



Institute for
Healthcare
Improvement

International Forum on Quality and
Safety in Healthcare - Asia

Red Beads: The Foundations of Modern Improvement

*Donald M. Berwick, MD, MPP
President Emeritus and Senior Fellow
Institute for Healthcare Improvement*

Singapore
27 September 2016



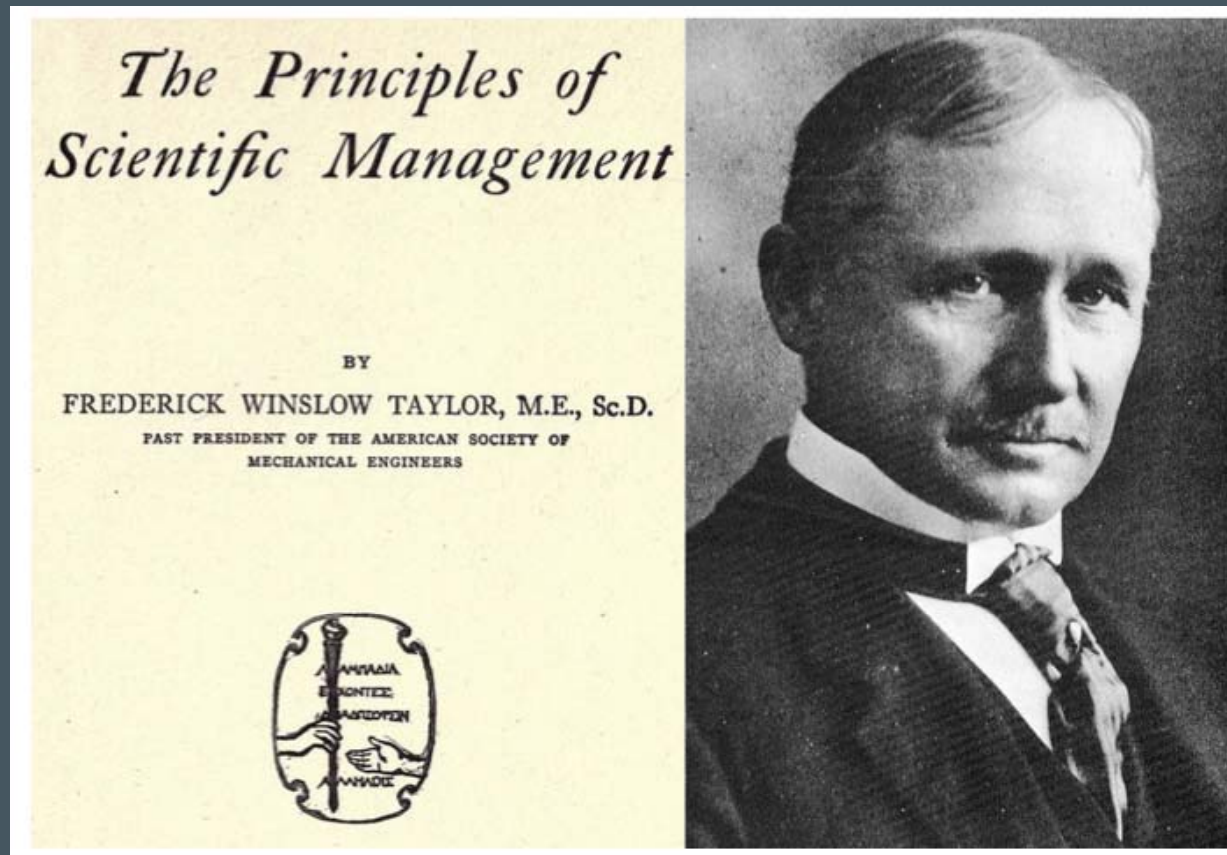
The Red Bead Game



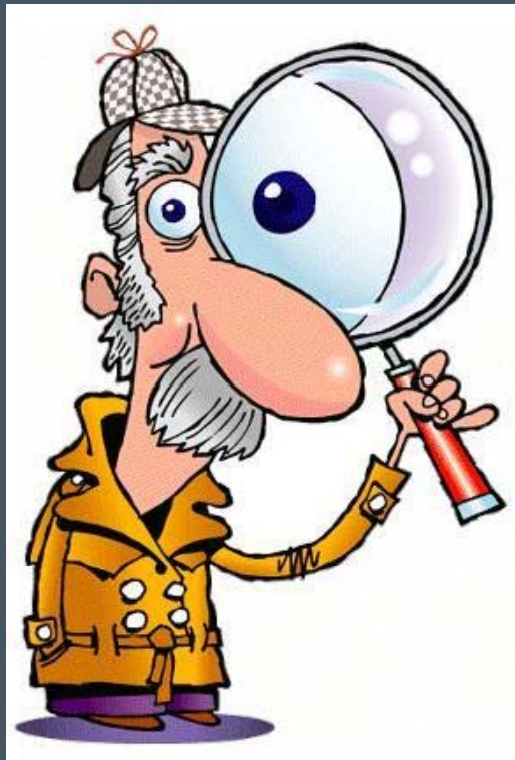
Henry Ford (1863-1947) – and Mass Production



Frederick Winslow Taylor (1856-1915)



Inspectors

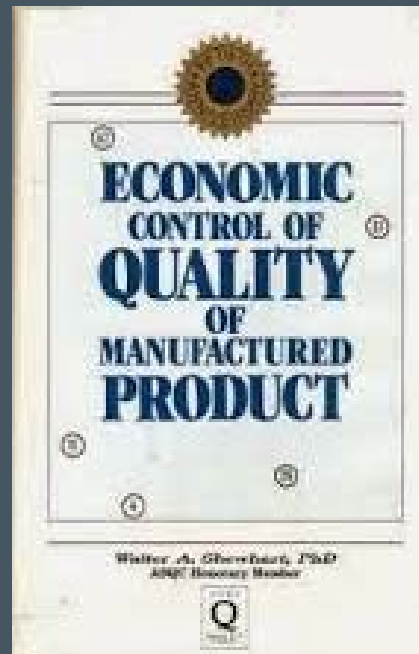


“As the Bell System grew in size,...(it) piled on more inspectors to oversee field installation of the complicated new switches, but often wound up with more inspectors on the job than installers.”

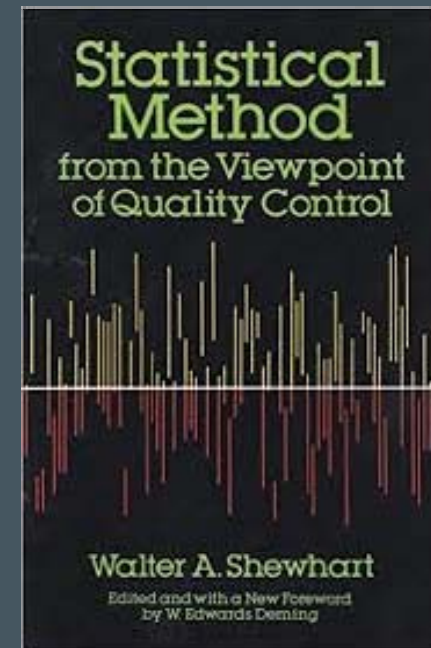
John Butman: Juran – A Lifetime of Influence



Walter A. Shewhart (1891-1967)



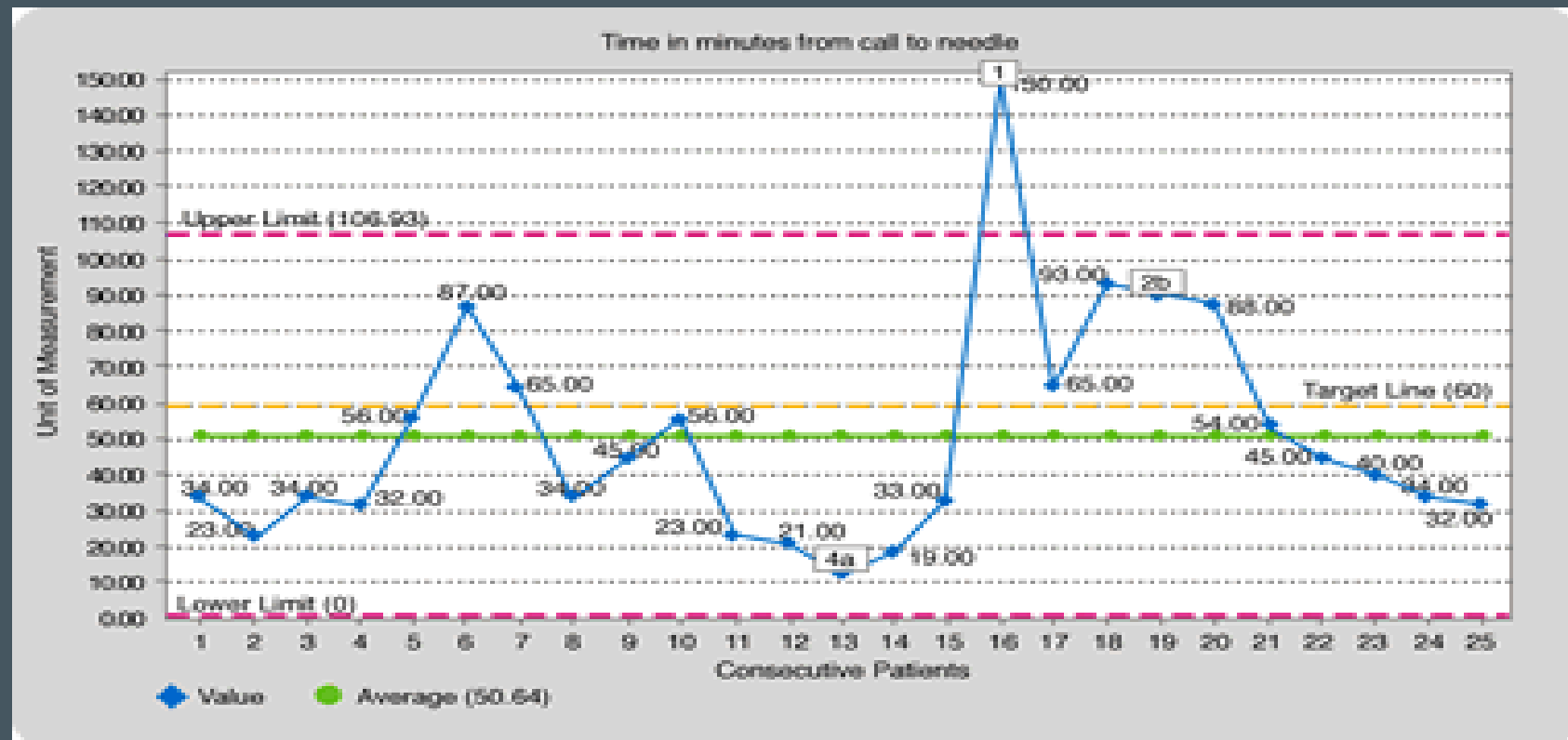
1931



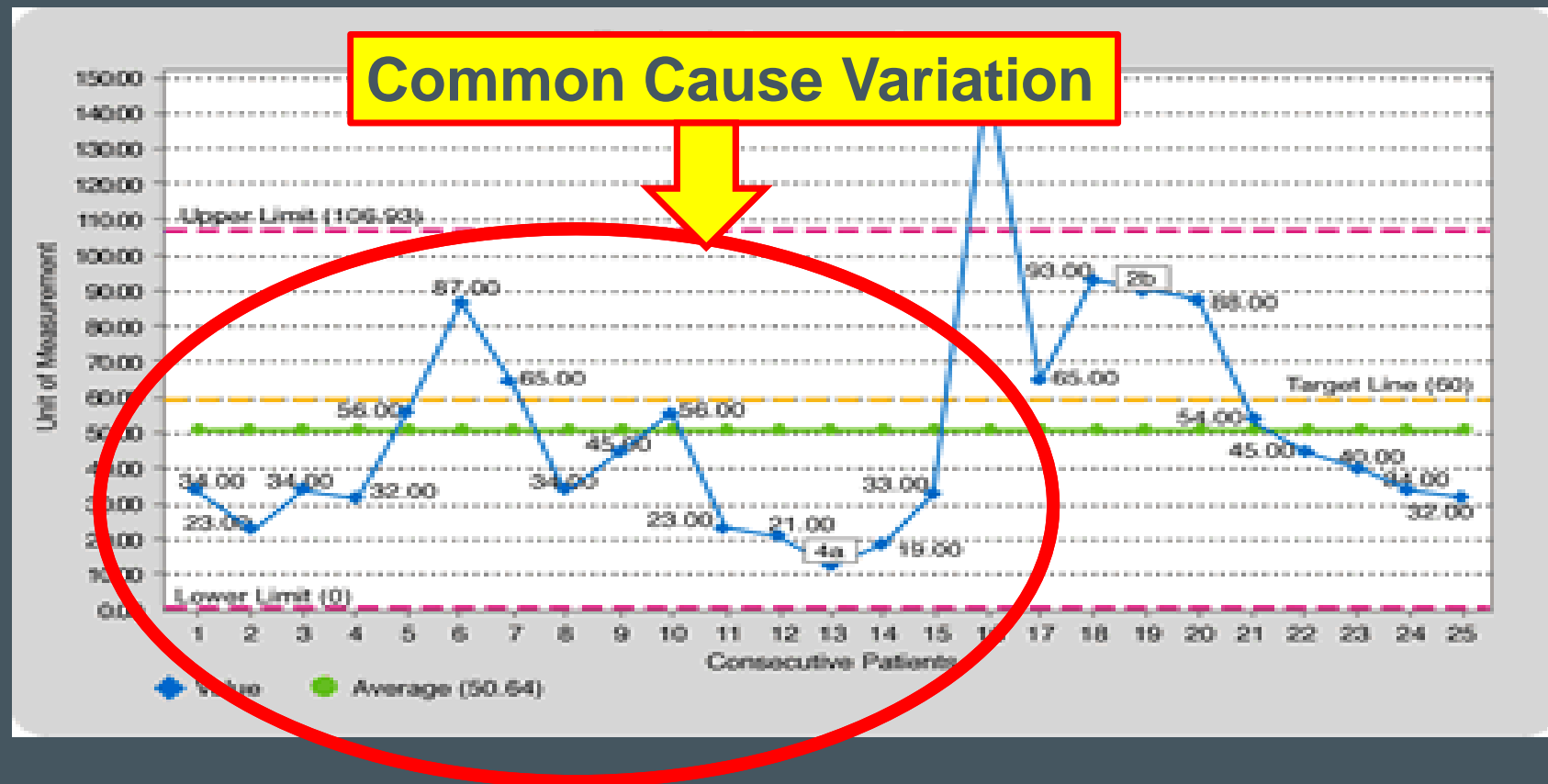
1939



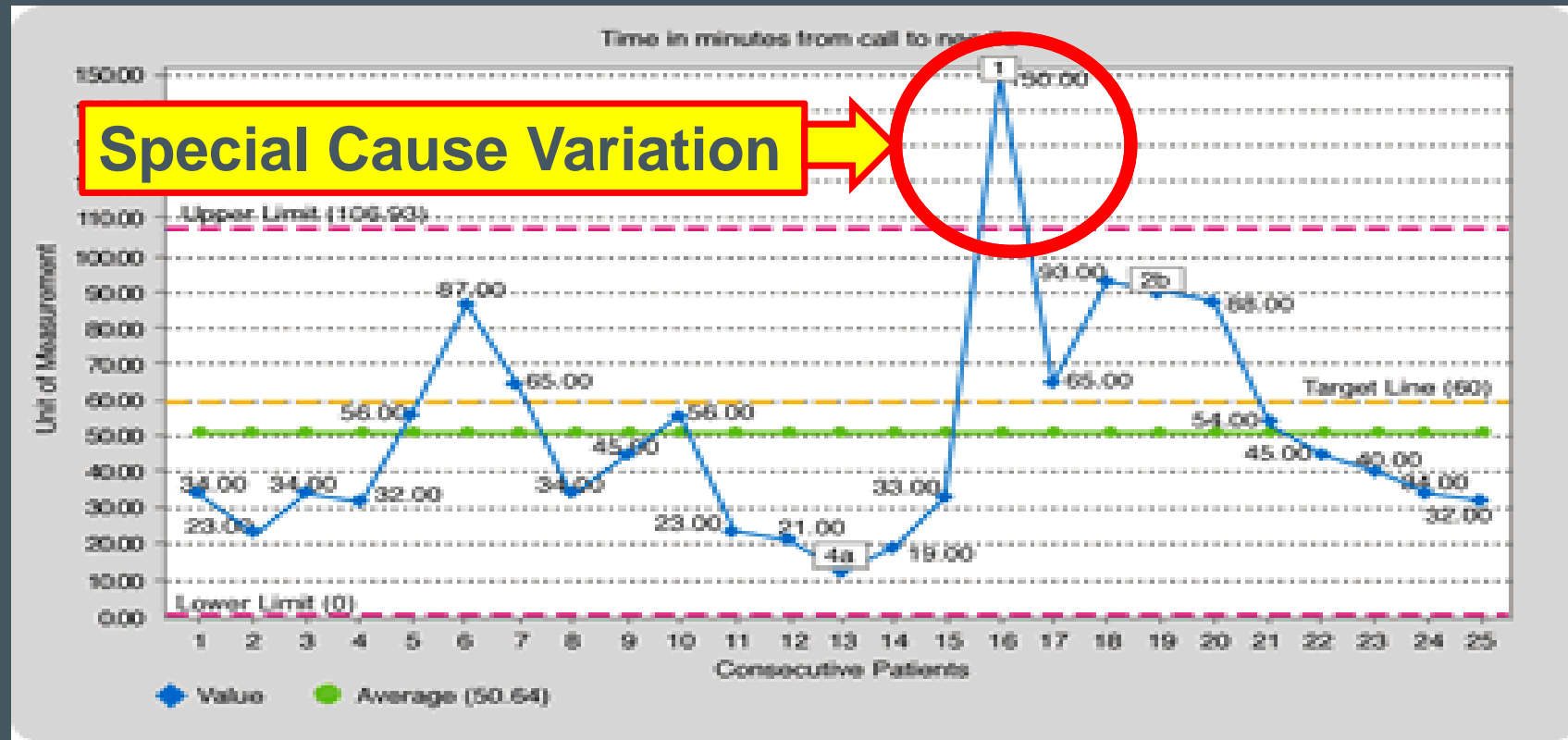
Statistical Process Control Chart: “Shewhart Chart”



Statistical Process Control Chart: “Shewhart Chart”



Statistical Process Control Chart: “Shewhart Chart”

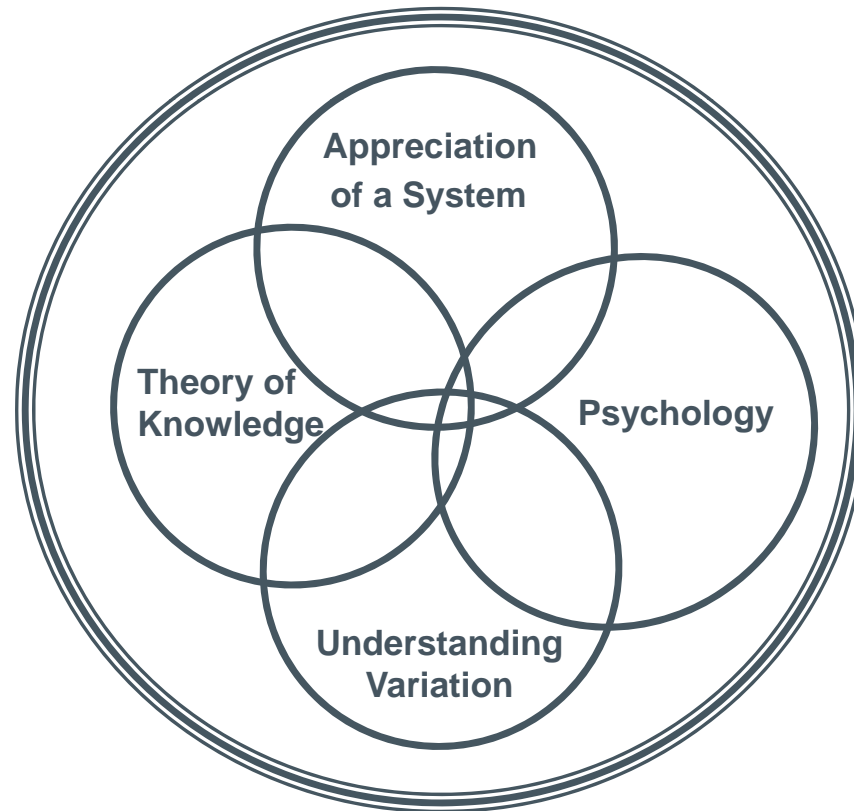
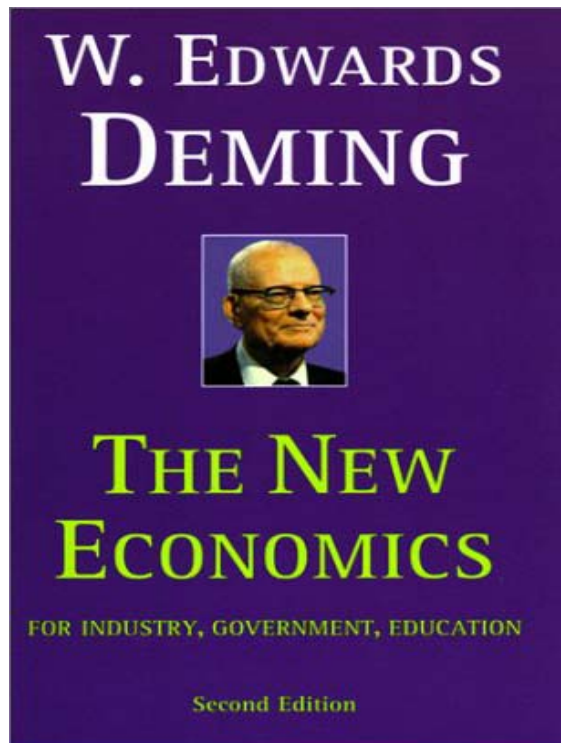


“Tampering”

- Reacting to **Common Cause Variation** As If It Were **Special**
 - Overreacting to random fluctuations
- Reacting to **Special Cause Variation** As If It Were **Common**
 - Changing the whole system in reaction to a non-representative event

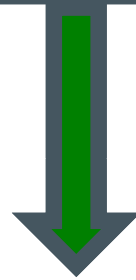


Deming's “System of Profound Knowledge”



Knowledge for Traditional Improvement

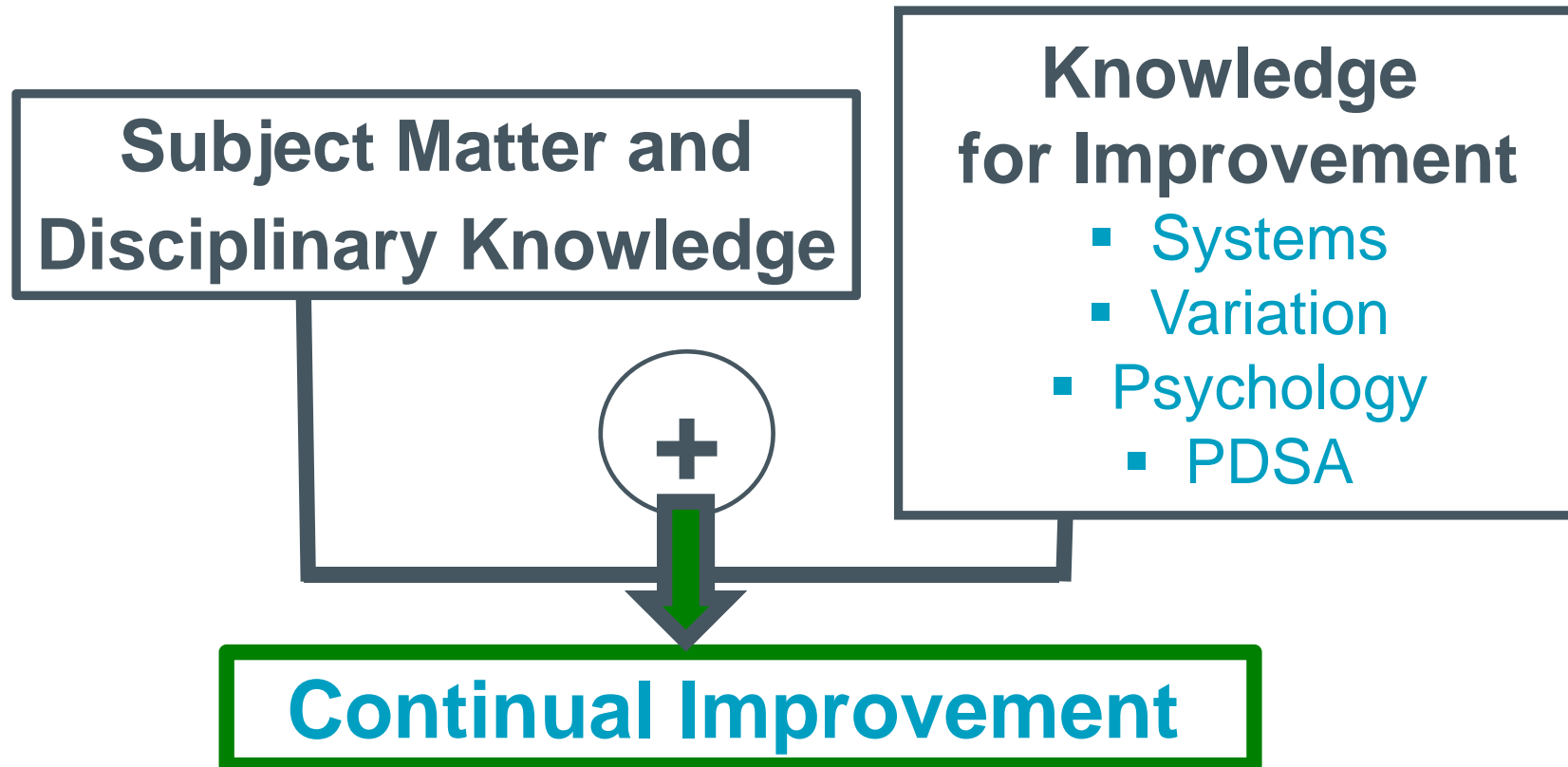
**Subject Matter and
Disciplinary Knowledge**



Traditional Improvement



Knowledge for Continual Improvement



Deming's “Profound Knowledge”

- Understanding Variation
- Appreciation of a System
- Knowledge of Psychology
- Theory of Knowledge



The Elements of Profound Knowledge

1. Understanding Variation

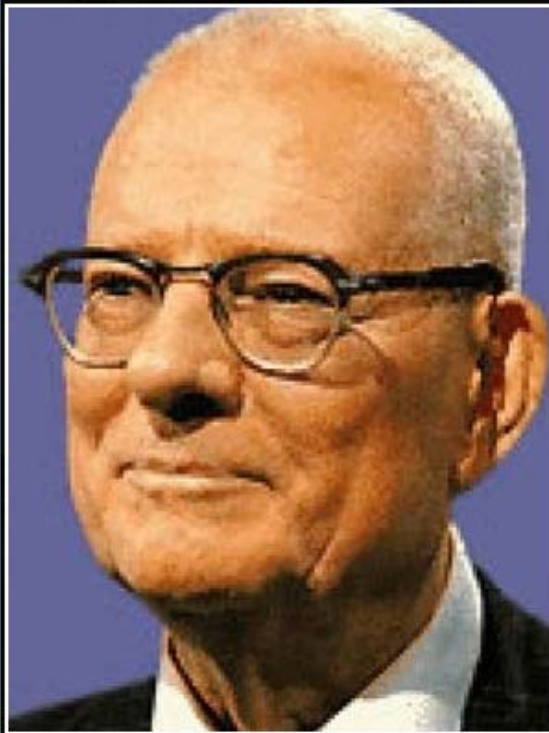


The Elements of Profound Knowledge

1. Understanding Variation
2. Appreciation of a System



Appreciation of a System



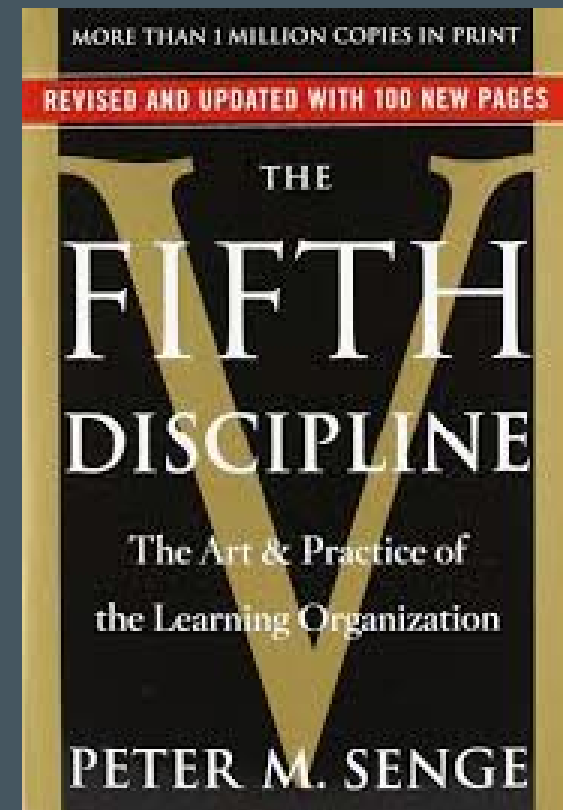
If you can't describe what you are
doing as a process, you don't know
what you're doing.

— *W. Edwards Deming* —

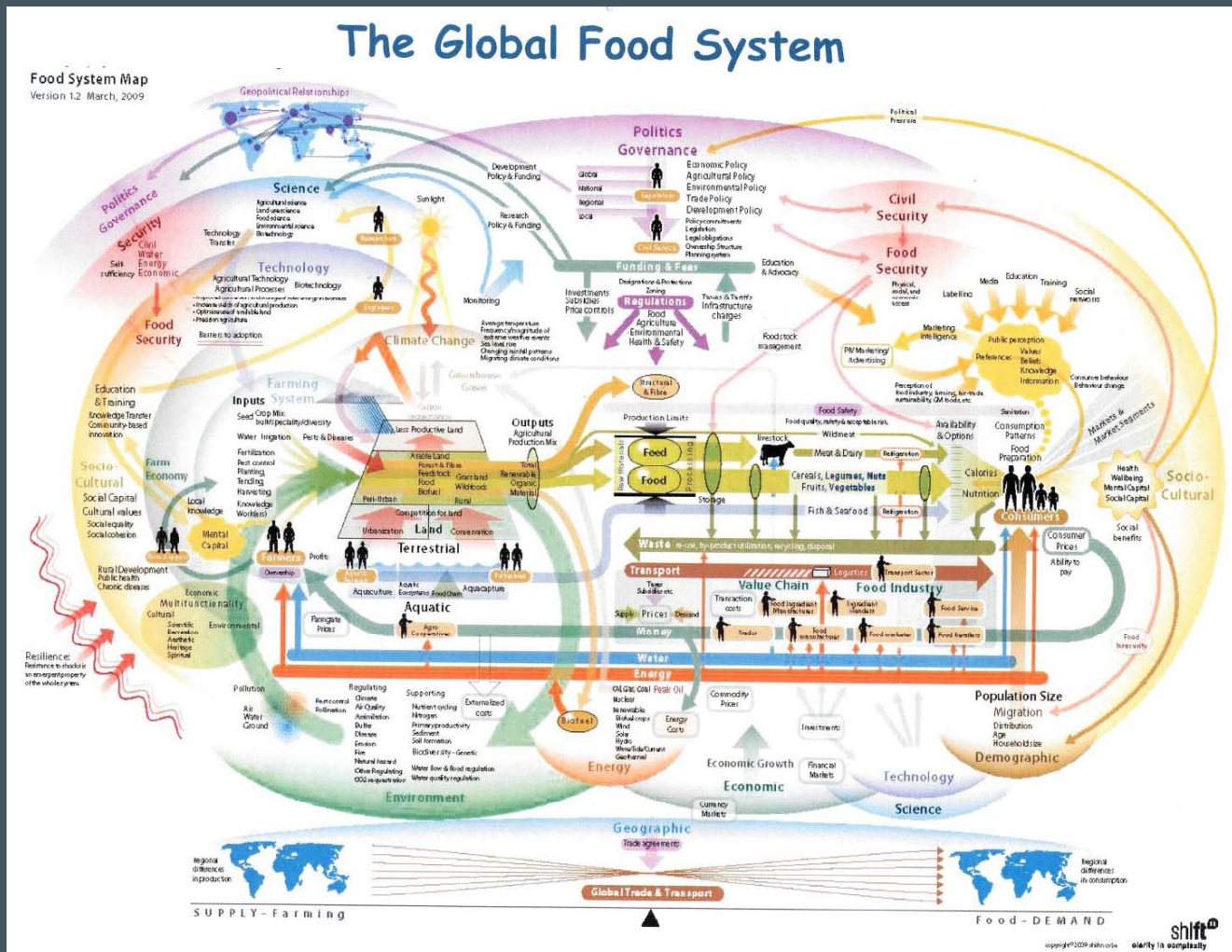
AZ QUOTES



Peter Senge: “The Fifth Discipline”



Appreciation of a System

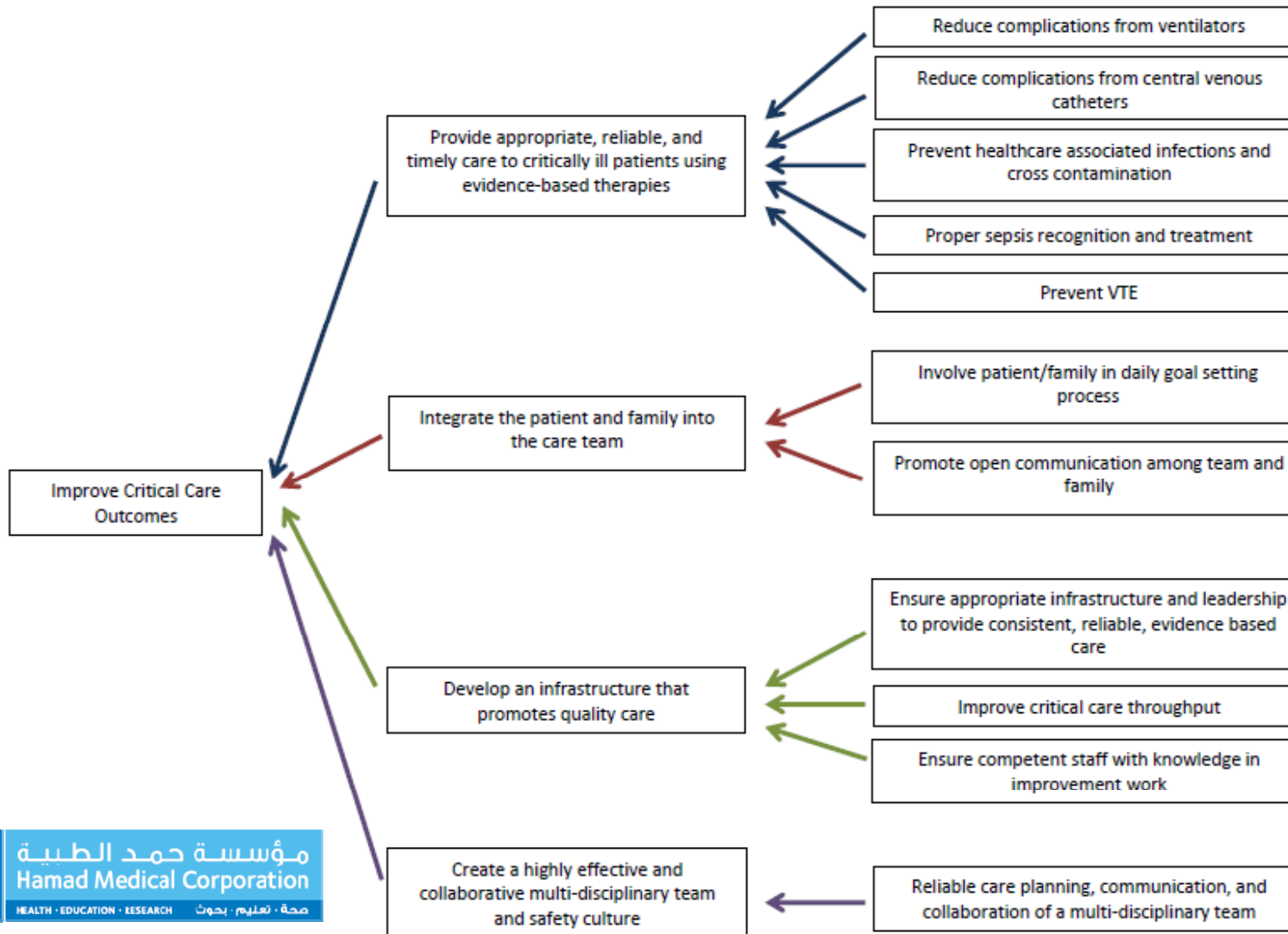


Best Care Always: Critical Care Driver Diagram

Outcome

Primary Drivers

Secondary Drivers



Peter Senge: “The Fifth Discipline”



The Fifth Discipline

Peter M. Senge

The 11 Laws of the Fifth Discipline

1. Today's problems come from yesterday's "solutions."
2. The harder you push, the harder the system pushes back.
3. Behavior grows better before it grows worse.
4. The easy way out usually leads back in.
5. The cure can be worse than the disease.
6. Faster is slower.
7. Cause and effect are not closely related in time and space.
8. Small changes can produce big results...but the areas of highest leverage are often the least obvious.
9. You can have your cake and eat it too---but not all at once.
10. Dividing an elephant in half does not produce two small elephants.
11. There is no blame.



The Elements of Profound Knowledge

1. Understanding Variation
2. Appreciation of a System
3. A Theory of Knowledge

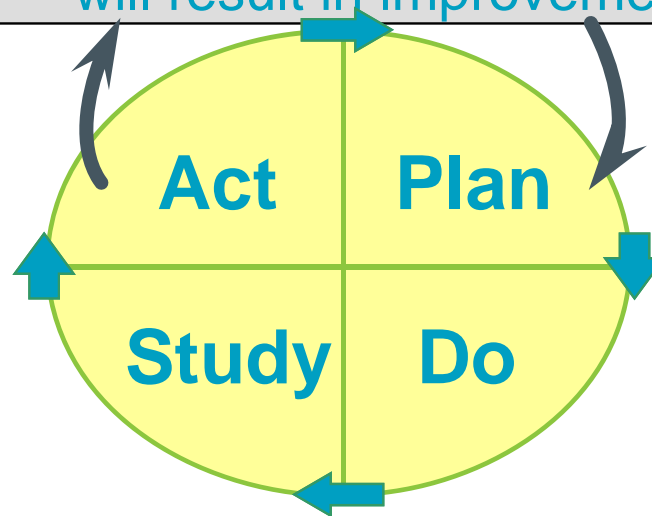


The Model for Improvement

What are we trying to accomplish?

How will we know that a change is an improvement?

What change can we make that will result in improvement?



When you combine the three questions with the...PDSA cycle, you get...

...the Model for Improvement.
A Model for Learning and Change

Source: *The Improvement Guide* p. 10



Repeated Use of the PDSA Cycle for Testing

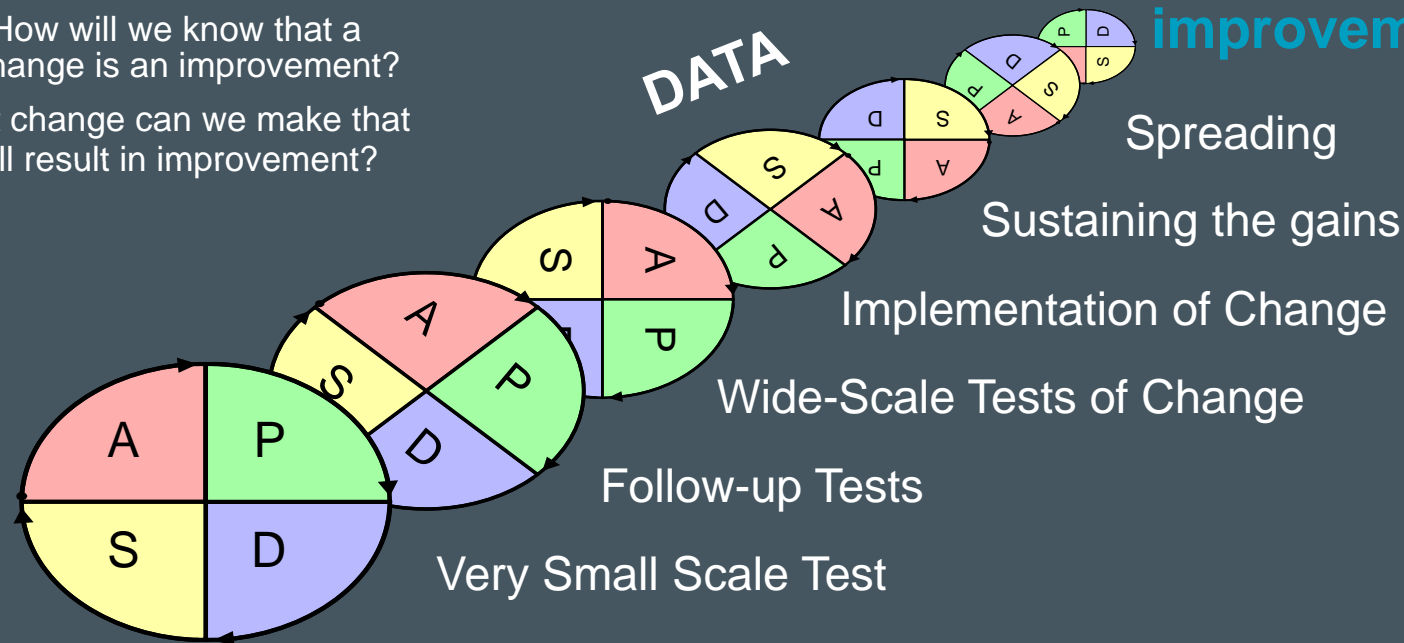
Model for Improvement

What are we trying to accomplish?

How will we know that a change is an improvement?

What change can we make that will result in improvement?

Changes that result in improvement

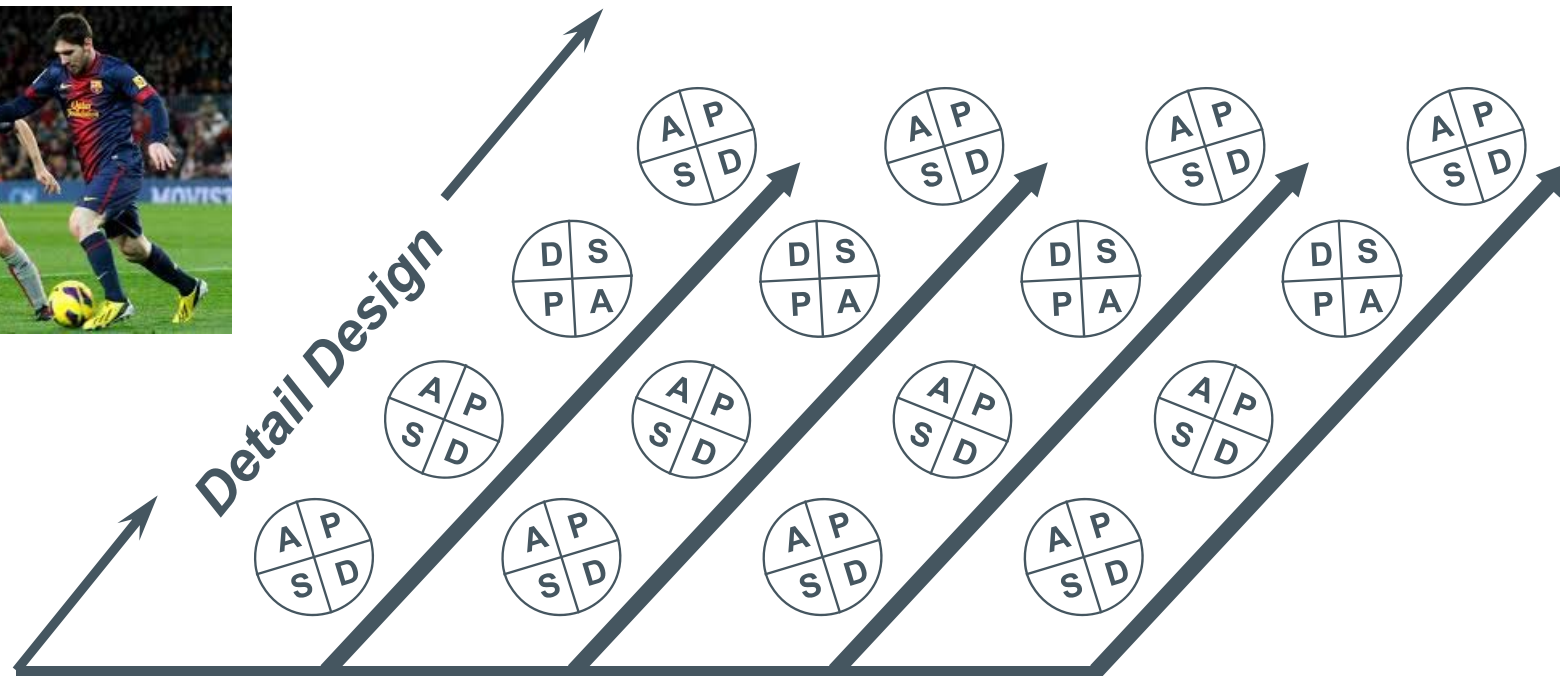


Hunches
Theories
Ideas

Sequential building of knowledge
under a wide range of conditions



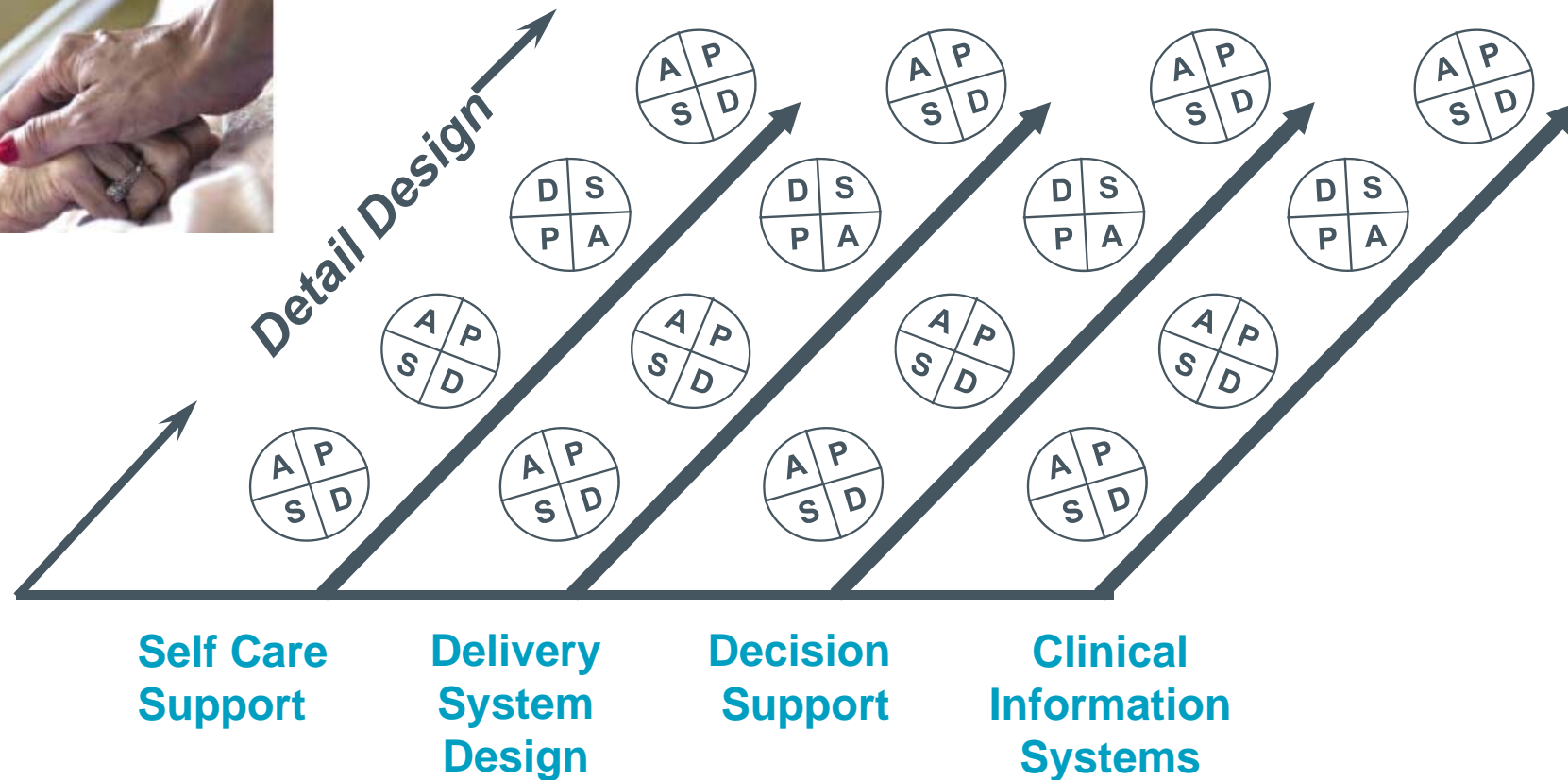
System Design: Football



Running Passing Shooting Conditioning



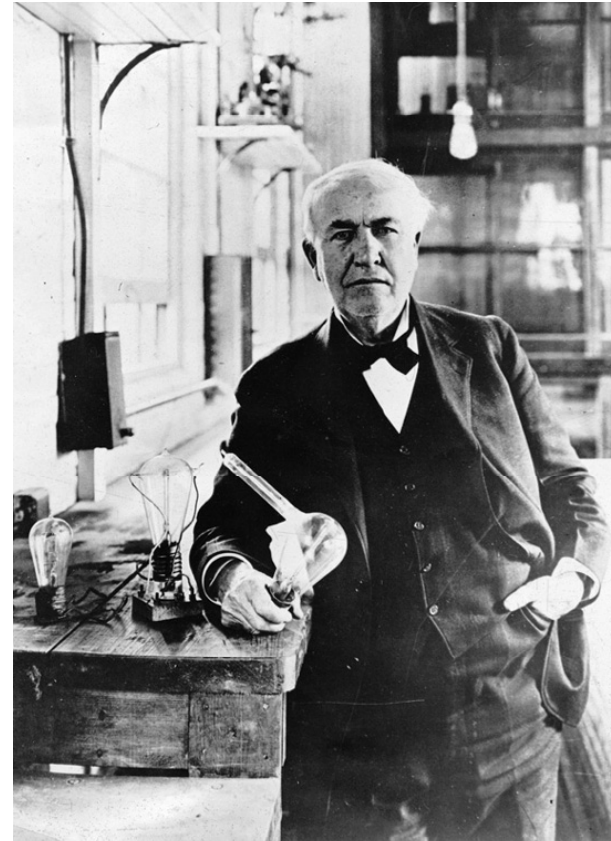
System Design: Chronic Illness Care



The Value of “Failed” Tests

“I did not fail one thousand times; I found one thousand ways how not to make a light bulb.”

Thomas Edison



The Elements of Profound Knowledge

1. Understanding Variation
2. Appreciation of a System
3. A Theory of Knowledge
4. Psychology



Frederick Winslow Taylor



Hardly a competent workman can be found who does not devote a considerable amount of time to studying just how slowly he can work and still convince his employer that he is going at a good pace.

— *Frederick Winslow Taylor* —

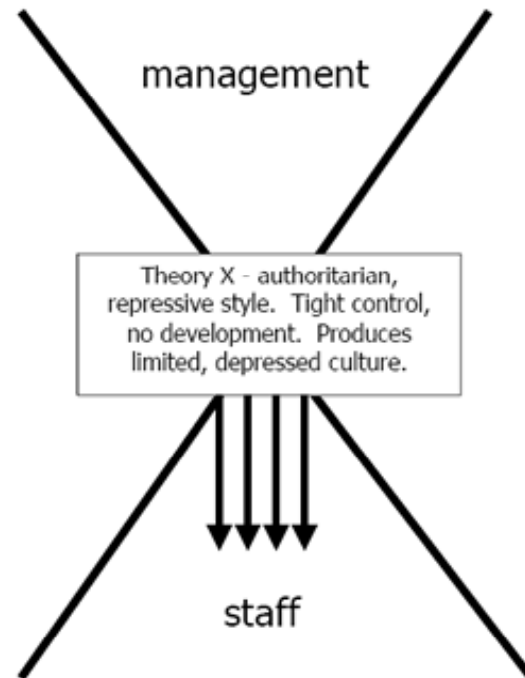
AZ QUOTES



Douglas McGregor: Theory X and Theory Y



'Theory X'



'Theory Y'





Team Manager, Mitchell Marcus, has a developmental disability.

The Elements of Profound Knowledge

1. Understanding Variation
2. Appreciation of a System
3. A Theory of Knowledge
4. Psychology

+ A "VESSEL"



The “Vessel” – A New Management System



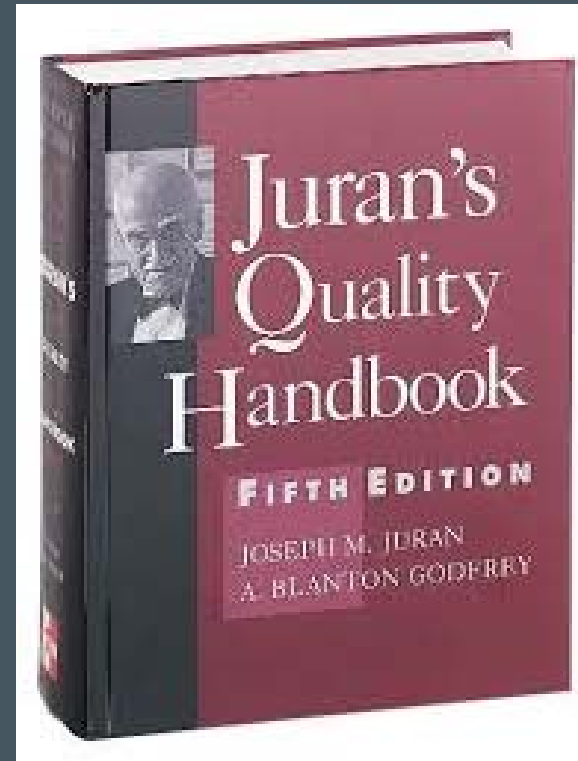
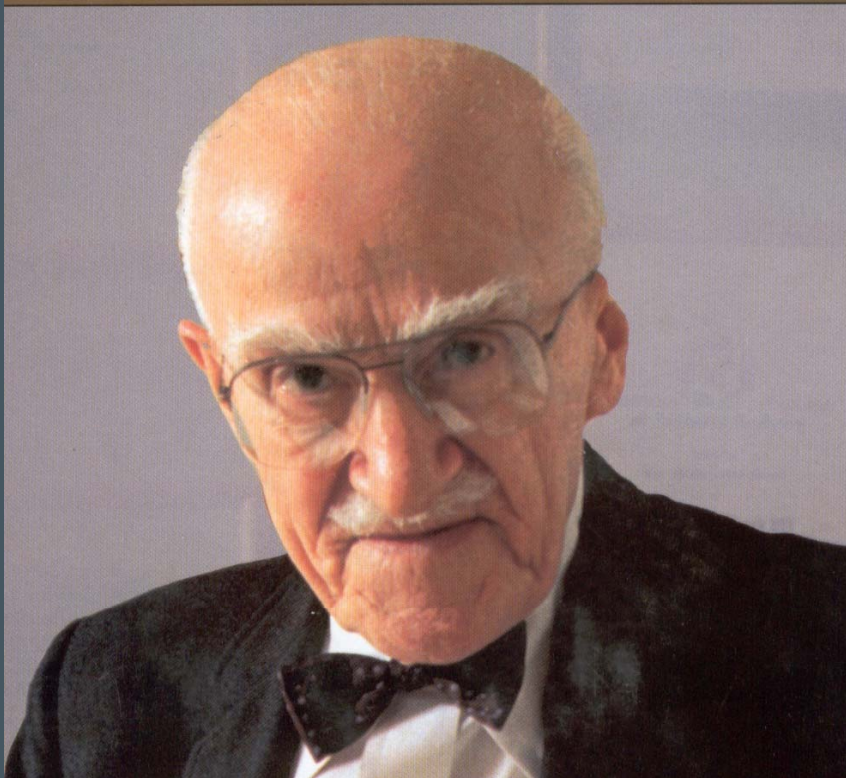
To successfully respond to the myriad of changes that shake the world, transformation into a new style of management is required. The route to take is what I call profound knowledge - knowledge for leadership of transformation.

(W. Edwards Deming)

“..transformation
to a new style
of management
is required....”



Joseph M. Juran (1904-2008)



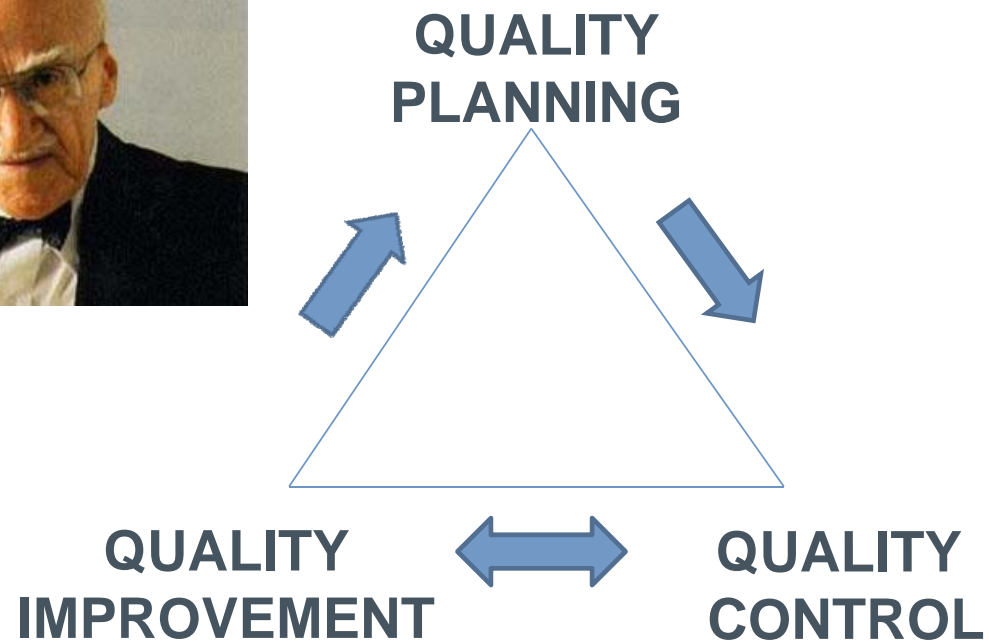
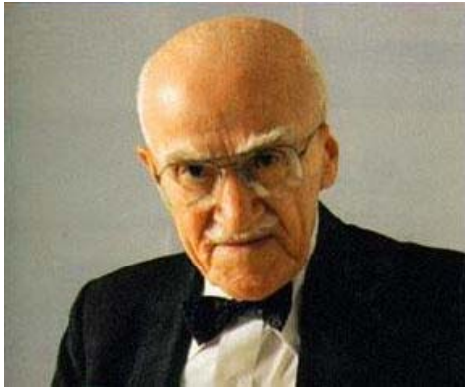
Deming's "14 Points for Top Leaders"

Deming's 14 Obligations of Top Management

1. Create Consistency of Purpose
2. Adopt a New Philosophy
3. Cease Dependence on Inspection
4. Stop Awarding Business based on \$\$ Alone.
5. Continuous Improvement of Production Processes
6. Modernize On The Job Training
7. Institute Leadership
8. Drive out Fear
9. Break Down Department Barriers (Silos)
10. Eliminate Slogans that do not provide a Method
11. Eliminate Quotas & Work Standards
12. Remove Barriers that rob Pride from the Individual
13. Institute Programs for Education & Training
14. Structure Management to focus on 1 - 13



Dr. Joseph M. Juran's "Trilogy"



So... What Can You Do?

1. Understanding Variation

- Master the concept of “tampering” and stop it.

2. Appreciation of a System

- Ask, “What am I part of?”

3. A Theory of Knowledge

- Practice “P-D-S-A” everywhere, all the time.

4. Psychology

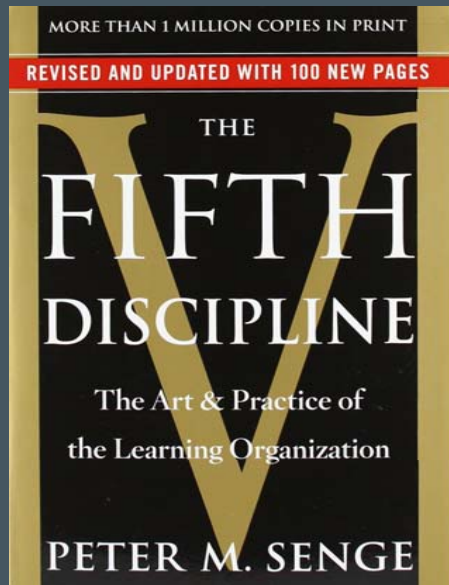
- Begin with trust. In everyone you meet, see yourself.

+ The “Vessel”

- Make “profound knowledge” the foundation for action.

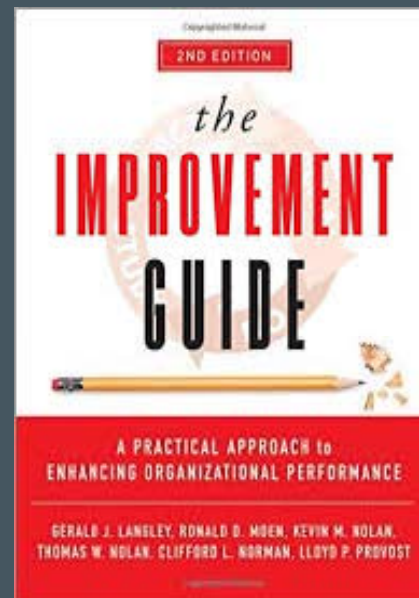


A Reading List for Leaders, part 1



Peter Senge:
The Fifth Discipline

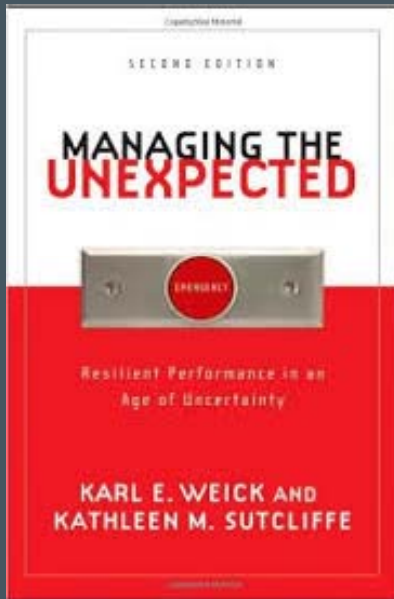
**Jerry Langley,
Tom Nolan, &
Kevin Nolan:**
The Improvement Guide



Chris Argyris:
Overcoming Organizational Defenses

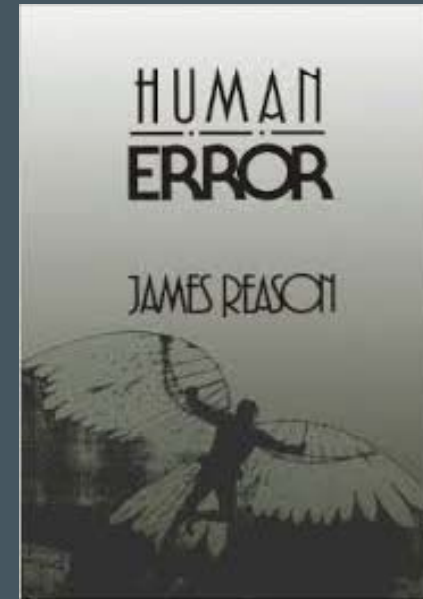
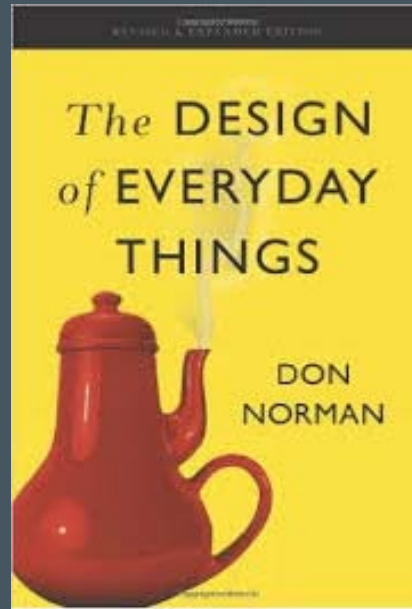


A Reading List for Leaders, part 2



**Karl Weick and
Kathleen Sutcliffe:**
*Managing the
Unexpected*

Don Norman:
*The Design of
Everyday Things*



James Reason:
Human Error



