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Human Resource Development and the Resource-Based Model of Core Competencies: Methods for Diagnosis and Assessment

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The resource-based theory of organizational performance emphasizes the sustained competitive advantages gained from production capabilities that are rare and hard to imitate. Under certain conditions, such capabilities become core competencies and tend to involve the firm's human resources. There is not yet a standard research protocol for how to research core competencies. Based on a review of existing studies on core competencies from a variety of fields, a framework for studying core competencies is proposed here based on four questions: Does the firm have a competitive advantage? If so, is it based on capabilities? What is the nature of the specific core competencies involved? Does the competition have core competencies, and if yes, what are they? The implications of this model for researchers and practitioners are discussed.

Keywords: resource-based theory; human resource development; diagnosis and research; core competencies

One standard, recommended human resource development (HRD) practice is needs or front-end assessment, whereby the knowledge, skills, and abilities (KSAs) needed for job or task performance are identified and then used as the basis for assessing the extent to which individuals in those jobs possess those KSAs (Goldstein & Ford, 2002; Rothwell & Kazanas, 1992). The KSA construct has been expanded to the broader concept of competency as any “underlying characteristic of an individual that is causally related to criterion-referenced effective and/or superior performance in a job situation” (Spencer & Spencer, 1993, p. 9). As such, competencies are more than learned KSAs but include qualities such as motives, traits, self-concept, values, and so on. Because of the obvious
connections to performance, competency has been a theoretical and research focus in the HRD field for a number of years (Le Diest & Winterton, 2005; Rothwell & Lindholm, 1999). More recently, researchers have focused on “core competencies” (see, e.g., Carmuffo & Comacchio, 2005; Dooley, Lindner, Dooley, & Alagaraja, 2004), a construct that can be traced back to the resource-based view (RBV) of strategy (see Prahalad & Hamel, 1990). As will be discussed more fully below, in the RBV, core competency means something more and different than the KSAs associated with individual task proficiency in particular or competencies in general. Furthermore, the methods for identifying and assessing core competencies are also different; indeed, as will be argued, traditional competency assessment procedures are likely to fail in identifying core competencies as defined by the RBV.

The purpose of this article is to propose a method for identifying and assessing an organization’s core competencies using the RBV framework, particularly as that method applies to HRD. As will be noted shortly, there is no accepted or comprehensive framework for carrying out such a diagnosis, limiting HRD’s ability to play the role of a strategic partner. Thus, this discussion establishes a foundation onto which specific data collection and analytic procedures for carrying out a diagnosis of a firm’s core competencies can be developed. As a result, this methodology should enable HRD to play a greater strategic role in the direction and operations of the organization. In the first section, the traditional HRD approach to competency assessment will be reviewed, followed, in the second, by a discussion of the RBV of core competencies. The third section provides an extended review of the methods and procedures proposed or used for assessing and diagnosing the RBV of core competencies. This discussion is organized in terms of four key issues in core competency analysis. The concluding section presents an initial framework for assessing core competencies for the HRD professional and then considers the implications of this analysis for both researchers and practitioners.

(Core) Competencies in HRD Theory and Practice

Traditionally, the analytic focus of HRD planning and programming, particularly as this applies to training, was to identify job-specific KSAs (Goldstein & Ford, 2002; Rothwell & Kazanas, 1992). Observed KSA deficiencies would become the platform for a training curriculum designed to remedy these deficiencies and thereby enable adequate performance. The construct of “competencies” essentially expanded the focus of KSAs beyond knowledge or skill to include a variety of personality and related characteristics, increasing the number of variables that could explain and predict job performance; at the same time, the emphasis shifted from enabling adequate performance to producing superior performance (Spencer & Spencer, 1993). Typically, the competencies of individuals in a job class (managers, for example) with superior performance were compared against the same types of characteristics possessed by individuals with lower average performance (Boyatzis, 1982). In practice, though,
competency assessment techniques continued to apply the traditional KSA identification and analysis procedure: job analysis of a specific job or task was followed by an assessment of the characteristics of individuals in that job. Jobs and the individuals performing them were put under the microscope, but in the process, the larger context and conditions in which these specific jobs were located were slighted (Clardy, 2007).

Although this traditional form of analysis is informative in its own way, such assessment does have its shortcomings. In particular, there are four issues related to the traditional approach to KSA and competency assessment. First, by isolating the individual characteristics correlated with superior task performance independent of contextual factors, it presents a simplified—and potentially misleading—model of performance (Kuchinke & Han, 2005). For example, organizational values, specific technology, the larger performance system of expectations, support and rewards under which employees operate, and/or the nature of work group relationships—all of which can exert profound influences on performance—are typically not factored in. Second, the sampling criterion for competency identification is individual task proficiency, not organizational success. The result is the curious condition in which individuals could be seen as possessing high competencies, all while working in a mediocre or failing organization. In such cases, individual proficiencies would obviously have little strategic merit. Third, the labeling of competencies as “core” has been operationally understood as meaning the generic or universal task proficiencies common to a set of performers in a job class (Carmuffo & Comacchio, 2005). If competencies are common or generic, then they can be appropriated and used by any organization and, as a result, reduce performance asymmetries between firms and minimize the differences between competing organizations. Yet the basis for strategic competitive advantage is asymmetry (Porter, 1980, 1985). In short, looking for core competencies among individual performers can actually limit the opportunity to produce superior and differentiated organizational performance. Finally, then, the traditional concept of “core competencies” (understood as the traits and proficiencies associated with superior individual task performance that can often be generalized across organizational and industrial settings) has arguably been misapplied to the core competency construct found in the RBV literature, a point now taken up.

The RBV Model of Core Competencies

An alternative method for defining and understanding core competencies derives from the resource-based theory of strategic management (Barney & Clark, 2007; Prahalad & Hamel, 1990). The starting point for the theory assumes that whereas most organizations in competition typically converge to an average level of performance (Hirshleifer, 1980), some operate at an above-average level; a few (Southwest Airlines and Dell Computers are oft-noted examples) perform at an above-average level on an ongoing basis. Firms that consistently perform on a superior basis are said to have a “sustained competitive advantage”
In this condition, the question becomes “What is the reason for the ongoing superior performance, or alternatively, what is the source of sustained competitive advantage?” Two schools of strategy provided answers to these questions. The positioning approach, championed by Porter (1980, 1985), argued that a firm’s performance derives from the firm’s product, production, and marketing posture relative to its competitors. The resource-based approach (see Barney & Clark, 2007, for an overview) attributes performance superiority to organizational capabilities, specifically in the form of core competencies (see Figure 1).

To understand how the resource-based process works, organizations can be characterized as a combination of assets and capabilities that form a production function for turning inputs into outputs (be they cars or graduates). Assets are the tangible factors owned by the organization, like plants or facilities, technology, or patents. Firms can compete successfully based on their assets when the assets provide prime location, access to deep financial pockets, or the latest technology. On the other hand, because assets have a tangible form, they can be copied (by reverse engineering, for example) and/or bought relatively easily in real estate, technology, or financial markets by competitors. Thus, whatever competitive advantage they provide can be easily obtained or matched. Assets are therefore not likely to be a source of sustainable competitive advantage because they can be “appropriated” by the competition (Teece, Pisano, & Shuen, 1997).

Capabilities, on the other hand, are the operational routines or systems composed of sets of jobs linked together by technology and various coordinating mechanisms. Nelson and Winter (1982) call routines the building blocks of organizations. Routines and the systems in which they are embedded are a property of the organization; that is, they are found at the level of multiple people doing various tasks in a coordinated, managed, and supported system of performance

![FIGURE 1: Tracking the Resource-Based View of the Core Competency Construct](http://hrd.sagepub.com)
(Grant, 1996; Hamel, 1994; Schoemaker & Amit, 1997). Moreover, organizations possess these capabilities independently on any specific individual (Collis, 1994). Capabilities *qua* routines are the mechanisms that not only yield superior performance on an ongoing basis but also become an engine of organizational renewal and innovation. A classic illustration is the assembly line: when Henry Ford introduced it in 1913, the capability of mass production shot Ford Motors past its competitors locked into more archaic, hand-crafted production systems. As a result, Ford dominated the automobile manufacturing industry for a decade and more (Brinkley, 2003). Fifty years later, Toyota’s just-in-time production system generated the same elevated result. Capabilities can be virtually any functional subsystem, from marketing and organizational learning through production processes to human resource management systems and more (Clardy, 2007). For reasons now discussed, capabilities are the foundation for core competencies and sustained competitive advantage.

In the RBV, there are several criteria for defining core competencies. First, core competencies can only be said to exist if the firm possessing them is performing noticeably better than its competition over the long term. That is, the sine qua non of core competencies is persistent, superior *organizational* performance. Of course, what levels of performance distinguish superior from average performance will no doubt depend on the industry and the size of the organization. Second, core competencies are properties of a system and are not generally reducible to or defined by statements of individual task proficiencies. Third, core competencies in the form of organizational capabilities are based on routines and processes. Finally, to create their superior effects, core competencies are organizationally asymmetric. That is, these are capabilities that only a given firm possesses. Importantly, capabilities cannot be duplicated or acquired as assets can be, in large part because the capability *qua* core competency highly depends on the firm’s human resources performing in the context of a unique sociotechnical system. Core competencies cannot, by definition, be common, generic, or universal, because if they are shared, then any firm can use them to achieve competitive advantage. These criteria are often referred to as the VRIS criteria: “Does the competency provide *Values* customers want?” “Is it *Rare*?” “Is it difficult to *Imitate*?” “Is the organization configured to sustain and take advantage of the competency?” (Barney & Clark, 2007).

In summary, then, the RBV of strategy is based on the following postulates: (a) core competencies are a typical, but not exclusive, basis for a firm to use for sustained competitive advantage; (b) core competencies are indicated if a firm’s performance is better than its competition over the long term; (c) core competencies are properties of organization or system, being more than the proficiencies or traits of specific individual; (d) to be the source of sustained superior performance, core competencies must be hard for competitors to obtain, and in practice, this means such competencies are based on the firm’s human resources performing in the context of a unique sociotechnical system; and (e) when core competencies exist, they differentiate the possessor...
firm from the competition, creating an organization asymmetrically configured to its competitors. Core competencies are capabilities qua organizational routines that enable sustained superior firm performance.

**Identifying and Assessing Core Competencies**

Because core competencies are so closely tied to the capabilities of a firm’s human resources, a strategy based on core competencies needs to—indeed, should—involv the HRD function. Even though the strategic roles for the HRD function in supporting such a strategy have already been suggested (Clardy, 2008), the potential for successfully executing that function depends on the ability to identify and assess core competencies. Without such a diagnostic ability, an organization cannot know whether it has core competencies or what those competencies might be, making it difficult to develop, sustain, and protect them. That being said, the Achilles heel of core competency management is measurement methodology: although a variety of studies employ methods for measuring core competencies, the techniques are often problematic and incomplete.

These methodological issues in measuring core competencies can be illustrated in Day and Wensley’s (1988) listing of 11 different diagnostic methods, which included expert opinion, comparison of resource commitments (such as R&D spending), marketing skills audits, comparison of the relative costs of each stage of a value chain, customer comparisons of firm versus competitor product attributes, measures of customer satisfaction or loyalty, market share, or relative profitability. Although there is nothing inherently wrong with this listing, these data collection approaches are presented as stand-alone techniques without a larger analytic, interpretive framework to guide the investigation. In general, then, the problem is not one of listing methods. What are missing are the analytic issues and questions needed to structure each stage of assessment. For example, when should customer satisfaction be measured, and even more important, why? What question about core competencies will information about customer satisfaction answer?

In short, there is no established methodological framework for diagnosing and assessing core competencies, particularly from a HRD perspective (Thomas, Pollack, & Gorman, 1999). Such a framework must establish what the critical issues are for investigating core competencies and then recommend specific data collection procedures relevant to those issues. As now explored, the available studies (reviewed next) can be harvested to begin codifying a systematic methodological framework. Based on the RBV of strategy and core competency as well as analysis of studies attempting to identify and measure core competencies, four critical assessment issues essential to diagnosing core competencies are proposed here; each is defined by its own specific diagnostic focus and particular diagnostic techniques. Each issue will be reviewed in turn.

**Issue 1**: Does the firm have a competitive advantage?
As defined, a firm can only be said to have core competencies if the firm has a sustained competitive advantage, demonstrated by sustained above-average performance when compared with its peers. This means that the first analytic issue involves assessing the organization’s level of performance. Specifically, does the organization have a record of above-average performance over an extended period of time when compared with its competition? Presumably, core competencies might also be indicated if a firm is catching up with or overtaking competitors with flat performance. Although measures of total company financial performance (e.g., profit) are obvious comparative indicators, Ray, Barney, and Muhanna (2004) make the case that when aggregated financial measures such as profit are used, a firm’s actual situation may be masked for several reasons. First, a multifaceted business with several operational processes and/or product lines may have both strong advantages in some processes/lines and no advantages in others; the aggregated measure may dilute specific advantages of a specific process or line. Second, stakeholders may draw down income, again diluting the measure of actual operating performance. Either way, company financial measures can give false readings of actual organizational performance. If used, financial indicators should be specific to an operating product or line.

Alternatively, surrogate indicators of superior performance, such as measures of market share, customer satisfaction, the number of or rate at which new products are introduced, patents or R&D performance, employee loyalty, and/or favorable press or analyst reports, may also be used. For example, Henderson and Cockburn (1994) used three indicators of relative performance to compare the R&D functions of pharmaceutical companies: the scientific publications by their staffs, patents granted, and the staff scientist’s reputation in the larger scientific community. This issue becomes problematic because average levels of peer or competitor performance are also needed for comparison. This concern is addressed, though, in Issue 4 below.

Finally, regardless of the metric used, the question remains, “How much of a difference is needed to say whether a firm has a sustained advantage?” For now, a definitive answer is not possible. What separates average from superior performance may not be reducible to an absolute or universal level of profitability or return. Each industry is likely to have its own somewhat unique distributions of performance variability, such that the level of differentiation in retail will undoubtedly be different than in high technology.

Issue 2: If the firm does have sustained above-average performance, to what extent is the basis of that performance attributable to assets or capabilities? If capabilities are indicated, where are those capabilities located?

If a firm has sustained, superior performance, the second concern is the source or basis for that advantage. Here, the question is fundamentally whether the source of the superior performance can be traced to the firm’s assets or its
capabilities. (Of course, in the real world, because advantage is likely to come from both assets and capabilities, precisely apportioning how much of the variance in a firm’s superior position is due to one or the other may not be easy.) A starting point would be to see if any significant assets were acquired prior to any observed run-up in competitive indicators. For example, was a new technology acquired, a new plant brought online, or product patents obtained that preceded and was responsible for the superior performance? For its first 20 or so years, Xerox had a virtual monopoly in the reprographics field because it owned a set of pivotal patents (Kearns & Nadler, 1992); the advantage was because of the legal protection given to its patents, not to its operating excellence, however. If no specific asset can be identified as the booster for superior performance, then the presence of a core competency in the basis of organizational capabilities would be suspected (Collins & Montgomery, 1995).

Hafeez and Essmail (2007) reported a multistage, integrated, or comprehensive approach to core competency identification. Data were collected from the director and managers of a construction company. First, the director identified nine capabilities that were critically important to business success, such as cost-effective construction, quality management, and modern design. Second, the director identified key capabilities by rating their relative importance using financial and nonfinancial criteria. Capabilities rated above average on both criteria were assessed again in terms of their internal cohesiveness and their external uniqueness. The core competences were those capabilities that met standards of resource redeployment and routines. Finally, using a paired comparison procedure, the relative contribution of personal, organizational, and technological factors to the core competences was estimated.

If capability is indicated, the issue becomes where that capability is located or what type of capability is involved. Porter’s (1980, 1985) value chain model could be used as a blueprint for locating the specific organizational domain(s) and/or process(es) in which a core competency may be found. Each stage in a value chain has its own distinctive pattern of costs that can be converted into a percentage of the whole cost structure of the firm or be put into a per capita ratio (Barney, 2002). Comparing these indicators with the firm’s competitors could point to likely sources of advantage. Functions or processes that are significantly more efficient or effective than the competition would suggest the location of a core competency.

Of course, it may not be possible to get sufficient information about a competitor’s internal cost structure. In this case, a number of other research strategies have been used. The studies now reviewed point to various methods and approaches for identifying the likely locations of core competencies in a firm’s operations and practices.

- Marino (1996) recommended beginning with essentially a marketing assessment of products and customer satisfaction in the context of competitors to identify sources of advantage in the design, production, and/or distribution schemes. Both
physical and knowledge assets behind any advantages are noted and then decomposed into organizational skills and abilities. In turn, these are gauged in terms of the VRIS criteria. Finally, the management team deliberates on and decides by consensus the top two to five competencies.

- Hall (1993) used a structured guide to interview a sample of managing directors or personnel directors in six mid-sized companies about the relative contributions made by a number of factors to each firm’s success. For example, the guide asked respondents to estimate the percentage contribution made to the firm’s product competitive advantage by factors such as price, quality, and after-sales service made. Likewise, managers estimated the percentage contribution made by intangible resources (such as product reputation, employee know-how, or change management skills) to the company’s advantage. Finally, they were asked to rate the sustainability (low, medium, or high) of the selected sources of advantage. Bias in self-perception and self-rating create enduring questions about the validity of the ratings. However, Chen and Wu (2007) used a similar approach in studying two successful high-technology and three traditional manufacturing firms in Taiwan. Managers in these firms completed a survey assessing organizational functions such as purchasing or marketing. Of the key rated capabilities, some were labeled core competences because of their value, uniqueness, and shared, collective nature.

- In some approaches, a standardized, universal list of capabilities is used. For example, Ulrich and Smallwood (2004) proposed 11 generic classes of capabilities that could become core competencies (such as being good at attracting, motivating, and retaining competent and committed people or making important changes rapidly by recognizing opportunities and reacting quickly). These capabilities would be listed as a “capabilities audit” to be completed by company executives. Using a 1 to 5 or 1 to 10 scale, the capabilities would be rated twice: in terms of current performance and in terms of the need for improvement. Gallon, Stillman, and Coates (1995) provided something of a behaviorally anchored scale for use in rating three aspects of potential competencies: strength (the extent to which the capability is internally optimized), criticality (how important the capability is for competing in the firm’s industry), and advantage (how important the capability is obtaining advantage).

- A list of capabilities may be gleaned from analysis of the academic and practitioner literatures. To study the core competencies of three-star hotels in Thailand, Aung and Heeler (2001) identified three likely general sets of capabilities critical for the success of hotels from an analysis of the service literature: a human resource function that nurtures and empowers employees, an operations function that includes both service process and data management, and a marketing function for developing new services, creating alliances, communicating with customers, and market sensing. They gathered data about eight different hotels from multiple data sources, such as national economic data and interviews with company managers, to create a case report for each hotel. They then evaluated each hotel on each capability, rating each as either strong, medium, or weak. Strong competencies were then assessed as to whether they made a direct contribution to service or created a competitive difference, thereby establishing the core competencies for each hotel. (To be effective as a basis for assessment, though, this approach assumes that the literature-derived capabilities are valid, important, and applicable to the analysis in question; this assumption can easily be questioned, however.)

- Lists of potential capabilities may begin with customers, as in the “process-oriented core competency identifying” model (Yang, Wu, Shu, & Yang, 2006). After learning what critical values customers want, those values are linked to the
firm’s various value chain activities. Those activities are then decomposed into their step-by-step processes. A competency rating process occurs through a matrix that shows the process steps across the columns and the different functional departments in the rows. If a department uses a process, it is checked on the matrix and a relative frequency count is conducted. Core competencies would be indicated when process steps are used by multiple functions.

As these examples illustrate, a standard approach for identifying the location of a firm’s competencies involves creating a list of candidate capabilities or resources that are then evaluated, often using the VRIS criteria. Both the process used to create the list of candidate capabilities; function ratings; generic capability lists; or literature reviews) as well as the people included in the assessments (executives, managers, customers, analysts) take different forms. Regardless, the outcome of this second stage of analysis would be an assessment about whether the firm in question has a sustained competitive advantage and whether that advantage could be due, at least in part, to organizational capabilities. If capabilities are indicated, the location or nature of those capabilities would then be identified.

**Issue 3:** How specifically does the core competency operate? What are the specific aspects and details about how the competency functions in practice?

If a firm has experienced sustained superior performance due in part to an organizational capability, core competencies are indicated. To this point, though, core competencies have been considered as a black box, that is, as a mechanism that generates a certain level of sustained, superior output but whose internal workings are unknown. It is important to open up that box and understand, as much as possible, how the core competency operates to produce superior performance. This analysis would be framed, ultimately, in terms of how the capability qua core competency creates and adds value for customers. In short, the intent of this stage of diagnosis is that the core competency should be detailed and examined in terms of how it operates in contributing either to superior cost savings or product/service uniqueness and distinctiveness, or both (Duncan, Ginter, & Swayne, 1998). Thus, the major focus here is to identify and describe what that specific core competency is in order to comprehend, formalize, and codify the nature of that competency so that it can be protected, maintained, and improved (Clardy, 2008).

Specific methods for identifying and describing a firm’s core competencies have been suggested by several authors. Klein and Hiscocks (1994), for example, recommended several techniques. First, *skill mapping* identifies and evaluates an organization’s skill base in relation to needed strategic skills. The map is a matrix based on an inventory of individual skills in the organization compared to the needed skills projected into the future. Core competencies would be those strategic skills that are rated highest and which are essential to a critical organizational capability. Second, an *opportunity matrix* uses the
skill map to project what kinds of product or market opportunities can come from existing skills with minimal additional investments. Third, *skill cluster analysis* classifies skills into clusters and then uses those clusters to define core competencies. The main problem with this approach, though, is that it equates core competencies in a simple additive fashion with the skill levels of the firm’s individual employees.

Perhaps the simplest and most direct method for identifying core competencies is simply rating the extent to which a candidate competency meets the VRIS criteria, based on a more traditional SWOT analysis of strengths, weaknesses, opportunities and threats (Grant, 1991). Duncan et al. (1998), for example, recommended an ASSIST (ASSessment of Internal factors for STrategic advantage) analysis. Using a SWOT framework, each company’s strength and weakness is classified as an asset or a capability. Then, each asset/capability is analyzed using the VRIS criteria, and those factors meeting the VRIS standards are then assessed further. Specifically, using various sources of data (such as organizational records, observations, surveys, etc.), analysts would rate each factor from *inadequate* (below the minimum required to be in the business) to *distinctive* (the factor cannot be duplicated by the competition). Gallon et al. (1995) used a similar procedure for identifying core competencies. A steering committee compiled a list of all the firm’s technological capabilities that were then rated in terms of strength and importance. The resulting top capabilities were clustered into skill sets and evaluated for their potential customer value and insularity from imitation.

A list of capabilities important to the industry in which a firm operates may be created through interviews, observations, and/or document analysis. This list is then put into a questionnaire distributed to the firm’s managers, who then rate the extent to which the firm has an advantage or disadvantage on each (see Bakker, Jones, & Nichols, 1994; King, Fowler, & Zeithaml, 2001). Hafeez, Zhang, and Malak (2002) used this basic procedure in their analysis of core competencies of an internationally operating firm in the home products sector. Managers in the firm identified what they perceived as their firm’s key capabilities or operational strengths; that is, the capabilities had to be crucial to business success because they generated high profit margins and market share. Thirty-seven capabilities were noted, which the managers then rated (using a 1-4 scale) on the extent to which the capabilities existed across functions, across the business, and across products. Those highly rated capabilities were then rated (again, 1-4) on their degree of rareness, lack of imitation, and lack of substitutability. Core competencies were those capabilities with high flexibility in use and application. This method contains the danger of self-rating bias, though.

Srivastava (2005) identified five generic “meta-competencies” based on analysis of relevant theory: cost efficiency, system reliability, innovation, close external relationships, and agility. These were arrayed against the McKinney 7-S model (strategy, structure, systems, style, staff, shared values, and skills), producing a $5 \times 7$ matrix. The researcher then rated firms’ statuses in each cell using
a 0 to 10 scale (company executives could also do the rating). Core competencies were those meta-competencies pervasive across a company’s major products.

Higgin (1996) argued that “the” one core competence that every organization needs is innovation. He developed a 49-item Innovation Quotient Inventory instrument for assessing the extent to which any organization is positioned for innovation. The 49 items were grouped into the 7-S categories already noted. Finer analysis of the data should pinpoint critical component processes.

Guimaraes, Borges-Andrade, Machado, and Vargas (2001) used a Delphi method to identify the competencies needed by a firm’s portfolio of research projects over a 3-year horizon. First, an initial list of 17 organizational core competencies was developed from reading corporate documents and other materials. This list was then presented to the firm’s top experts from different fields of knowledge, who edited the list to 9 organizational core competencies. This reduced list became a Delphi survey sent to 151 internal and external experts who evaluated each competency in terms of its future importance and current condition at the company in question. Summary scores for each competency were created by multiplying the future importance scores by current capacity, leading to a ranking in terms of priority.

The studies just noted all attempted to identify core competencies with a quantitatively based rating process. Other studies use a more ethnographic, case study approach to describe what the competencies actually are. For example, Shaiken (1998) studied two Mexican start-up manufacturing plants of “Universal Motors.” Over a period of more than 2 years, Shaiken combined extensive interviews of managers, union leaders, and workers with more than a dozen site visits, spending considerable amounts of time on the shop floors, observing operations and practices. Similar techniques must have been used by Cook and Yanow (1993) in their study of leading world-class flute makers in Boston. Finally, an interesting application of the core competency model to nonprofit operations was the study of the U.S. Army’s Opposing Force training brigade. Through observations, interviews, and document analysis, Darling, Parry, and Moore (2005) found that the core competency responsible for the consistent success of U.S. Army’s Opposing Force against superior forces was how it used After Action Reviews that enabled the force to learn and adapt better and faster and, in the process, to carry out its plans more effectively.

The common theme of these diagnostic examples is that a production function or capability (previously identified as a likely source of core competencies) is analyzed as a system of factors and routines. Although traditional assessments of task skill proficiency are important for identifying KSAs for component jobs, the analysis offered here goes beyond researching individual task proficiencies to look for the performance routines followed, the related production technology involved, the operational and human resource management systems in place, and the culture of the organization, function, and/or work group.

**Issue 4:** Does the competition have core competencies, and if so, what are they?
A competitor with a history of above-average performance may have a core competence; a firm’s strategists would like to know what its competitor’s competencies are to identify potential opportunities to erode, imitate, and/or neutralize them. To do this, analysts would look at competitors in much the same way as they study their own firms (Issues 1-3). Keeping in mind that superior performance does not automatically mean the presence of a core competency, a first step would be to identify what competitors, if any, are performing at a superior level on a sustained basis. Klavans (1994) suggested a “bibliometric” approach for gathering specialized information about competitors. This approach measured certain objective indices of scientific performance by analyzing various outputs of a competitor’s R&D function (e.g., papers presented or patents granted), the publications of their scientific staff, or the citations of their works.

For potential high-performing companies, core competencies may be identified through a functional benchmarking process that focuses on the performance of specific organizational functions, such as manufacturing or human resources management (LL Bean, for example, has been studied for its excellence in mail order operations; Camp, 1995). In practice, though, it may not always be easy to obtain the information needed to make the assessments. Furthermore, copying the practices of benchmarked competitors will only lead to competitive parity, not advantage (Barney, 2002).

Understanding a competitor’s internal conditions and operations that make a capability a core competence is challenging, though not inherently impossible. High-performing firms may often be the focus of reporting by the business media as well as the subject of more scholarly study, yielding important insights into the principles and practices of such firms. Moreover, firms may even publish their core operating practices directly on their own Web pages for promotional purposes. Such informational richness is not restricted to large, publicly owned corporations, either.

An interesting illustration of this point is the industrial design firm IDEO. Headquartered a few blocks from Stanford University, IDEO has been a consistent recipient of design awards and media acclaim for a decade and more. A relatively simple Internet search can produce a number of reports on IDEO’s operations and practices from sources such as Business Week and the Harvard Business Review. IDEO’s general manager published a book detailing how IDEO is structured and how it tackles a typical design problem. IDEO’s praises have been sung by authors and consultants, including Tom Peters, who singled out IDEO’s unique methods of problem analysis and solution. IDEO was featured in an ABC Nightline episode, where its employees were challenged to demonstrate their methodology by redesigning and prototyping a new, working model of a grocery shopping cart in 5 days. The near-documentary nature of the report showed IDEO routines in operation. And finally, there is the firm’s Web page itself (ideo.com) that provides a précis of its four-step process: observation, brainstorming, prototyping, and implementation. Even though the authors
of these reports were different, they were all based on firsthand observations that reported consistent findings triangulating on common themes.³

**Critiquing the Core Competency Methodology**

Research studies attempting to identify a firm’s core competencies have used a variety of methods and procedures. Across this variety of approaches, all suffer to some extent from the twin weaknesses of conceptual confusion and a lack of a comprehensive analytic framework. Furthermore, beyond this common concern, the various studies may also be dogged by four specific methodological problems.

First, the methods are often poorly and incompletely reported, making replication for either researchers or practitioners difficult. For example, how Hafeez and Essmail (2007) elicited a list of key capabilities—a key step in their model—was not clear, although it appears that the director of the firm they were studying was the source of the listing. Given the importance of this step, the procedure used should not be ambiguous. Second, core competencies as the phenomenon to be explained are often simply posited rather than demonstrated. That is, rather than establishing that the phenomenon to be explained (core competencies) exists, some studies begin with the assumption they do exist (Chen & Wu, 2007; Srivastava, 2005). Similarly, in other cases (Yang et al., 2006), the set of potential competencies to be assessed are derived and deduced analytically from available literature rather than discovered inductively from an initial investigation of the company. Aung and Heeler’s (2001) study relied on capabilities listed in the literature of service industries, assuming that these capabilities were applicable to the firms they studied, rather than deriving the specific competencies from an initial empirical assessment of the firms. Either way, core competencies are postulated existing a priori, prior to investigating whether a firm under study in fact possesses a core competency or what those specific competencies might be.

Third, while understandable and perhaps unavoidable, many studies use company employees—particularly, managers and executives—to rate the list of capabilities provided (Bakker et al., 1994; Gallon et al., 1995). At times, the number of respondent-raters may involve a sample size of one (Hafeez & Essmail, 2007). As Van der Vorst (1997) cautions, though, self-assessments can easily be biased, making conclusions from this approach at best suspect. Finally, the methodological instruments used—interview guides (Bakker et al., 1994), apparent proprietary software (Hafeez & Essmail, 2007), or important psychometric information (Higgin, 1996)—are not published or adequately reported, making it difficult to assess the reliability and validity of the procedures used.

These issues notwithstanding, these studies do provide several important advances. First, a general process is often followed that generates a list of candidate capabilities, which is then reduced in some manner to a set of arguable core competencies. Second, the criteria used for reducing capabilities to core
competencies are consistent with the RBV model. In particular, customer value and inimitability are used consistently, along with criteria that the capability must be (or could be) used across products or processes. Third, it is possible to isolate the effects of assets from capabilities on firm performance, as Hansen and Wernerfelt (1989) were able to do in a general test of the resource-based theory.

Summary and Implications

Although the traditional HRD methodology for assessing the competencies needed by individuals in specific jobs is well established, the same cannot be said for assessing the core competencies of a firm. As used in the RBV, core competencies are organizational routines and capabilities that generate sustained superior organizational performance. The analysis of core competencies must be done at the organizational, not individual, level. Based on RBV theory and studies of core competencies, four main questions have been proposed as a diagnostic framework, creating a foundation for organizational core competency assessment: (a) Does the firm have a competitive advantage? (b) If the firm does have sustained above-average performance, to what extent is the basis of that performance attributable to assets or capabilities? If capabilities are indicated, where are those capabilities located? (c) How specifically does the core competency operate? What are the specific aspects and details about how the competency functions in practice? (d) Does a competitor have core competencies, and if so, what are they?

A number of studies have suggested methods for gathering and analyzing information to answer those questions. Those various reports have been harvested and combined here into the general methodological framework, shown in Table 1. This consolidation reprises the four critical questions and highlights the diagnostic techniques that have been used. In particular, it must first be determined whether the firm has or is developing core competencies; this is done by assessing its performance against a referent group of competitors over an extended period of time. If the firm has above-average performance, it must be decided to what extent that performance is due to capabilities and not the potentially more easily imitated or duplicated assets. If capabilities are indicated, the actual organizational location of the core competencies needs to be identified. Third, the nature and operations of core competencies need to be described. Finally, if competitors have core competencies, those competencies should be studied to identify ways to match them and thereby erode a competitor’s advantage.

Implications for Scholars and HRD Practitioners

The model offered here is an interpretation and consolidation from the available research literature in strategic management. Even so, a number of future research issues remain. For example, an essential first concern is a more complete testing of the entire procedure. Does the protocol presented here
**TABLE 1: Diagnostic Model for RBV Core Competencies**

<table>
<thead>
<tr>
<th>Issue</th>
<th>Diagnostic Procedure</th>
<th>Standard</th>
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<tbody>
<tr>
<td>1. Does the firm have a competitive advantage?</td>
<td>Selecting an appropriate metric and a peer or competitor group for comparing the firm’s performance over time</td>
<td>Core competence suggested when there is sustained above-average performance or performance that is overtaking the competition</td>
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<tr>
<td>2. If the firm does have an advantage, to what extent is the basis of that advantage assets or capabilities? If capabilities are involved, where are those competencies located?</td>
<td>a. Categorize the firm’s structure into assets that may produce superior results</td>
<td>a. Rule out assets as exclusive source of sustained competitive advantage</td>
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<td></td>
<td>b. Identify candidate list of capabilities: SWOT, Interviews with management, Research or practitioner literature</td>
<td>b. Capabilities should be organization specific</td>
</tr>
<tr>
<td></td>
<td>c. Evaluate capabilities to identify core competencies: Expert judgment, Management ratings, Delphi</td>
<td>c. Use VRIS standards as basis for identifying core competencies</td>
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<tr>
<td>3. How specifically does the core competency operate?</td>
<td>Describe the operation of selected core competencies: skills mapping, diagnostic inventory, ethnographic study</td>
<td>The description integrates workflow, management coordination, employee skills, learning practices, and sociotechnical practices</td>
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<tr>
<td>4. Does the competition have core competencies, and if so, what are they?</td>
<td>Identify superior performing competitors by data gathering through benchmarking, competitive intelligence or other forms of analysis.</td>
<td>Competitors with core competencies are identified and their sources of competencies estimated</td>
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**NOTE:** RBV = resource-based view; SWOT = strength, weaknesses, opportunities, and threats.
present an efficient and effective method of identifying a firm’s core competencies? If not, how does it need to be changed? Second, should the HR function focus on HR-specific indicators for comparing a firm against its competition? As noted in the article, although traditional financial measures are the obvious metrics to use for comparison, they are not the typical province of HR practitioners. Are other measures more connected to HR (e.g., turnover rates, employee skill levels, or labor market reputation) better to use? Can a firm be a consistent superior performer when it comes to HR-related metrics (e.g., turnover rates) yet still be an average performer financially? In other words, are certain metrics essential for assessing a firm’s performance in regard to core competencies? A related issue is how to operationally define sustained superior performance. Given some metric (financial or otherwise), what guidelines might be possible to define what constitutes a firm consistently outperforming its competition? The entry hypothesis here would be that both the levels of superiority (how much) and the length of superiority (how long) would be industry specific. Is this true?

Second, as some studies have found, the approach proposed here assumes that the effects of assets can be separated from that of capabilities as the basis for eventually isolating a firm’s specific core competencies. This differentiation presents its own challenges, though, such as how assets should be accounted in terms of organizational performance outcomes? For example, using asset information from the balance sheet, it might be possible to use a per capita figure of asset value per employee. If a group of firms have comparable such ratios, yet one is consistently more profitable that the others, this would presumably suggest that nonasset factors are driving the differences; can the same conclusion be drawn if one firm is as similarly profitable as the others but with a significantly lower employee per capita asset level?

A third issue for research is the nature of the process for describing and codifying the operations of core competencies. Ethnographic analysis that combines interviews with observations seems preferred. Is there a specific, recommended set of research procedures for carrying out this approach? Once core competencies have been described, is it necessary to test these competencies against their presence or absence in competitors? How should the operation of a core competency be represented and codified (narrative text? workflow chart? standard operating procedure?)?

The resource-based approach to core competencies presented here also makes new demands on HRD practitioners in terms of skills and roles. First, resource-based theory really applies at the level of strategy; in this context, HRD personnel would now need to be able to function in the firm’s strategic domain. This would point to the need for HRD professionals to become well versed in the theory and practice of strategy. Gaining access and participating in strategic conversations would likely follow when HRD produces information and analysis of strategic value about the firm’s core competencies. Second, the value of the RBV to strategy will be a function, in part, of executive knowledge.
and/or ability to operate with resource-based theory. Executive competence with the RBV to strategy becomes a training issue at the executive level. This implies that HRD should play a stronger role in educating executives about strategy, RBV, and core competencies. Third, traditional methods of job analysis and KSA assessment need to be supplanted with (but not replaced by) organizational capability analysis. This involves being able to study routines and operations as a system of procedures, skills, technology, coordinating mechanisms, and learning practices to render an accurate description of how the firm’s core competencies function. This may begin with basic workflow analysis often used as the foundation for reengineering, but would move quickly to analyzing a host of management, informal learning, and sociotechnical practices connected with that basic process.

Core competencies suggest one source of superior organizational performance. Only certain firms possess them, though. Regardless, these competencies are most likely found in the routine production function of a firm, and the defining feature of this production function is the unique way by which employees and others work together. Identifying core competencies is something that the HRD function can be well suited to support. The diagnostic framework proposed here is offered as an initial basis by which the HRD function can actually contribute to the strategic superiority of the firm.

Notes

1. The underlying resource-based theory of strategy and core competencies has been described in Clardy (2007) and the implications of this theory for HRD in Clardy (2008). Both are integrative reviews of the RBV literature. To identify the empirical studies of core competencies used as the foundation of this article, the available conceptual and theoretical literature was again examined to locate guides and procedures for measuring core competencies. Some references were found but these recommendations tended to be simplistic and inadequate. In March 2007, searches were conducted in the ABI, Academic Search, and Business Source Premier databases using combinations of the keywords resource-based strategy, core competencies, strategic analysis, and method or methodology. The most productive search (core competency and method) yielded 98 citations, many of which were found in strategy-related journals. These reports were then screened for original empirically based field studies or for reports specifically addressing research and diagnostic methods for assessing core competencies in some detail. From this screening, the remainder of the studies used here was selected.

2. Barney and Clark (2007) argue that it is better for the firm to be ignorant of the nature and operations of its core competencies. That is, competencies that are known inside the firm can be transferred by recruiting, espionage, or other forms of knowledge transfer.

3. A full report and analysis of the IDEO case (Clardy, 2005) exceeds the available space for this article. The limits of analysis based on available published sources need to be recognized, too. Obtaining a list of skills, practices, or actions listed as steps that are promoted by a firm as its core competencies might not be as directly transferable as it might seem. For example, routine capabilities listed as steps evolved in the firm over time in the context of a specific organizational culture supported by various management and human resources policies and practices, including hiring systems, organizational and work group structures, management styles, and so on. These foundational infrastructure elements undoubtedly create the necessary stage on which the sufficient core competency routines are developed, yet these foundation practices may not be reported. Such
is the case with IDEO, where a number of questions about its various infrastructural elements are not otherwise available in the business media. To see this analysis, go to http://towson.edu/~aclardy/WORKING PAPERS.htm.

References


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