Linking Competence Change and Organization Performance

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The notion of long term sustainable competitive advantage assumes that environment changes are engrained into organizations. Yet, the principles of continuous improvement suggest a shorter and shorter lifecycle of skills and knowledge that provides the sustainable advantage. Continuous change resulting from new ideas, practices, and technologies requires continuously changing performance standards. Therefore competencies must continuously update to achieve new standards. This paper explores the relationship between environmental changes and individual competence and introduces a framework for competence change.

Keywords: Competence, Organizational Change, Performance

The notion of competence has been an essential part of human activity and human survival throughout history. Yet, in the field of Human Resource Development, the operational meaning of the concept of human competence has been elusive (Jacobs, 2001; Kuchinke, 1997). This may be in part because competence is not absolute rather it is an ever-changing and dynamic state. Adapting to the intensifying diffusion of ideas, practices, and innovations caused by globalization has become a facet of research importance. Yet, little is understood about the relationship between organizational change and human competence. The ability of an organization to adapt to its changing environment ultimately determines its ability to succeed. Further, adaptability is dependent upon competence found within an organization, its processes, and its people. If firm adaptability is dependent upon competence then exploring the linkages between individual competence and organizational adaptability is a valuable framework to understand.

The literature on competence is reflective of an increasing complexity of the global economy and the importance to provide context in defining competence. These cross-cultural implications make defining and understanding competence even more challenging (Jeris, Isopahkala, Winterton, Anthony, 2005). Global business operations and multi-cultural facilities in the United States make defining competence and operationalizing competence even more complex. We can be certain the forces of globalization will continue to intensify. Firms must learn to continuously identify and develop new competence standards for individuals, processes, and the organization as a whole in order to compete successfully in a global marketplace.

Research Question

This paper explores the relationships between organizational continuous improvement and changing competence in order to achieve new levels of performance. This paper presents the connection between individual and organizational competence, and explores how competence, expressed as worthy performance, adapts to maintain consistent organizational value. I propose a conceptual framework for further examination of the relationship between environmental changes outside the firm and individual competence within a firm. This paper explores the following research question:

> If the goal of competence is to generate more value than cost then how does human competence adapt to provide consistent worthy performance in a changing environment that causes competence to become outdated?

Conceptual Framework
Defining Competence Change

Gilbert's (1996) seminal work links competence, or worthy performance, with organizational outcomes and serves a critical foundation for much of the HRD literature on competence. Gilbert argues that competence is not a measure of behavior expressed in knowledge, hard work, or dedication rather a measure of performance. He defines competence as the "function of worthy performance, which is a

function of the ratio of valuable accomplishments to costly behavior". Since accomplishment determines competence, it can be measured by the difference in value and cost of the achievement that contributes to performance. Gilbert's work provides an explicit link between individual competence and organization results.

Gilbert further argues, "competence is a social concept, a comparative judgment about the worth of performance. In order to convert measures of performance into measures of competence, we require a social standard". Changing social standards are easily discovered such as Just-In-Time manufacturing shifting the standards of inventory management, and use of computer technologies changing standards of productivity and speed. We can assume social standards change over time causing the "ratio of valuable accomplishments to costly behaviors" to change as well. Therefore, adapting individual competence based on social standards suggests identifying the current status of competence within a firm as well as the potential opportunity to enhance worthy performance. This includes examining the potential both inside and outside the firm. The baseline of current competence compared to the potential opportunity represents the competence gap. Gilbert refers to this difference as the potential for improving performance, or PIP. Jacobs (2001) further suggests four defining principles of competence include:

- A concern with abilities must mean there is a particular context.
- Does not necessarily mean a learning process rather emphasizes performance outcomes.
- Measuring should be conducted through the use of clearly defined standards.
- Represents a measure of what can be done at one particular point in time.

Consider an example of inventory management. In the mid-1980's, a small manufacturer could use paper and pencil to manage their inventory. With the advent of spreadsheet software in the 1990's (i.e. –Excel), the same small manufacturer could convert to the software and manage inventory more tightly and efficiently by tracking more attributes of inventory (i.e. - age) more efficiently. In the late 1990's, the same small manufacturers became involved with supply chain management (automotive, Wal-Mart) that resulted in the integration of their inventory management through Electronic Data Interchange (EDI) technologies. Recently some supply chains are requiring fully integrated real-time inventory systems throughout the whole supply chain. This scenario demonstrates that competence is not an absolute state and as a concept is indeed elusive.

In each of these shifts caused by technology and market dynamics, the firm may have had exemplary performance in inventory management from an internal perspective. In terms of Gilbert's (1996) definition of competence, there had been worthy performance since the value exceeds the cost. There has also been a low potential for improving performance (PIP). However, social standards shifted over time resulting in significant opportunity costs if the organization's competence does not adapt. Employee competence in spreadsheet software usage but not knowledgeable about computerized inventory tracking systems and electronic data interchange technologies would result in lost market share if the competence did not adapt. Competence shifted from an expert in one standard of inventory management to a novice in another standard of inventory management and the cost of the performance now greatly outweighs its value. Based on Gilbert's definition, the performance is no longer worthy. Additionally, the PIP has increased because of significant opportunity costs associated a new standard of competence. This shift or failure to shift to a new standard of worthy performance has tremendous financial implications for the firm.

Linking Organization and Individual Competence

In recent years much has been written on the vital role of competence in organizations. Prahalad and Hamel (1990) establish an organization's core competence as "an area of specialized expertise that is the result of harmonizing complex streams of technology and work activity" that over the long term provides a sustainable competitive advantage. Gallon, Stillman, and Coates (1995) differentiate organizational core competence from the competence of individuals by establishing that core competencies are a synergistic accumulation of capabilities within the firm.

Herling and Provo (1997) establish that organizational competence is limited by individual competence, which they define as a "cluster of related factual knowledge, skills, experiences, and attitudes directly related to one's job" (p.2). Therefore the collection of individual skills and abilities that become a unique combination of organizational core competencies provides the synergistic accumulation identified by Gallon, Stillman and Coates. Extending that notion to a multi-level perspective, the synergies are created by an accumulation of capabilities at organization, process, and individual levels. Rummler and Brache (1995) support the notion that individual competence and organizational competence must be aligned for the organization to adapt to its environment. Their model, based on

the systems view, explicitly links organizational performance to a process that aligns three levels of an organization: the organization, process, and job/performer level.

Yet Prahalad and Hamel's notion of "long term" sustainable competitive advantage assumes either an environment that does not change or that environment changes are incorporated to maintain the competitive advantages. Constant change resulting from an intensified diffusion of ideas, practices, and technologies requires flexibility and continuous learning and therefore requires a set of competencies to continuously update to maintain a sustainable competitive advantage. Van der Klink and Boon (2002) identify flexibility as a key variable for individual and organizational success, while Li (2005) and Herling (1997) emphasize the importance of continuous learning as an underpinning of competence. Therefore we can hypothesize that a firm's organization and process competence is dependent upon competence and expertise found with its' people. We can further hypothesize maintaining long-term organization and process level competence, or core competencies, requires a renewal or continuous improvement of individual level competence to maintain advantages relative to changes in social standards.

The knowledge economy and globalization are intensifying the diffusion of ideas, practices, and innovations (Friedman, 2005). As competitive responses, firms are leveraging systematic approaches such as TQM, ISO 9001, ISO 10015, lean manufacturing, and Six Sigma. These approaches to enhance firm performance create an environment of continuous change. The principles of continuous improvement that underscore these methodologies promote a shorter and shorter lifecycle of skills and knowledge. Consider a scenario that causes frequent workplace changes like the implementation of lean manufacturing principles. Womack, Jones, and Roos (1991) define lean production as "the accurate specification of the product's value to the customer and the identification of the Value Stream of actions required to produce the product." Lean manufacturing is a systematic approach that identifies and eliminates eight major "wastes" (non-value added activities) through continuous improvement to address customer needs. These wastes can be directly connected to process and job/performer worthy performance:

1. Overproduction – produce too much and too quickly.
2. Inventory – excess of one-piece flow.
3. Defects – inspection, rework, scrap.
4. Non-value added – effort that customer does not see and is unwilling to pay for.
5. Waiting – idle time.
6. Talent – underutilization of employee skills.
7. Motion – excessive movement of people and machines.
8. Transportation – resources expended to move material around the operation.

Continuous reduction of these wastes implies multiple and repeated shifts of employee competence from expert or specialist to novice as process adjustments repeatedly change the standards necessary to produce worthy performance. This, in turn, causes a need to adjust skills, abilities, and knowledge to achieve the new standards of worthy performance.

Adapting competence

Robinson and Robinson (1995) present two models that connect individual competence change with organizational performance. One approach, a performance model, identifies the best practices of individuals through observation or interviewing of exemplary performers and creates models for positions by benchmarking the performance of these exemplary performers. The second approach, a competency model, is described in terms of skills, knowledge, and attributes and also utilizes exemplary performers to build the models. Robinson and Robinson stress a role for both models since the performance model is more appropriate for a specific position while the competency model is better used for a family of positions. An underlying assumption of these models is that internal expertise is the source of developing performance. The authors provide criteria to identify exemplary performers including length of time in position, appraisal ratings, operational results, and qualitative results (how results are achieved, not only what is done to achieve results). The authors note that in their experience "only 5 to 10 percent of the people in a given position qualify as exemplary" (p. 116).

While Robinson and Robinson provide excellent conceptual models for performance they do not explicitly address an external focus necessary for connecting individual competence and changing social standards of worthy performance. By assuming that exemplary performers are internal, the role of external exemplary performance or new technologies that change the value of exemplary performance is discounted. Rummler and Brache (1995) also do not explicitly identify worthy performance although they do focus on accomplishment over behavior. While it may be assumed that organizational alignment creates worthy performance, it may not necessarily be the case without explicit incorporation of external evaluation and scanning of external levels of performance.

Rummler and Brache view the organization as an adaptive system to develop the horizontal, or systems, view of organizations. They argue that "adaptation is a process" and that "an effective manager can use the systems

framework to predict and proactively cope with change" (p.13). Yet, their framework does not provide explicit insight into how an organization adapts to the environment. For example, their framework does not explicitly identify an organizational feedback loop or a role of environmental scan. The authors further note that a good individual fails in a bad process every time yet they do not recognize that a process assumed internally to be "good" may not be "good" relative to external social standards. It is likely that an organization that has not undertaken six sigma, Lean, or ISO methodologies will have "bad" (i.e. – not cost competitive) processes relative to their competition. The organization may have internal worthy performance but when evaluated with changing social standards of performance, it may not.

Jacobs (1997) presents a taxonomy of employee competence based on a definition of employee competence as the "relative abilities of individuals with respect to a particular work task or set of related tasks" (p.1). The five levels are:

- Novice – little or no knowledge, skills, and experience with the task in question.
- Specialist – reliably perform specific tasks unsupervised. Coaching still important.
- Experienced Specialist – reliably performs tasks and has done so many times. Tasks are performed with ease and skill.
- Expert – has knowledge and experience to meet and exceed task requirements. Distinguished and highly regarded.
- Master – an expert among experts.

Figure 1 presents Jacobs' conceptual model of the relationship between job performance and competence. Jacobs identifies three important points about the relationship between competence and job performance. First, it is not necessary to develop high levels of competence in all tasks to meet and exceed job requirements.
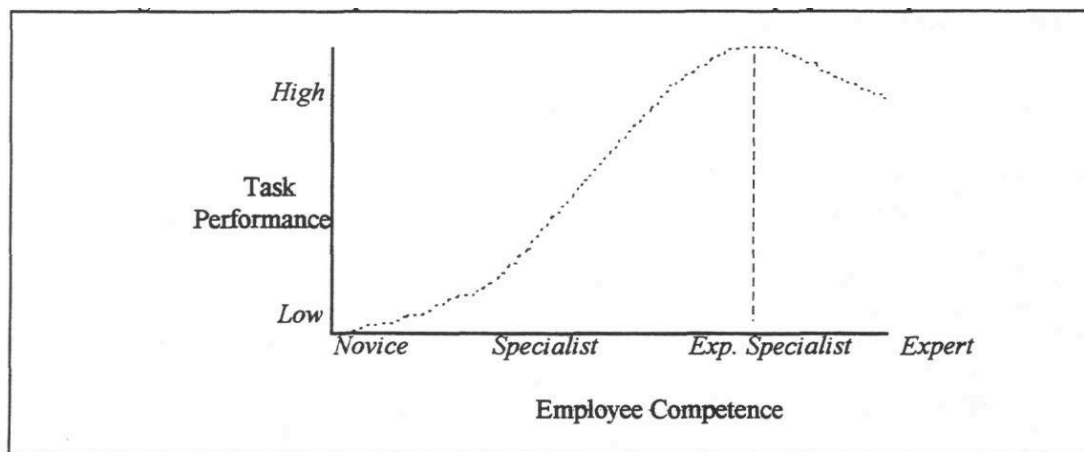

Figure 1. Jacobs' Task Performance Relationship

Secondly, organizations must more precisely match competence and performance. Finally, the relationship between competence and performance is not linear. The task performance of an expert may actually decrease relative to an experienced specialist, which indicates that knowing too much may be a hindrance in task performance. That is, a person might over-analyze and derive overly complex fixes for problems that can actually be resolved with simple solutions. This taxonomy assumes the task remains static and the competence necessary, or value of worthy performance, remains constant.

By extending this model to an organizational perspective we can depict how, based on Jacobs' taxonomy, competence shifts through continuous improvements over time. Figure 2 shows organizational performance on the Y-axis, and competence shifts over time on the X-axis. Each curve represents a shift in the value of worthy performance due to shifts in technology or other external variables. This figure shows several relationships between competence and organizational performance. First, Jacobs' notion is maintained that adjusting competence from a novice to a specialist within a curve increases task performance. Additionally, a specialist in one technology curve may now be a novice in a curve representing a new standard of worthy performance. Finally, the novice in a new curve may still exceed the performance of the previous technology, which accounts for performance gains such as productivity and accuracy.

Figure 2. Competence and Organizational Performance

Competence Change Framework

The convergence of concepts from Jacobs' taxonomy and Rummler and Brache's system view provides an opportunity for a new framework that connects individual competence, organizational performance, and changing social standards. Figure 3 presents a competence change framework. This framework acknowledges the interplay of changes in social standards of worthy performance with organizational performance, the alignment of the three levels of organization, and the importance of quantifying worthy performance. It is for these reasons that the unit of measurement of worthy performance in this model is shown at an organization level.
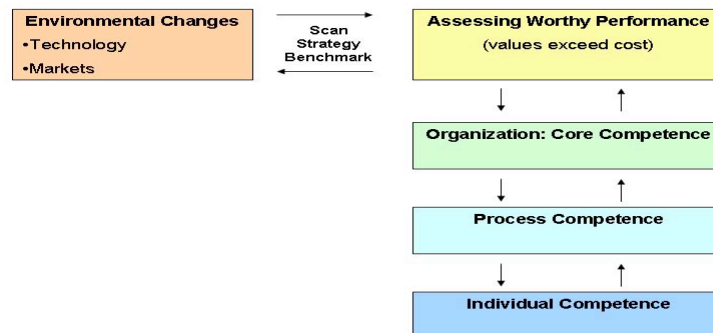

Figure 3. Competence Change Model

This competence change framework has three primary assumptions. First, an organization must adapt to new standards of performance brought about by new ideas, practices, and technologies that cause social standards of worthy performance to change. Second, there is a connection between individual level competence and organizational level performance and the three levels of an organization are aligned as described in Rummler and

5

Brache's model. If core competence is a collection of individual competencies then the organization is bounded by the collective performance of its individuals. Therefore the levels are linked and require alignment. This assumption is best witnessed in micro enterprises and small businesses that rely on the competence of few individuals for the firm's survival. Third, this framework assumes that strategic stance and strategic action matter and that an organizational method to scan and assess the environment relative to internal performance is a necessary function. Popular examples of environmental scan include benchmarking, SWOT analysis, and the balanced scorecard.

This competence change framework has three primary weaknesses that require further exploration. First, it assumes that environmental scans are done and done well. This is not necessarily the case since it is difficult to know opportunity costs and points of leverage relative to external choices for performance improvement. Second, this framework does not explicitly address organization change methodologies. Imagine when a firm's leadership decides their current inventory control system's performance is no longer adequate and that new standards are required. This decision shifts the standard of current worthy performance from acceptable towards a view that the cost of behavior significantly exceeds its value due to opportunity costs. Implementation of this competence shift represents a human resource development implementation that impacts the organizational, process, and individual levels of the organizations. While this framework implicitly assumes change it does not explicitly identify how the change occurs at each level or how the new standard is diffused in the organization.

Finally, measuring worthy performance is still a challenging effort despite its relative simplicity as a concept. This framework compounds the issue by identifying worthy performance as an accumulation of individual competence. Essentially this framework is proposing that core competence can be expressed in terms of worthy performance relative to the external exemplars.

Research Implications

This paper has presented the link of individual competence and organizational change through the concept of worthy performance. The review of literature that links organization competence, or core competence, and individual competence supports this notion. This paper highlights research gaps in the literature that focuses primarily on internal exemplars of worthy performance and makes the case that to understand worthy performance organizations need an outward assessment or environmental scan to incorporate social standards of worthy performance. Gilbert's arguments and Jacobs' taxonomy provide the fundamental logic that competence is a dynamic state that requires precisely matching skills and knowledge based on assessments of the potential to improve performance. The notion of precisely matching competence is implicit in the concept of organizational core competencies. Developed from the literature, I present a competence change framework to expand the notion of worthy performance in the context of changing social standards of performance. This framework provides a foundation to explore how, by what processes, do organizations identify a gap in human competence and decide to facilitate a change. Another research question can examine how do organizations determine a frequency to adapt competence. This includes exploring external evaluation (strategy and environmental scans), internal evaluations (continuous improvements), and both simultaneously on criteria of comparative judgment.

This preliminary framework requires significant further examination. First, there should be further exploration of each element and their interrelationships. Strategic stance and strategic action, such as benchmarking, are critical approaches that deserve further development to understand how firms assess their competence in relationship with the competence potential discovered in the environment. Second, change management is an implicit component of this model and deserves further assessment and potentially an explicit inclusion in the framework. Third, exploring the literature on human capital metrics may provide further insight into developing organization level worthy performance. Finally, there is an opportunity to empirically examine this model in order to further develop the connection between individual competence and organizational adaptability.

Organizational adaptability is a critical concept from the organization theory paradigm that assumes organizations must adapt to survive. Changes in the workplace caused by intensifying diffusion of ideas, practices, and technologies as well as increased customer demands in the performance of goods and services create a tenuous environment for firms. Rummler and Brache note that "organizational health is a function of how well it has adapted" (p.12). This model seeks to guide research into explaining how organizations can adapt through competence change.

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