Deming’s Greatest Contribution to Quality Management

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About Robert Spencer, Presenter

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• Experienced in business process management systems since the late 70s
• MS in Quality Assurance
• MA and BA degrees in experimental psychology
Why Review Deming’s Contributions to Quality Management?

• *Why* is this topic relevant to current Business Process Improvement initiatives?

• *What* perspectives will be shared to reinforce Deming’s original teachings about improving the business system?

• *Why* is this topic relevant now?
Deming’s Greatest Contribution to Quality Management Theory

Deming’s ideas of how to improve industrial management in American companies through organizational change and continuous improvement.
Pursuing Quality at the Process Level or Systems Level?

• Dr. Deming insisted that in a business context quality should embrace the expectations of everyone, including shareholders, customers, suppliers, employees, the community and the environment.

• The aim for any organization should be that everybody gains, not just one part of the organization at the expense of any other.
Pursuing Quality at the Process Level or Systems Level?

Dr. Deming’s greatest contribution to quality management theory and practice was to view an organization as a system.
Deming’s View of the Organization as a System

Deming used the analogy of an orchestra to illustrate the concept of a system:

- “An orchestra is judged by listeners, not so much by illustrious players, but by the way they work together”
- “The conductor, as manager, begets cooperation between the players, as a system, every player to support the others”
- “There are other aims for an orchestra, such as joy in work for the players and the conductor.”
Deming’s System of Profound Knowledge – Recognition of the Organization as a System

• Deming defined a System (Organization) as a network of interdependent components that work together to accomplish the aim of the System.

• When all the connections and interactions are working together to accomplish a shared aim, a business can achieve tremendous performance results (effectiveness, efficiency, customer and employee satisfaction, profitability, and market share).
Types of Knowledge

- **EXPLICIT** – Knowledge can be demonstrated, captured, codified, stored and transmitted as an inventory. It can be easily transmitted to others. Information in a textbook is a good example of explicit knowledge. A Quality Management System retains explicit knowledge in manuals, documents, and procedures.

- **IMPLICIT** – Knowledge that can be inferred through empathy, language and socialization – Often unspoken, unexpressed, undeclared, unstated, or not expressed directly in terms of observations and measurements.

- **TACIT** – Knowledge in the form of skills and expertise within the individual that cannot be communicated – rather, it must be directly seen or experienced in the first person to be clearly understood.

All knowledge acquisition requires Action Learning because knowledge is a perishable stock with a rate of decay, called the “Power Law of Forgetting”
A Systems Approach to Quality Management

• Deming believed that the vast majority of problems a business is having exist in the system – So improve the system, and the problems go away.

• A systems perspective requires that management views the organization as many internal and external interrelated connections and interactions, as opposed to independent departments or processes governed by numerous chains of command.

• Viewing quality as a Management System promotes creation of an organizational culture that values and seeks employee ideas for business improvements.
Deming’s Plan-Do-Study-Act (PDSA) Cycle

The PDSA Cycle (Also known as the Deming Wheel, or Deming Cycle) is a systematic series of steps for gaining knowledge and understanding for the continual improvement of a process for producing products or services. The PDSA concept was first introduced to Dr. Deming by his mentor, Walter Shewhart.
Deming’s Plan-Do-Study-Act (PDSA) Cycle

- **Plan step:** Involves identifying a goal or purpose, formulating a theory, defining success metrics and putting a plan into action.
- **Do step:** Components of the plan are implemented, such as making a product.
- **Study step:** Outcomes are monitored to test the validity of the plan for signs of progress and success, or problems and areas for improvement.
- **Act step:** Closes the cycle, integrating the learning generated by the entire process, which can be used to adjust the goal, change methods or even reformulate a theory altogether.

These four steps are repeated over and over as part of a never-ending cycle of continuous improvement.
The Scientific Method:

- **Purpose** (Describe, Explain and Create Theory)
- **Research** (Inductive Logic - general laws from particular instance; or Deductive Logic - inference of particular instances from a general law)
- **Develop Questions**
- **Formulate Hypotheses** - Plausible Statement of Facts and Relationships
- **Experiment** - Develop Testable Predictions
- **Analysis** - Gather Data to Test Predictions (Observations)
- **Results**
- **Conclusions** - Accept or Reject Hypotheses; including Develop General Theories
- **Theory Refinement** – Go back through the steps of the Scientific Method
Deming’s 14 Points for the Transformation of Management

The bulk of the causes of low quality and low productivity belong to the system and thus lie beyond the power of the work force.
We can argue that each of Deming’s fourteen points address the organization as a system.

1. Create constancy of purpose - toward improvement of product and service.
2. Adopt the new philosophy - Management must take on leadership for change.
3. Cease dependence on inspection - Build quality into the product in the first place.
4. End the practice of awarding business on the basis of price tag - Instead, minimize total cost.
5. Improve constantly and forever the system of production and service - And thus constantly decrease costs.
6. Institute training on the job.
7. Institute leadership (see Point 12) - Supervision of management is in need of overhaul, as well as supervision of production workers.
Deming’s 14 Points for the Transformation of Management

We can argue that each of Deming’s fourteen points address the organization as a system.

8. Drive out fear - So that everyone may work effectively for the company.
9. Break down barriers between departments - People must work as a team, to foresee problems and create solutions.
10. Eliminate slogans, exhortations, targets (work standards or quotas), Management By Objective (numbers, numerical goals) that ask the work force for zero defects and higher levels of productivity.
11. Remove barriers that rob the hourly worker - of his right to pride of workmanship.
12. Remove barriers that rob people in management - of their right to pride of workmanship – Abolish annual or merit rating and Management By Objective.
13. Institute a vigorous program of education and self-improvement.
14. Put everybody in the company to work to accomplish the transformation - The transformation is everybody's job.
Deming’s 7 Deadly Diseases of Management

The Seven Deadly Diseases of Management describe the most serious barriers that management faces to improving effectiveness and continuous improvement.
Deming’s 7 Deadly Diseases of Management

We can argue that each of Deming’s seven deadly diseases address the organization as a system.

1. Lack of constancy of purpose to plan product and service that will have a market and keep the company in business, and provide jobs.
2. Emphasis on short-term profits: short-term thinking (just the opposite from constancy of purpose to stay in business), fed by fear of unfriendly takeover, and by push from bankers and owners for dividends.
3. Evaluation of performance, merit rating, or annual review.
4. Mobility of management; job hopping.
5. Management by use only of visible figures, with little or no consideration of figures that are unknown or unknowable.
6. Excessive medical costs.
7. Excessive costs of liability, swelled by lawyers that work on contingency fees.
Beyond Business Process Improvement to Integrated Enterprise Excellence

Characteristics of most business process improvement projects:

A Google search on the phrase “Business Process Improvement” showed among the top 10 identified URLs not one of the websites mentioned the word “system” in describing the purpose of typical BPI goals or improvement strategies and activities.

A typical Lean Six Sigma project is “Pushed” by the quality improvement office to receptive managers in the organization that agree to undertake “process improvement” studies that will demonstrate defect and or cost reductions in their areas of responsibility.

These typical LSS projects are often conducted in isolation without formal consideration of impacts in other functions or even consideration of strategic benefits for the whole organization.

Characteristics of all Integrated Enterprise Excellence (IEE) projects:

Business managers “Pull” for improvement project that change processes in their areas of responsibility to positively impact the entire organization as determined by metrics that are sensitive to the performance of the business system (metrics determined to be appropriate through assessment and adoption in the organization’s strategic plan).

IEE uses a recent period of performance stability to calculate a future process performance expectation and asks the question, “Is this performance satisfactory, and what is the cost of doing nothing different (CODND). Based on this analysis the organization can decide to undertake improvements to satisfy strategic goals and objectives.

IEE focuses on the organization as a System and then identifies metrics that are sensitive to organizational performance and not limited to performance of specific processes.
Polling Question

Are you able to connect the dots between the top level strategies, associated processes and metrics within your organization?

• Definitely
• Somewhat
• Not at all
• Unsure
• This is not important
Deming’s System Thinking –
Integrated Enterprise Excellence Method

System Goals & Performance Defined

Process Improvement through Strategic Projects

Performance Metric Management for Ultimate Benefits

define
improve
sustain
Deming’s System Thinking – Integrated Enterprise Excellence Method

Start with view of organization from an overall Integrated Enterprise Excellence (IEE) value-chain system point of view.
Deming’s System Thinking – Integrated Enterprise Excellence Method

Align processes with performance metrics in the IEE system - this helps lead to organizations towards Deming’s system thinking.
Deming’s System Thinking – Integrated Enterprise Excellence Method

30,000-foot-level metric reporting offers a system-thinking performance reporting methodology that uncovers organizational value.
Satellite-level Metrics in an IEE Value Chain

• Example Business Metrics
  - Gross Revenue
  - Profit
  - Net Profit Margin
  - Earnings Before Interest, Depreciation and Amortization (EBIDA)
  - Voice of the Customer (VOC)

Want to report these metrics from a Deming’s system point of view so that improvements can be made, when appropriate, that benefit the big picture.
30,000-Foot-Level Metrics in an IEE Value Chain

- 30,000-foot-level Performance Metrics
  - Defective/Defect Rates
  - Cycle Time
  - Waste
  - Days Sales Outstanding
  - Customer Satisfaction and Loyalty
  - On-Time Delivery
    - Number of days from promise date
    - Number of days from customer requested date
  - Inventory
  - Head Count
  - Market Share
  - Etc.

Want to report these metrics from a Deming’s system point of view so that improvements can be made, when appropriate, that benefit the big picture.
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