Action

QUESTIONS	THINKING	SITUATIONAL ACTION
The fundamental questions to be addressed	The thinking that underlies your answers to the questions – principles or *what you want to achieve* and will guide your decisions	The actions to be taken to actualize your thinking – *how* to achieve what you want to achieve

Questions – Thinking – Action

QUESTIONS	THINKING	ACTION
The fundamental questions to be addressed	The thinking that underlies your answers to the questions – principles or *what you want to achieve* and will guide your decisions	The actions to be taken to actualize your thinking/principles – *how* to achieve what you want to achieve

This logic flow is critical… to avoid the copycat

"hammer looking for a nail" or

"check the box" syndrome.

Questions – Thinking – Actions

The QUESTIONS	The THINKING	ACTIONS
The fundamental questions to be addressed:	The thinking that guides your answers – these become your guiding principles (what to achieve, your ideals, the principles you want to actualize):	How you will actualize your thinking (guiding principles) for your situation (How to achieve what you want to achieve)
i. *PURPOSE* ii. *WORK/PROCESS* iii. *CAPABILITY DEVELOPMENT* iv. *MANAGEMENT SYSTEM & LEADER BEHAVIOR* v. *BASIC THINKING*	▪ *Value* ▪ *Humanity* ▪ *Scientific Thinking & Doing* ▪ *Three Goods: customer, community, enterprise (employers, employees, partners)*	▪ Strategies, ▪ Tools,Techniques ▪ Situational solutions ▪ Organizational development

Questions – Thinking – Actions

The QUESTIONS

The questions guide your thinking. Consider any statement of principle, even any interpretation of a situation, as being preceded by a question.

(How you address these questions will identify your fundamental thinking or your *guiding principles*).

1. What is our *purpose*, what *value to create,* or what *problem* are we trying to solve?
2. How do we *design, do, and improve* the *actual work*?
3. How do we *develop the capabilities* we need?
4. What *management system* and *leader behaviors* will you aim for to support the new way of working?
5. What *basic thinking* or assumptions underlie your transformation or, before that, your enterprise?

Questions – <u>Thinking</u> – Actions

The THINKING

The thinking that guides your answers to the fundamental questions – these become your guiding principles. There is a basic thinking that informs how you address each of the questions, including the fundamental thinking question.

(Together, these answers to the basic questions comprise *what you want to achieve* – the principles you want to actualize).

- *Value – defined by the need of the customer*
- *Humanity – respect for the humanity of the people who do the work*
- *Scientific Thinking & Doing – PDCA, KAIZEN, CIm & CIn, art & craft of science*
- *Three Goods – How to sustainably satisfy and delight:*
  - *Customer – the recipient of the value you are creating, the product or service you choose to provide*
  - *Community – immediate community and greater society*
  - *Enterprise (employers, employees, partners)*

Questions – Thinking – <u>Actions</u>

Your Basic Action Choices

The *actions you choose* address the question of *how* you go about the process of actualizing your thinking or guiding principles (which are your answers to the basic questions). A set of tactical questions will determine your specific approach (to address your set of challenges, given your specific circumstance or "problem situation"). Generalizable principles or basic thinking that will guide the formulation of your actions include:

- *PDCA – the art & craft of science*
- *Humanity – respect for the humanity of the people who do the work*
- *Scientific Thinking & Doing – PDCA, KAIZEN, Continuous Improvement & Continuous Innovation, art & craft of science*
- *Engage people, question more than tell*
- *Top-down and bottom-up and middle-out*
- *Build momentum through small success; start small, go big*

What is the Framework and its Purpose?

A structure of self reflection to define the gap between the current and desired states of your transformation efforts.

Self-reflection is critical to creating specific situational approaches that avoid and the "hammer looking for a nail" copying.

Addressing Fundamental Questions with Lean Thinking

1. What is our *purpose*, what *value to create,* or what *problem* are we trying to solve?

2. How do we *design, do, and improve* the *actual work*?

3. How do we identify and *develop the capabilities* we need?

4. What *management system* and *leader behaviors* are required to support the new way of working?

5. What *basic thinking, mindset* or *assumptions* underlie this transformation?

What to do, why, and how to do it

Transformation 2ⁿᵈ Level Questions

1. What is our purpose, what value to create or what situational problem are we trying to solve?
   - ➢ Have you made the purpose or mission clear to everyone? Does everyone know their value to create?
   - ➢ Does each person know their specific, situational problem to solve?

2. How are we designing, doing, and improving the actual work?
   - ➢ Have you defined the work to be done? Is it being improved? How, by what means, to what end?

3. How are we developing capability?
   - ➢ Do you have the necessary capabilities? Have you defined them? What is your approach to capability building? How are you developing people?

4. What management system and leadership behaviors are required to support the new way of working?
   - ➢ Have you designed the management system and do your leaders exhibit the needed behaviors (to develop capability to do the work to accomplish the mission)?

5. What basic thinking, mindset, or assumptions underlie this transformation?
   - ➢ Do you understand the current basic thinking (mindsets, assumptions, as well as values) and grasp its impact on the organization and its culture?
   - ➢ What are you going to do to change the basic thinking (and culture) in desired directions?

Transformation 3rd Level Questions

High and mid level challenges
are defined and questions are
geared to address fully
situational problems, obstacles,
gaps, jobs to be done, etc.

Lean Transformation

Enterprise transformation is the process of an organization shifting its "business" model to a desired future state.

A <u>lean</u> transformation requires learning a new way of thinking and acting…

Lean Transformation

Enterprise transformation is the process of an organization shifting its "business" model to a desired future state.

A lean transformation requires learning a new way of thinking and acting...

characterized not by implementing a series of steps or solutions but addressing key questions of purpose, process and people.

Lean Transformation

WHAT WE DO

VALUES · ATTITUDES

CULTURE

It's easier to act your way to a new way of thinking than to think your way to a new way of acting.

But, we *do* want to change the way we think. *How* to change thinking/culture will be situational, depending on: 1) the problem(s) we need to solve, and 2) the circumstance we are working in.

Lean Transformation
Aligning Purpose – Process - People

19
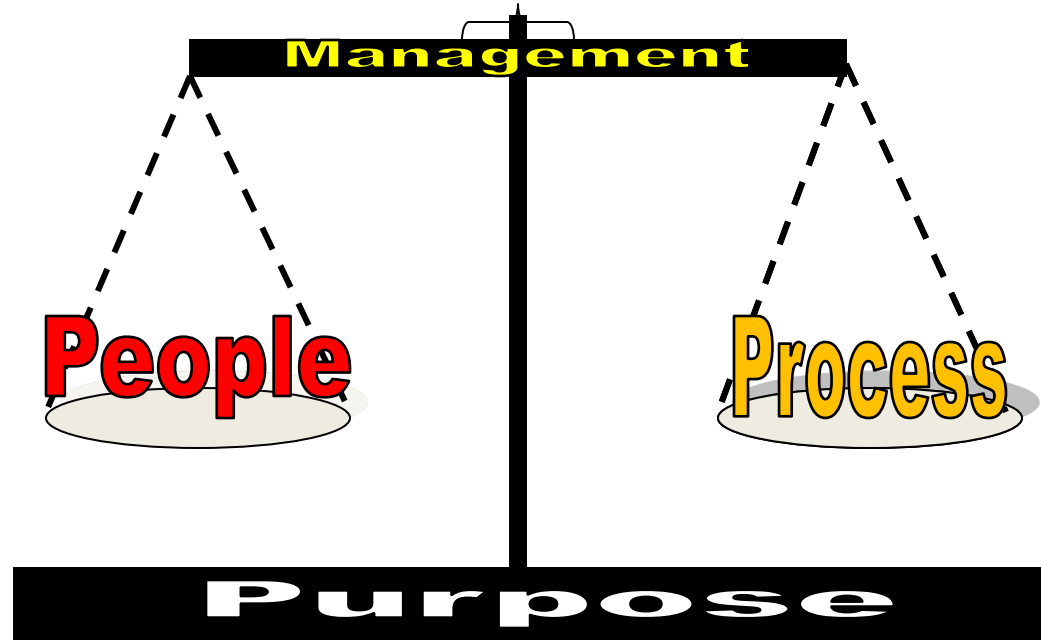
Transformation Support

- "The value of external support of any Lean Transformation is determined by happens after the support ends" – Dan Jones
  - ➢ Therefore: Define *what should happen when support ceases*.
    - ➢ Then: Determine *what needs to happen for that to happen*.
- Any outside support (consulting, coaching, sensei-ing) should be defined by the answer to those two questions.
  - ➢ Define the ideal and target conditions.
    - ➢ Then engage support:
      - ➢ As little as possible!
      - ➢ As much as necessary!

① **VALUE-DRIVEN PURPOSE:**

Mandating lean, but purpose is unclear
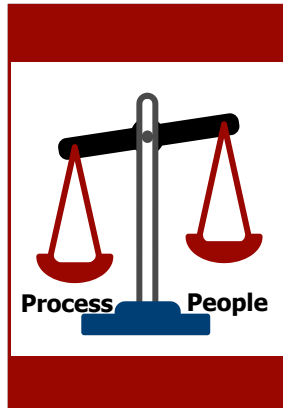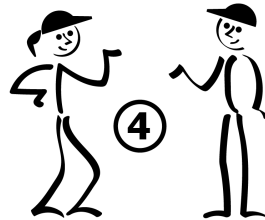
Process — People

What management system & leadership behaviours

④

are required to support the new way of working?

Process — People

⑤ **What Basic Thinking, Mindset & Assumptions drive this change?**
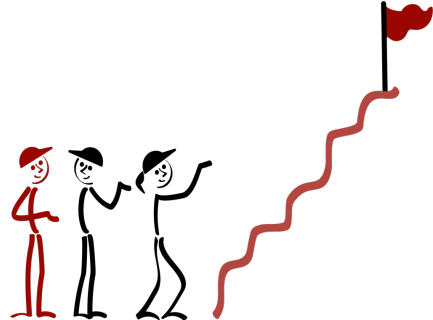
Lean Enterprise Academy

Breadth Before Depth
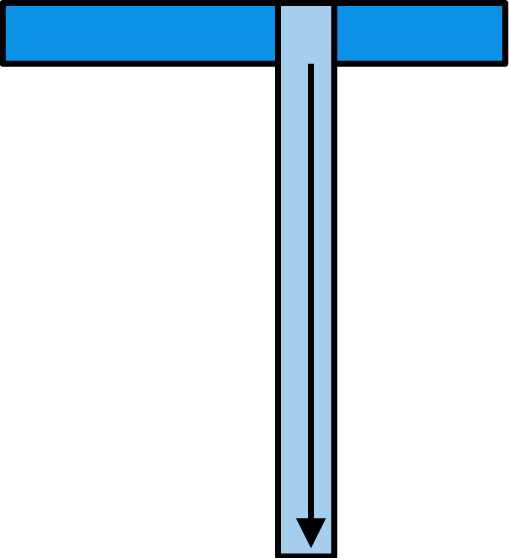
Too Fast, Too Slow

Being Better vs Perfection
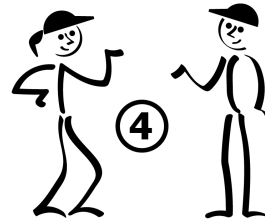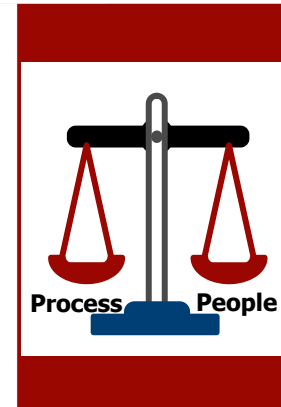
① **VALUE-DRIVEN PURPOSE:**

Lean means to solve problems – at every level, everywhere
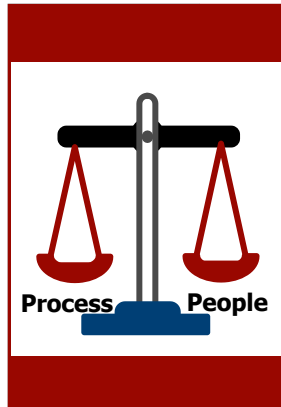
What management system & leadership behaviours ④ **are required to support the new way of working?**

Process   People

Process   People

Being mindful of culture & underlying thinking but not using it as an excuse

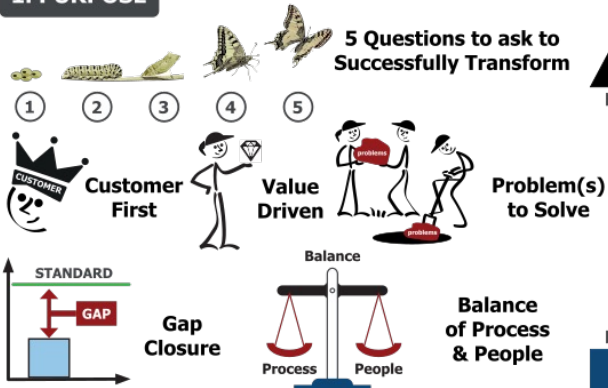Lean Transformation Framework © Lean Enterprise Academy

Why do we use a Poster?

- Can be taught by leaders in the workplace without the need for a training room

- Structured into defined areas making it easier to remember

- Pictures are easier than words – creates more interest & discussion

- Can be displayed in the workplace
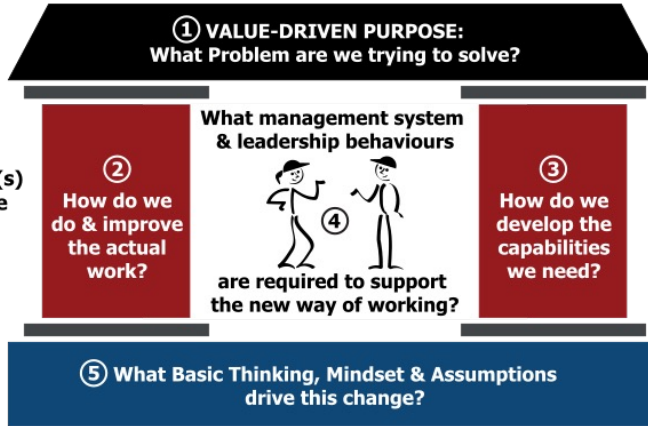
Lean Transformation Framework ©

Lean Enterprise Academy

1. PURPOSE — To Apply Lean Thinking and Practice

5 Questions to ask to Successfully Transform

① ② ③ ④ ⑤

- Customer First
- Value Driven
- Problem(s) to Solve
- Gap Closure
- Balance of Process & People (Balance — Process / People)

STANDARD — GAP

LEAN TRANSFORMATION FRAMEWORK

① VALUE-DRIVEN PURPOSE: What Problem are we trying to solve?

② How do we do & improve the actual work?

What management system & leadership behaviours

④ are required to support the new way of working?

③ How do we develop the capabilities we need?

⑤ What Basic Thinking, Mindset & Assumptions drive this change?

2. PROCESS — Key Elements to Apply it

- Situational
- Fractal
- For All Levels
- Continuous

LTF P-D-C-A Process

P LEARNING
A ⑤ D
C

GAP = Problem!

LEARN & APPLY LTF ↔ IDENTIFY CURRENT STATE ↔ AGREE FUTURE STATE ↔ DEVELOP PLANS ↔ RUN TESTS/ TRIALS

NEXT LEVEL OF THINKING

CHECK RESULTS

3. PEOPLE — Role & Responsibility of Everyone

- Engage Everyone
- Teamwork
- Take Ownership
- Leaders Develop People
- Respectfully Challenge
- Open Communication
- Trust, Safety
- Impatient for Action
- Act your way to a new way of thinking
- Learners for Life

Transformation Examples

Organization	Key People	Duration	Initial Problem Defintion and Initial Action	Subsequent problems and what was done. Other improvements.
Large, Old Producer of Consumer Goods	Dir Lean, CEO, VP Engineering, Dir Strategy,	10 years	Design of lean plant floor management system modeled after NUMMI and other benchmark organizations.	The new production lines couldn't produce, even after large investment and despite supoprt of Japanese consultants. So, company adopted new LTF-based approach with on-the-floor hands-on coaching to solve production problems and build capability to build product. Later CEO requested introduction of Hoshin Kanri. Later, seeing all the initial new products (designed in their obeya process in 2010-11) failed, VP of Engineering initiated LPPD.
Large Grocer	COO	4 years	**Perceived Problem**: Lean in logistics operations to improve service levels. I**nitial Action**: Model Line implemented.	Following success with logistics project at subsidiary, Company decided to try a lean practice at the store level, leading to project to create Model Deli at one store. Following success in Deli, extended to equally successful project in bakery. LEI then proposed extending two ways: i) throughout store to create "model store" and ii) to deli in all stores. Company leadership was attracted to IT solutions. Intiative to create "model district" resulted in learning for some mid-level execs, but project ultimately stalled.
Large, Old Producer of Consumer and Industrial Goods #2	Dir OpEx, VP OpEx, , CEO, Biz Unit President.	4 years	**Perceived Problem**: Inadeuate enterprise success despite great investment in comany-wide lean program led to intention of complete lean enterprise transformation with extended value stream focus. **Initial Actions**: executive sessions. multiple sites with CEO. Initial ivestigation led to changing strategy to first focus on better application of lean in operations (over 30 major sites, each implementing a highly structured process brought in from consulting company), changing focus of the OpEx lean system from programmatic to problem-solving focus.	LEI proposed creating a Model Plant. Investigation led to a Model Line project at one large, key production site. Several years of good, on-the-floor hands-on improvement work led to major changes, the creation of a successful Team Leader training course and Plant Manager Development Course based out of the Model Line plant. Conflict cropped up between two approaches: highly programatic approach that had been introduced by a "lean" consulting company vs methodical Model Line extension based on leader learning. In the end, transfer the learning beyond the Model Line plant was limited, though some key people were developed.
Restaurant Chain (SME)	Owner, Head Chef, COO, Restaurant Chefs and staff	5 years	**Perceived Problem**: Inadequate capacity to launch new product line. **Initial Action**: Model Line project implemented in food processing plant. Typical results quickly ensued from change from isolated island batch to continuous flow line. The absence of any need for new capacity was quickly understood by all. In the meantime, attention turned from new product introduction to support for restaurants.	After initial skepticism, local and corporate leaders became enthusiastic about success at first experiments in applying lean thinking & practice in the first trial restaurant, leading to additional work in other restaurants. Company also successfully adopted structured Hoshin Kanri adoption.
Small Community Health Center	CEO, COO, Department heads, medical and nursing staff	5 years	**Presenting Problem**: Serious challenges in meeting mission objectives -- organization survival was at risk in spite of its critical role in local community. **Initial Action**: executive training & coaching and development of a model clinic. Model clinic outperformed other clinics in terms of shorter visit times (via reduced waits), more patients seen with improved throughput, increased MD productivity, and staff morale.	Ongoing support through management changes (new CEO and COO) Led the board and exec team through strategic planning process. True north defined, Strategic objectives created by CEO and shared, cascade of relevant work priorities to support the objectives to the front is next.
Large Construction Company	VP of Operations, Regional leads, CEO	4 years	**Perceived Problem**: Need to improve lengthy, costly, error-ridden procurement process. **Initial Action**: VSM revealed many big problems and barriers to making needed changes. Decision made to focus on leadership development and problem solving capability.	General Manager of one major region requested deeper learning for himself and his senior team.leading to implemention of executive development program based on individual problem solving A3s with group sessions and individual coaching. In first two years, 75 executives in 3 regions (currently proposing all SVPs and all RLMs in all regions and functions). In 2019, expanded to gemba (job site) focusing on two model sites and implemented hoshin kanri in one regional business unit. Ongoing coaching with senior leadership including CEO to define 5 year vision for lean and role of leadership in supporting lean transfrmation. Steady expansion to more regions.
Large City Hospital	CEO, CMO, CNO, Executive Staff	3 years	**Perceived Problem**: Need to teach and coach PI team how to better solve problems for the system. **Initial Action:** problem solving project in a model learning area.	Create a model hospital in seven hospital system starting with the executive team and other key senior leaders (16 total) to solve 5 key business problems. Extend number of executive participants in subsequent years. In year three added daily huddles with President and Chief Clinical Officer with kata approach for daily practice.
Producer of Industrial Equipment (large, global)	VP Engineering, VP Manufacturing	5 years	**Perceived Problem**: Global Engineering organization needed revolutionize the product development process in order to enable to the company to help its customers disrupt the oil industry - profitably develop offshore fields even with oil at $30/barrel. **Initial Action**: One week kick-off session, establishment of Steering Team with regular cadence (quarterly) meetings, multiple global sites chosen each to tackle its own challenges with central coaching support for each and all synced up for learning and enterprise progress.	Chief Engineers appointed for major products, obeya established at each site, training provided in various LPPD tools and processes. Subsea 2.0 met targets of 50% cost, 50% size, 50% weight. Gemini project had similar success. Both products still in process of being introduced to conservative, risk-averse, cost-oblivious customers. Later, following discussions and proposal to COO, a parallel program was initiated with Manufacturing, with expectation Supply Chain will also join later.
Academic Medical Center (large)	CMO, Senior Medical Staff	15 years, 3 phases of 5 years	**Perceived Problem for Phase Three:** Clinical design process yielding highly uneven results, often missing deadlines and cost targets. **Initial Action:** LPPD pilot in new industry - healthcare.	

Lean Transformation Fundamentals

- Basic Approach: PDCA – The Art and Craft of Science

- Specific Approach in Each Case: Situational, Determined by Asking

  - "*What problem are we trying to solve?*"

- TWO Pillars: Process Improvement and Capability Development

  - Process Improvement

    - Start with the Work

      - Individual Level, System Level

  - Capability Development

    - At all Levels

    - Problem-solving, Improvement Capability

- Ownership: *Who is the lead architect?*

  - Internal: Need an Executive Champion and Project Lead(s)

  - External: Coach (usually needed) and (frequently) Architect

VALUE-DRIVEN PURPOSE
- Situational Approach -
"WHAT PROBLEM ARE WE TRYING TO SOLVE?"

PROCESS IMPROVEMENT

Continuous, real, practical changes to improve the way the work is done

Leadership Behaviors

MANAGEMENT SYSTEM

CAPABILITY DEVELOPMENT

Sustainable improvement capability in all people at all levels

Basic Thinking, Mindset, Assumptions
That drive this transformation

Transformation Questions	What is your current situation?	What is an ideal "lean" condition?	What is your specific target condition to achieve in the next year?	What are your next steps
1. Purpose - What is the purpose, what value is being provided, or what problem are they trying to solve?				
2. Process – How is the value-creating and all work being defined and continually improved?				
3. Capability- How are necessary capabilities defined and being developed?				
4. Management System & leader behaviors – How are the management system and leader behaviors being established to support desired ways of working?				
5. Basic Thinking, Underlying Assumptions - What basic assumptions or mindset exists? How do they need to change?				

Transformation Questions	What is your current situation?	What is an ideal "lean" condition?	What is your specific target condition to achieve in the next year?	What are your next steps
1. Purpose - What is the purpose, what value is being provided, or what problem are they trying to solve?	Macro Micro			
2. Process – How is the value-creating and all work being defined and continually improved?				
3. Capability- How are necessary capabilities defined and being developed?				
4. Management System & leader behaviors – How are the management system and leader behaviors being established to support desired ways of working?				
5. Basic Thinking, Underlying Assumptions - What basic assumptions or mindset exists? How do they need to change?				

Transformation Questions	What was the original situation of the case study organization?	What could be their ideal "lean" condition?	What target condition did they choose to challenge?	What steps did they take? What happened?
1. Purpose - What is the purpose, what value is being provided, or what problem are they trying to solve?	Macro / Micro			
2. Process – How is the value-creating and all work being defined and continually improved?				
3. Capability- How are necessary capabilities defined and being developed?				
4. Management System & leader behaviors – How are the management system and leader behaviors being established to support desired ways of working?				
5. Basic Thinking, Underlying Assumptions - What basic assumptions or mindset exists? How do they need to change?				

Transformation Questions	What is your current situation?	What is an ideal "lean" condition?	What is your specific target condition to achieve in the next year?	What are your next steps
1. Purpose - What is the purpose, what value is being provided, or what problem are they trying to solve?	Macro / Micro			
2. Process – How is the value-creating and all work being defined and continually improved?				
3. Capability- How are necessary capabilities defined and being developed?				
4. Management System & leader behaviors – How are the management system and leader behaviors being established to support desired ways of working?				
5. Basic Thinking, Underlying Assumptions - What basic assumptions or mindset exists? How do they need to change?				

Transformation Questions	What was the original situation of the case study organization?	What could be their ideal "lean" condition?	What target condition did they choose to challenge?	What steps did they take? What happened?
1. Purpose - What is the purpose, what value is being provided, or what problem are they trying to solve?	Macro Micro			
2. Process – How is the value-creating and all work being defined and continually improved?				
3. Capability- How are necessary capabilities defined and being developed?				
4. Management System & leader behaviors – How are the management system and leader behaviors being established to support desired ways of working?				
5. Basic Thinking, Underlying Assumptions - What basic assumptions or mindset exists? How do they need to change?				

Transformation Questions	What was the original situation of the case study organization?	What could be their ideal "lean" condition?	What target condition did they choose to challenge?	What steps did they take? What happened?
1. Purpose - What is the purpose, what value is being provided, or what problem are they trying to solve?	Macro / Micro			
2. Process – How is the value-creating and all work being defined and continually improved?				
3. Capability- How are necessary capabilities defined and being developed?				
4. Management System & leader behaviors – How are the management system and leader behaviors being established to support desired ways of working?				
5. Basic Thinking, Underlying Assumptions - What basic assumptions or mindset exists? How do they need to change?				

Transformation Questions	What is your current situation?	What is an ideal "lean" condition?	What is your specific target condition to achieve in the next year?	What are your next steps
1. Purpose - What is the purpose, what value is being provided, or what problem are they trying to solve?	Macro Micro			
2. Process – How is the value-creating and all work being defined and continually improved?				
3. Capability- How are necessary capabilities defined and being developed?				
4. Management System & leader behaviors – How are the management system and leader behaviors being established to support desired ways of working?				
5. Basic Thinking, Underlying Assumptions - What basic assumptions or mindset exists? How do they need to change?				

Auto Retail LTF Process (2014)

LTF Dimensions & Questions:	What is the Current State?	What is the "Ideal" (Future) State?	What is the GAP?	What will you do to close the gaps? (WHO by WHEN)
1. What is your value driven purpose? What problem(s) are you trying to solve?	Selling cars Servicing cars Selling parts Selling finance & insurance	Guarantee hassle free mobility	Purpose not clear Silos of activity Point optimization	SMART Goals agreed Renumeration aligned to purpose Activities to share and develop purpose (alignment)
2. How Do We Do & Improve The Work?	Service Techs allocated work to meet productivity goals Multiple ways of "doing the work" – no standard No mechanism for kaizen as no standard, no target	Brilliant basics Separate work flows Predictable and unpredictable Standaridse work (content, sequence, time to takt) Heijunka bookings Be proactive – initiate booking	Work flows required (VS Design) Education in job methods, PAM, spaghetti, takt time (flow and pull)	"Model line" – Green flow "Model line" – Orange flow "Model line" Service reception
3. How Do We Develop The Capabilities We Need?	Manufacturer training courses Workshop control and A/S Manager provide a kind of andon support	Skills matrix by flow – diagnose, parts, interpretation, basic manual skills Process for leading teams Process for instruction Process flow kaizen PDCA Problem solving	Organise by team leader and teams Job instruction Problem solving process	Structure change Job instruction process Kaizen process Basic 3C and A3
4. What Management System & Leadership Behaviours Support The New Way of Working?	Leaders (managers) manage the budget Formal review monthly -spreadsheets and variance "Work harder" mentality	Performance system SQDCP Improvement system Gemba management Coaching	Performance system first (for stability)	Performance system first (for stability)
5. What Basic Thinking Mindset & Assumptions Drive This Change?	Workers work, managers manage Hierarchy Focus on results (financials) Often win - lose	Easy to do business with Customer first Integrity Respect for all Challenge and Kaizen	Change to making work easier for the frontline Turn triangle to focus on value creating work	The above

Lean Transformation FMEA

FMEA	FMEA Transformation Dimensions	Potential Failure Mode	Potential Failure Effects	Potential Causes	Current Process Controls	Actions Recommended	After Action Review
TRANSFORMATION of ORGANIZATION XX	**Dimensions 1-5**	What failures in this Dimension may cause failure of the Enterprise Transformation?	What is the potential impact on Quality, Delivery, Cost, and Culture (safety, morale, CI)?	List every potential cause for each failure mode.	What are the existing social or technical systems or processes that prevent the failure mode or its cause?	List Countermeasures to reduce the Probability of Occurrence of the failure mode or cause.	What actions were taken, what experiments run? Did they have intended result? Why or why not? What was learned?
	1. Purpose - What is the purpose or what problem are you trying to solve?						
	2. Process Improvement - How is the value-creating and all work being defined and improved?						
	3. Capability Development - How are you building capability to do and improve the work and solve problems?						
	4. Leadership and Management System - How are leadership behaviors and management systems being established to support desired ways of working?						
	5. Basic Thinking, Mindsets, Underlying Assumptions - What are you doing to understand current basic thinking &culture and what steps being taken to move in desired directions?						

Lean Thinking for Self Reliance

John Shook
Lean Global Network
Lean Enterprise Institute