Module 9
Section D: Coordinate Digital Transformation and Continuous Improvement

Term
Business process reengineering (BPR)

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Term
Continuous improvement (CI)

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Term
Continuous process improvement (CPI)

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Term
Cost of poor quality

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Term
Define, Measure, Analyze, Improve, Control (DMAIC) process

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Employee empowerment

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Term
Employee involvement (EI)

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Term
Heijunka

The act of making incremental, regular improvements and upgrades to a process or product in the search for excellence.

A procedure that involves the fundamental rethinking and radical redesign of business processes to achieve dramatic organizational improvements in such critical measures of performance as cost, quality, service, and speed. Any BPR activity is distinguished by its emphasis on process, rather than functions and products, and the customers for the process.

The costs associated with performing a task incorrectly and/or generating unacceptable output. These costs would include the costs of nonconformities, inefficient processes, and lost opportunities. See: quality costs.

A never-ending effort to expose and eliminate root causes of problems; small-step improvement as opposed to big-step improvement. Syn.: continuous improvement. See: kaizen.

The practice of giving non-managerial employees the responsibility and the power to make decisions regarding their jobs or tasks. It is associated with the practice of transfer of managerial responsibility to the employee. Allows the employee to take on responsibility for tasks normally associated with staff specialists. Examples include allowing the employee to make scheduling, quality, process design, or purchasing decisions.

A six sigma improvement process composed of five stages: (1) Determine the nature of the problem. (2) Measure existing performance and commence recording data and facts that offer information about the underlying causes of the problem. (3) Study the information to determine the root causes of the problem. (4) Improve the process by effecting solutions to the problem. (5) Monitor the process until the solutions become ingrained.

In just-in-time philosophy, an approach to level production throughout the supply chain to match the planned rate of end product sales.

The concept of using the experience, creative energy, and intelligence of all employees by treating them with respect, keeping them informed, and including them and their ideas in decision-making processes appropriate to their areas of expertise. Focuses on quality and productivity improvements.

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Just in time (JIT)

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Kaizen

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Lean metric

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Lean production

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Load leveling

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Master data

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Plan-do-check-action (PDCA)

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Six sigma

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The Japanese term for improvement; refers to continuing improvement involving everyone—managers and workers. In manufacturing, [this] relates to finding and eliminating waste in machinery, labor, or production methods. See: continuous process improvement.

A philosophy of manufacturing based on planned elimination of all waste and on continuous improvement of productivity. It encompasses the successful execution of all manufacturing activities required to produce a final product, from design engineering to delivery, and includes all stages of conversion from raw material onward. The primary elements of [this] are to have only the required inventory when needed; to improve quality to zero defects; to reduce lead times by reducing setup times, queue lengths, and lot sizes; to incrementally revise the operations themselves; and to accomplish these activities at minimum cost. In the broad sense, it applies to all forms of manufacturing—job shop, process, and repetitive—and to many service industries as well. Syn.: short-cycle manufacturing, stockless production, zero inventories.

A philosophy of production that emphasizes the minimization of the amount of all the resources (including time) used in the various activities of the enterprise. It involves identifying and eliminating non-value-adding activities in design, production, supply chain management, and dealing with customers. [It also employs] teams of multiskilled workers at all levels of the organization and use highly flexible, increasingly automated machines to produce volumes of products in potentially enormous variety. [It] contains a set of principles and practices to reduce cost through the relentless removal of waste and through the simplification of all manufacturing and support processes. Syn.: lean, lean manufacturing.

A metric that permits a balanced evaluation and response—quality without sacrificing quantity objectives. The types of metrics are financial, behavioral, and core-process performance.

An enterprise's essential core data consisting of basic information needed across the enterprise to conduct business. Describes the core entities of the enterprise, including products, customers, suppliers, sites, and charts of accounts.

Spreading orders out in time or rescheduling operations so that the amount of work to be done in sequential time periods tends to be distributed evenly and is achievable. Although [this ideally applies to] both material and labor, specific businesses and industries may load to one or the other exclusively (e.g., service industries). Syn.: capacity smoothing, level loading. See: level schedule.

A methodology that furnishes tools for the improvement of business processes. The intent is to decrease process variation and improve product quality.

A four-step process for quality improvement. In the first step (plan), a plan to effect improvement is developed. In the second step (do), the plan is carried out, preferably on a small scale. In the third step (check), the effects of the plan are observed. In the last step (action), the results are studied to determine what was learned and what can be predicted. The plan-do-check-action cycle is sometimes referred to as the Shewhart cycle (because Walter A. Shewhart discussed the concept in his book, "Statistical Method from the Viewpoint of Quality Control") or as the Deming circle (because W. Edwards Deming introduced the concept in Japan, and the Japanese subsequently called it the Deming circle). Syns.: plan-do-check-act cycle, Shewhart circle of quality, Shewhart cycle. See: Deming circle.

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Value stream mapping

A lean production tool to visually understand the flow of materials from supplier to customer that includes the current process and flow as well as the value-added and non-value-added time of all the process steps. It is used to help reduce waste, decrease flow time, and make the process flow more efficient and effective.