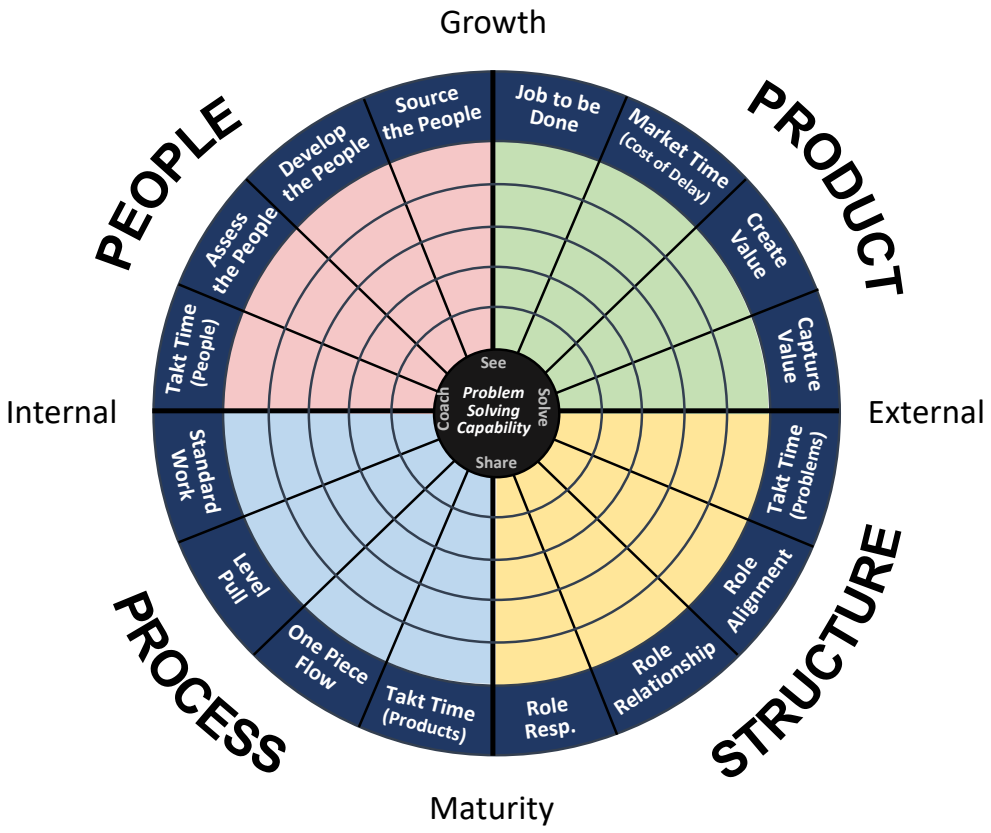
Management Matters

Management System 3.1 (Open Source Reference Model)

Management Matters

Management System 3.1 (Open Source Reference Model)

- **A Department of Defense resourced management system.**
- **Developed by management practitioners with support from former Toyota Managers.**



Management Matters

Good vs. Mediocre Management:

- **25% faster annual growth**
- **75% higher productivity**
- **10-fold increase in patents**

Source: "Why Do We Undervalue Competent Management?" by Raffaella Sadun , Nicholas Bloom and John Van Reenen

Management Matters

The biggest driver of competitive advantage of an *organization, industry, sector, or economy* is **Management** and their **Management System**.

In fact, investment in Management provides better ROI than IT, R&D, or Employee Skills.

Based on research from Harvard, MIT, Stanford and McKinsey

Management Matters

"When we take stock of the productivity gains that drive our prosperity, technology gets all the credit. In fact, **management** is doing a lot of the heavy lifting".

Joan Magretta,
Harvard Business School

"Management is the most noble of professions if it's practiced well."

Clayton Christenson,
Harvard Business School

What is an organization?

Product, Process, Structure, People

What is an Organization?

A structure of roles, occupied by people, who interact in processes to deliver products valued by customers.

Source: Based on research from Steven J. Spears, Clayton Christenson, Elliot Jaques

Building Blocks of Organizations

"From common building blocks, nature builds bumble bees to elephants."

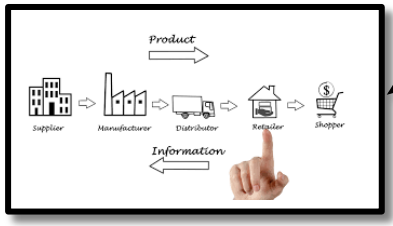
From common building blocks, managers build meetings to economies.

Meetings

Distribution

Product
Process
Structure
People

Supply Chains



Department of Defense

Department of Defense

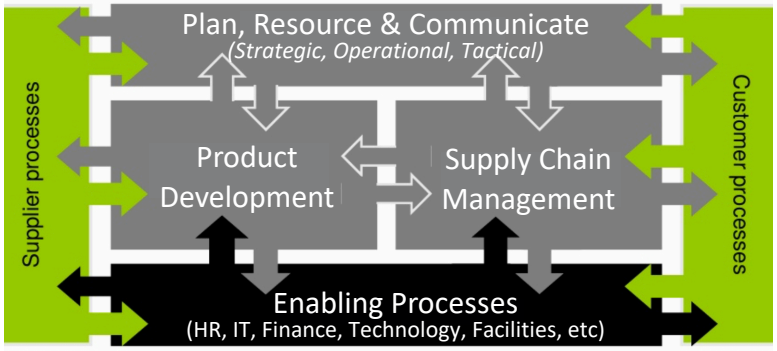
Mission: "Deter war and ensure our nation's security"

(close in person, place & time; with the fewest loss of life possible; at the lowest cost - $716 billion)

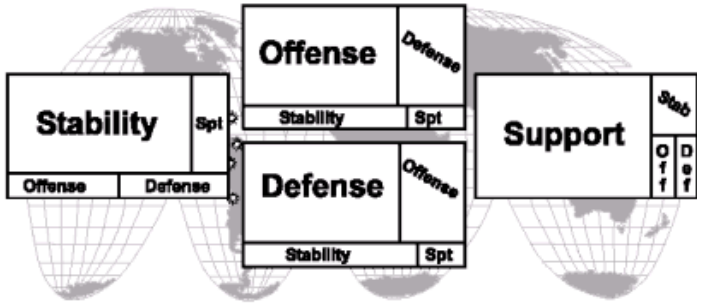
Product

Process

Acquisition, Technology, & Sustainment



Full Spectrum Military Operations



Structure

Roles, Responsibilities, Authorities & Accountabilities *(Alignment & Relationships for Unified Action)*

Economic Sectors

- Aircraft
- Ship
- Ground Vehicles
- Space
- Organic Industrial
- Electronics
- Materials
- Radar & Elec. Warfare
- Munitions & Missiles
- Distribution
- C4….Etc…

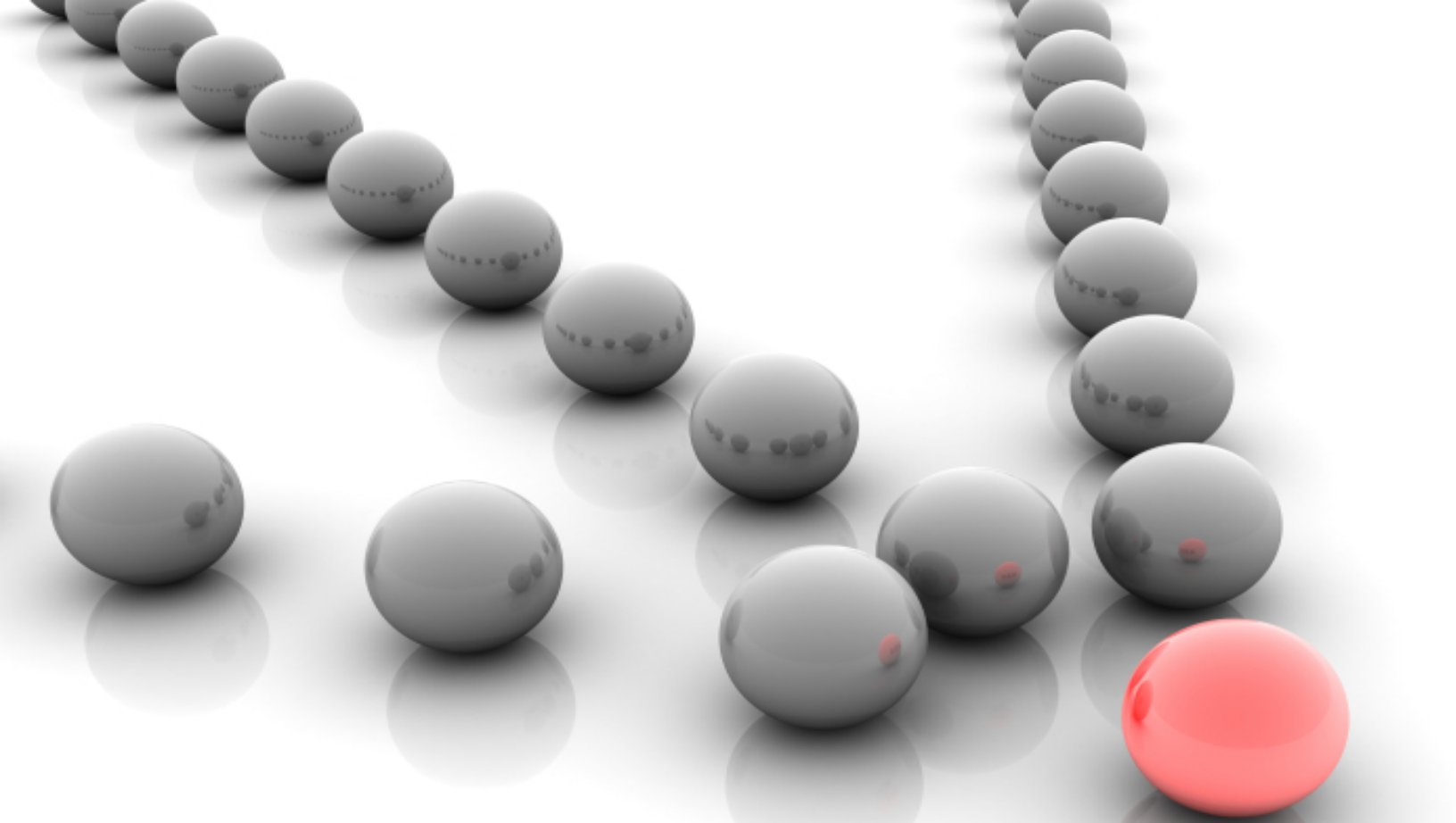
- Combatant Commands (11)

- Air Force
- National Guard
- Coast Guard
- Army
- Marine Corps
- Navy

People

Source & Develop our People: Right Capability, Right Role, Right Time, Right Qty, Right Cost

Civil Servants:	Service Contractors:	Product Contractors:	Operational Contractors:	Military Members:
732,079	561,239	1 Million (approximate)	60,000+ (classified)	2.15 Million



What is a High Performing Organization?

Faster Problem Solving

Organizational Performance

Researchers asked: Given that industry competitors have access to the same…

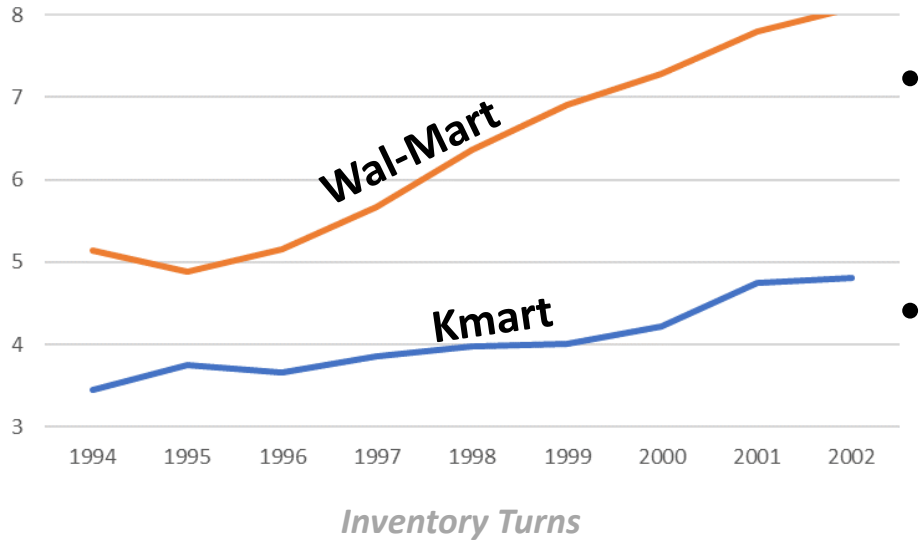
- *Resources*
- *Labor pool*
- *Technologies*
- *Capital markets*
- *Supplier base*
- *Best practices, etc*

Why do some organizations "deliver more value, in less time, at less cost" to customers?

Source: Based on research from Harvard, MIT and Stanford

A Tale of 2 Companies

- Both started doing business in 1964
- Each had experienced management teams
- Access to the same technologies, suppliers…
- One had more financial resources



- Both organizations improved over time (absolute performance)
- But one improved at a much faster rate (relative performance)

Source: Philip Rosenthal, Halo Effect; Steve Spear, MIT

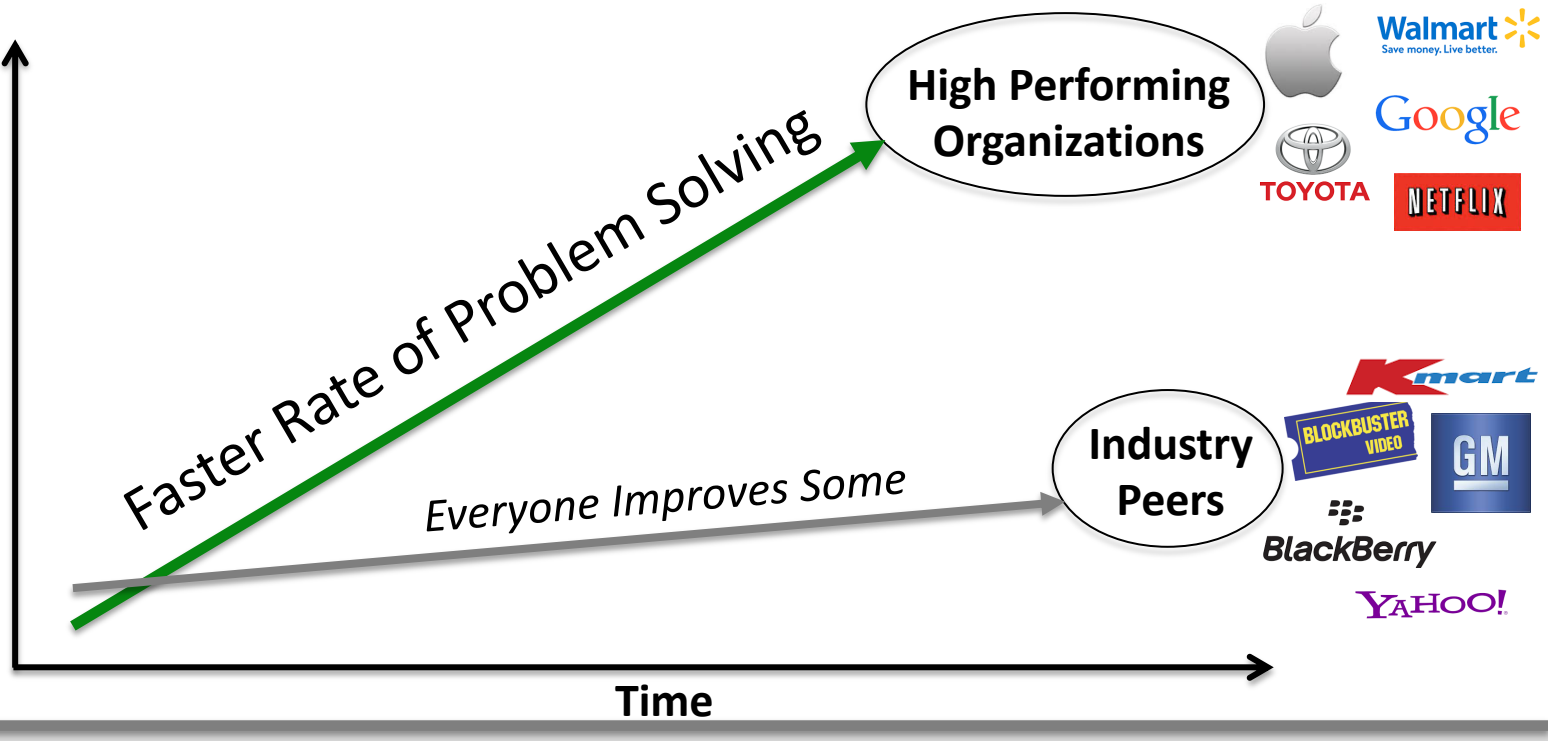
High Performing Organizations

Organizations that solve problems faster than the competition deliver products with:

1. twice the value (better),
2. in half the time (faster),
3. at half the cost (cheaper),
4. for a long period (>15 years)

Performance:

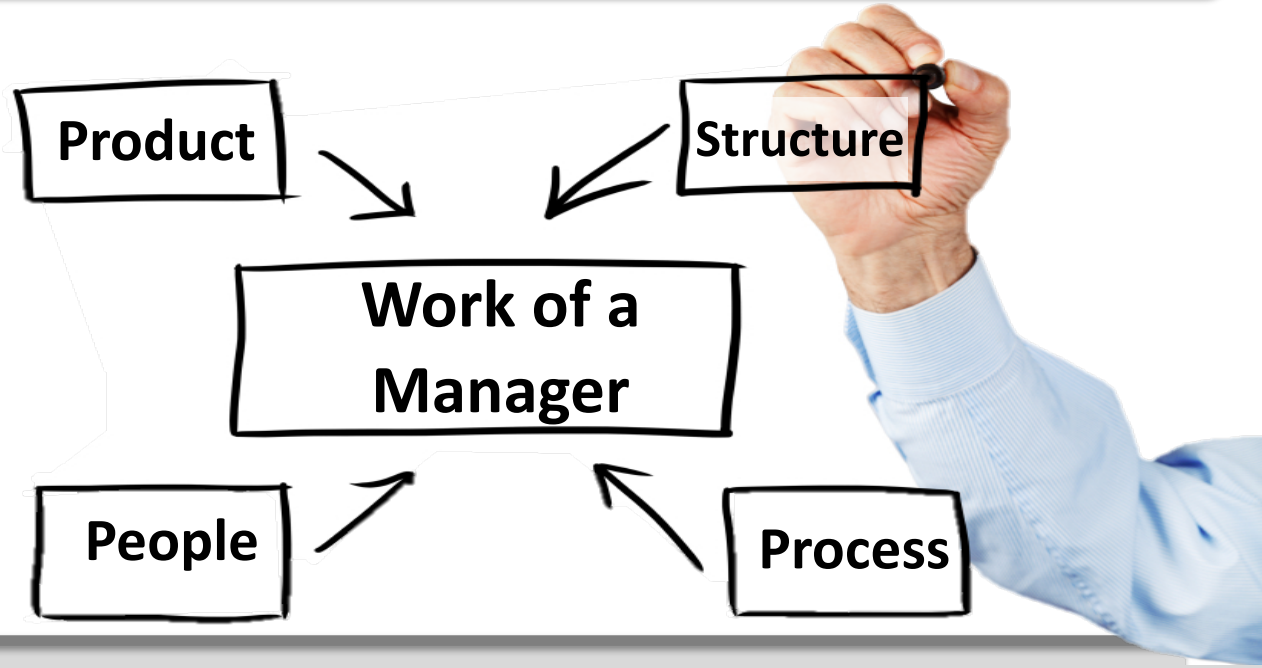
- Safety
- Quality
- On Time
- Flexibility
- Cost
- Productivity
- Market Share



Source: Based on research from Harvard, MIT and Stanford

4 Capabilities of High Performers

1. Design & operate **work** to see problems
2. Solve problems close in person, place & time
3. Capture & share knowledge from solving problems
4. Managers coach & structure their team (1-3)



Management Drives Problem Solving

The biggest driver of competitive advantage of an *organization, industry, sector, or economy* is Management and their Management System.

CAUSE	***EFFECT***	***RESULT***
Management System (How managers think & act)	**Faster Rate of Problem Solving** (Relative to Competition)	***Deliver Products:*** 1. *twice the value (better),* 2. *in half the time (faster),* 3. *at half the cost (cheaper),* 4. *for a sustained period.*

Source: Based on research from Harvard, MIT and Stanford.

What is Management?

"The Most Noble of Professions"

Management Matters

"Management is the most noble of professions if it's practiced well.

No other occupation offers as many ways to help others learn and grow, take responsibility and be recognized for achievement, and contribute to the success of a team"

- *Source:* Clayton Christenson, Harvard Business School

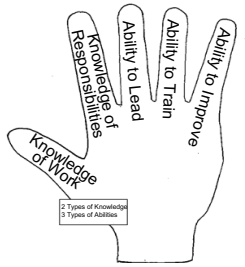
What is Management?

Management is a Role

- Organizational Manager
- Functional Manager
- Program Manager, etc

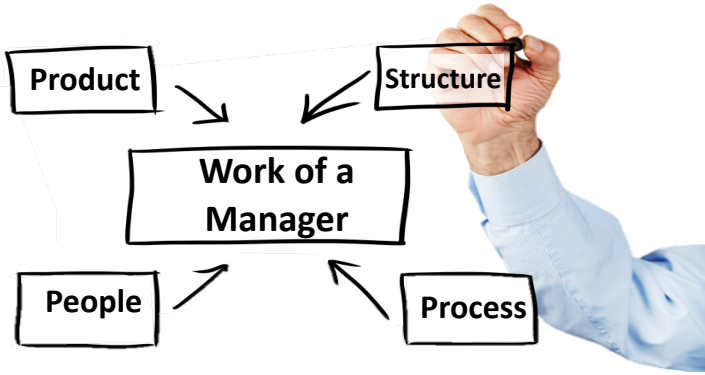
All Roles Require

Knowledge of Work
Knowledge of Responsibilities
Ability to Lead
Ability to Train
Ability to Improve



Management has Intent:[1]

- "To Organize Purposefully"



Source: Elliot Jaques, Requisite Organization;
1. Joan Magretta, What is Management

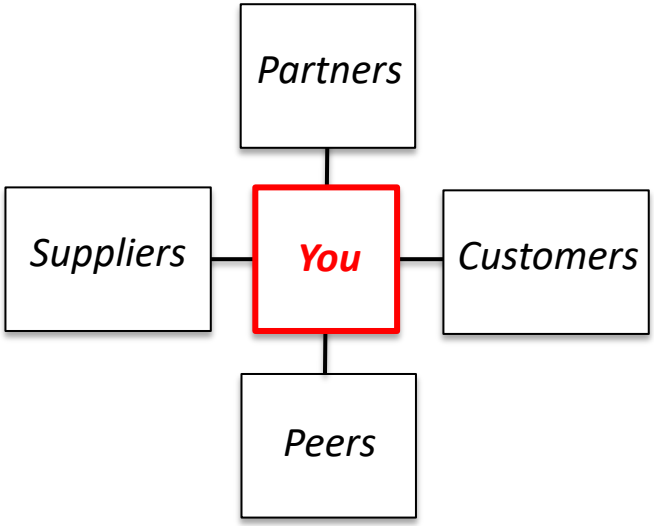
What is Management?

Management is Responsible For:[1]

- The output of their organization

+

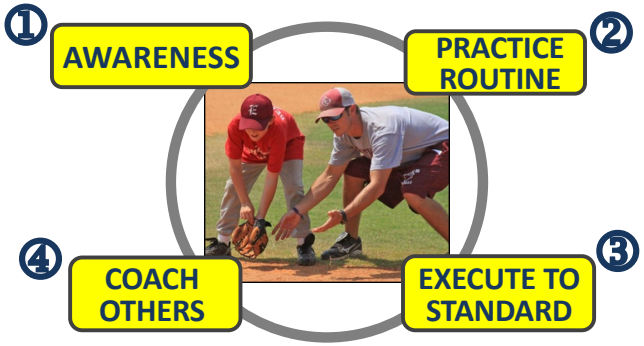
- The output of neighboring organizations under their influence



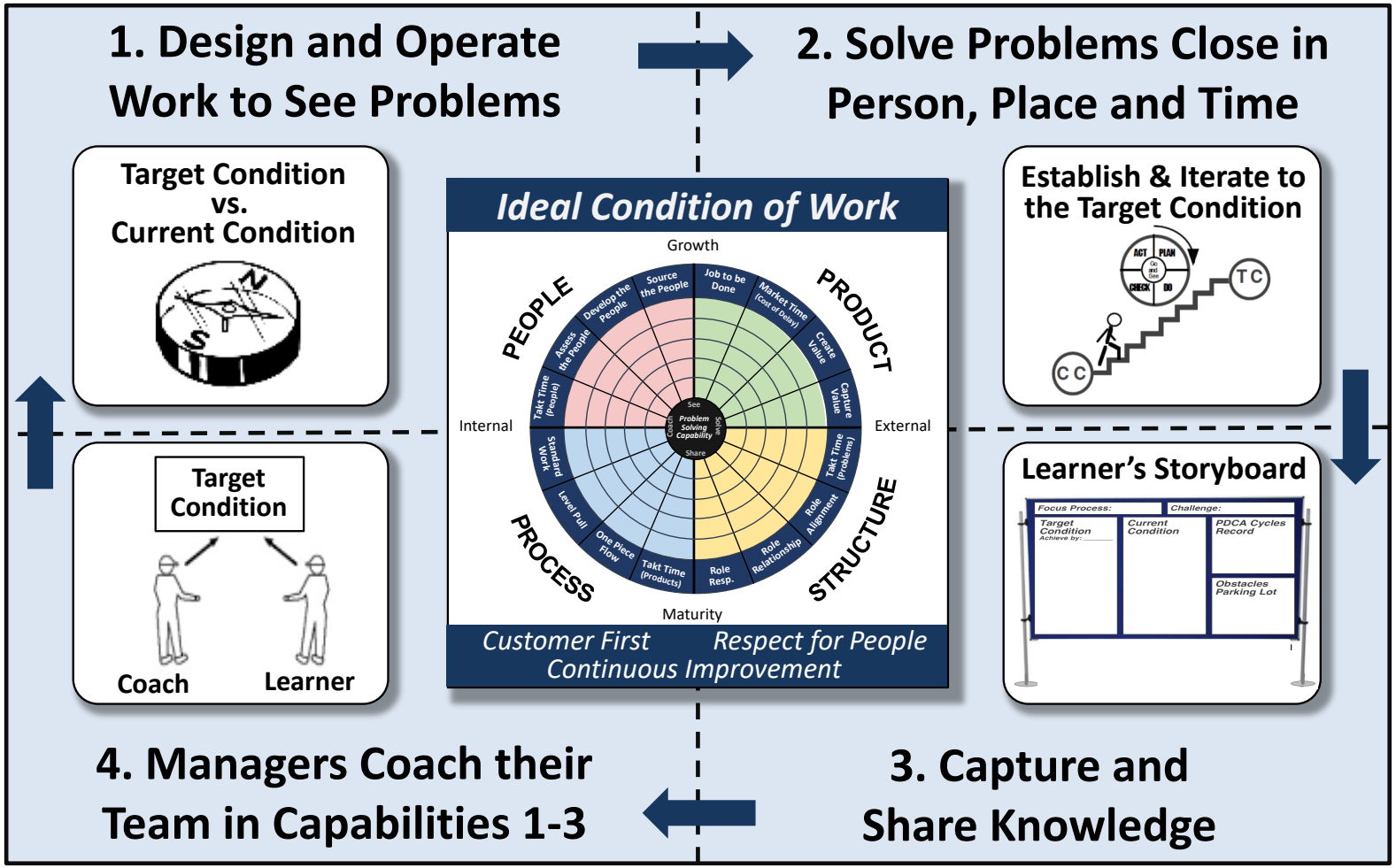
Management is a Practice

- It is a profession (with its own body of knowledge)
- You "learn by doing"

Practice Makes Permanent (so "Practice Perfect")



Source: 1. Andy Grove, former CEO of INTEL; Clayton Christenson, Harvard Business



Management System 3.1

Reference Model

What is the Management System?

An "Open Source" Management System resourced by DoD (circa 1999)

- No trademarks, no proprietary rights, etc…
- No consultant "lock-in" strategy
- NO FADS [Insert program name here]

A "Reference Model" (3.1)

- Incorporates DoD "Training Within Industry" (1940 open source MS)
- Based on cumulative knowledge of management & evidenced based researchers (w/citation and credit to original source)
- Used for: maturity assessments; benchmarking; survey instruments…

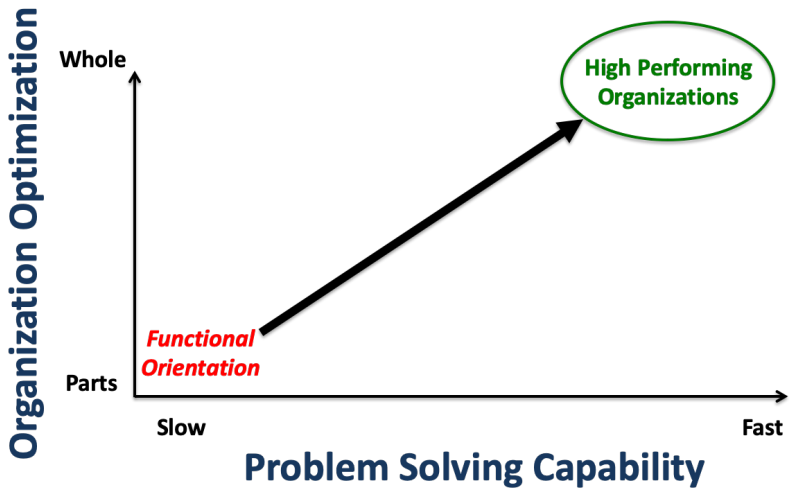
Source: Steven J. Spear (MIT), Tachii Ohno (Toyota), Clayton Christenson, (HBS); Elliot Jaques, Requisite Organization

What is the Management System?

A system to manage the interacting components of an organization:

- Product ← **The value you create**
- Process
- Structure
- People

} **How you create & capture that value**



A system based on the 4 Capabilities required to increase the rate of problem solving (i.e. learning):

1. Design & operate work to see problems
2. Solve problems close in person, place & time
3. Capture & share knowledge from solving problems
4. Managers coach & structure their team (1-3)

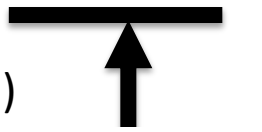
Need for a Management System?

- Establishes standards (e.g. Rules-TTPs, goal, target, policy, plan, accepted way of operating)
- "Where there is no standard there can be no continuous improvement (no problems to solve)".

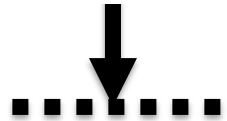
Taiichi Ohno

Standard

(What **should** be happening?)



GAP = Problem



Current Condition

(What is **actually** happening?)

"Having no problem is the biggest problem of all."

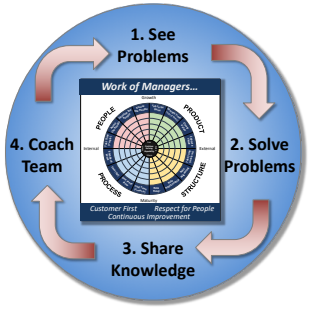
The Standards Drive Improvement

"Ideal Condition" creates tension for change

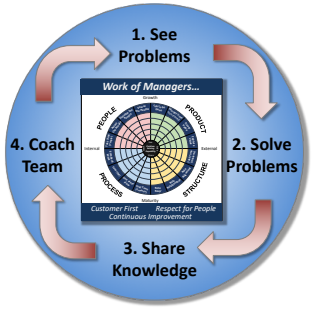
Performance

Time

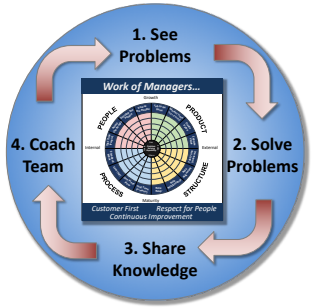
Current Condition



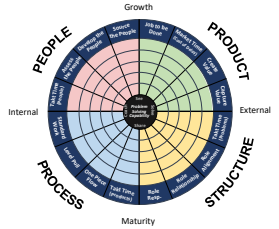
Standard Condition



Target Condition



Ideal Condition



"Win the Market"

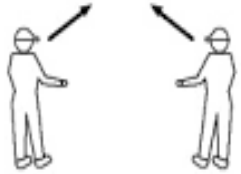
- ***Perfect Product***
- ***Perfect Process***
- ***Perfect Structure***
- ***Perfect People***

Management System 3.1

1. Design and Operate Work to See Problems

Target Condition vs. Current Condition

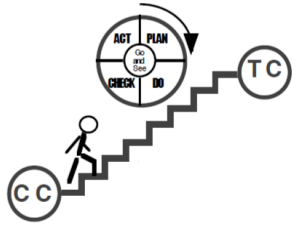
Target Condition



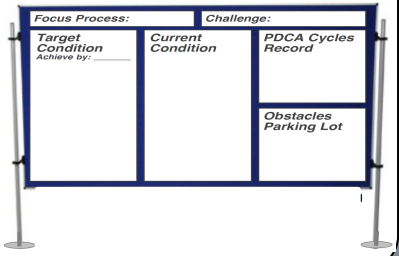
Coach Learner

2. Solve Problems Close in Person, Place and Time

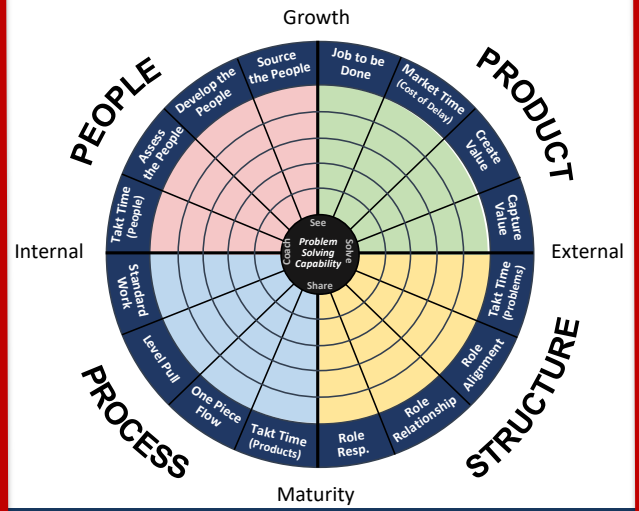
Establish & Iterate to the Target Condition



Learner's Storyboard



Ideal Condition of Work



Customer First *Respect for People*
Continuous Improvement

3. Capture and Share Knowledge

4. Managers Coach their Team in Capabilities 1-3

Management System By Any Name…

Prescriptive guidance for designing and improving work

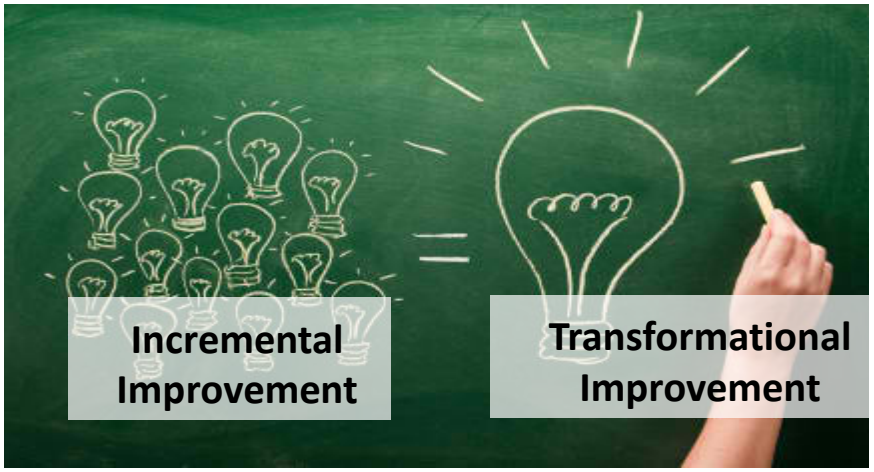
Rules & TTPs (AKA):

- ✓ "Doctrine"
- ✓ "Principles"
- ✓ "Standards of Management"
- ✓ "True North"

Management System Values

The Foundation of All that Follows

1. Customer First
2. Respect for people
3. Continuous Improvement

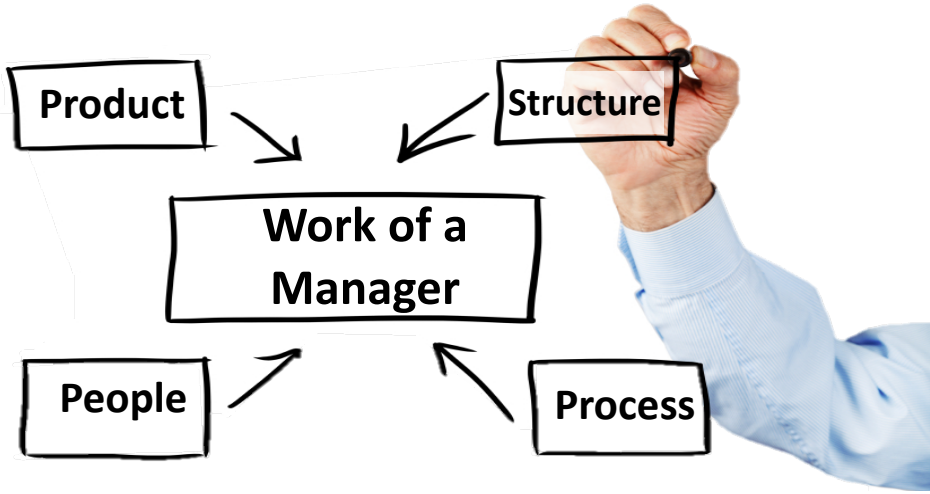


Work is …

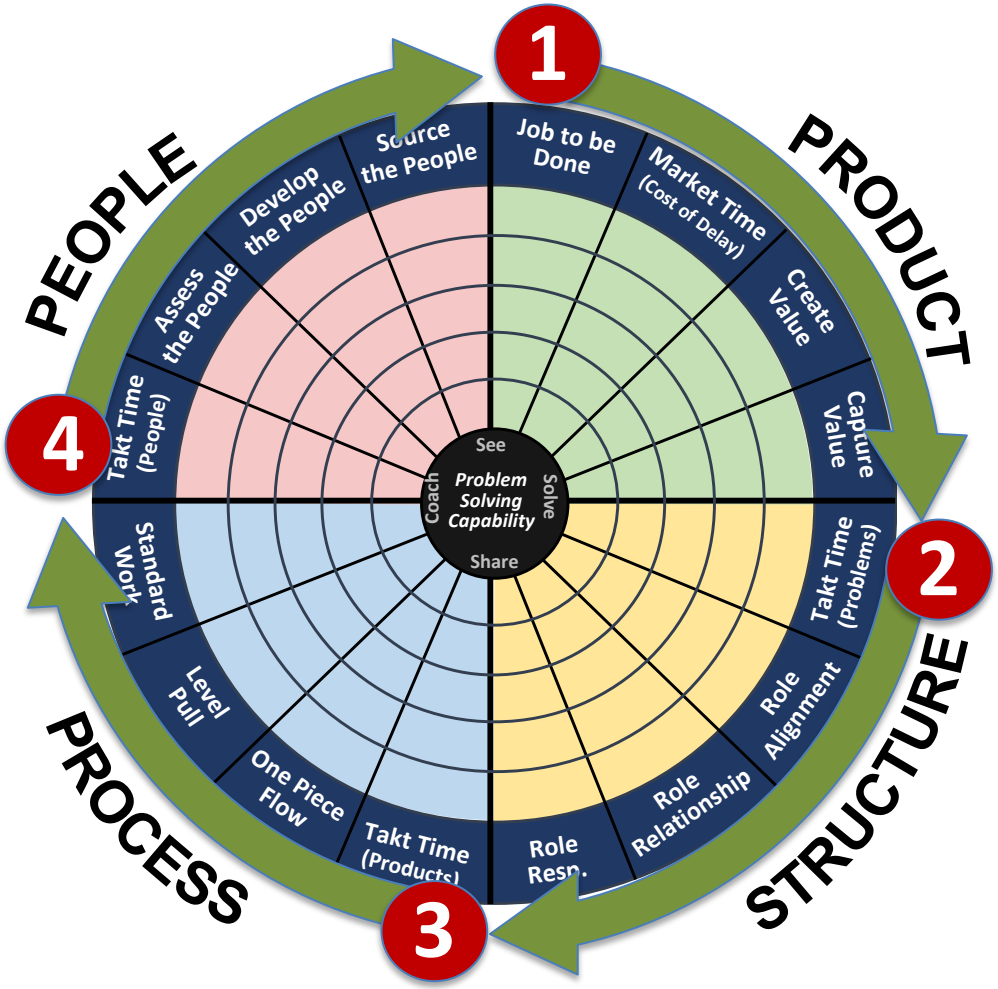
- About exercising judgment in making decisions to solve problems in order to accomplish tasks
- The task is intended to create & capture value

A Managers work is about:

- Product strategy and design
- Structure required to bring the product to market
- Process needed to develop and deliver the product
- People capable of executing their role responsibilities

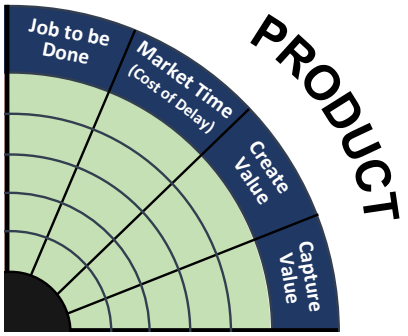


Unpacking the Management System



Product

Products that Solve the Customer's "Job to be Done"



"It isn't the customer's job to know what they want … People don't know what they want until you show it to them."

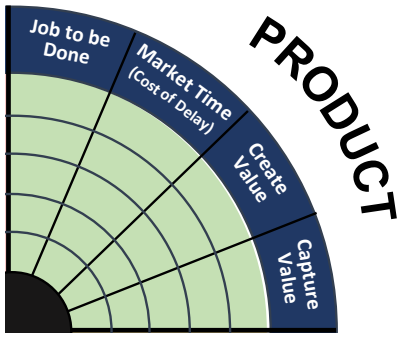
Steve Jobs, Apple

"New products succeed not just because of the features and functionality they offer but because of the experiences they enable."

Clayton Christenson, Harvard

Management System: Product

Rule Statement: Prioritize and develop products that solve the customer's "job to be done" with no "cost of delay".



Ideal Condition

100% Value Creation

- Perfect Customer Satisfaction
- 0 "Cost of Delay" (customer impact)

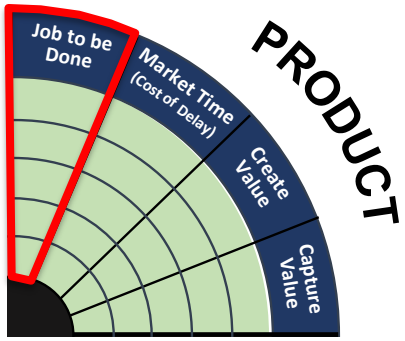
100% Value Capture

- Revenue, Resources, Profits, Units…
- 0 "Cost of Delay" (organization impact)

Source: Steven J. Spear, Massachusetts Institute of Technology (MIT)

Management System: Product

Job to Be Done: TTP's to understand the *motivation* for why customers hire or fire products to help them get their job done.



Henry Ford saw the Job as:

"People want to get from Point A to Point B quickly"

NOT

"People want faster horses"

Same Job, Different Product

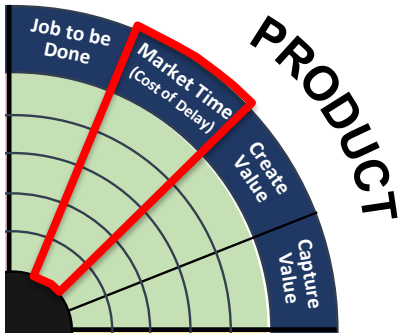
Horses

Cars

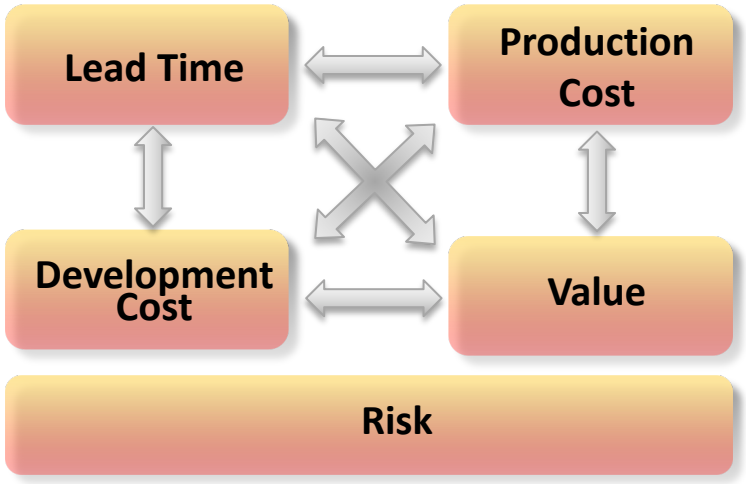
Source: Steven J. Spear, Massachusetts Institute of Technology (MIT)

Management System: Product

Market Time (Cost of Delay): TTP's to measure the time it takes to respond to market opportunities; and to prioritize development decisions by calculating the impact of time on value creation & capture.



Quantify Urgency
(Trade-off Decisions)

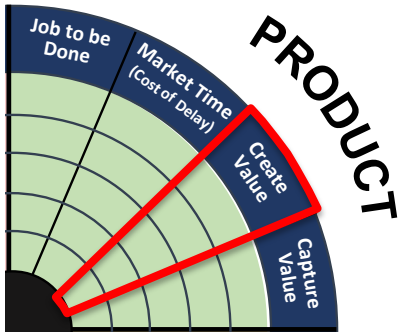


What is the cost of delay to ourselves and our customers?

Source: Donald Reinertsen, Developing Products in Half the Time.

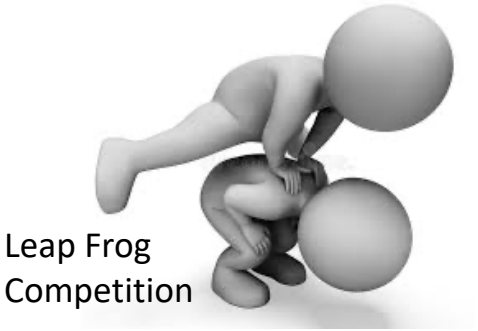
Management System: Product

Create Value: TTP's to enable strategic choice by 1) classifying the type of product you are developing and 2) how to position it for competitive advantage.



1. Sustaining Path? or Disruptive Path?

Sustaining Innovation:
Bring a better product into an established market



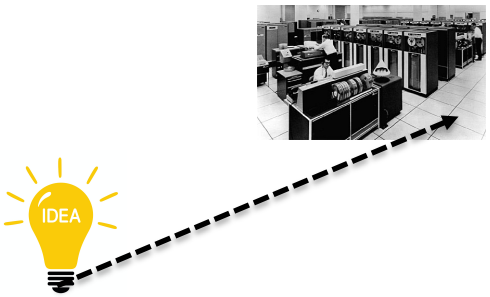
Leap Frog Competition

Most New Products

Low-end Disruption:
Address over served customers with a lower-cost business model

Walmart vs Department Stores

New market Disruption:
Address non-consumption (unfulfilled needs)

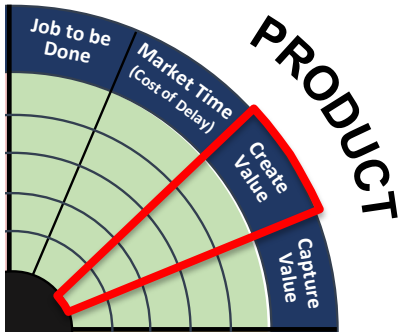


PC / Ford Car / Mobile Phone

Source: Clayton Christenson & Michael Porter

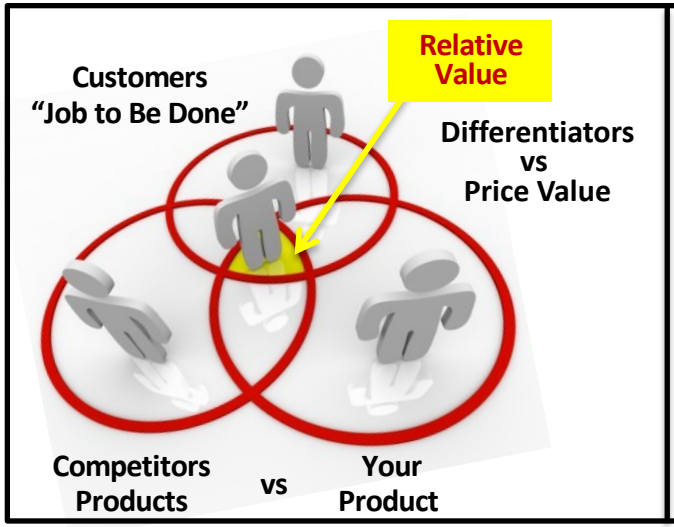
Management System: Product

Create Value: TTP's to enable strategic choice by 1) classifying the type of product you are developing and 2) how to position it for competitive advantage.



2. Position the Product for Competitive Advantage (think different)?

A. Value Proposition:



B. How to be Different:

"Perform different activities than rivals"

Apple
App Store

Amazon
Prime Delivery

"Perform similar activities differently"

TOYOTA

Toyota
Production System

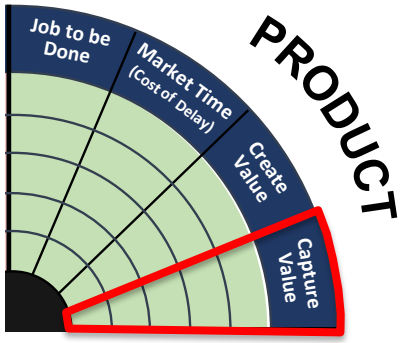
amazon

Amazon
Vs Retail Stores

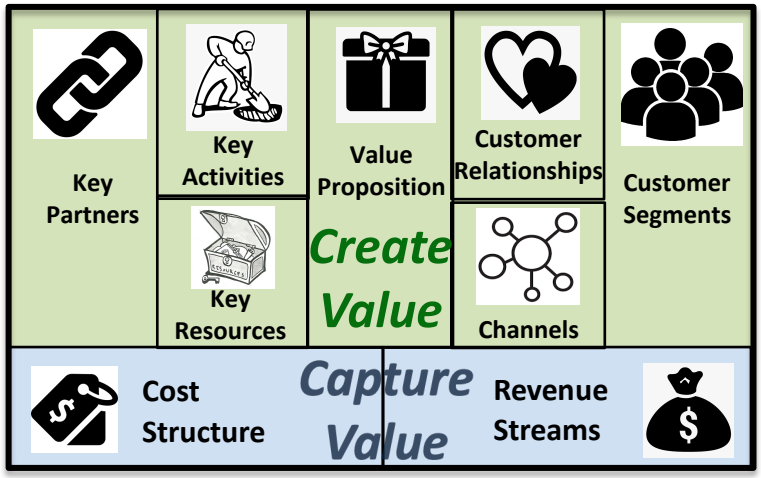
Source: Clayton Christenson & Michael Porter. Relative Value (Price Value / Non-Price Value)

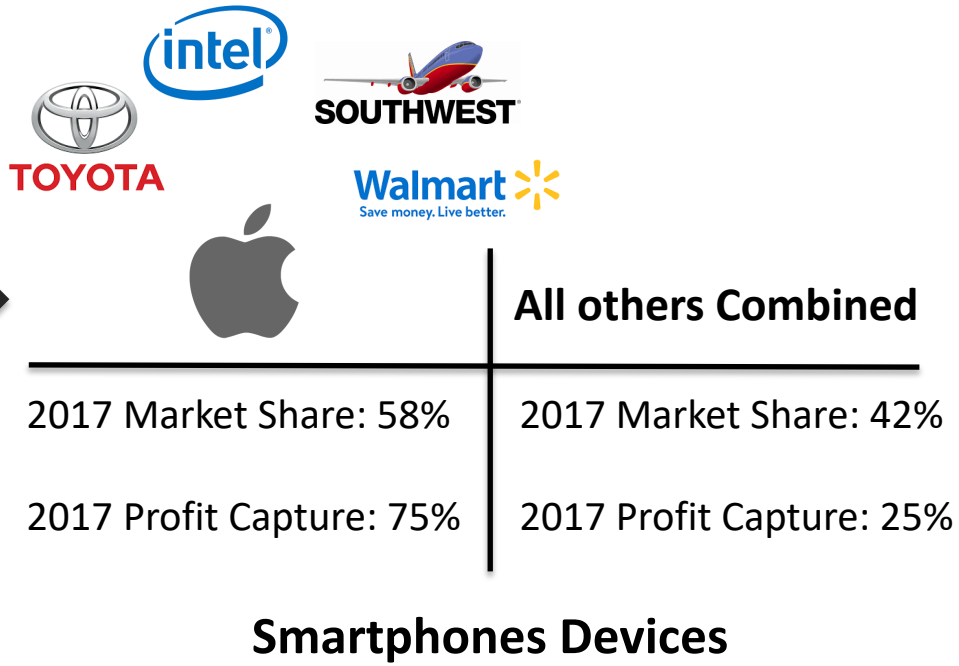
Management System: Product

Capture Value: TTP's to capture a portion of the value you create in order to have a sustainable business model that continues to create value.



Business Model

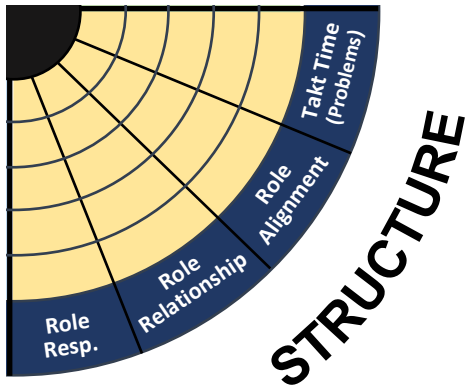




Source: Michael Porter (Capture Value); Alex Osterwalder, Business Model Canvas

Structure

Structure that enables working relationships to solve problems



"There are so many people working so hard and achieving so little value."

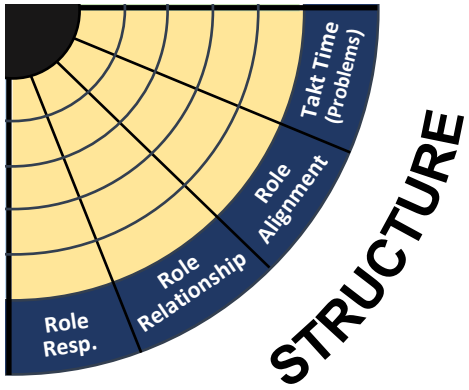
Andy Grove, Intel

"Structure follows Strategy" [i.e. product positioning]

Alfred D Chandler, Harvard

Management System: Structure

Rule Statement: Structure the role relationships (vertical and functional) to solve problems that deliver products of value.



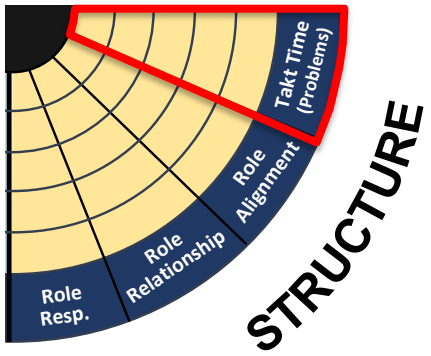
Ideal Condition

- Clear Communication
- Perfect Information
- Effective Decision Making
- Disciplined Problem Solving
- Clear Accountabilities & Authorities

} At All Levels, Close in Person, Place & Time

Management System: Structure

Takt Time (Problems): TTP's to determine the demand on the structure to meet the "expected scope & frequency of problems" to manage the cross-functional flow of product.



Estimated type (scope) and number of problems

How Long… Cycle Time (Problems)

How Often… Takt Time (Problems)

= Resources needed in organization by Level

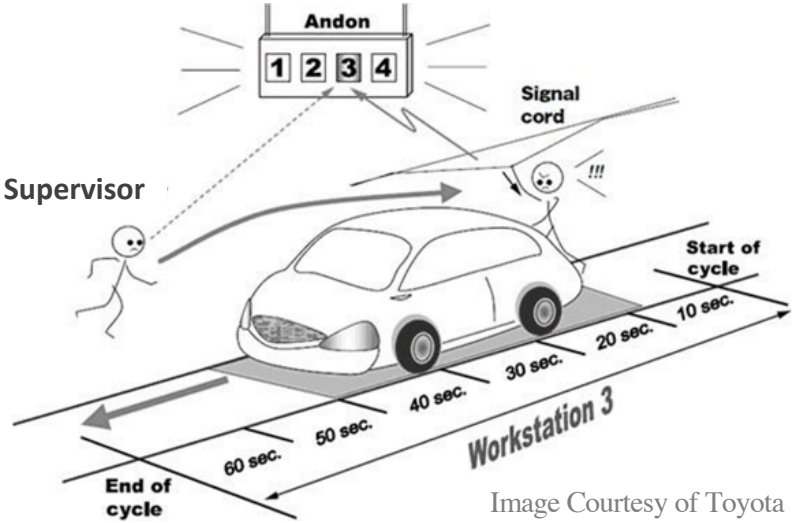


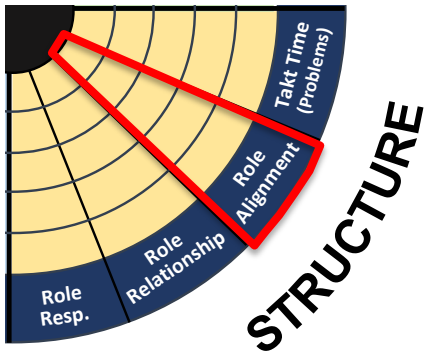
Image Courtesy of Toyota

Toyota's structure makes time available for 1,000 problems per shift

Source: Toyota Manager Conversation; Taiichi Ohno, TPS; Steven J. Spear, (MIT)

Management System: Structure

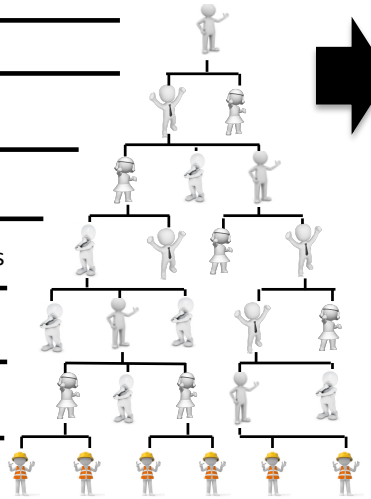
Role Alignment: TTP's to establish the vertical and functional groupings of work to meet the demand of problem solving.



Vertical Alignment

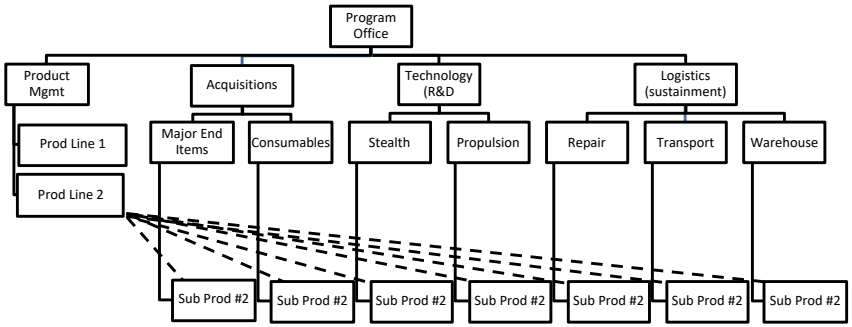
(Problem Solving "Levels of work")

Level	Planning Horizon	Typical Roles
VII	20– 50 years	CEOs (Large)
VI	10– 20 years	EVPs of Groups; BD EVPs
V	5 – 10 years	BU Manager; Specialist VPs
IV	2 – 5 years	General Manager; Specialist GMs
III	1 – 2 years	Unit Manager; Unit Specialist
II	1 – 12 months	FLM; First line Specialist.
I	1 day – 3 months	Associates; First line supervisor



Functional Alignment

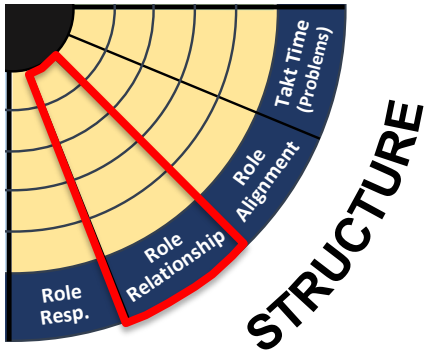
(Problem Solving "Groupings of work")



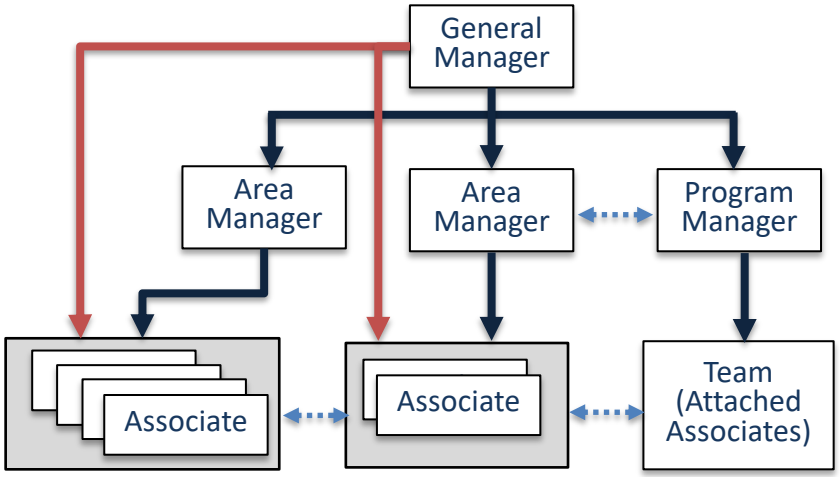
Structure follows Strategy (Product)

Management System: Structure

Role Relationship: TTP's to define authorities and accountabilities required for effective vertical and cross-functional role relationships.



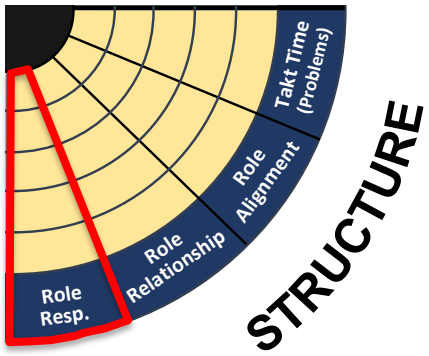
Trusting Relationships require clear Roles, Accountabilities & Authorities



	Role Relationships	Authority	Accountability
Vertical	Manager to Employee Or PM to Team →	– Task Assigning – Assess capability (for current role) – Select / Veto – Initiate removal	– Output of Team – Output of Individual – Coach the people (for current role)
Vertical	Manager once Removed (MoR) →	– Assess capability (for future role) – Role Establishment – Transfer (new role) – Promote / Demote	– Output of Managers – Talent Pool Strength – Mentor the people (for future role)
Cross Functional	Any non-managerial relationship (dotted vs solid line) e.x: Peer to Peer ↔	– Collaborate – Advisory – Request Service – Monitor – Coordinate – Audit – Prescribe	– To their manager – To their colleagues

Management System: Structure

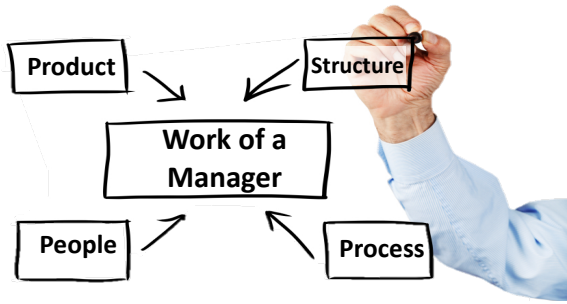
Role Responsibilities: TTP's to define the specific role responsibilities (how & what)



For Example:

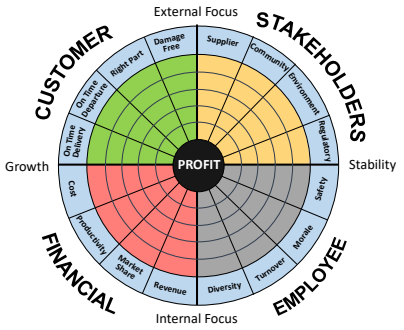
Manager Responsible for Problem Solving (How):

1. Design & Operate **Work** to See Problems
2. Solve Problems Close in Person, Place & Time
3. Capture & Share Knowledge from Solving Problems
4. Managers structure & coach their team (1-3)



Manager Responsible for Output (What):

The output of their organization + The output of neighboring organizations under their influence

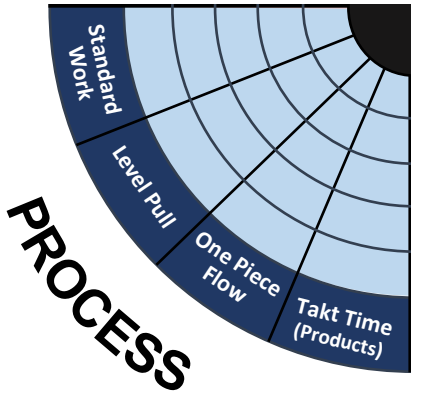


Performance Model

Source: Andy Grove, CEO INTEL; Elliot Jaques, Requisite Organization; Steven J. Spear, (MIT)

Process

Processes that Produce and Deliver the Products Just in Time (Right Time, Quantity & Cost)



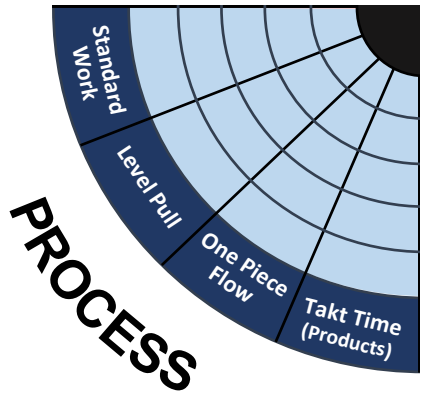
"What makes Toyota stand out is not any of the individual element… But what is important is having all the elements together as a system. It must be practiced every day."

Taiichi Ohno,
Toyota

"It's Toyota's way of designing and improving processes that generate both short term stability and long-term agility. "

Steven J Spears,
MIT / Harvard

Management System: Process



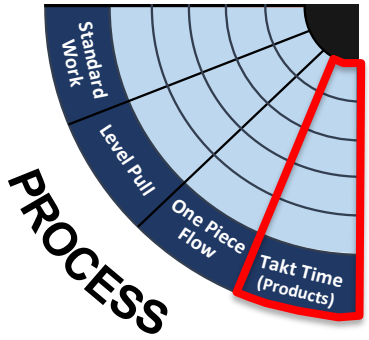
Rule Statement: Develop the process to deliver "just in time" (right product, right qty, right time, right cost).

Ideal Condition

- On-demand (actual customer pull)
- No waiting (0 lead-time)
- Zero Defect
- Perfect Safety (physical, emotional, professional)
- No Waste (over production, over processing, transport, inventory, movement, waiting, rework/defect)

Source: Steven J. Spear, Massachusetts Institute of Technology (MIT)

Management System: Process



Takt Time (Product): TTP's to set the pace of production to match pace of customer demand (net available time / customer demand).

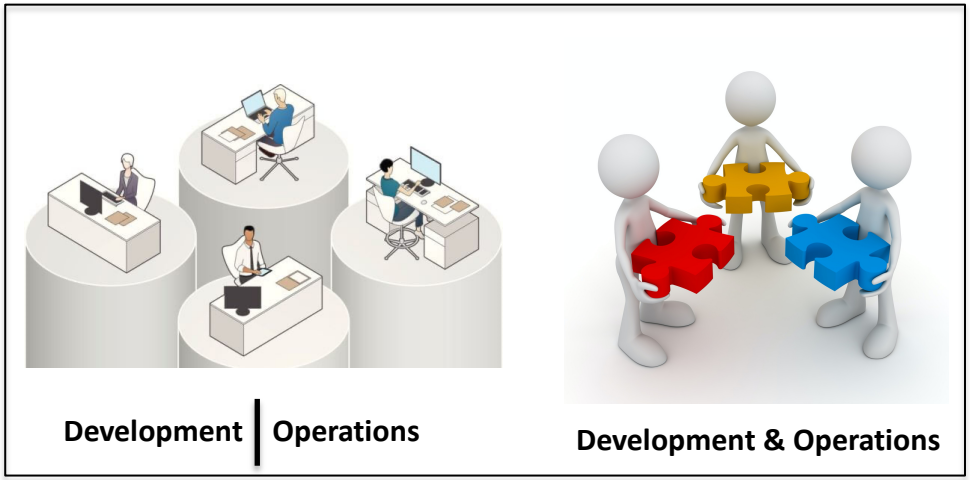
Pace of Process (Product Delivered)

Must Match

Takt Time (Product)

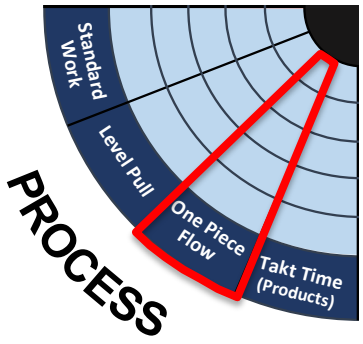
Pace of Demand for the Product / Service

Synchronized (No Silos)



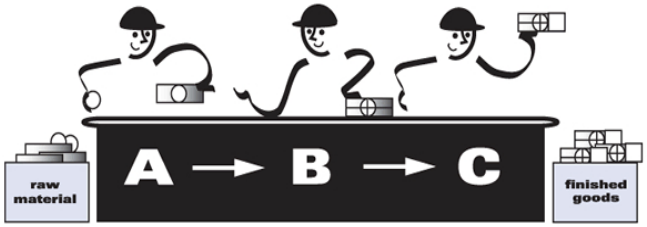
Applies to Both Development and Operations Processes

Management System: Process



<u>One Piece Flow</u>: TTP's to produce and move one product at a time (or in small batches) continuously across processing steps.

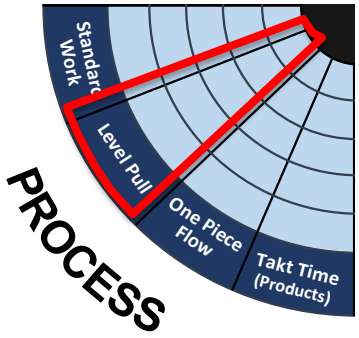
One Piece Flow



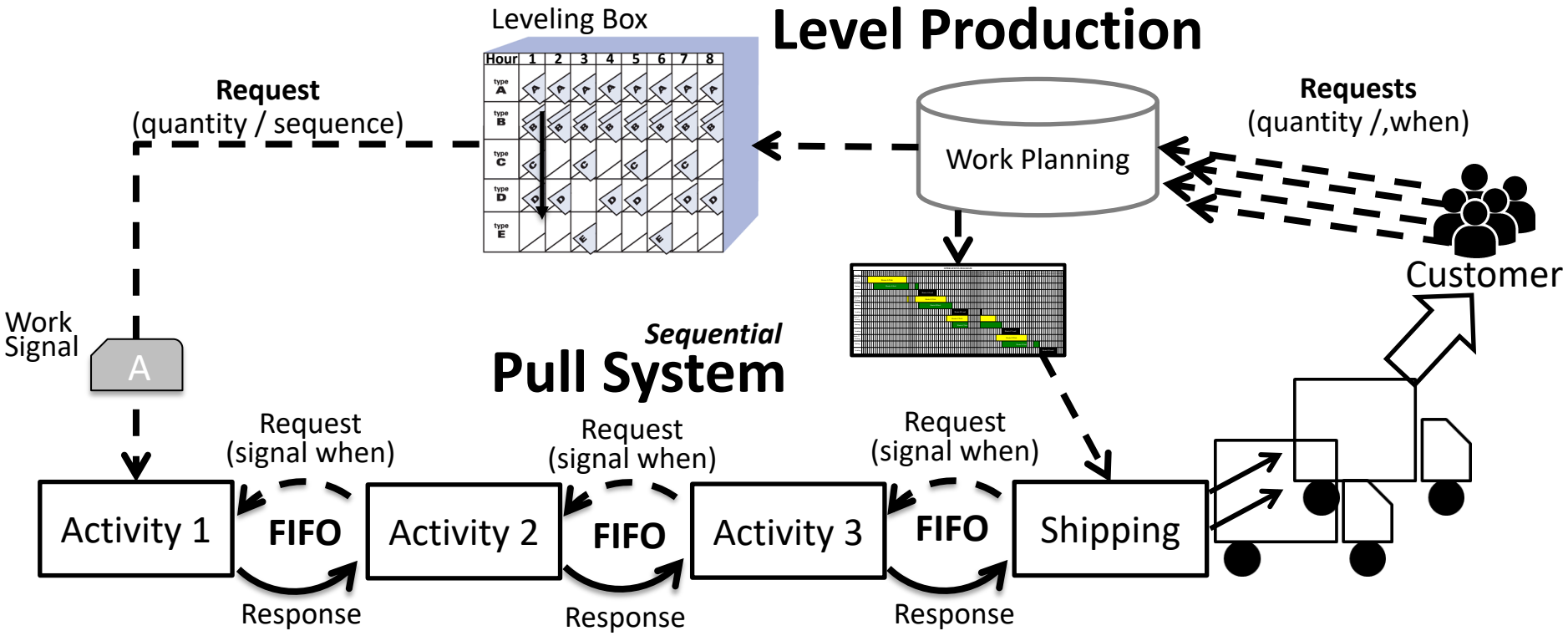
Large Batch Processing

Improved Flow
Shorter lead times
Higher Quality
Lower Cost
More Responsive

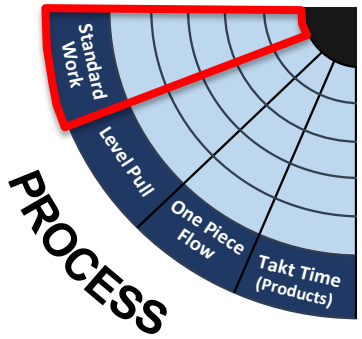
Management System: Process



Level Pull: TTP's to level the type & quantity of production over a fixed period of time; and a pull method of production control where downstream activities signal their needs to upstream activities



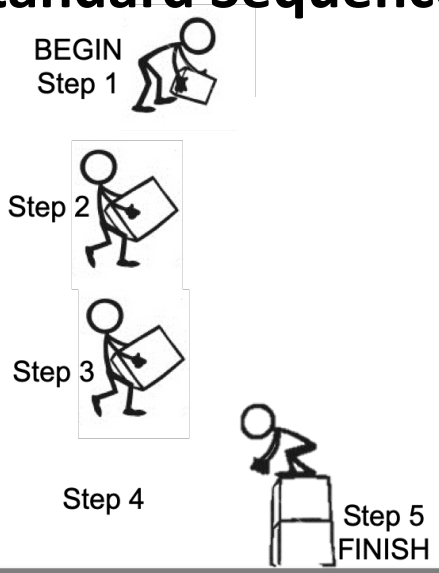
Management System: Process



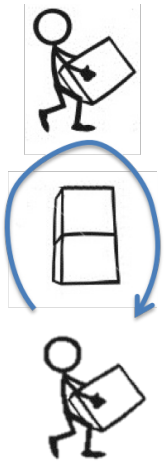
Standard Work: TTP's to define current best method for performing an activity (standard sequence, standard WIP and standard time).

3 Elements of Standard Work

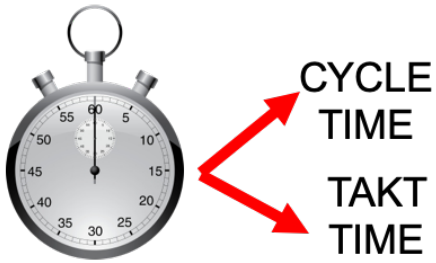
1. Standard Sequence



2. Standard WIP



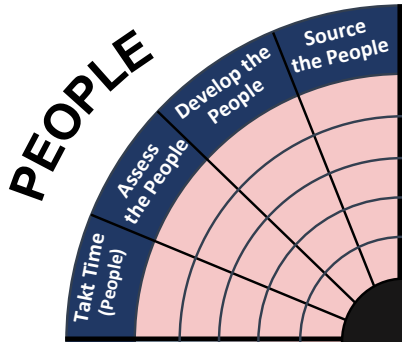
3. Standard Time



Source: Taiichi Ohno, Toyota Production System.

People

People that have the Capability to Execute the Structural Roles



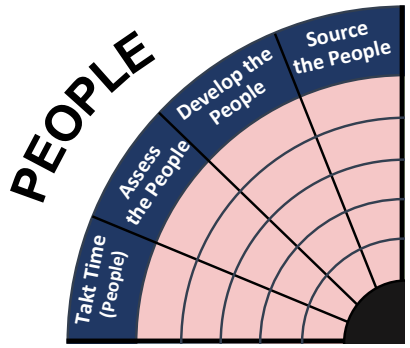
A manager must prepare their people professionally and then use their capability to their fullest potential.

All Work is Problem Solving… "match capability of the people to the complexity of the role"

Admiral Rickover, US Navy

Elliott Jaques, Harvard

Management System: People

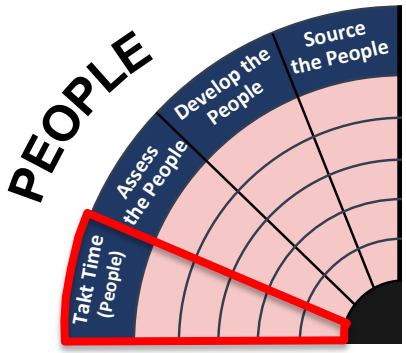


Rule Statement: Develop and deliver capable people "just in time" (right role, right qty, right time).

Ideal Condition

- Commitment to the role
- Problem solving capacity
- Knowledge and Abilities
- Positive Temperament (no minus T)

Management System: People



Takt Time (People): TTP's to set the pace of developing capable people to match the pace of demand (roles to be filled).

Pace of Developing Capable People

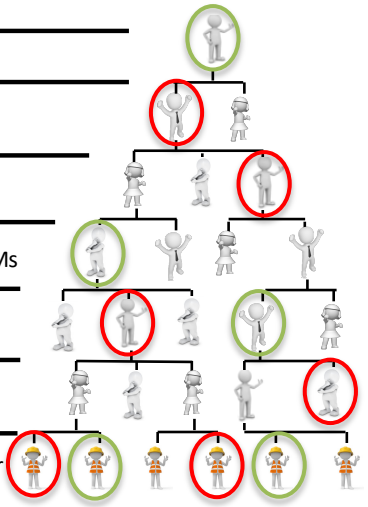
Must Match

Takt Time (People)

Pace of Demand for Structural Roles to be Filled

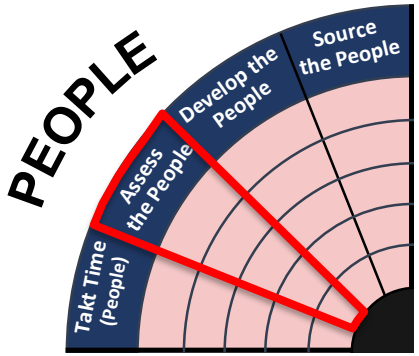
Roles Filled with Capable People

Level	Planning Horizon	Typical Roles
VII	20– 50 years	CEOs (Large)
VI	10– 20 years	EVPs of Groups; BD EVPs
V	5 – 10 years	BU Manager; Specialist VPs
IV	2 – 5 years	General Manager; Specialist GMs
III	1 – 2 years	Unit Manager; Unit Specialist
II	1 – 12 months	FLM; First line Specialist.
I	1 day – 3 months	Associates; First line supervisor



Source: Elliot Jaques, Requisite Organization, Tachii Ohno, Toyota Product System

Management System: People



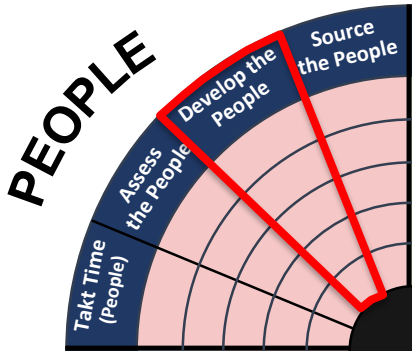
Assess the People: TTP's to assess the *applied capability* of people in their current role and *potential capability* for their future role.

Right People, Right Role, Right Time (Current & Future Role)

Traits (source)	**Skills** (develop)
Problem Solving Capacity	**Commitment to Role**
Temperament (person's nature)	**Knowledge / Abilities**

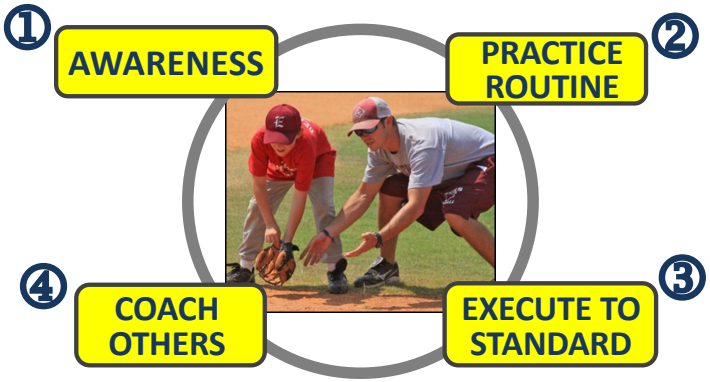
VALUES: Customer First, Respect for People, Continuous Improvement

Management System: People



Develop the People: TTP's to develop the *capability* of people for their current role (coaching) and for future roles (mentoring).

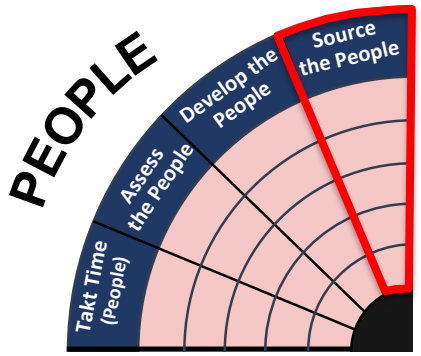
Managers Coach the People
(capability in current role)



MoR Mentor the People
(capability in future role)

MoR = Manager once Removed
Source: Elliot Jaques, Requisite Organization

Management System: People



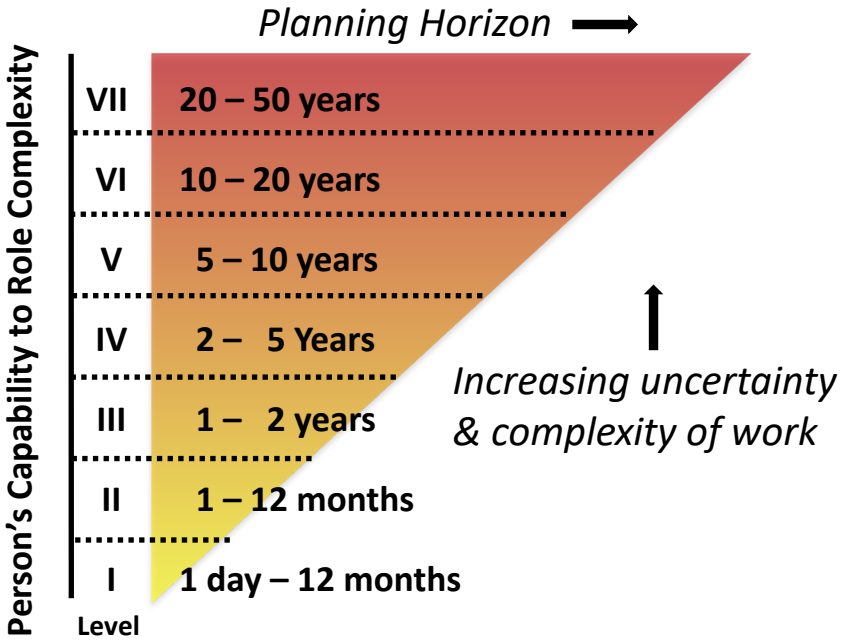
<u>Source the People</u>: TTP's to source people *capable* of being developed to fill current and future roles (outlined in "*role responsibility*").

Sourcing People with the "Potential Capability"

"Develop"
"Assess"

- Commitment to the role
- Problem solving capacity
- Knowledge and Abilities
- Positive Temperament (no minus T)

"Role Complexity"



Problem Solving Capabilities

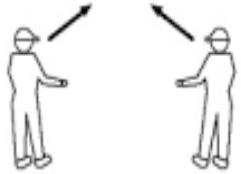
4 Capabilities to Accelerate Problem Solving

Management System 3.1

1. Design and Operate Work to See Problems

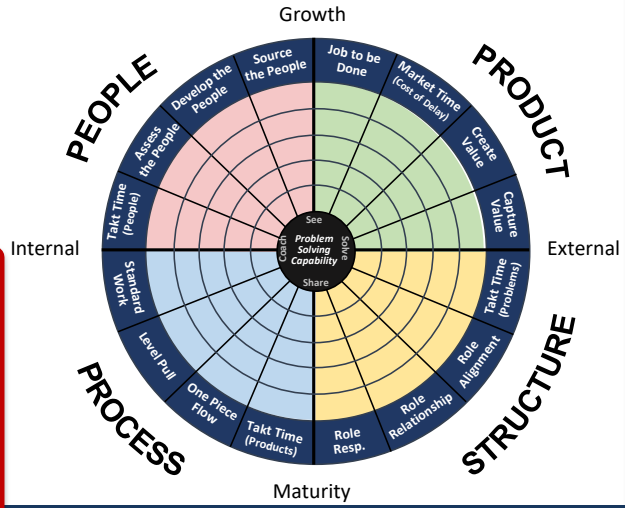
Target Condition vs. Current Condition

Target Condition



Coach Learner

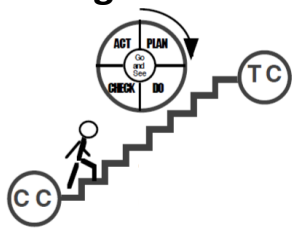
Ideal Condition of Work



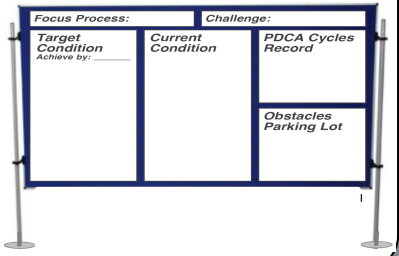
Customer First *Respect for People*
Continuous Improvement

2. Solve Problems Close in Person, Place and Time

Establish & Iterate to the Target Condition



Learner's Storyboard



3. Capture and Share Knowledge

4. Managers Coach their Team in Capabilities 1-3

Capability 1 (See Problems)

Design and operate work to see problems

Capability 1 (See Problems)

Design and Operate Work to See Problems

- The Responsibility of Managers
- The Management System is about making problems visible, because until we can see our problems we can not solve them
- What do we do with problems?

Celebrate and Fix Them

Capability 1 (See Problems)

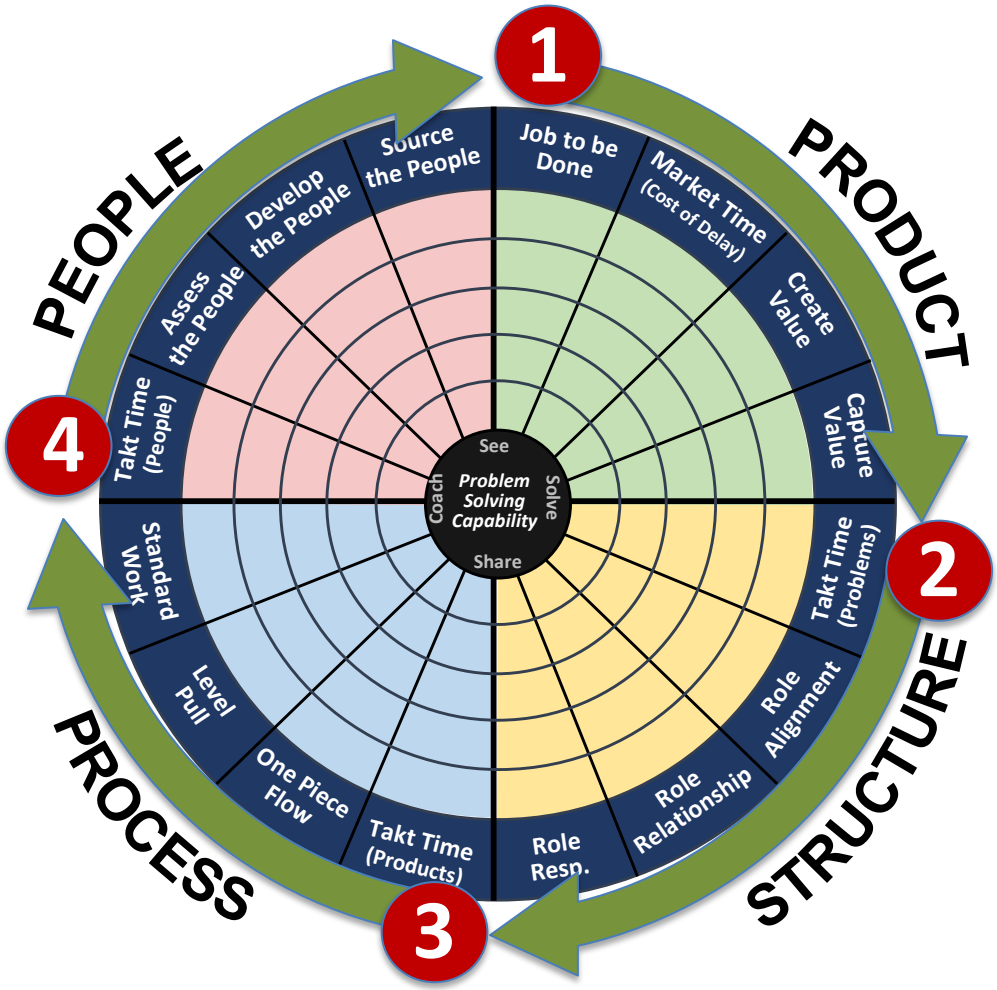
Design and Operate Work to See Problems

It is the Responsibility of every Manager in the organization (all all levels):

- To Design their operations and daily activities (creating a plan / expectation)
- To Operate as part of the normal business with built in tests that reveal problems

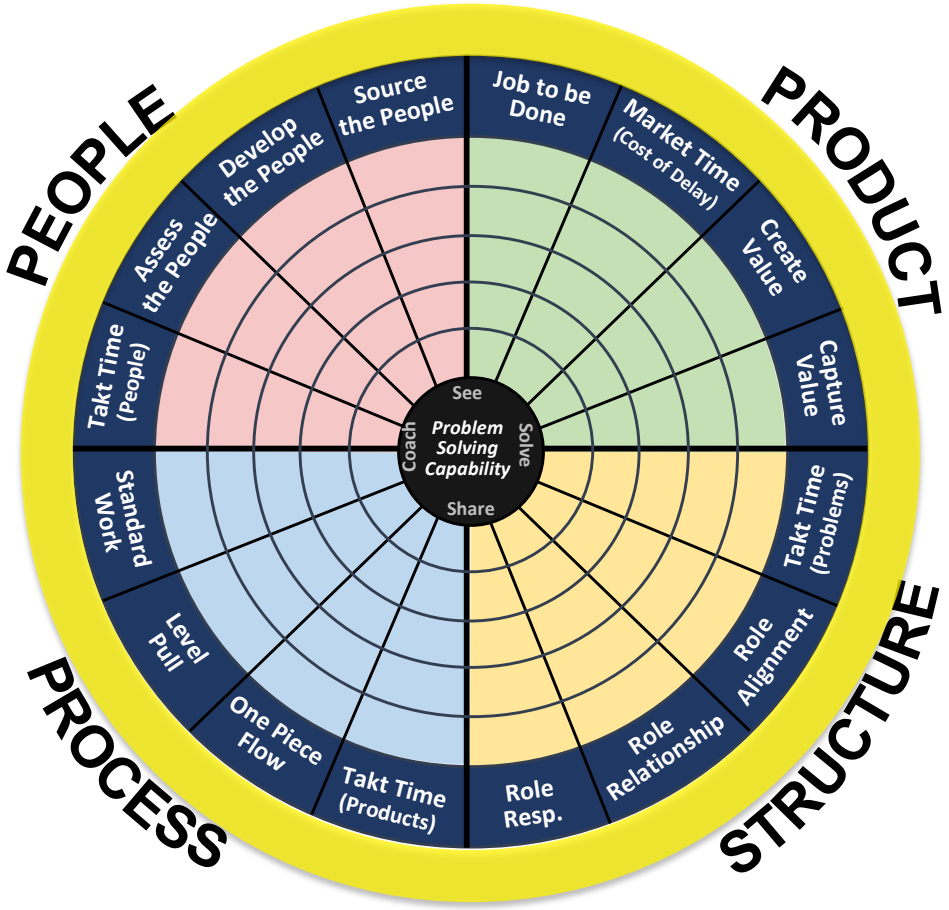
Capability 1 (See Problems)
Design Work to See Problems

1. **"Job to be done" & Product Fit for Job**
2. **"Structure follows [Product] Strategy"**
3. **Process capable to deliver the product**
4. **People capable of executing their role**



Capability 1 (See Problems)
Operate Work to See Problems

- **Built in Tests (detect & signal deviation from "Design")**
- **Tests are continuous notifications of problems**
- **Tests enables Capability 2 (Solve Problems)**

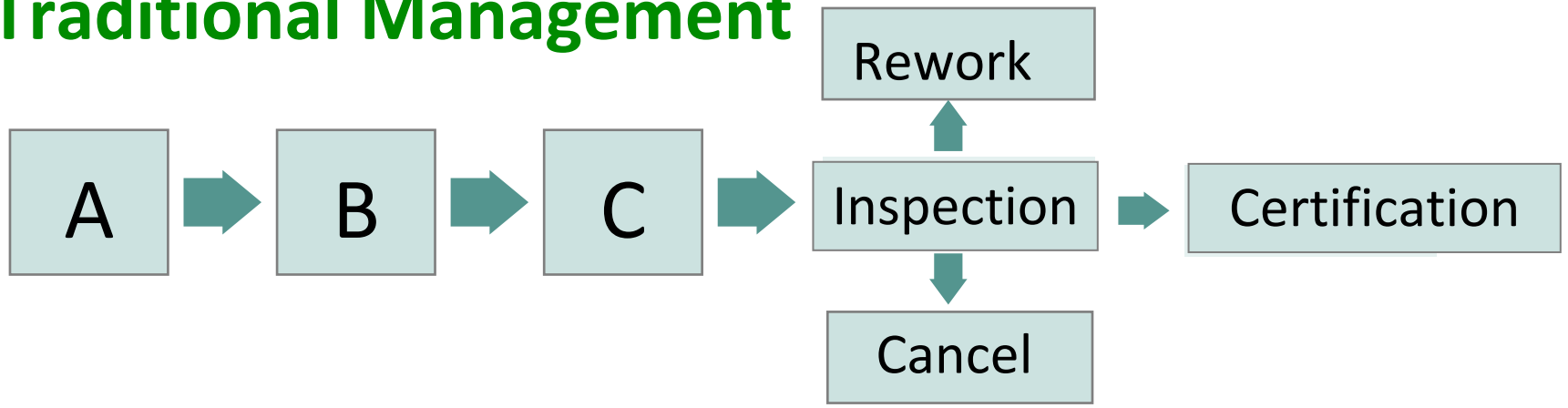


Capability 1: Requires Build In Quality

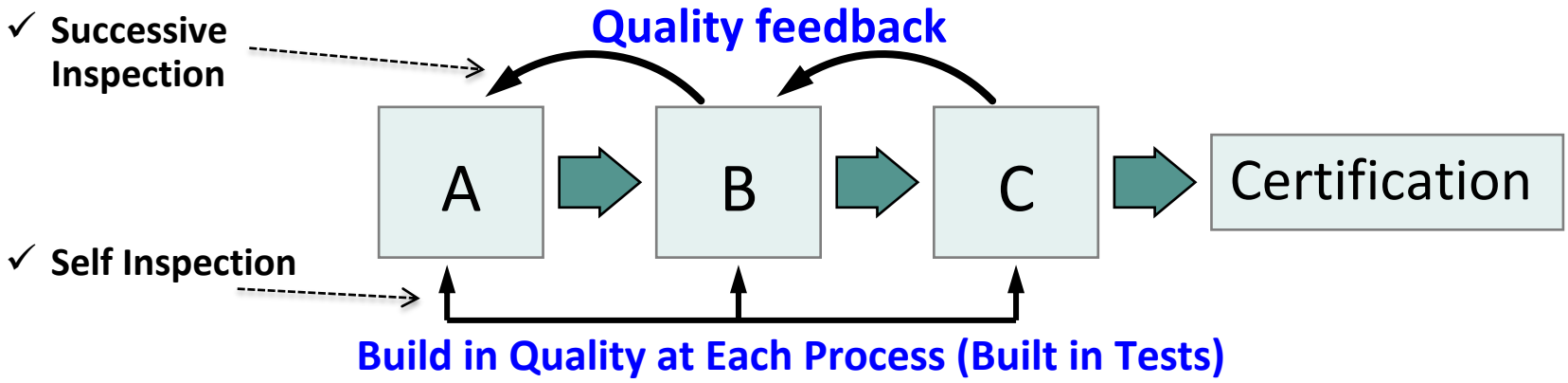
- ✓ **Built in Tests**
  - Detect & signal a deviation from the intended “design” during “operation”.
  - Automated and Human methods (e.g. self & successive inspection).
- ✓ **Stop and Notify of Problems**
  - Do not pass on poor quality
- ✓ **PDCA**
  - Determine the Root Cause
- ✓ **Error Proofing**
  - Preventative – fix it at the source

Capability 1: Build In Quality (e.g. Process)

Traditional Management



Management System



Capability 1: Build In Quality (e.g. Structure)

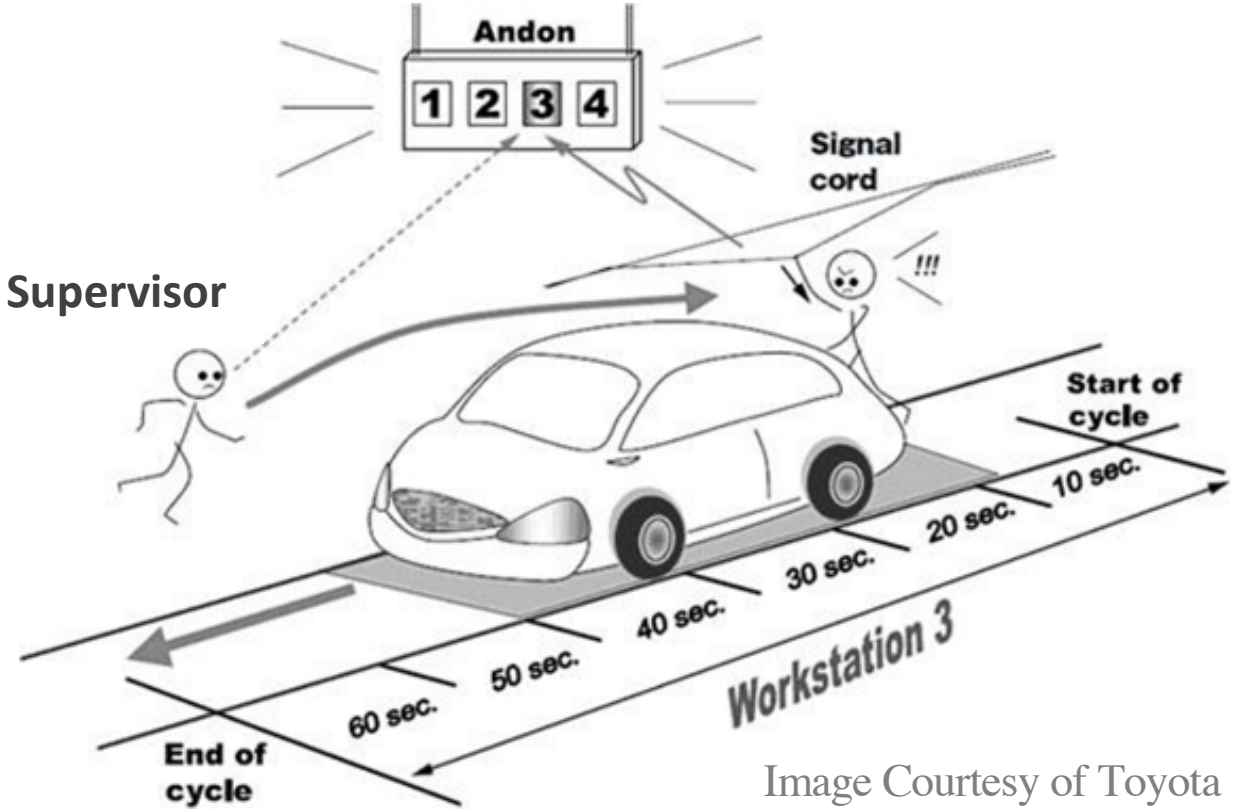
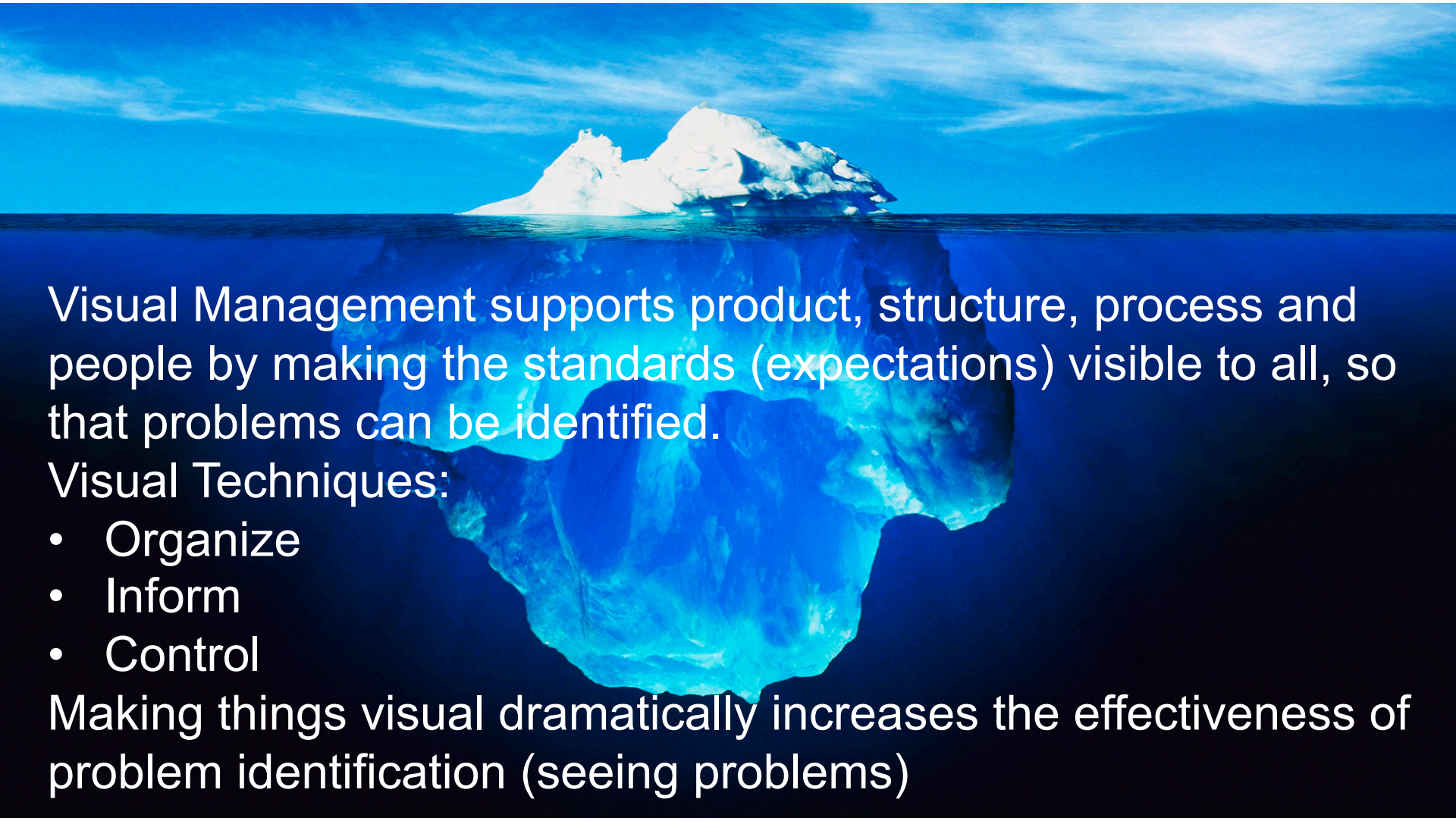


Image Courtesy of Toyota

Structured to See & Solve 1,000 problems per shift

Capability 1: Requires Visual Management



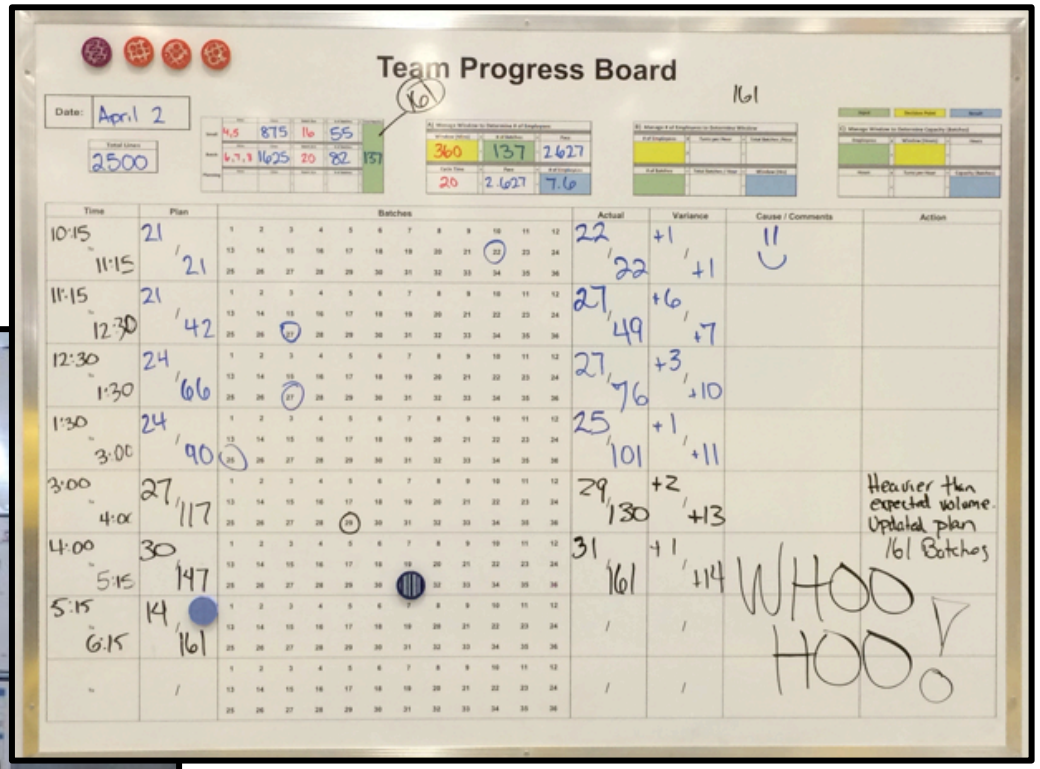
Visual Management supports product, structure, process and people by making the standards (expectations) visible to all, so that problems can be identified.

Visual Techniques:

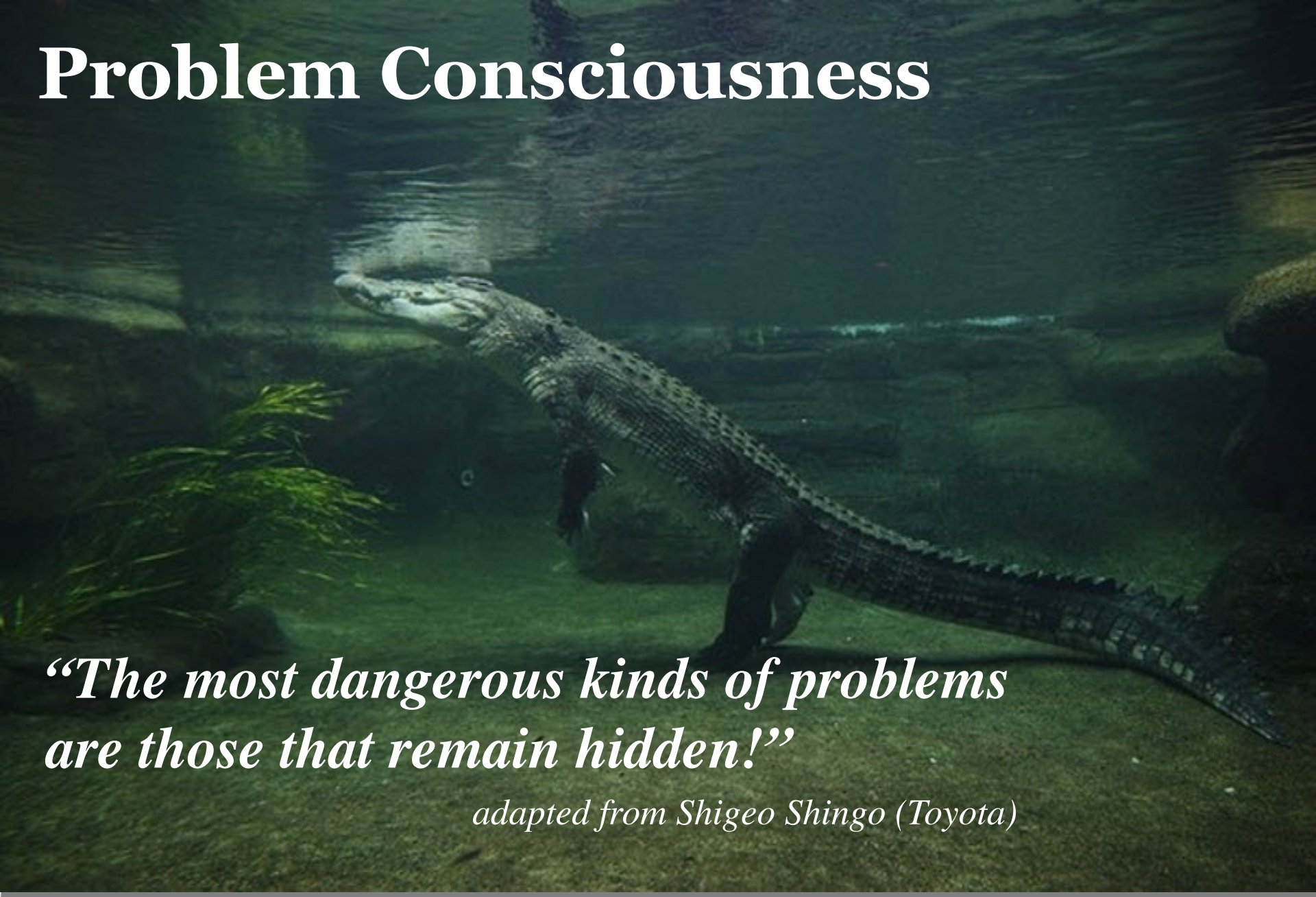
- Organize
- Inform
- Control

Making things visual dramatically increases the effectiveness of problem identification (seeing problems)

Examples of Visual Management (e.g. process)



Problem Consciousness



"The most dangerous kinds of problems are those that remain hidden!"

adapted from Shigeo Shingo (Toyota)

Problem Consciousness

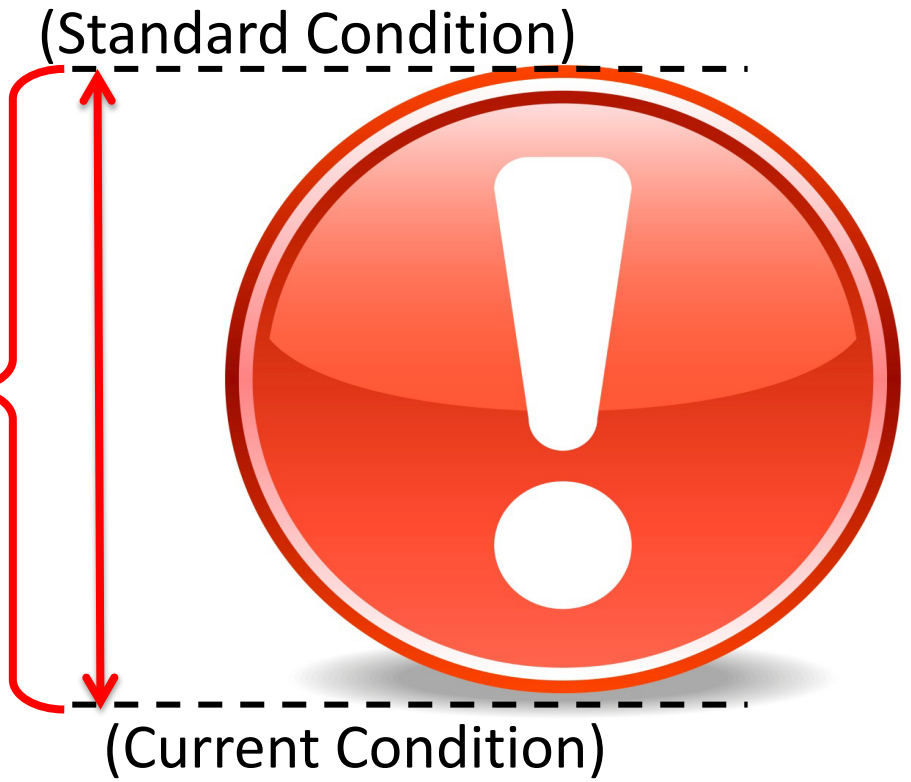
- ✓ **Should be** is defined by a standard
- ✓ A **standard** is an expectation of what should be happening
- ✓ **The Management System** sets the standard for managing an organization

Creating Problem Consciousness

"What **should** be happening?"
(Standard Condition)

GAP = Problem

"What is **actually** happening?"
(Current Condition)

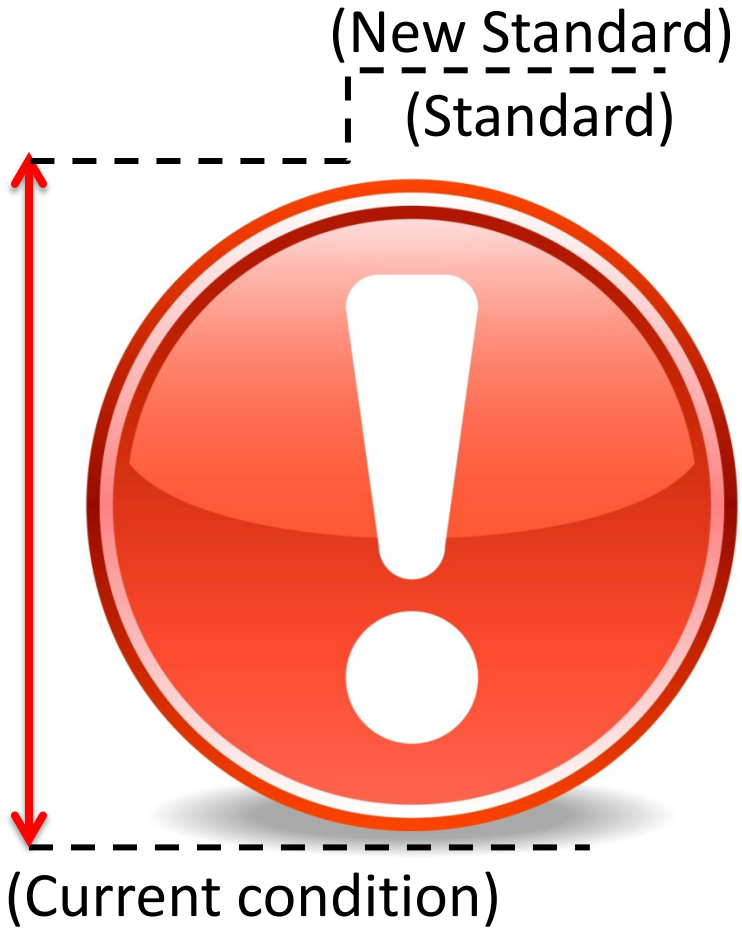


✓ Use the **MANAGEMENT SYSTEM** to establish the **STANDARDS** for how things should work. Then use **Built in Test** to monitor what is **ACTUALLY** happening to identify the **GAPS = PROBLEMS**.

Problem Consciousness

Problems = Opportunities

- ✓ To **set** a standard (when none exist – e.g. new product/process)
- ✓ To **reach** a new or established standard (e.g. new employees)
- ✓ To **maintain** an established standard (e.g. daily Andons)
- ✓ To **raise** to a higher standard (pursuing the "Ideal Condition")

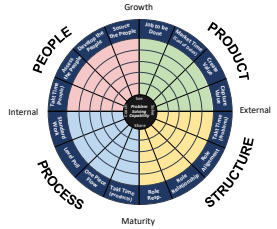


Now we have focus. If not, we're lost.

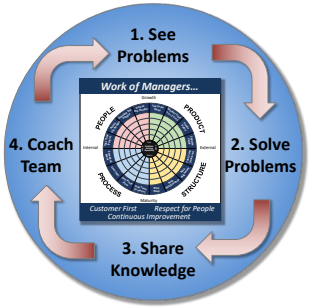
The Standards Drive Improvement

"Ideal Condition" creates tension for change

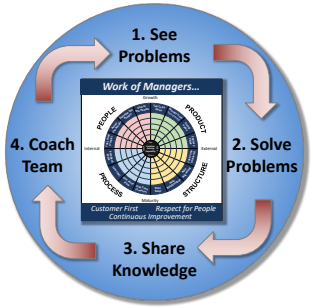
Ideal Condition



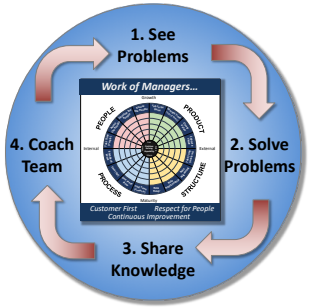
Target Condition



Standard Condition



Current Condition



"Win the Market"
- ***Perfect Product***
- ***Perfect Process***
- ***Perfect Structure***
- ***Perfect People***

Performance

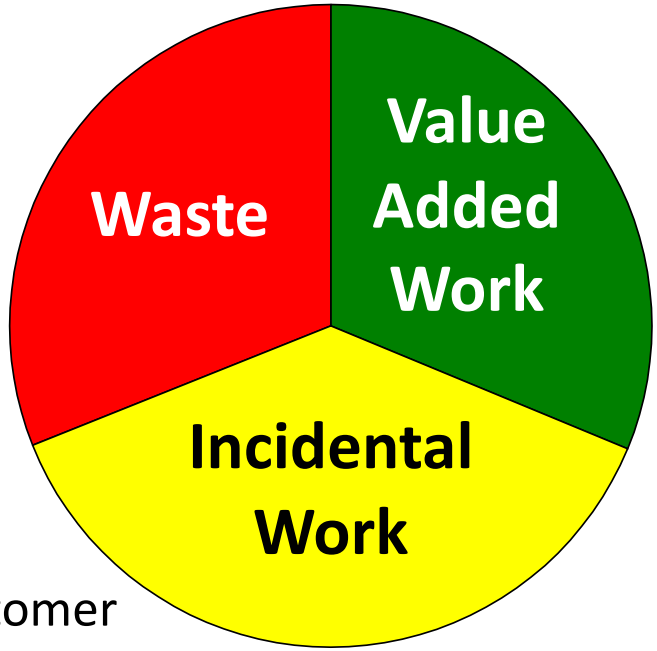
Time

Understanding Work

Value Add vs. Non-Value Add

- ✓ Work is broken into 3 categories
- ✓ Value Added – The customer determines what adds value
- ✓ Attack anything that does not add value for the customer

Waste –
Consuming resources, but adding no value

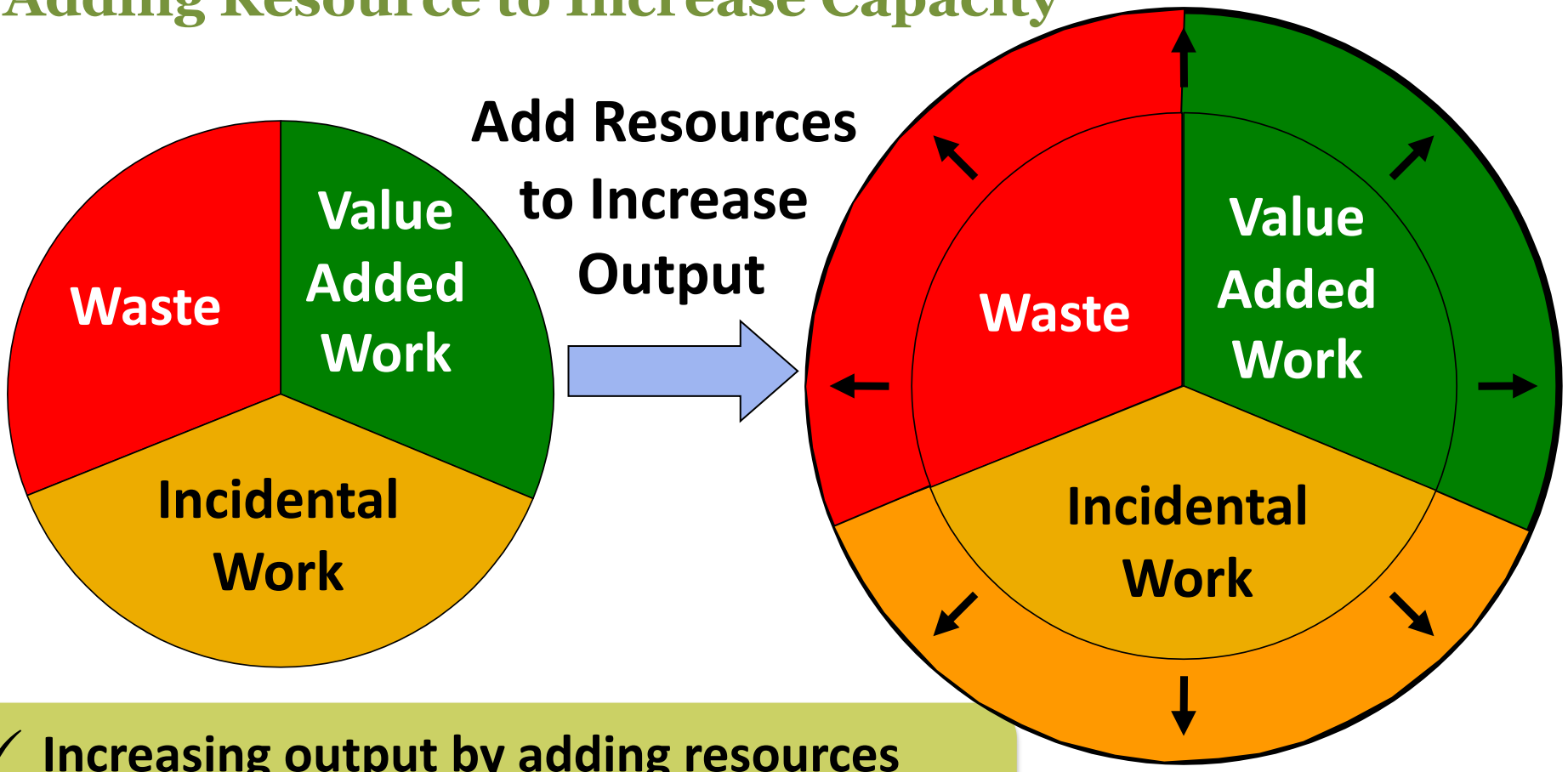


Value Added –
Adds value for the customer

Incidental Work –
Necessary for the current job, but does not add value to customer

Forcing More Work Through

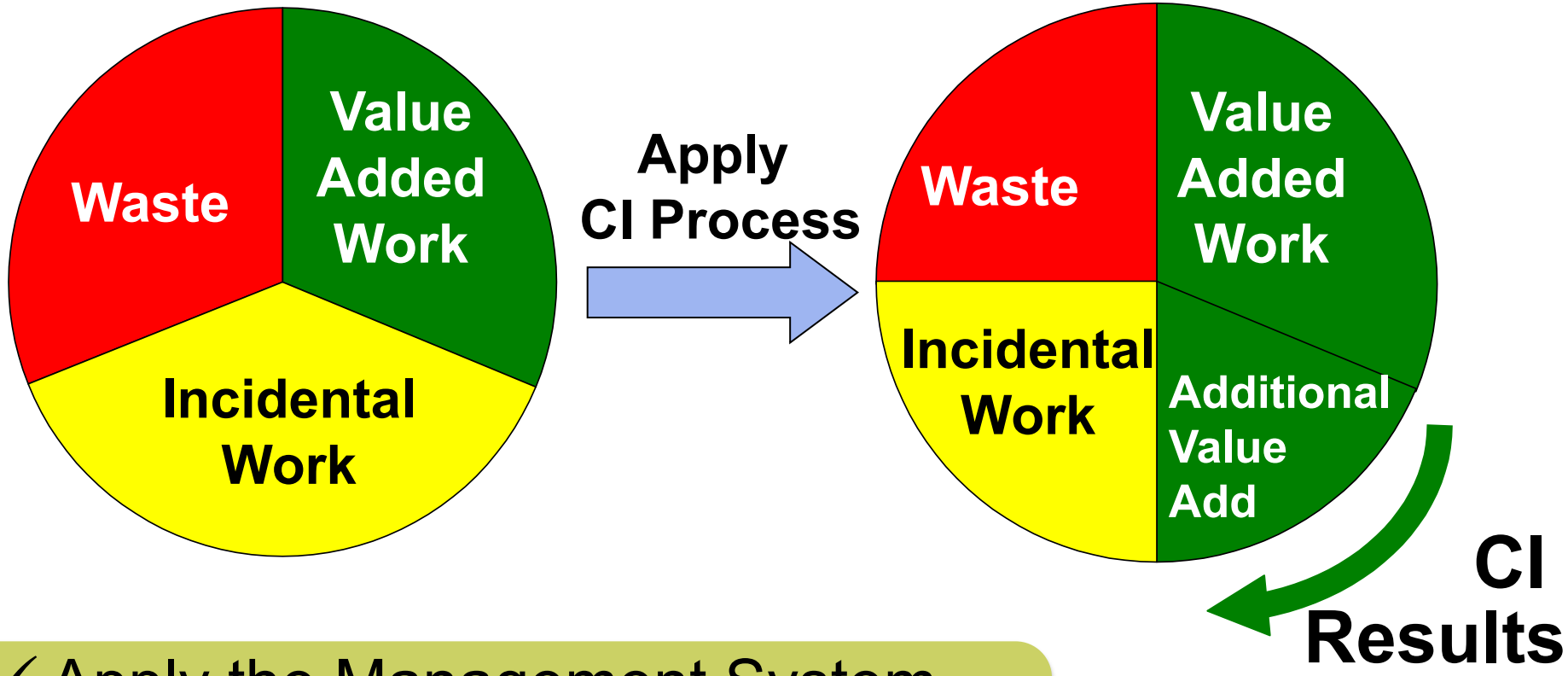
Adding Resource to Increase Capacity



- ✓ **Increasing output by adding resources (without addressing waste) causes waste and incidental work to grow**

Raise Efficiency through Continuous Improvement

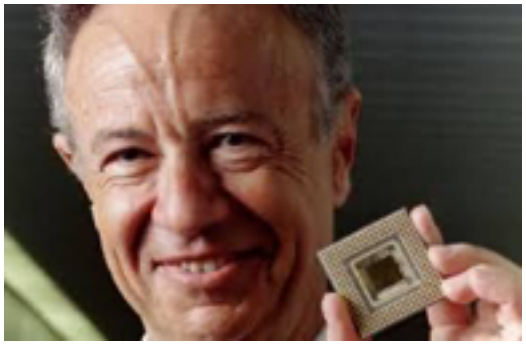
Remove Waste to Increase Value Added Time



- ✓ Apply the Management System standards to increase the portion of work that is value added

Understanding Work

"There are so many people working so hard and achieving so little value."



Andy Grove, Intel

- The "value added ratio (VAR)" is less than 5% in most traditionally managed organizations!

- 95% of resources are wasted during the "Design and Operation of Work" (product, process, structure, people)

The 7 Wastes of Product

Delayed

Switching

Unfit

Misunderstood
Job to be Done

Unfeasible

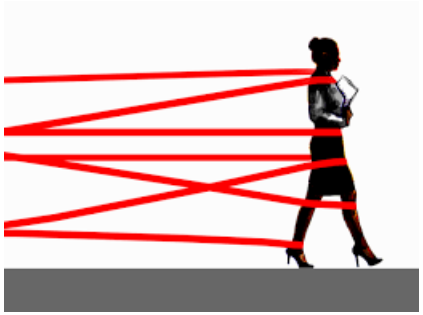
Unprofitable

Over-Engineered

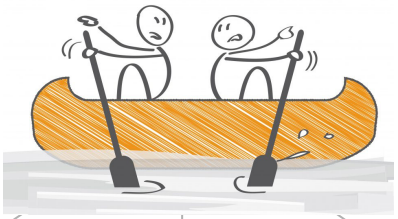
The 7 wastes of Structure

Lack of Accountability

Waste of Human Potential



Overly Complicated



Mis-Alignment

Ineffective Decision Making

Mis-Communication

Slow Problem Solving

The 7 Wastes of Process

Inventory

Waiting

Motion

Over-Production

Over-Processing

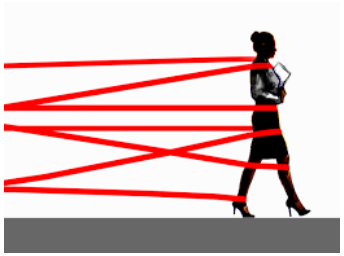
Rework / Defect

Transport

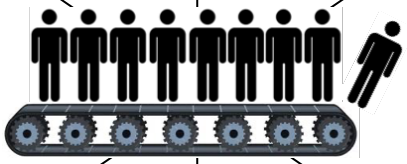
The 7 Wastes of the "People Process"

Inventory

Waste of Human Potential

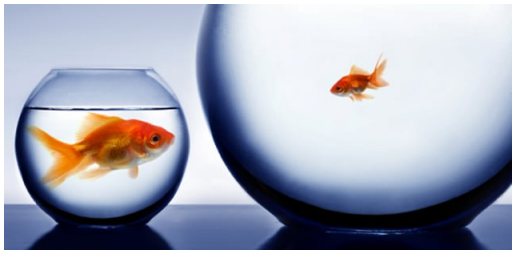


Faulty methods



Over-Production

Over-Developed



Out of Sequence

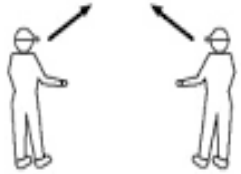
Role Mismatch

Management System 3.1

1. Design and Operate Work to See Problems

Target Condition vs. Current Condition

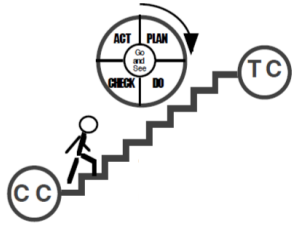
Target Condition



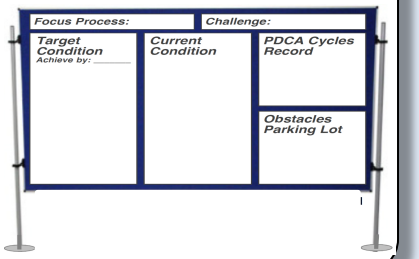
Coach Learner

2. Solve Problems Close in Person, Place and Time

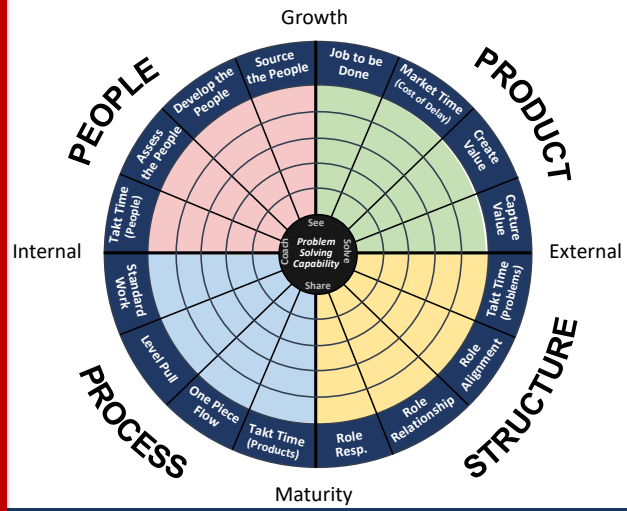
Establish & Iterate to the Target Condition



Learner's Storyboard



Ideal Condition of Work



Customer First *Respect for People*
Continuous Improvement

4. Managers Coach their Team in Capabilities 1-3

3. Capture and Share Knowledge

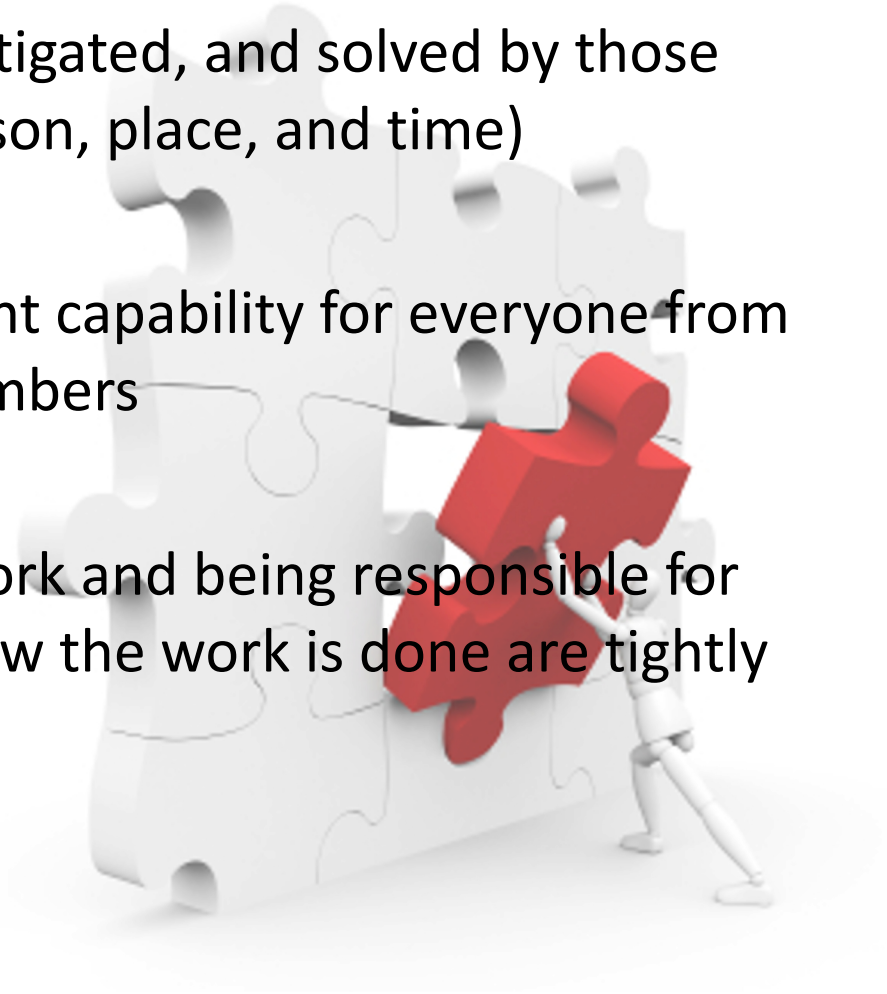
Capability 2 (Solve Problems)

Solve problems close in person, place, and time

Capability 2

Solve Problems Close in Person, Place and Time

- Problems are contained, investigated, and solved by those closest to the issue (i.e. in person, place, and time)
- Problem Solving is an important capability for everyone from top management to team members
- Being responsible for doing work and being responsible for problem solving/improving how the work is done are tightly intertwined



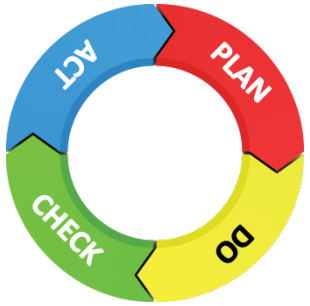
Problem Solving Fundamentals

- Problem solving is made in accordance with the scientific method
- One standardized problem solving process allows for increased sharing and collaboration
- Problem solving skills are built by solving problems

7-step Problem Solving Process

Capability 2: Solve problems close in person, place, and time

1. Define the Problem
2. Grasp the Current Condition (identity root causes)
3. Plan (Target Condition)
4. Do
5. Check
6. Act
7. Conclusions and Lessons Learned



Fact-Based Decisions

Management System drives Decision-making based on facts

- Opinions are not facts!
- You can not make fact-based decisions without facts!
- You can not collect facts on what you have not measured!
- You can not measure what you can not operationally define!
- You can not define what you do not understand!
- You can not fully understand what you have not clearly seen!
- Go Look, Go See

"3 Step Design Walk" "4 Step Improvement Sprint"

Manager: [responsible for coaching the 7 step process]
Team: [direct reports, peers, who participate in solving the problem]

Theme of Improvement Effort

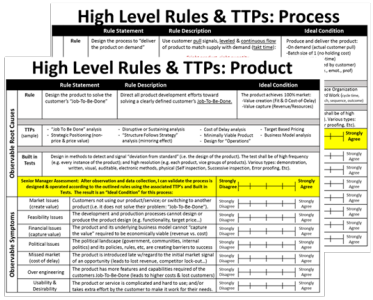
Step 1 thru Step 7	Final Rpt Out
3/15/2016 -6/11/2016	6/18/2016

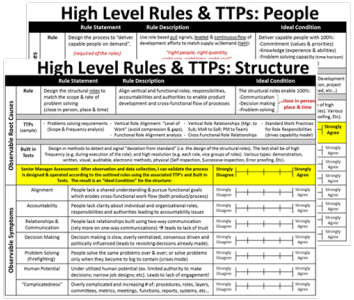
1. Define the Problem — P D C A

- Have you identified the "deviation from standard (i.e. the gap)"?
  - Current Condition vs. Standard Condition
  - Current Condition vs. Target Condition
  - Current Condition vs. Ideal Condition
- How did you measure the gap?
- How can you make the gap visual?
- What is the impact of this gap (as it relates to safety, quality, cost, customer)?
- What is the urgency of closing this gap (ex. "cost of delay" analysis - helps with prioritizing)?
- **KEY: How can you engage both the "Rider & Elephant" in defining your problem?**

2. Grasp the Current Condition — P D C A

- What is causing the GAP in Step 1? **GO LOOK, GO SEE**! Conduct Data Collection, Measurement & Analysis. Use diagrammatic representations, descriptions and/or measures that describes current condition





Intent: You are telling a story of how work is getting done today and what may be contributing to the "Problem" (i.e. gap)

3. Identify the Root Cause(s) — P D C A

- After Grasping the Current Condition, have you used a fishbone, tree diagram and/or 5 Why's Analysis to drill down deeper and determine the "root cause(s)" of the problem (i.e. what is causing the gap from Step 1).?
- Have you performed a more detailed investigation of the operations if necessary to validate the team's "root cause" conclusion(s)?
- Remember, a sound 5 Why's Analysis should flow downward (by asking WHY between causes) as well as upward (by inserting THEREFORE between causes).
- **KEY INSIGHT**: Most Root Causes will be linked to the lack of "Design Rules & TTPs" for Product, Process, Structure and/or People (ex. lack of small batch, lack of standard work, lack of pull signals, limited WIP control, lack of Mgr. to Sub roles in place, etc.)

4. Develop Countermeasures (Target Condition) — P D C A

- After Identifying the Root Cause(s), did you brainstorm potential countermeasures that will eliminate the root cause(s)? → which will close the gap in Step 1 (or make progress toward closing it).
- **KEY INSIGHT: most countermeasures will be based on changing the design of the product, process, structure and/or people.**
  - Specifically, we are taking action to move us toward the "ideal condition" based on the Design Rules & TTPs (ex. establish better WIP control, Mgr. to Sub. Role relationship, etc…).
- What is your prediction about what will happen? Have you generated a diagrammatic representation of the target condition showing how the target condition will work (product, process, structure, people)?
- How will the effects of the countermeasures be measured (i.e. current condition vs. target condition). For example improvements in lead-time, cycle times, batch sizes, WIP control, etc)? List in Step 6.
- Do you think your countermeasure are the most practical & effective?

Intent: You are telling the story of how work will get done in the future after you implement your countermeasures (i.e. to close the gap in Step 1)

5. Implement (Do) Countermeasures — P D C A

- What is your plan to carry out the countermeasures? (Did you identify who, what , where, when, and how?)
- Can you model it using a prototype with your customers to learn ("prototypes are worth a thousand pictures")?
- Have you communicated key changes with all the affected work area(s)?
- Can you stagger the implementation in order to see changes associated specifically with each countermeasure (Note actual dates of each implementation and capture observations as to the impact of the action)?
- What data collection methods are you using to analyze the plan as it is carried out?
- What is the interval in which you will be checking on progress?
- Are you on schedule? Are you documenting any changes in addition to or omitted from the original plan. How about the plan, did it play out as expected?

6. Check (plan vs actual) — PDCA

- What are the results compared to the original prediction (measures, current, target, actual)?
- What surprised you (any gaps, plus or minus)?
- What did you learn from the gaps in your prediction?
- What could you have done different?
- What does the team, customers, and stakeholders think?

7. Act on learnings — PDCA

- If targets ARE achieved:
  - Deploy and expand countermeasures;
  - Standardize, train and sustain.
  - Harvest the gains (e.g. redeploy FTE, equipment, etc, from improvements made).
- If targets are NOT achieved: Develop necessary second countermeasure by returning to steps 4– 6.
- Formally document & share lessons learned from problem solving (What went well? What didn't go well? Can what you learned be applied elsewhere?)

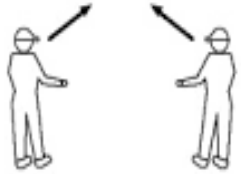
Problem Space Solution Space

Management System 3.1

1. Design and Operate Work to See Problems

Target Condition vs. Current Condition

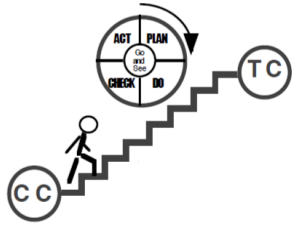
Target Condition



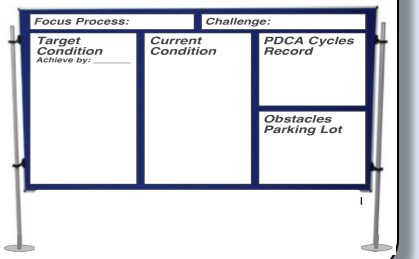
Coach Learner

2. Solve Problems Close in Person, Place and Time

Establish & Iterate to the Target Condition



Learner's Storyboard



Ideal Condition of Work

Customer First *Respect for People*
Continuous Improvement

3. Capture and Share Knowledge

4. Managers Coach their Team in Capabilities 1-3

Capability 3 (Share Knowledge)
Capture and share knowledge

Capability 3: Capture & Share Knowledge

Knowledge is created from solving problems

- Knowledge is an asset and as it is accumulated it compounds like interest, becoming an enormous advantage

Capability 3: Three Step Knowledge Flow

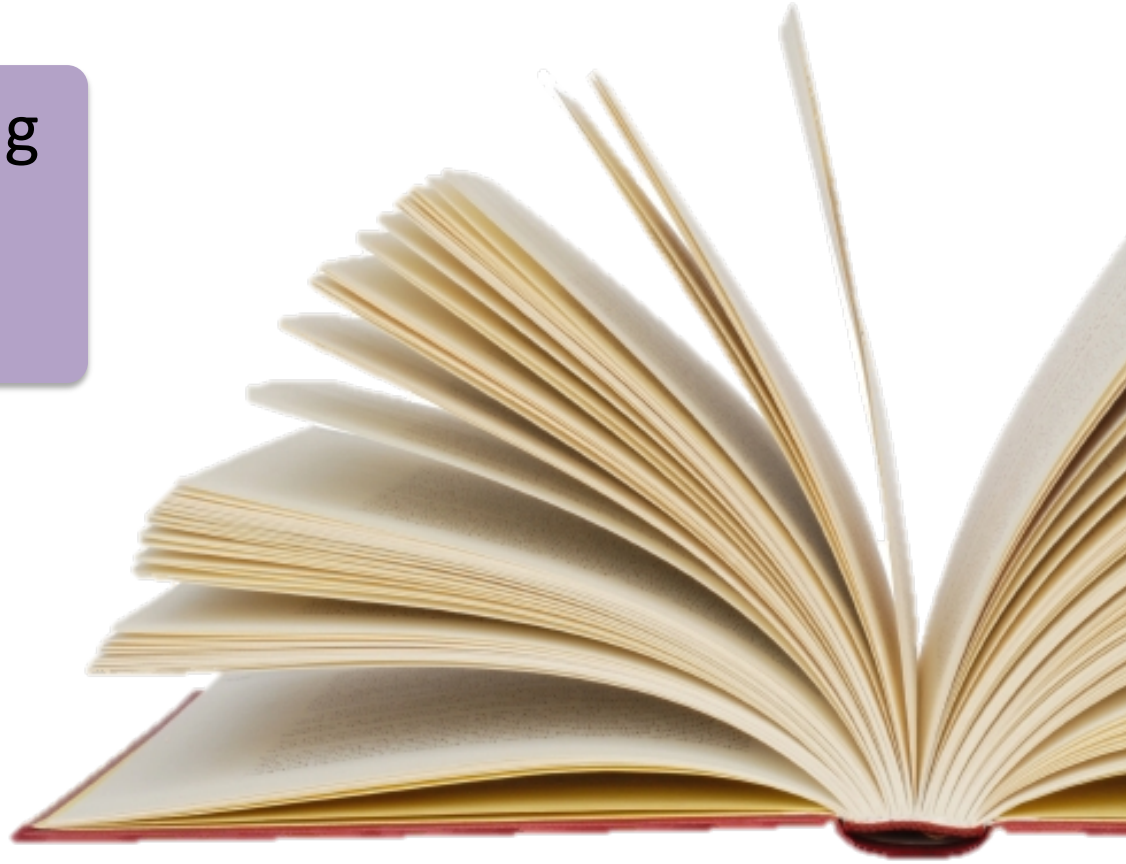
Capture → Validate → Share (CVS)

- Capture knowledge from solving problems (C2)
- Validate knowledge and document best practice
- Share within organization & neighboring organizations

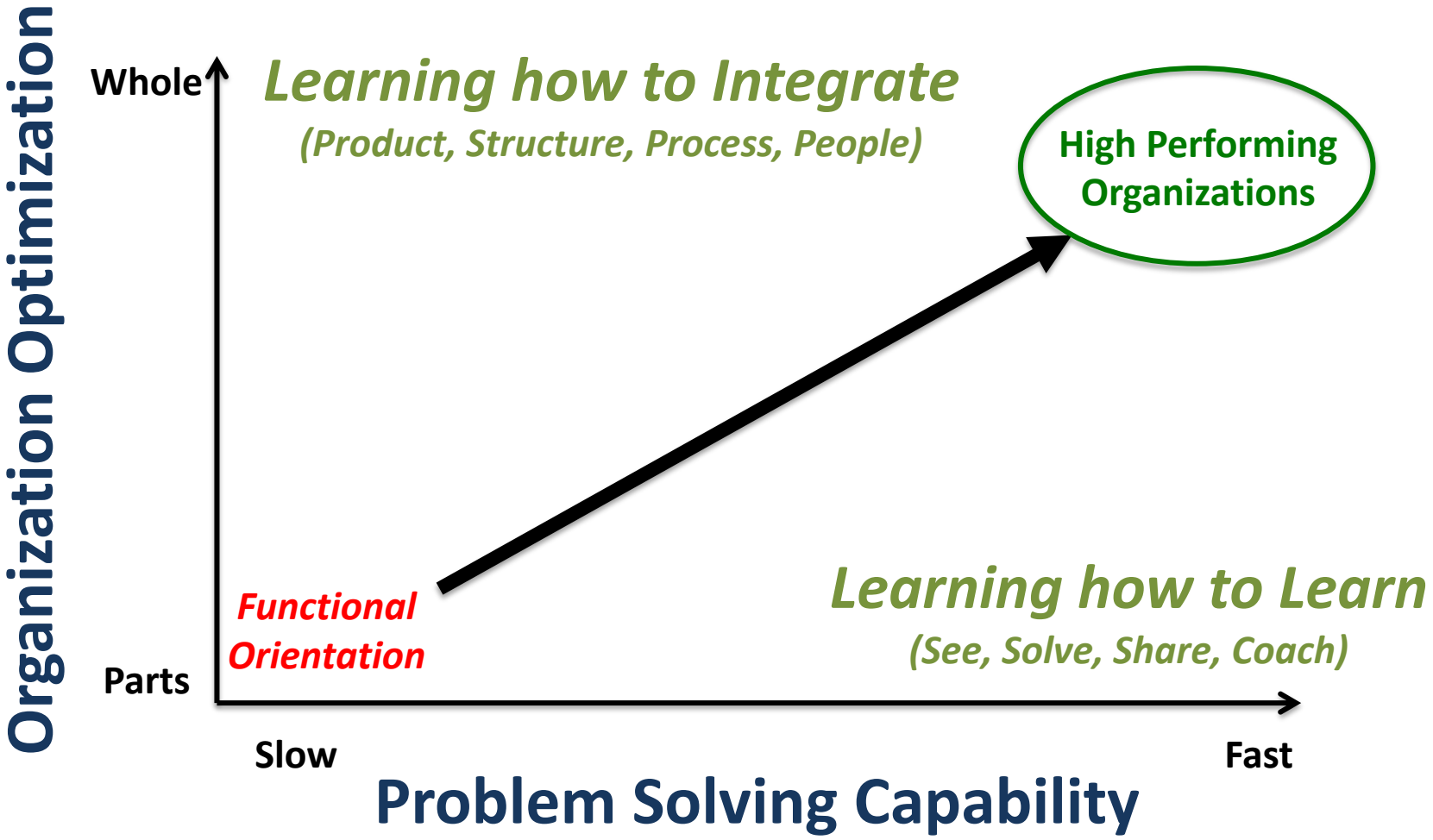
Capability 3: Capture & Share Knowledge

Learning is improving through better knowledge

- Knowledge and learning go hand-in-hand with problem solving



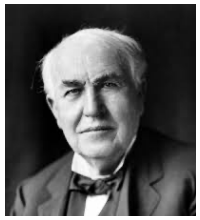
Capability 3: Two Dimensions of Learning



Source: Chris Argyris, HBS; Steven J. Spear, MIT.

Capability 3: Capture & Share Knowledge

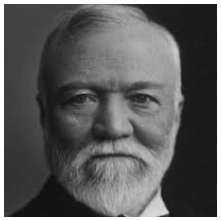
Accumulated learnings over 140 years


Thomas Edison


Clayton Christenson


Oprah Winfrey


Steve Jobs


Andrew Carnegie


Michael Porter


Alfred P Sloan

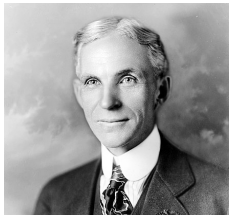

Florence Nightingale


Taiichi Ohno

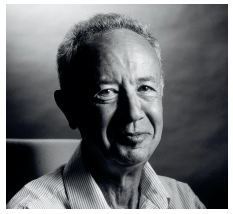

Steven J. Spear


Hyman Rickover


Marie Curie

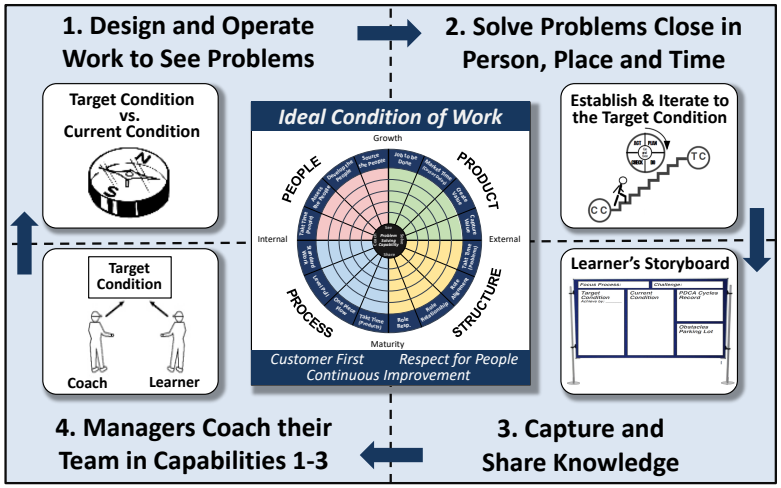

Henry Ford


Elliot Jaques


Andy Grove


Martin Luther King

Management System



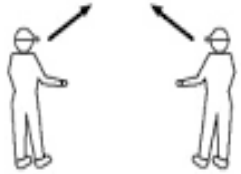
The Rules & TTP's are the cumulative learnings of designing, operating and improving work

Management System 3.1

1. Design and Operate Work to See Problems

Target Condition vs. Current Condition

Target Condition



Coach Learner

2. Solve Problems Close in Person, Place and Time

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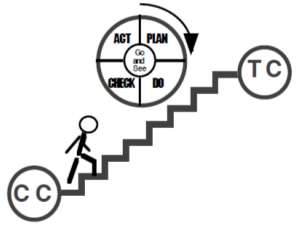
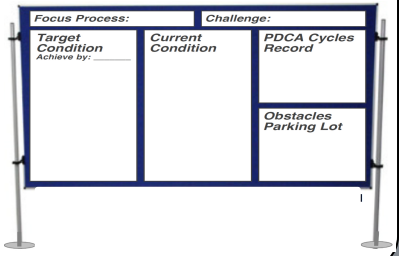
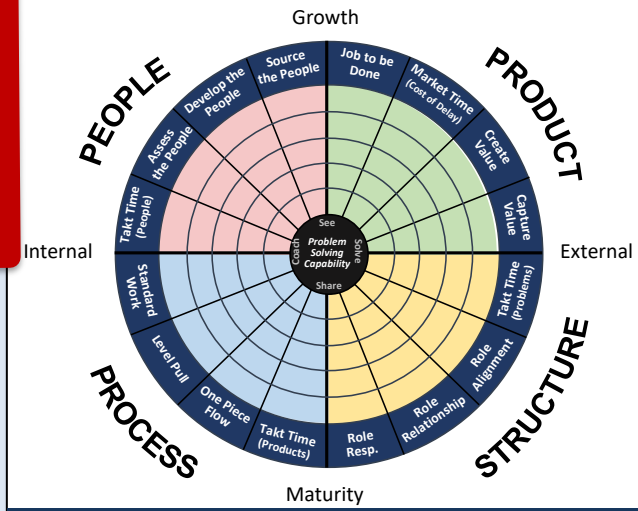


Learner's Storyboard



Ideal Condition of Work



Customer First *Respect for People*
Continuous Improvement

3. Capture and Share Knowledge

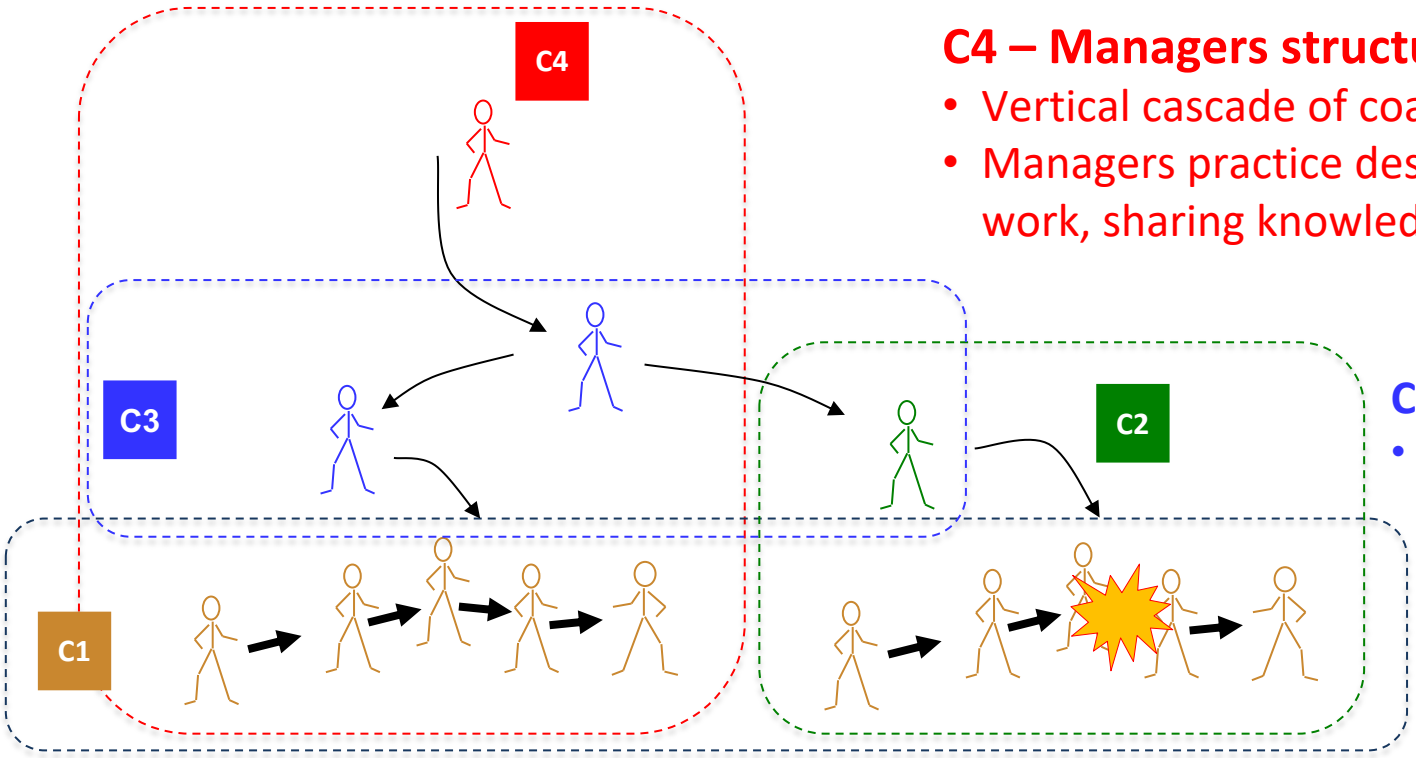
4. Managers Coach their Team in Capabilities 1-3

Capability 4 (Managers Coach)

Managers structure & coach their team (1-3)

Develop a work force that is engaged and enabled to solve problems and continuously improve.

Managers Structure for (C1-C3)



C4 – Managers structure & coach team

- Vertical cascade of coaching (level by level).
- Managers practice designing & improving work, sharing knowledge, developing team.

C3 – Share Knowledge

- New knowledge created from problem solving is shared to create cumulative learning.

C1 – See Problems

- Highly specified work designs capture best understanding of how to create value (product, process, structure, people)
- Built-in-tests indicate gaps between what is actually happening and what was predicted to happen ("deviation from standard").

C2 – Solve Problems

- Problems are solved using PDCA close in person, place, and time to the occurrence.

Managers Coach Team (C1-C3)

"Management is the most noble of professions if it's practiced well"

Clayton Christenson, HBS

① **AWARENESS**

"Management Matters" (Management System)

② **PRACTICE ROUTINE**

Standard routines to practice daily

- 3-Step Design Walk (C1)
- 4-Step Improvement Sprint (C2)
- 3-Step Knowledge Flow (C3)
- 5-Step Coaching Cycle (C4)

③ **EXECUTE TO STANDARD**

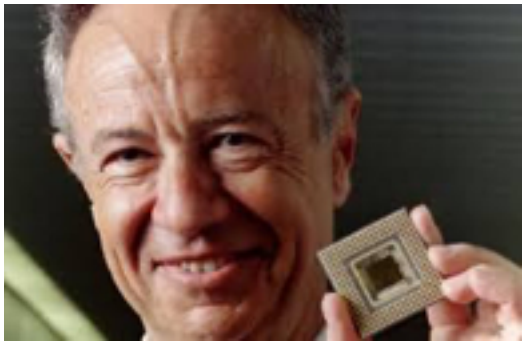
Corrective feedback (by the manager's manager) to ensure execution to standard

④ **COACH OTHERS**

Coach others every day to pursue the Ideal Condition

Managers Coach Team (C1-C3)

"Meetings are the medium of managerial work"



Andy Grove, Intel

5 Step Coaching Cycle

1. What is your Target Condition?
2. What is your Current Condition?
3. What is preventing you from closing the gap (obstacles / root causes)?
4. What are your next steps (plan)?
5. When can we go & see what you learned (check/act)?

Source: Toyota Kata, Mike Rother

How to Shape a Culture

(Meeting by Meeting; Consciously or Unconsciously)

- What **managers** coach and role model on a daily basis
- What **managers** pay attention to, measure and control on a regular basis
- How **managers** prioritize and allocate resources
- How **managers** react to critical incidents and crises
- How **managers** allocate rewards and status
- How **managers** recruit, select and promote

Capability 4: Managers Coach (Teach versus Tell)

Give a man a fish and you feed him for a day.
Teach a man to fish and you feed him for a lifetime. -- Proverb
Give your team a solution they improve once.
Teach your team to problem solve and they can improve forever.

"Training is the boss's job"…Andy Grove

Summary

Management Matters

What is an Organization?

A structure of roles, occupied by people, who interact in processes to deliver products valued by customers.

Source: Based on research from Steven J. Spears, Clayton Christenson, Elliot Jaques

"Every Organization is Perfectly Designed to Get the Results it Gets"

Good vs. Bad Management:

- 25% faster annual growth
- 75% higher productivity
- 10-fold increase in patents

W. Edwards Deming

Source: Based on research from Harvard, MIT and Stanford