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Human Capital in the Supply Chain of Global Firms

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The common thought is that corporate globalization cannot exist (in a practical sense) in a world filled with differences. This is both true and not true. The great difficulty for many firms is that most managers are more apt to focus on differences than similarities. The true test is of the manager’s perspective. It is the manager’s perspective that allows for global success.

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Thomas L. Friedman indicates in “The World is Flat: A Brief History of the Twenty-first Century” that he awoke to the revelation one day that the traditional barriers of international trade had somehow passed, resulting in a world where relatively frictionless commerce on a global basis was taking hold. While new to Friedman, the issue of the movement toward a global economy is not new to those senior executives engaged in global competition. However, the fundamental elements of Friedman’s book speak to all of those in the economy, when we look to the issue of why this change has come upon us—whether the breaking down of physical barriers, such as the Berlin Wall, or the “opening of the windows,” via the introduction of the Windows operating system, which has placed us on a course for global workflow management.

Through these changes and the continued evolution toward the opening of world markets and the reduction of trade barriers—such as through the efforts of nations in the World Trade Organization—the world has indeed become flat. The flatteners that Friedman speaks of, such as open sourcing, outsourcing, offshoring, in-forming, etc., have transformed commerce. However, Friedman argues that these flatteners have led to a “leveling of the playing field.” Unfortunately, this is an oversimplification of global business (much as the foundation economic theories of international trade oversimplify the complex nature of global commerce).

While managers would agree that the “levelers” Friedman speaks of have clearly led to the globalization of markets, thus intensifying competition on a global basis, they have no more leveled the playing field than the Internet leveled the playing field between well entrenched firms and online startups. Simply stated, the levelers have increased the inter-connectiveness of the global market, reducing the barriers a firm faces when operating (whether selling or sourcing) throughout the world. The newly formed hypercompetitive global competitive environment has increased the importance of how firms compete (e.g., placing firms such as Haier Group, Samsung Electronics Co. and Whirlpool Corporation in more intense competitive environments). Understanding resource configurations leading to competitive advantage has become heightened. However, today’s hypercompetitive global environment necessitates that firms acquire and retain the human capital capable of...
effectively developing marketing and management strategies capitalizing on resource advantages in the new global environment. Nowhere is this more notable than in the operations of the firm’s global supply chain.

In this article, it is argued that the human capital a firm employs in its global supply chain allows the firm to take advantage of the global flatteners. This is to argue that Friedman’s hypothesis that the flatteners have created a level playing field overstates the nature of the global business environment. Rather than these flatteners leveling the playing field, they have set the stage for firms to compete more fiercely, thereby enhancing the competitive advantage of those firms embodying the human capital capable of leveraging this newly charged environment.

The focus here is on the human capital necessary for firms to operate aggressively in the global marketplace, taking advantage of the flatteners to maximize value delivered to a wide variety of firm stakeholders. To this aim, we (1) address the importance of human capital for global supply chain competitiveness, (2) delineate dimensions of human capital that firms need to accumulate within the firm’s global supply chain to compete in this new environment, and (3) discuss how the explicated human capital dimensions advance global supply chain strategies for success in a dynamic global business environment.

THE IMPORTANCE OF HUMAN CAPITAL FOR FIRM COMPETITIVENESS

Human Capital as Foundation for Firm Competitiveness

Firms are globally competitive when they possess and configure the appropriate unique combinations of tangible and intangible resources within their global supply chain. It is through the development and leveraging of unique combinations of heterogeneous and imperfectly mobile resources in the firm’s global supply chain that it is able to achieve and sustain competitive positions resulting in above normal returns. For example, the ability of Wal-Mart Stores to connect with consumers throughout the world is derived from the supply chain people Wal-Mart employs, who are able to deliver superior value to these customers. It is through the interface of Wal-Mart’s management and marketing personnel that Wal-Mart has been able to engage global consumers (via its global supply chain) at a fundamental level. Though global sourcing programs demand higher quality goods, lower prices and more integrated supply chain coordination, Wal-Mart has led the retail sector in the delivery of value. However, resource configurations (i.e., capabilities) are only foundations of competitive advantage when they are able to be continually modified to maintain competitiveness within the dynamic environment. Hence, it is through the firm’s ability to develop and maintain dynamic capabilities within the global supply chain that it competes. This argument, while well founded, often proceeds without consideration of the fundamental unit of analysis—i.e., the human capital employed by the firm, which embodies the firm’s capabilities.

Human resources are one of a firm’s most common means to build and maintain dynamic capabilities. This fact is more important today, when firms compete in hypercompetitive global markets, where a firm’s employees are challenged to work within a global supply chain environment. Therefore, it is important for senior managers to not only understand how to motivate supply chain personnel to accumulate capital, but also to understand themselves the types of capital most useful to the firm in working in the flat world. Here it is argued that a meta-element of competitive advantage in the flattened world is the cognitive approach (or perspective) that one has to world business dynamics.

Cognitive Constraints: Understanding the Boundaries of Mindsets

Inherent within the argument of the importance of human capital employed in
the firm’s global supply chain is the mindset of the supply chain personnel employed in the strategic decision-making element of the firm, as well as its tactical implementation. The issue of global mindsets is not new. Rather, the global mindset of an individual has been well addressed in the business press. A global mindset refers to an individual’s perspective on the world, and therefore, places cognitive constraints on his/her manner of relating to the world around him/her. While the press (both business and academic) enumerates a number of mindsets, for the purpose of this discussion we will speak of three (1) domestic, (2) international and (3) global, and we will relate these mindsets to issues concerning understanding the complexities of the global economy (e.g., the flatteners) Friedman addresses (see Fig. 1).

Supply chain personnel with a domestic mindset have primary business experience and interest in their domestic market. Given the lack of interest or experience in foreign markets, these individuals have been primarily unaware or uninterested in the dynamically changing global environment. These individuals, when challenged in a hypercompetitive global business context, are ill-equipped to effectively compete with their global counterparts. First, these individuals often do not perceive the flatteners Friedman speaks of as influencing their firm’s competitive position (this conclusion is typically based upon a limited scope of the firm’s operations). Second, when these individuals are placed into this context they often rely upon extant patterns of behavior/strategies in the administration of their tasks (i.e., to expand beyond their domestic operations, they often consider the most appropriate strategy to be the standardized strategy). For example, a Canadian marketing manager in charge of the customer service department of an international maintenance, repair and operating supplier, when charged with responsibility for the firm’s U.S. operations, immediately extended existing policies used in Canada to the U.S. Unfortunately, national differences in the supply chain personnel now under her control were overlooked, resulting in a series of initiative failures in the U.S. market that had been effective in the firm’s Canadian operations (a consequence not foreseen due to the domestic mindset of this manager). The ineffectiveness of the strategy resulted in a

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**Figure 1** Relationship of Mindset to Perceptions of Hurdles to Global Business

![Graph showing relationship between mindsets and perceptions of hurdles to global business](image_url)
lengthening of the cycle time of the firm. As this example illustrates, those individuals having a domestic mindset are cognitively restricted to a relatively rigid self-reference criterion, in which their limited experiences and interest shade not only their perspectives of what is appropriate, but more importantly, what is possible (and thus places constraints on organizations engaged in the global environment).

Supply chain personnel with an international mindset have some limited business experience or interest in markets outside of their domestic market. These individuals have become sensitized to the complexities of unique aspects of international markets and are relatively well versed in the need for adaptation of business due to the inherent variations across markets. As such, these individuals, while understanding the flatteners increasing global competitiveness of the firm, in some respect have become hypersensitive to the inherent differences across markets, thereby limiting their ability to fully capitalize on these flatteners. Thus, these individuals face the paradox of understanding the need to leverage the flatteners available to their firm but also understanding that in order to leverage these flatteners, the firm must overcome the hurdles of operating across vast market differences. For instance, while an individual in a global supply chain may see that offshore outsourcing provides the firm with unique locational advantages (e.g., cost and productivity), concerns over the costs related to control and coordination issues with such an operation spanning cultural, geographic and time differences may cognitively outweigh the perceived advantages of this strategy. For that reason, the cognitive frame employed by those with an international mindset places the firm at a strategic disadvantage in relation to maximizing global supply chain operations.

Supply chain personnel with a global mindset have multiple business experiences and interests in international settings. Given the experience of these individuals, they are often more capable of sensing both the advantages and disadvantages of global operations. Such personnel, while perceiving the uniqueness of each market in which their firm operates, also senses opportunities for leveraging the firm’s operations. For example, 3M Company was challenged when operating in India in relation to its dish scrubber product (a product consisting of a liquid soap fill-able handle and an attached sponge scrubber). Local content laws required 3M to use locally produced sponges. Supply chain personnel sensitive to the local requirements and the ability to leverage existing products decided to offer the product to the market without the sponge, thereby capitalizing on economies of scale and minimizing the need to contract with local manufacturers. Supply chain personnel with global mindsets are able to focus on leveraged opportunities in the global marketplace, putting aside inherent differences (overlooking complexities) to focus on opportunities. It is argued that global supply chain personnel with global mindsets are more sensitive to the opportunities offered in the global marketplace resulting from the flatteners of the global economy.

Further, it is argued that it is the supply chain personnel’s lack of a global mindset that is a constraint on the firm’s capabilities, both embodied by and developed/maintained by, the human capital of the firm. The cognitive constraint imposed on the organization sets forth its path for recognizing and leveraging the flatteners Friedman identifies. This is not to indicate, however, that simply by developing global mindsets within the firm’s global supply chain personnel that the firm can achieve competitive positioning in the hypercompetitive global marketplace, but rather that senior executives must recognize the constraint that such cognitive frames have on the organization (and its ability to develop dynamic capabilities). Furthermore, it is argued that the perspective of the supply chain personnel is leveraged by the specific human capital that the individual possesses which determines the strategic path of the firm.
DIMENSIONS OF HUMAN CAPITAL NECESSARY FOR FIRM SUCCESS IN A FLAT WORLD

The perspective of supply chain personnel plays a critical role in the foresight that the individual has in developing effective global strategy. However, this perspective must be leveraged through a series of skill sets that enable the individual to excel in both strategic assessment and continual management skills. Here, strategic assessment skills relate to the competencies of supply chain personnel to effectively determine appropriate courses of action in a globally competitive marketplace. Alternatively, continual skills relate to the set of competencies that allow the individual to effectively manage existing and future initiatives of the firm, its global supply chain, and in its competitive environment. These skills directly relate to two fundamental sets of human capital, i.e., analytical capital and social capital.

Although ebbs and flows have come to pass related to the primacy of analytical capital and social capital (as both have had prominence in the business environment at different times), the seminal issue is that differing balances of capital are needed for different positions within a firm’s global supply chain. For example, for those whose primary responsibility is in managing the global supply chain relationships of the firm, a more developed set of social capital than analytical capital is appropriate. For an operations manager within the firm’s global supply chain, social capital becomes somewhat less important than analytical capital. Within the context of a flatter world marketplace, characterized by an emphasis on informing, outsourcing, off-shoring and global workflow, an individual’s set of human capital (analytical and social) becomes increasingly important. Overall, while there are many dimensions of human capital, some appear specifically important for successful global business in a flat world (see Fig. 2).

Analytical Capital

Analytical capital (e.g., critical thinking) reflects an individual’s abilities to conceptualize a problem, isolate its components, organize information for decision-making, establish criteria for evaluation, and draw appropriate conclusions. Analytical capital structures the manner in which the individual applies bases of knowledge and can be viewed in relation to tacit knowledge, experiential framing, prioritization of problems, learning and unlearning.

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**Figure 2** Influences of Analytical and Social Capital on Firm Performance

![Diagram showing the influence of analytical and social capital on firm performance](image-url)
Tacit knowledge is an intellectual and cognitive process that is neither expressed nor declared openly, but rather implied or simply understood. From a cognitive standpoint, tacit knowledge results from the reduction of abstract concepts to a structure reflective of the environment that allows individuals to learn. Tacit knowledge appears in the form of complicated, multi-condition rules for accomplishing specific tasks within a given set of parameters. Tactic knowledge bypasses in-depth analysis, and moves rapidly to a plausible solution when a familiar pattern is recognized. As such, tacit knowledge is often used during the decision-making process to determine the appropriateness of the solution, or to determine information requirements necessary for a decision. More importantly, tacit knowledge is important for supply chain personnel to adapt to changing environmental conditions, as it provides the foundational reference from which individuals can extrapolate concepts. For example, a global supply chain manager’s tacit knowledge of effectively coordinating geographically disperse and diverse supply chain units can enhance not only the effectiveness of decision-making regarding outsourcing and offshoring decisions, but can also increase the effectiveness of strategic adaptations to policies. Take the case of Japanese electronics specialist Matsushita Electric Industrial Co. Historically, Matsushita maintained arms-length relations with its supply chain partners, conducting the majority of innovation and high-tech component manufacturing. However, to take advantage of locational supply economies while simultaneously retaining its tacit knowledge, Matsushita engaged in training and assisting an elite set of foreign suppliers, thus transferring elements of the firm’s tacit knowledge while leveraging flat world economics.

The concept of tacit knowledge is also related to another type of analytical capital referred to as experience framing. Experience framing relates to an individual’s ability to apply past experiences to different problems and their related solutions. Through repeated exposures and extrapolation episodes an individual’s experiences, problems, and their related solutions become hierarchically organized. This results in developing a more expansive knowledge structure, allowing for foreshadowing of effects. Experiential framing is important for decision-making as those with greater experiential framing abilities are able to more effectively organize information around implicit principles and abstractions that enhances their ability to make appropriate decisions.

Further, breadth of experiential framing, derived from a breadth of experiences and extrapolation episodes, plays an important role in the decision-making process. This is because functional experience (i.e., that experience related to the specific job tasks of the individual) tends to narrow cognitive processing. Lack of breadth of experiential framing has resulted in the inability to replicate successes from one market to the next. For example, although Carrefour has had tremendous success throughout Western markets, the narrow experiential framing of Western market operations hindered its ability to effectively deliver value to the Japanese marketplace. This mistake ultimately resulted in the sale of eight of its stores to Japanese retailer Aeon, Co. Carrefour’s four-year presence in Japan lost the French retailer between 200 and 300 million euros. However, the failure in Japan may have provided Carrefour the experience to broaden its framing for success in other Eastern markets.

While experience and knowledge are critical analytical capital elements, supply chain personnel must also be able to prioritize problems (i.e., an individual’s ability to identify and rank those issues related to the achievement of the firm’s goals). Supply chain personnel rely upon their experiences and their understanding of the organization’s goals to develop a ranking of issues presented to them (reduced cycle time, inventory control problems, product delivery delays, etc.) in order to determine the ordering of actions to be taken by them-
selves or by others working in the firm’s global supply chain. The ranking is typically completed under a risk management perspective, with global supply chain personnel assessing the risk associated with each course of action. Those issues containing relatively little risk are usually ranked lower in priority, while those higher in risk to the organization typically are ranked higher. The flat world has increased the speed at which information flows as well as the information available to global supply chain personnel (in-forming). For that reason, the importance of an individual’s ability to prioritize problems is increased in a flat world. It is only when these individuals can quickly and effectively sort through global issues in an effective manner that the manager can respond in an appropriate timeframe for the organization.

Learning refers to the process through which supply chain personnel acquire a dominant logic upon which to operate. This conceptualization explicitly addresses the feedback component necessary for learning, as well as allowing for a general enough definition to include stimulus-response, cognitive and behavioral theories. An individual’s ability to learn, or his or her ability to develop consistent logic, is critical for effective performance under global environmental conditions. With such great emphasis placed on the learning organization, the ability of supply chain personnel to learn is becoming paramount. Through learning, supply chain personnel are better able to effectively adapt to changing conditions. For example, in June 2000, Nike Inc. noticed significant problems in inventory excesses and shortages. Nike was able to identify the problem as a glitch in its i2 supply chain forecasting implementation system. The reliance on the system has become a pivotal learning experience for Nike’s global supply chain personnel, setting forth new protocols to minimize the probability of future replications (e.g., Nike stopped using i2’s demand planner for short- and medium-range athletic footwear planning). As the world flattens, the ability of global supply chain personnel to learn is challenged, as they are often faced with extremely divergent worldviews. Supply chain personnel emerging from linear thinking societies are often confronted with learning non-linear thinking in order to enhance the firm’s overall operations. The ability of global supply chain personnel to quickly learn divergence cognitive processes (both in terms of value chain members and customers) becomes central to effective strategic planning.

While learning is important to minimize future mistakes, we cannot dismiss the importance of unlearning (i.e., the process through which a manager, or organization, relinquishes dominant logic or protocols for completing a task and acquires new logic or protocols). As in learning, global supply chain personnel vary in their ability to relinquish logic that was previously successful when presented new problems to solve. While learning enhances an individual’s logic and thus allows him/her to become a more efficient and effective decision-maker, existing logic creates a barrier to solving many of the complex problems of the global marketplace, thus stifling innovation. The importance of unlearning is heightened in a global business context, as global supply chain personnel must be able to make micro-level adaptations given contextual conditions. Furthermore, supply chain personnel are challenged continually in the global marketplace to unlearn the effective strategies of the past in the assessment of the future. For example, although Avon Products Inc.’s supply chain operations in the United States have been extremely successful, Avon needed to unlearn this system and learn a new system to operate in the Chinese market (inclusive of increasing the speed and flexibility in the supply chain via flattening of the supply chain structure). Through unlearning and learning Avon has been able to overcome many of the challenges that have caused other firms to fail in the Chinese market. However, only through continued unlearning and learning will Avon be able to repli-
cate the supply chain success it has had in the United States.

**Social Capital**

Social capital reflects an individual’s abilities, personality traits, character traits, interpersonal abilities, work ethic, and attitudes. Social capital is founded in an individual’s inherent nature. However, this is not to suggest that social capital cannot be nurtured. Rather, through specific development programs and social capital elements (e.g., intuition, self-confidence, ability to deal with ambiguity, ability to work under pressure and flexibility), the personnel associated with the global supply chain can be enhanced.

Intuition is a sense of certainty relating to an issue, decision, or course of action without specific knowledge as to how one came to a conclusion. It is the essence of knowing without necessarily being able to explain how the knowledge was ascertained. While a consensus has not been reached relating to either the conceptualization or definition of intuition, here we define intuition as a feeling of knowing on the basis of inadequate information and without conscious awareness of rational processing. At the conscious level, intuition aids in the recognition of patterns. At the subconscious level, intuition is used to access cumulative experience and expertise. As such, intuition can be viewed as the end product of an implicit learning experience. Intuition can be one of the most useful skills for achieving desired results. In a global business environment where adequate information is lacking and change is continuous, intuitive skills enable a firm to maintain progress toward accepted goals in an environment of unfolding situations. For example, market research indicated that the U.S. market was not prepared to accept another home video game system in the 1980s (after the fall of the market in 1983). However, the intuition of Minoru Arakawa about the viability of such a market proved correct, resulting in one of the largest rebirths of a global industry. Furthermore, individuals having greater intuition can more effectively interact with others, thus enhancing the effectiveness of global supply chain activities.

Similarly, self-confidence is a necessary capital element for global supply chain personnel. Self-confidence refers to an individual’s degree of perceived probability of success at a task. Self-confidence is a summary judgment of performance capability that is induced by the assimilation and integration of multiple performance determinants. One aspect of self-confidence’s importance stems from its relationship to performance outcomes. Those global supply chain personnel possessing self-confidence tend to achieve higher performance, while those low in self-confidence often experience self-discouragement, resulting in lower achievement.

As global competition increases with the flattening of the world, self-confident managers are better able to maintain extant relationships and reconfigure and formulate global supply chain activities in turbulent and uncertain environmental conditions. For example, only when supply chain personnel are confident in their partner firm’s abilities are they able to effectively communicate to partners their own firm’s strengths. An example is the recent alliance between United Parcel Service of America, Inc. (UPS) and Hong Kong Disney. UPS will be responsible for the delivery of Disney’s magical memories around the world by bringing its express delivery services to the Park. The success of this alliance hinges to a significant degree on the brand reputation of UPS, which is derived, in part, from the self-confidence in supply chain excellence of UPS’ global supply chain personnel.

Further, the ability to deal with ambiguity, often referred to as ambiguity tolerance, is concerned with the degree to which supply chain personnel can hold back their need for complete information relating to their environment. Supply chain personnel high in ambiguity tolerance are more comfortable handling situations in which complete information is unavailable. Alternatively, those supply chain personnel who have a low level
of ambiguity tolerance avoid the uncertainty and opaqueness of a situation by oversimplifying the content and thus forming a reality-inadequate approach. The ability of supply chain personnel to deal with ambiguity has been a common variable used to differentiate individuals in the workplace. Nowhere is ambiguity higher than in an increasingly dynamic, flatter global business environment. For example, uncertainties about the role of government in the Chinese economy have firms both selling to and buying from China operating in environments constantly in flux. Only supply chain personnel possessing a certain degree of ambiguity tolerance are able to work under the stress of such conditions and develop effective business strategies.

While being able to deal with uncertainty allows supply chain personnel to cope with global operations, they must do so under the increasing pressure of the flat world. Pressure is the aggregate of all changes, challenges or demands placed upon managers. In business, pressure is commonly experienced through demands on time or attention, dealing with people, task overload, organizational changes, etc. Stress is the biological and psychological response to pressure. The ability of supply chain personnel to effectively employ coping strategies to minimize stress enhances the firm’s effectiveness. The ability to function under pressure is believed to be a key determinant of successful supply chain personnel engaged in global business.

Those individuals who are able to employ effective coping strategies are better able to maintain focus and problem-solve effectively. The importance of this skill has been heightened in the flat world, where interconnectivity of global supply chain personnel and customers are constantly in flux. For example, the movement toward virtual workflow necessitates that global supply chain personnel be able to effectively operate under multiple timeframes simultaneously. Thus, supply chain managers for Dell Computer Corp. must be able to adapt to conceptualizing the worldwide supply chain flow of parts to assembly facilities, and to individual customer shipments simultaneously. They must be able to understand how slight cycle time disturbances in a component part can result in substantial delivery delays. Not only the ability to work under pressure becomes a paramount capital element, but also the ability to be flexible in the flat world.

Flexibility, from a cognitive perspective, refers to an individual’s awareness that in any given situation numerous options and alternatives are available. It implies not only the awareness of alternative options, but also a willingness to change one’s behavior based upon an assessment of the alternatives. This results in linking the cognitive to the behavioral dimension. In a firm setting, flexibility is viewed by many as a key skill for an effective workforce. Flexibility allows global supply chain personnel to assess a wide range of information and consider a number of alternatives prior to making a decision. This allows the supply chain manager to select the most appropriate solution for the given problem, as well as effectively interact with a wide range of individuals. The upside is increasing both their ability to manage in a global workforce as well as effectively contribute to the creation of market offerings capable of meeting a diversity of consumer needs.

Inflexible managers restrict their alternatives to those previously employed and thus limit their ability to effectively develop optimum solutions for newly encountered problems. For example, the increased potential for a global pandemic raises substantial concerns related to disruptions in the firm’s supply chain. Outbreaks of Severe Acute Respiratory Syndrome (SARS) and Avian Influenza have forced global supply chain personnel to act quickly in adapting their supply chain tactics to minimize inventory disruptions. For example, Motorola Inc. was required to reshuffle production schedules when it temporarily suspended production at its Singapore facility when workers there were quarantined for SARS exposure. Through the employment of flexible global
supply chain personnel, firms can continue to develop effective strategies and tactics to be competitive in an increasingly flat world.

**STRATEGIC IMPLEMENTATION**

The fact that the “world is flat” places firms, and more importantly the human capital charged with the development and maintenance of the capabilities of firms, at the nexus of global hyper-competition. As human capital is central to the effectiveness of global supply chain strategy development and implementation, the strategic implications offered here relate specifically to developing and retaining the firm’s human capital to maximize global supply chain efficiency and effectiveness.

**Step One: Assess Tasks of Supply Chain Personnel**

In order for the firm to discern its appropriate amount and distribution of human capital, it is necessary for the firm to explicate all of the tasks it needs to perform in its supply chain operations and decompose those tasks into specific jobs. This multi-stage process involves the firm identifying the tasks that it needs to perform in delivering value. The first stage is delineating the functions of the global supply chain. This involves exploring the functional elements both internal and external to the firm’s operations. For example, the sorting and matching function could be held internal to the firm or external to the firm, or the customer relationship development function of the firm’s global supply chain. Next, the firm must identify the tasks to be performed within each function. For example, in relation to sorting and matching, if it is held internal to the firm, the determination of the most efficient location as to where this specific function resides in the global supply chain operations should be identified. Similarly, attention must be given to which tasks would be required in customer relationship development (e.g., handling complaint behavior, customer research, etc.). Next, the firm should map the tasks into jobs. The breadth of tasks incorporated in jobs will vary by any number of criteria, e.g., size of firm, size of supply chain department, union requirements, or country standards. Once tasks have been mapped into jobs, the firm should work to develop job descriptions and job specifications. Through this multi-stage process, the firm cannot only gain a better understanding of its current operations, but it can also gain an understanding of potential areas that need help.

**Step Two: Assess Human Capital and the Mindset of Managers**

A firm’s supply chain personnel vary in their level of analytical and social capital. That is to say, a senior supply chain analyst’s human capital distribution may not be similar to a manager of reverse logistics, a warehouse manager or a manager of supply chain relationships. For example, a senior supply chain analyst may possess a high degree of analytical capital, he/she may not possess a high degree of social capital. Conversely, a manager of supply chain relationships may possess a higher degree of social capital than analytical capital. Thus, it is necessary to first gain an initial understanding of the distribution of capital elements possessed by supply chain personnel as well as individual mindsets (which set cognitive constraints on perceptions of global business). The assessments of human capital and mindset can be conducted in a number of ways. For example, objective assessment via measurement protocols, such as psychological testing of analytical and social capital, as well as mindsets, can be employed. Psychological testing has become a common method of employee evaluation within professional development programs. Through such assessment, senior managers are better able to structure programs to develop personnel to become more efficient in their present jobs or to offer the employee jobs that would
better suit their set of capital. As an alternative to psychological testing, experiential assessment methods, such as scenario exposure or post hoc review of the manager’s past behaviors, can be used to assess human capital levels.

**Step Three: Matching Job Tasks to Human Capital Levels**

In order for a firm’s supply chain personnel to be able to effectively operate in a flat world, the embodied human capital of these individuals needs to appropriately match the tasks embedded within the job. Only when the human capital and mindset of supply chain personnel is matched to the job tasks can a firm realistically expect success in the global marketplace. For example, supply chain personnel in jobs with task responsibility for production efficiency require higher degrees of analytical and social capital in order to effectively monitor operations and manage those involved within production. Furthermore, these managers must also possess a global mindset. Alternatively, those tasked with customer service roles would require greater social than analytical capital. Key to this process is a developmental approach – in that the firm is striving to not only enhance its global supply chain efficiency, but also provide a more ideal work environment for employees by better understanding each employee’s skill set and mental perspective.

**Step Four: Assessing the Effectiveness of the Supply Chain Personnel and Development Planning**

Assessment of the effectiveness of supply chain personnel in their specific jobs should occur periodically. The firm may wish to employ both objective and subjective assessment methods. For example, a firm may wish to query individuals at periodic intervals regarding their perception of their effectiveness and how they believe it could be improved (thus potentially leading to human capital development planning). Furthermore, by independently assessing supply chain personnel effectiveness, differences may be observed, suggesting opportunities for developing human capital elements. However, it is important to indicate that a self-assessment at the firm level of task mapping is also required at this point. The effectiveness of supply chain personnel may be due to the firm’s misalignment of tasks necessary in the job and the requisite capital and mindset of the supply chain manager. Thus, it is important to not view (or present) this exercise as an evaluation tool, but rather as a mechanism aimed at professional development of employees by more appropriately crafting their jobs. The goal is to provide for a more fulfilling work experience while simultaneously working toward enhancing the overall effectiveness of the global supply chain.

**SUMMARY**

Friedman’s contention that we are operating in a flatter world is correct. However, it is argued here that firms challenged with operating in this environment must recognize that the levelers have not made the playing field equal for each firm. The playing field has been leveled by increasing the need to focus on the human capital (and constraining managerial mindsets) of the supply chain personnel that the firm employs. This article has argued that human capital is the foundation for business success in the flat world. Through the embodiment of human capital in the firm’s global supply chain the firm is able to compete. However, it is argued that global competitiveness is constrained by the mindsets that supply chain personnel operate under, as well as the degree of analytical and social capital possessed. It is argued that through a four-step assessment procedure, firms can assess and appropriately match supply chain personnel to specific jobs, thereby increasing their global competitiveness. It is argued here the importance of the individual is key to
effective supply chain operations. Finally, it is recognized that the capital dimensions enumerated here are but a few of the human capital dimensions that can lead to competitive advantage. However, it is hoped that this discussion can serve as a starting point to recognizing the interaction between mindset, human capital and global competitiveness in an increasingly competitive global marketplace.
The role of resources in the firm and the importance of human capital for firm competitiveness is examined in a wide number of articles, including: Jay Barney, “Firm Resources and Sustained Competitive Advantage,” Journal of Management, 1991, 17(1), 99–120; Kathleen M. Eisenhardt and Jeffrey A. Martin, “Dynamic Capabilities: What Are They?” Strategic Management Journal, 2000, 1(10/11), 1105–1121; David A. Griffith and Michael G. Harvey, “A Resource Perspective of Global Dynamic Capabilities,” Journal of International Business Studies, 2001, 32(3), 597–606; Michael A. Hitt, Leonard Berman, Katsuhiko Shimizu, and Rahul Kohhar, “Direct and Moderating Effects of Human Capital on Strategy and Performance in Professional Service Firms: A Resource-Based Perspective,” Academy of Management Journal, 2001, 44(February), 13–28; and Alan J. Malter and Peter R. Dickson, “The Effect of Individual Learning on Competitive Decision-Making and Firm Performance,” International Journal of Research in Marketing, 2001, 18(June), 99–117.

Managerial perspective, as indicated by the concept of mindset, is essential for effective global operation. Several books and articles examine this concept, e.g., Jean-Pierre Jeannet, Managing with a Global Mindset (London: Pearson Education Limited, 2000); B. Kedia and A. Mukherji, “Global Managers: Developing a Mindset for Global Competitiveness,” Journal of World Business, 1999, 34(3), 230–247.

Analytical and social capital identified come from a rich research tradition in organizational behavior, inclusive of: Weston H. Agor, Intuitive Management, Integrating Left and Right Brain Management Skills (Englewood Cliffs, NJ: Prentice-Hall Inc., 1984); Albert Bandura, Social Learning Theory (Englewood Cliffs, NJ: Prentice-Hall, Inc., 1977); Erich N. Brockmann and Paul G. Simmonds, “Strategic Decision Making: The Influence of CEO Experience and Use of Tacit Knowledge,” Journal of Managerial Issues, 1997, 9(4), 454–467; Stanley Bunder, “Intolerance for Ambiguity as a Personality Variable,” Journal of Personality, 1962, 30(March), 29–50; M. T. H. Chi, R. Galser, and M. J. Farr, The Nature of Expertise (Hillsdale, NJ: Erlbaum, 1988); David V. Day and Robert G. Lord, “Expertise and Problem Categorization: The Role of Expert Processing in Organizational Sense-Making,” Journal of Management Studies, 1992, 29(1), 35–47; Jeffrey R. Edwards, “A Cybernetic Theory of Stress, Coping, and Well-Being in Organizations,” Academy of Management Review, 1992, 17(2), 238–274; Allen J. Magrath, “The Importance of Unlearning,” Across the Board, 1997, 34(2), 39–41; and Jagdish Parikh, Intuition: The New Frontier of Management (Cambridge, MA: Blackwell Publishers, 1994).

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