MANAGEMENT SYSTEMS, COGNITION, AND CULTURE

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ABSTRACT

Balanced scorecards, JIT, ABC/M, TQM, and TOC are examples of modern management systems (MS) being adopted with varying degrees of success. Naysayers argue for traditional budgetary control systems and dismiss modern MS as fads that will not stand the test of time. New cognitive research comparing differences between Eastern and Western cultures is described; and a connection between that research and choice of management systems is made. Better understanding of cognitive process differences should result in better systems. The author concludes that those systems will include some elements of modern MS, but changes may occur slowly.

INTRODUCTION

Recent articles describe ongoing changes in a controller's role [2] and the contribution that intuition makes to improved decision making, especially in the area of strategic decisions [7]. Regel builds on a Cognitive Continuum model developed by Hammond [3]. Hammond's model posits an analytical/common sense/intuitive continuum that virtually all people use, but to different degrees by different people for different tasks and different information displays [4].

Nisbett's [6] *Geography of Thought: How Asians and Westerners Think Differently* addresses many of the same problems and issues as Hammond, but includes culture as a major variable. There is much overlap between the theories of Hammond and Nisbett, but Nisbett adds a dimension that is extremely useful; globalization and outsourcing are key issues facing the world today. Nisbett and his coresearchers conducted large numbers of experiments with varied contexts in many countries around the world, using subjects that span a wide age spectrum. In addition, he provides a historical comparison of ancient Greek and Chinese language, culture, and philosophy that is tied to the experiments. The latter part of his book directly addresses economic issues, democracy, and alternative cultures. Some relevant examples of different perception and thinking caused by different cultures will help demonstrate the idea.

THE INFLUENCE OF CULTURE

Researchers visited homes of Japanese and Americans having infants either six, twelve, or nineteen months old. They asked the mothers to clear away the toys from the play area and then they introduced several that they had brought with them—a stuffed dog and pig and a car and truck. The mothers were asked to play with the toys with their babies as they normally would. They found large differences in the behavior of mothers even with their youngest children. American mothers used twice as many object labels (e.g., piggie, doggie) as Japanese mothers whereas Japanese mothers engaged in twice as many social routines of teaching politeness norms (empathy and greetings, for example). An American mother's patter might go like this "That's a nice car. See the car? You like it? It's got nice wheels." A Japanese mother might say: "Here! It's a vroom vroom. I give it to you. You give this to me. Yes!

Thank you." American children are learning that the world is mostly a place with objects; Japanese children are taught that the world is mostly about relationships [6, p. 150].

In another experiment, a researcher shows an underwater animated scene. His American students zeroed in on a big fish swimming among smaller fish. Japanese subjects, on the other hand, made observations about the background environment—the different "seeings" are a clue to the profound underlying differences between Western and Eastern cultures. East Asian thought is "holistic"—drawn to the perceptual field as a whole and to relations among objects and events within that field. By comparison to Western modes of reasoning, East Asian thought relies far less on categories or on formal logic; it is fundamentally dialectic, seeking a "middle way between opposing thoughts." By contrast Westerners focus on salient objects or people, use attributes to assign them to categories, and apply rules of formal logic to understand their behavior.

MANAGEMENT ACCOUNTING AND CULTURE

Nisbett's work [6] explains more about cost management and managerial accounting than Hammond. *Traditional MS* focus on budgeted financial data and responsibility accounting; people are held accountable for the dollars in their budgets and are rewarded based on achieving targeted results. An underlying premise of *modern MS* is that this traditional financial budget information is "too late, too aggregated, and too abstract" to be most useful in managing an organization. This is sometimes referred to as "driving with a rear-view mirror." Modern MS keep financial accountability, but add forward-looking activity and strategic performance measures. Examples of modern MS include the balanced scorecard, activity-based costing/management, total quality management, lean manufacturing, and the theory of constraints. Relative to traditional financial-based systems, modern managerial systems have more emphasis on processes & activities, system-wide efficiency, customers, non-financial performance measures, and team accountability. Hansen & Mowen [5] provide a framework to compare traditional and modern MS.

Differences between traditional financial-based and modern management systems (MS)

Traditional MS	Modern strategic/activity-based MS
1. Organizational units	1. Linked to strategy
2. Local operating efficiency	2. System-wide efficiency
3. Individual accountability	3. Team accountability
4. Financial outcomes	4. Financial outcomes
5. Customer perspective	
6. Process perspective	
7. Learning and growth perspective	

Some elaboration of this outline may help in understanding the basic connection between culture and management systems. A major theme of modern MS is a focus on managing activities, not costs. Activities are examined and measured carefully with an eye toward reducing or eliminating any non-valued added work. Non-valued added work is defined as anything that is done that is not valued *by the customer*; examples include setting up a machine or inspecting a final product. One might question this and say that of course the customer wants the product to be inspected, but that is faulty reasoning. The customer wants a defect-free product but does not care how that is accomplished. If the original assembly process was error-free, there would be no need for inspection. More effort on error *prevention* would result in *less inspection costs,* ideally zero inspection cost when there is a zero-defect tolerance in

the original process. Accomplishing this zero-defect goal and other goals is better attained through team accountability and system-wide efficiency, not individual accountability and local operating efficiency. Team accountability implies that everyone in the value chain is responsible for the final product; each segment does not stand by itself. At least part of the rewards in the system is based on gain-sharing and/or other team-based compensation. In this system, relationships matter more than individual accountability. The team is responsible for the final result and everyone is motivated to contribute to a quality product or service.

An example of traditional individualistic thinking in an education setting is when a university *core course* instructor's evaluation is based primarily on student satisfaction and the number of students retained in the class. The instructor may be tempted to inflate grades, go slower than normal, or take some other undesirable action to raise student evaluation scores and enrollment. However, growth in student knowledge, skills, and abilities suffers. Team accountability lessens this temptation and its negative consequences because other faculty members will object to the lowered quality and take action, e.g., they try to influence the instructor to keep high standards. Thus, students will progress according to plan and will be adequately prepared for subsequent courses, jobs, etc. Rewards are at least partly team-based; ideally they promote the highest quality at every step of the value chain, and every individual works toward improvement of the end result of the entire team. Communication between instructors at different levels is very important and everyone focuses on student/customer needs and efficient ways to accomplish them.

SUMMARY AND CONCLUSION

Can modern MS be implemented widely in the U.S.? Implementation successes at Toyota and other foreign firms have given more U.S. companies the motivation to try more modern techniques. And globalization has resulted in the building of foreign multinational plants in the U.S. Many of them are using modern MS and many U.S. workers are adapting. Not all attempts have been successful, but the results seem promising thus far. Given Nisbett's [6] evidence that human thinking processes *become* fundamentally different when people are raised in different cultures, it is understandable that change may occur slowly.

The education example described earlier may be met with skepticism. Indeed, it may be one of the most difficult and extreme cases, given the entrenched systems present in most U.S. schools. Tenure and academic freedom issues will be raised. However, our education system and its results have been challenged from within, and some schools are changing. Frequently the changes involve more curriculum and instructor coordination [1]. It may be that we do not yet have a "luxury of crisis" to cause large scale change; hopefully we can make meaningful improvement before crisis occurs.

Nisbett does *not* conclude that Eastern thinking is necessarily superior. However, logic and common sense suggest that management systems that encourage and reward teamwork, employee cross-training, and other similar practices will show better results than systems without those features. The globalization movement requires more contact and communication between people from different cultures throughout the world. Nisbett's observes that ". . . understanding Eastern cultures . . . is not just nice, but necessary if we wish to solve the problems we confront in the world today." In our present context, better understanding of cognition differences will result in better communication and better management systems that include elements of modern MS. Because these differences are cultural, change may occur slowly.

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