KNOWLEDGE OVER INFORMATION

Abstract This paper presents three viewpoints of “knowledge” applied in business organization. It also cites one multi-national global company that employed “knowledge”-base rather than “information”-base in its operations. This paper concludes that “knowledge”-based approach to project management has a wider and more beneficial scope of application compared to “information”-based approach.

Knowledge Merriam-Webster defines knowledge as: “. . . .acquaintance with or understanding of a science, art or technique . . .” (Merriam-Webster’s Collegiate Dictionary, 11th Ed., 2004, p.691). Nickols (2003) cites the work Davenport & Prusak in “Working Knowledge” (1998, p.5) in which the authors “draw distinctions among data, information and knowledge.” Nickols (2003) quotes Davenport & Prusak (1998) of their definition of knowledge as: “. . . a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information. . . . .In organizations, it often becomes embedded not only in documents or repositories but also in organizational routines, processes, practices, and norms.”

Nickols (2003) discusses three kinds of knowledge derived from other authors. The first is “explicit knowledge” which means knowledge that has been “articulated” or known to others. An example is a formula used by banks for calculating interest: “Interest = Principal x Rate x Time.” The second is “tacit knowledge” (taken from Michael Poliyan’s “Tacit Knowledge”, 1997)—knowledge that cannot be articulated. An example is a typist that can type words correctly without looking at the keyboard. Here, the “knowing is in the doing,” writes Nickols (2003). The third is “implicit knowledge” which means a knowledge that can be articulated; however, it has not yet been articulated or known to others (Nickols, 2003). This is the kind of knowledge that is known by a person alone by himself. An example is the knowledge of processing a “Request for Quotation” known only by a lone employee—trouble sets in, however, when said employee does not report to work and no one knows his job. In business organization, “implicit knowledge” is oftentimes taken
for granted out of ignorance of its implications. Nickols (2003) also presents two other kinds of knowledge derived from “cognitive psychologists”—the “declarative knowledge” and “procedural knowledge.” Declarative knowledge is synonymous with explicit knowledge only that the latter “consists of descriptions of facts and things or of methods and procedures.” “Procedural knowledge,” is that which is something articulated or manifested in having done something and yet how it was done cannot be explained (Nickols, 2003). Examples abound: we know how to dance but it is impractical to explain how we do it. Procedural knowledge is synonymous with implicit knowledge—an example is the procedural knowledge of a process engineer on how to perform his job. Like in implicit knowledge, this is an area that management might want to consider seriously.

Continuum of understanding. Associated with the set of knowledge provided by Nickols (2003) is the continuum of understanding presented in Figure 1.
Clark (2004) quotes Cleveland (1982) about understanding as a continuum: “data comes about through research, creation, gathering, and discovery; data is turned into information by organizing it so that we can easily draw conclusions. Data is also turned into information by ‘presenting’ it. . . . Knowledge has the complexity of experience . . . [it] is built from scratch by the learner through experience. Information is static, but knowledge is dynamic as it lives within us. Wisdom is the ultimate level of understanding . . . [it] operates within us. We can share our experiences that create the building blocks for wisdom.”

The continuum of understanding is both applicable to an individual and to any organization. To an individual, “data” are brought by the various sense organs—sight, olfaction, audition, touch, taste—upon their “stimulation” to the brain that produces so called “percepts” or “schemata” through its “billions of neurons.” Percepts or schemata produced in the brain triggers “thinking” or “feeling.” Theoretically, images produced by “sensation” in the brain are not lost—they are stored in the brain’s “memory bank” and can be accessed through the process of “remembering” (Atkinson, Atkinson & Hilgard, 1983, pp.105-129, 133-159). The human memory is a reservoir of an individual’s past that can be accessed at will or repressed and stay there for a lifetime. The memory is the seat of knowledge and knowing. Knowledge can grow in size or it can shrink. Experience enriches knowledge. This is so, because the more an individual exposes himself to experience, the more he learns and accumulates knowledge. As he grows older, he accumulates wisdom and he becomes wiser each day.

Figure 2 shows an actual system documentation structure used in orienting the personnel of one company about its quality management system. The triangular part on top represents the quality management system documentation prescribed by ISO 9000 standard. The structure captures a company’s policy, the next lower level is the documentation of the company’s business processes and procedures. Business processes are similar to the functional units of a company, like, Finance and Human Resource departments; procedures are the documented methods of doing activities identified in a business process. The lowest level consists of work instructions and forms.
The seemingly innocent looking “form” actually plays a significant role in the system. When, for example, a Job Application Form is filled up and “processed,” then the form has become a record. A record is a proof that the intent of the form has been implemented. Records are kept because of their vital use in an enterprise—they serve as the basic building blocks of information. When a report on the number of applicants in a particular year is needed, for instance, all the application forms in file for a particular period are retrieved; then a report is prepared, validated (signed) and communicated (circulated). Each record represents a singular “data” and when they are put together in the form of a “report” they have been transformed into “information.” Information can be stored permanently as another form of “record.” When the senior management a company requires a report about recruitment, for example, the company executives is said to have acquired knowledge pertaining to recruitment. The knowledge acquired by an organization serves as guide to the enterprise’s management in making decisions and in envisioning what course of action to take in the future in the form a planning.

Many company decision-makers today stop at the “information” level of their organizations where they expect to find historical records, like, figures of financial statements. These executives do not want to know more about the other factors impacting the performance of their companies, like pervasive absenteeism, other than records of expenses classified by their accountants. They focus much of their attention on financials and less on human performance in the organization. Their organizational knowledge is almost limited to information alone. This, to Deming, is like driving with a car’s windshield covered and the only guide is the rearview and side mirrors (Latzko & Saunders, 1995, p.26). Clark (2004) writes: “Data and information deal with the past. They are based on the gathering of facts and adding context. Knowledge deals with the present. It becomes a part of us and enables [us] to perform. However, when we gain wisdom, we start dealing with the future as we are now able to vision and design for what will be, rather than for what it is or was.”

The system of profound knowledge of Dr. W. E. Deming. A company today that has not heard of the name Deming or TQM or Quality (with a big ‘Q’) or quality products “made in Japan”
is possibly still operating under Taylorism or Weberian (bureaucratic) mentality—these principles of management are inward-looking; they advocate “efficiency” of the worker and the strict observance of established rules, methods and procedures; they never turn their focus outside their organizations to listen to and accommodate the needs and expectations of the customer. Deming started a revolution in the ‘80s when his influence on the quality products and services of Japan was finally felt in his own country in the US—that is, when “50 percent or more of its world market” were captured by Japan (Scholtes, 1998, p.8).

The management philosophy of Deming is a holistic view of an organization—it is founded on a four-cornered “system of profound knowledge” summarized in this paper. The components are: (a) appreciation for a system (b) theory of variation (c) theory of knowledge and (d) understanding of psychology. Latzko & Saunders (1995, pp.34-43) remind readers that the “various segments of Profound Knowledge cannot be separated. They interact with each other. Thus, knowledge of psychology is incomplete without knowledge of variation.” Following is a brief summary of each component with accompanying relevant principle/s advanced by others.

**Appreciation for a system.** Latzko & Saunders (1995, p.35) quote Deming of his definition of a system: “A system is a series of functions or activities. . .within an organization that work together for the aim of the organization.” Deming demands the observance of “interdependence” among the components of a system.

A book on “Introduction to Management” states: “One of the most important resources of an organization is people. How they are organized is crucial to the success/effectiveness of the organisation. All organizations have an underlying structure, power distribution and culture. . .The organisation culture is the set of beliefs, values and assumptions that guide the way an organisation carries out its business.”

The basic elements of an organisation which are present in all designs” are: “[a] job descriptions—some understanding is needed of each person’s duties and what the boundaries of their jobs are. . . .[b] structure of working relationships—usually expressed by means of an
organisation chart, this sets out membership of groups and hierarchy. . . . [c] decision-making processes—decisions are made by an individual or groups of people. . . . [d] operating procedures—the ways in which decisions are implemented. . . .” (no author, n.d., p.55-56).


The former is the “visible, formal, obvious, and officially reported version of the organization. It consists of . . . the hierarchical structure and chain of command; the official roles, functions, job descriptions, and accountabilities . . . the official systems, processes, and methods of work; the official policies, goals, plans, objectives, and standards.” The latter, “informal organization,” “has its unofficial leaders and unwritten rules. . . . [it] has its own communication channels, its grapevine. . . .[it] is what determines the average employee’s workplace experience. . . .[it] creates and . . .constitutes the organization’s culture.”

Managing requires a system approach, write Koontz, O’Donnell & Weihrich (1980, pp. 18-19). Koontz, et al. (1980, p.19) quote the Oxford English Dictionary about “system” as: “a set or assemblage of things connected, or interdependent, so as to form a complex unit; a whole composed of parts in orderly arrangement according to some scheme or plan.” Furthermore, “[t]his definition indicates that almost all life is a system. . . .No one can or should disregard the network nature of the components in any company, department, problem, technique, or program.”

Koontz, et al. (1980, pp.19-20) provides several “key concepts” on systems theory: (1) A system—such as an enterprise—is more than the sum of its parts; it must be viewed as a whole. (2) Systems can be considered as either “closed” or “open” . . . . [6] . . . systems have subsystems and are also a part of a suprasystems; they are hierarchical. . . .”

Koontz, et al. (1980, p.21) quotes Katz and Khan about social systems: “Social structures are essentially contrived systems. They are made by men and are imperfect systems. They can come apart at the seams overnight, but they can also outlast by centuries the biological organisms which originally created them. The cement which holds them together is essentially psychological rather
than biological. Social systems are anchored in the attitudes, perceptions, beliefs, motivations, habits, and expectations of human beings.”

**Theory of variation.** The theory of variation is what is commonly known as “statistics.” It is adopted by management in measuring, for example, subsystems within a larger system. The central idea in variation applied in management is the “understanding of special and common causes of variation.” Oftentimes, problems occur anywhere in an organization. Management and/or managers usually want to find out the causes to these problems, but somehow they tend to use the simplified yet wrong approach to solving organizational problems. Management usually takes the shorter course of action by blaming the worker.

**Theory of knowledge.** As stated above, knowledge is the acquaintance with science, art and technique. Science with its rigorous methods in coming up with truths and absolutes can predict the future; so does Deming expect top and middle management of business organizations to do the same. An ability to predict the future eliminates the costly “trial and error” approach to managing.

**Understanding of psychology.** Psychology, in its simplest definition, as many have come to know, is the study of human behavior. Applied in management, it focuses on motivation—that is, what moves an individual into action. Knowledge of the underlying causes of human behavior is expected of any manager since one of his roles is to ascertain that the goals and objectives of a business are met through the collective actions of people in an organization. He is called to effectively handle the emotions and perceptions of the people under him.

**Organizational and operational excellence of a knowing and learning organization.** The succeeding case is in line with the topics presented in this paper. In late 1994, then AT&T Saudi Arabia was awarded with a multi-billion US dollar mega telecom project that installed 1.5 million telephone switch lines in the Kingdom of Saudi Arabia. From a mere 200 workforce in its initial year, the project organization expanded along with rapid growth of its manpower threatening the timely delivery of the project (Galapon & Shamari, 2002). In 1998, the Outside Plant (OSP) organization chartered four separate quality improvement teams (QITs) that successfully saved
Lucent an annualized saving of US$13 Million (Galapon & Norton, 2001). In 1999, the Network Engineering Group chartered a process development and improvement team sponsored by the VP of Implementation with a task to recommend a solution to the problem on the “Master Clock” that governed the signal of the GSM (global system for mobile communication) in the entire Saudi Arabia. The initiative created a wave of organizational changes that swept the entire company leading to the design, development and implementation of an integrated business process that captured all the business processes into one piece of paper (Galapon & Khawaja, 2002). In July 2001, Lucent became the first telecom company in the Middle East to become ISO 9001:2000-Certified company (Galapon & Shamari, 2002). All these achievements of Lucent Technologies SA were “knowledge-based” rather than “information-based.” The principle of “implicit knowledge” was used in capturing and documenting the various business processes of 22 functional departments that would become the components of the Quality Management System of Lucent for its ISO 9001:2000 Certification. The system of profound knowledge of Deming were used, too. The “appreciation for system” principle of Deming was actually one of the eight quality management principles of ISO 9000:2004; the OSP QIT initiative used the theory of variation (statistics) in capturing the cost of OSP operations; the theory of knowledge of Deming was used in adopting various relevant principles of quality management and business management; and the knowledge of psychology of Deming was used for all the improvement initiatives in handling the “soft” side of the undertakings—the minds and hearts of the team members and team leaders.

Conclusion. This paper concludes that “knowledge”-based approach to managing has much more value than “information”-based as indicated in the company cited herein.

Bibliography


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