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A Multi-Theory Approach to Managing Knowledge Assets: The Case of Complex Professional Human Service Organizations

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ABSTRACT

A multi-theory framework is offered for guiding managerial decision making in complex professional human service organizations; a growing segment of the economy for which the ability to proactively and dynamically manage knowledge assets is naturally critical to performance. Following a call for greater theoretical integration, this framework synthesizes essential and complimentary elements of three theoretical domains. It combines Transaction Economics' focus on the appropriate procurement of knowledge assets, with Knowledge Management's focus on how to dynamically unleash the potential of those assets, and Contingency Thinking's focus on how to structurally harness and direct that potential. Two key "bridging constructs" emerge offering useful insights both for theory and practice: 1) *learning systems* as a key element of functional design for managing knowledge assets, and 2) *learning costs* as a key factor in managing the economic structure of knowledge assets. We apply our integrated framework to two professional human services sectors – business education and health service delivery– and discuss broader implications for research and practice.

KEYWORDS

Organization capability; managing knowledge assets; professional service firms; theory integration; functional and economic structure

Complex professional human service organizations (e.g., hospitals, universities, and law, accounting, information, consultancy, and financial service firms) comprise a large and growing segment of postindustrial economies (Florida, 2014). Such firms increasingly characterize the new reality of competition in modern business environments that are more uncertain, fluid, and centered around knowledge. Because these types of firms are extremely dependent for success on the knowledge possessed by highly educated professionalized workers (Von Nordenflycht, 2010), their ability to proactively and dynamically manage knowledge assets is naturally critical to their performance.

Although there are many "classic" theories available to guide managers of such organizations, they provide a shrinking source of strategic advantage when considered in isolation, due to the fact that they have become so widely dispersed and, more importantly, are limited in scope from capturing the evolving *interdependencies* between their respective areas of focus. It is therefore necessary to look for important guiding insights in the combinatorial space *between* theoretical domains, which, if used astutely, comprise wellsprings of opportunities for better understanding and managing knowledge assets.

Our purpose in this article is to develop an enhanced framework for guiding managerial decision making in complex professional human service (cPHS)

organizations that identifies useful "*bridges*" between three potentially synergistic theoretical domains: contingency thinking, knowledge management, and transaction economics. We have chosen to focus on these three theory streams particularly for their practical relevance to strengthening the capabilities and effectiveness of modern cPHS firms. For these theoretical streams, traditionally regarded as alternative frameworks, and thus typically considered independently, we show that their complementary strengths offer potential for integration and synthesis; generating important bridging themes and constructs at their interfaces.

Specifically, in the following sections we (a) provide rationale for a synergistic framework, (b) detail the framework's constituent theoretical components, (c) present the framework's key bridging themes and constructs, (d) illustrate the entire framework in action by applying it in two types of cPHS contexts (business schools and hospitals), and (e) discuss its implications.

Rationale for synergistic framework

As the field of strategic management has evolved, theories of organizational capability (e.g., Barney, 1991; Eisenhardt & Martin, 2000; Teece, 2007, 2014; Teece,

Pisano, & Shuen, 1997) have slowly replaced theories of market positioning (e.g., Porter, 1990, 1996) for explaining successful business strategies (Zenger, 2013). Many authors emphasize that developing and evolving distinctive resource configurations (also referred to as “core competencies”; e.g., Prahalad & Hamel, 1980) and selecting the appropriate form of corporate governance are today more important to competitive success than necessarily protecting products against imitation or raising barriers to the mobility of rivals (e.g., Argyres & Zenger, 2012). Empirical evidence suggests that strategies focused on systemic firm-specific resources and knowledge-based sources of value creation tend to be more effective for sustaining competitive advantage than strategies focused on industry competitiveness, particularly in highly dynamic sectors where market power is insufficient to sustain superior performance (Hawawini, Subramanian, & Verdin, 2003).

Consistent with this reasoning, strategists are calling for refinements to our understanding of organization capability that include not only useful extensions to existing theory but also the *integration* of independent theoretical streams (Mahoney & McGahan, 2007). Some management scholars (e.g., Kessler & Bartunek, 2014) have similarly suggested the value of creating integrative “maps”—constructed by “stitching together” multiple theories from different domains—to present a more holistic picture of their interrelated systems and complementary content. Although established theories work well within their specified boundary conditions, a more synergistic approach to theorizing arranges these boundaries in a manner that bridges their complementary slices of reality (e.g., Tsoukas, 1994). For example, Campbell’s (1969) article presenting a “fish scale model of omniscience” contends that enhanced understanding is best pursued via meta-theoretical systems that synthesize narrow and overlapping domains of specialized thought. Further, Baum and Rowley (2002) demonstrate the utility of delineating and piecing together the “interconnections and substantial overlaps” among existing theories for expanding their explanatory as well as predictive power. Moreover, according to Kessler and Bartunek (2014), these integrative theoretical “maps,” in addition to offering a more complete and accurate picture of reality, also offer improved pragmatic guidance to practicing managers. The integration of theory is thus valuable not only for explaining the interlocking interdependencies of organizational systems but also for developing more multilevel policies and recommendations that take into account the cumulative effects of their variables across theoretical domains. As such, the integration of existing frameworks is useful for managers to construct more

holistic solution sets that better address complex real-world problems.

We therefore conclude that a more integrative framework is needed for describing and developing the strategic capabilities of modern organizations that are derived from superior management of knowledge assets. In this article we focus on one such type of organization—the aforementioned complex professional human service (cPHS) firms. These are particularly emblematic of the evolving economy by virtue of their high ratio of labor to capital and dependency on the sizeable stock of esoteric knowledge and specialized expertise embodied in highly educated professionalized workers (Morris & Empson, 1998; Starbuck, 1992; Von Nordenflycht, 2010).

Toward this end, we propose that progress toward greater conceptual synthesis is tendered through the confluence of three traditionally distinct streams of thinking: Contingency Thinking, Knowledge Management Theory, and Transaction Cost Economics. We chose to focus on these theoretical domains because of what we see as their dominant influence on management thought and action, their complementary strengths and shortcomings, and their potential for integration and synthesis, generating important domain-spanning constructs where they overlap.

One branch of contingency thinking, which we call Technology-Based Contingency Theory (TBCT), focuses on the *activities* to solve problems or conduct core tasks (see, e.g., Galbraith, 1973; Perrow, 1970; Thompson, 1967; Woodward, 1965). The “if/then” nature of this stream is very helpful in prescribing alignments between core task information-processing demands and functional structure, but is largely inattentive to *knowledge* processes and transactions. Knowledge Management Theory (KMT) focuses on the dynamics and management of organizational *knowledge and learning* (Argyris, 1999; Nonaka, 1994; Senge, 1990), which have been identified as critical for capability formation and performance differentiation in the modern organization (Grant, 1996; Kogut & Zander, 1992; Von Nordenflycht, 2010; Winter, 1987). However, KMT tends to be vague about the best functional and economic arrangements for managing knowledge assets. Fusing TBCT and KMT can point to methods and tools for applying knowledge to solve core problems. However, neither stream accounts adequately for knowledge providers as potentially self-interested beings and the economic arrangements by which they transact with the organization. Transaction Cost Economics (TCE) focuses on economizing the *asset exchanges* (transactions) underlying a firm’s activities (see, e.g., Williamson, 1975, 1985). TCE is prescriptively informative about the ideal relationship

between economic structure and asset exchange risks and costs, but is inattentive to functional structure and, particularly, the learning costs to capitalize on the unique qualities of knowledge assets. Thus, although each draws attention to certain theoretical dynamics important to consider when conducting research on or making decisions for complex professional human service organizations, each also creates risks that other potentially critical factors may be overlooked or poorly considered.

Foss and Foss (1998b) noted that there has been relatively little dialogue and synergy between organizational economists and knowledge-based theorists. However, to some degree, the need for greater integration has been recognized within the theoretical domains focused on here. Grant (1996) applied structural contingency prescriptions to knowledge management, and Birkinshaw, Nobel, and Ridderstrale (2002) used knowledge attributes to predict structural contingencies. Jiang (2011) asserted that transaction cost economics must be joined with a theory of knowledge and production, and even Williamson (1999) acknowledged the complementarity of the competence “[knowledge] perspective” and the governance [economic] perspective.”

Our framework synthesizes essential and complementary elements of these three conceptual streams. This integrative framework focuses at the level of core task activities for subunits of cPHS organizations, and the knowledge dynamics and asset exchange factors associated with those tasks. It combines TCE’s focus on the appropriate procurement of knowledge assets, with KMT’s focus on how to dynamically unleash the potential of those assets, and TBCT’s focus on how to structurally harness and direct that potential. In doing so, it surfaces two key bridging constructs for greater managerial attention: (a) *learning systems* (integrating TBCT and KMT) as a key element of functional design for managing knowledge assets, including the associated cultural elements to support it, and (b) *learning costs* (integrating KMT and TCE) as a key factor in managing the economic structure of knowledge assets.

In the section that follows, we analyze in greater detail the key strengths and shortcomings of the constituent theories: Technology-Based Contingency Theory (primarily as related to “core task technologies”), Knowledge Management Theory, and Transaction Cost Economics, with particular attention to the constructs that emerge at their intersections.

Constituent theoretical domains

Technology-Based Contingency Theory (TBCT)

The overarching contribution of general contingency thinking is that there is no single best organization form for optimal performance; rather, it depends on many factors such as its environment, strategy, size, and technology (Burns & Stalker, 1961; Galbraith, 1973; Lawrence & Lorsch, 1967; Thompson, 1967). In this article, we focus on the link between core task technology and operating structure because it is there that important “micro-foundations” of organizational capabilities are most effectuated (Felin & Foss, 2005; Felin, Foss, Heimeriks, & Madsen, 2012; Felin, Foss, & Ployhart, 2015; Helfat & Peteraf, 2015): what we refer to as Technology-Based Contingency Theory (TBCT).

TBCT focuses on the activities of “core tasks” (i.e., those vital to strategic capabilities) at the subunit level of organizations, with the objective of understanding and prescribing the optimal alignment between “core task technology” and organizational operating (or functional) structure, including grouping schemes, optimal span of control (number of managerial reports), and degrees of centralization of authority and formalization of rules (Woodward, 1965). “Technology” is viewed very broadly by this school to include any tangible and intangible means to transform inputs into outputs, including information, knowledge, methods, and tools. Perrow (1967) recognized that organizations can deploy multiple task technologies that vary at the subunit level.

The dominant logic of TBCT is that core task “technology” determines functional structure. The role of the manager is to choose, according to the demands of their task technology, the appropriate functional design features for organizational units. The key element determining structure is the *information-processing demands* of the core task that derive from the amount of uncertainty caused by task complexity and dynamism.

“Task variability” and “problem analyzability” are central task characteristics determining organization structure (Perrow, 1967). Task variability refers to the frequency of unexpected and novel events that occur in the transformation process, making it difficult to predict facts in advance when variety is high. Problem analyzability concerns the potential for individuals to solve problems using objective, routinized procedures (e.g., sequencing actions through procedural processes). Low problem analyzability (e.g., need for ad hoc sequencing of actions) places greater reliance on judgment and experience, rather than on formal rules and routines (as in cPHS organizations).

The increased uncertainty arising from high variability and low analyzability of core tasks forces a subunit to increase its information-processing capacity through structural mechanisms for collecting appropriate information, applying information in a timely fashion, transmitting information without distortion, and handling high volumes of information (Daft & Lengel, 1986). TBCT research establishes that flatter, flexible, decentralized “organic” structures are better than hierarchical, centralized, formalized “mechanistic” forms for providing the autonomy and discretion to deal with greater uncertainty (Burns & Stalker, 1961; Keller, 1994; Larkey & Sproull, 1984; Lawrence & Lorsch, 1967; Tushman & Nadler, 1978).

Uncertainty also arises when critical interrelated elements of core task activities must be coordinated within and across organizational subunits (Galbraith, 1973; Thompson, 1967; Van De Ven & Drazin, 1985). When various functional departments are highly *interdependent* for the accomplishment of an objective, such as in the case of educational programs and healthcare delivery, uncertainty increases due to the requirements for frequent and accurate cross-unit communication. Frequent reciprocal adjustments between departments increase the need for more information processing and, therefore, for more specific horizontal coordination mechanisms, such as liaisons and teams. This is witnessed, for example, in increased adoption of “lean management” principles encouraging cross-functional teamwork and communications to facilitate hand-offs among health care staff and transitions of care across service settings (Grabau, 2016).

Notwithstanding the important contributions of TBCT, it appears inadequate for designing effective organizations when there is a need to conduct highly complex, knowledge-intensive activities. Clear distinctions between technology, information, and *knowledge* are necessary for a more sophisticated contingency theory of organization applied to knowledge-dependent industries. Although Perrow (1967, 1970) originally identified knowledge as an important aspect of core task technology, TBCT has more commonly focused on information and on physical tools for information processing and production (with few exceptions; e.g., Birkinshaw et al., 2002). Yet solving problems requires appropriate knowledge about the task environment and its dynamics, and about how information tools may be applied to change it. Further, since much of the critical knowledge needed to tackle mission-centric core problems in cPHS firms resides in people, we need to question TBCT’s proclivity to view knowledge providers as benevolent,

thus ignoring exchange risks associated with opportunistic human behavior.

In summary, TBCT posits that the key to superior organization performance lies in creating the optimal fit between the information processing requirements of a subunit’s core task activities and its choices about operating structure. Prescriptively, the high degree of task complexity, dynamism, and interdependence that characterizes cPHS organizations serves to increase uncertainty and information-processing demands, dictating more organic organization designs grouped around reciprocally interdependent activities. This is observed, for example, in grouping health care providers by clinical specialty, business consultants by industry and practice expertise (e.g., strategy, information systems, human resource management), or attorneys by legal domain (e.g., corporate, litigation, tax). However, TBCT is largely inattentive to the processes and economics of *knowledge* assets that are so central to cPHS organizations. The next sections address these apparent TBCT shortcomings.

Knowledge Management Theory (KMT)

KMT can itself be viewed as an amalgam of conceptual streams concerning the nature and role of knowledge in organizations, sharing the premise that superior knowledge management is the key to superior organizational capability and performance. One stream, the “Knowledge Based View (KBV) of the firm” (e.g., Grant, 1996; Kogut & Zander, 1992; Spender, 1996; Winter, 2003)—which originates from and extends the Resource Based View (e.g., Barney, 1991; Penrose, 1959; Wernerfelt, 1984)—establishes *knowledge* as a firm’s most strategically significant resource. KBV identifies variations in the knowledge bases and capabilities among firms as the major determinants of sustained competitive advantage and superior performance. According to KBV, knowledge plays a crucial role in enabling the firm to transform inputs into valuable outputs by determining how other resources are applied along the transformation process (Arrow, 1971; Nelson & Winter, 1982). The ability of a firm to generate unique value to the end consumer depends on *distinctive knowledge* (Szulanski, 1996, 2000) that is socially complex, accumulated over time through context-specific learning and practice, and thus difficult to imitate or transfer (Dierichx & Cool, 1989; Nonaka & Takeuchi, 1995). Since the process of accumulating knowledge is to a great degree holistic, ill-defined, contextually specific, and grounded in unique historical pathways (Barney, 1991), firms differ from each other in the degree they possess such firm-specific, uniquely

evolved knowledge. Many KMT authors have discussed how an organization may create superior value through higher-order “*meta-routines*” (likened to its “genetic material”; Nelson & Winter, 1982) for integrating specialized knowledge or dynamically recombining existing resources based on the internal, multilevel networks between individuals and groups (Grant, 1996; Kogut & Zander, 1992; Spender, 1996; Teece, 2014; Zollo & Winter, 2002). From this perspective, *the firm exists to facilitate the generation, accumulation, transfer, and integration of knowledge.*

Toward the purpose of unleashing and leveraging critical knowledge assets, another KMT stream illuminates the *dynamics and management of organizational knowledge and learning* (Argyris, 1999; Nonaka, 1994; Senge, 1990; Weick, 1993). For example, Nonaka and his colleagues elaborate a knowledge-dynamics model describing the processes by which different types of knowledge are created, transformed, and transferred in organizations (Nonaka, 1994; Nonaka & Takeuchi, 1995; Nonaka, Toyama, & Byosière, 2001). They contend that knowledge is fundamentally humanistic and related to action. They make the critical distinction between *tacit* and *explicit* knowledge (based on Polyani’s seminal 1983 work on cognition). Tacit knowledge (i.e., knowing how) is inherently *embodied* in individual professionals (e.g., physicians, attorneys, teachers), arises out of human experience, and defies expression in formal and codified language. In contrast, explicit knowledge (i.e., knowing about) can be expressed in formal language and *embedded* in documents and protocols (i.e., formally specified routines), and even programmed into machines.

Nonaka and Takeuchi (1995) argue that individual tacit knowledge may become organizational knowledge through a dynamic, spiral-like process. Through “socialization” routines, such as mentoring and coaching programs, context-specific and inarticulable tacit knowledge may be transferred to others inside and outside the organization through shared experiences, demonstrations, and informal dialogue, to become their tacit knowledge, much in the way that apprentices learn their craft through observation and imitation. Over time, it usually becomes possible to articulate and convert some aspects of tacit knowledge into formally communicated knowledge, which can then be converted into increasingly more complex and systematic sets of explicit knowledge through communication among members of organizations or professional associations. Importantly, individual professionals must ultimately convert explicit knowledge back into tacit knowledge by learning how to actually *apply* codified knowledge in practice. A beneficial “spiral” emerges when the ongoing interaction between tacit and explicit knowledge is dynamically

elevated and shared vertically and horizontally, within and between organizations.

The importance of fostering a *culture* conducive to the creation and flow of knowledge, stressed by Nonaka and Takeuchi (1995), has been reinforced by many scholars in the field of organizational learning and change (e.g., Argyris & Schön, 1996; Beer, 1992; Popper & Lipshitz, 1998, 2000; Weick, 1995). In particular, the socialization process by which tacit knowledge is transferred benefits from an open organization culture that balances individual competition and group cooperation (Holste & Fields, 2010), promotes inquiry and trust (McHugh, Groves, & Alker, 1998; O’Keeffe, 2002), and nurtures the development of shared understanding (Wang & Ahmed, 2003) and shared “mental models” (Argyris, 1990; Senge, 1990). A number of methods have been prescribed to encourage robust knowledge exchange and deeper organization learning through such processes as action learning (e.g., Bradbury & Reason, 2003; Senge, Roberts, Ross, Smith, & Kliener, 1994; Yorks, Marsick, & O’Neil, 1999), and collaborative and appreciative inquiry (see, e.g., Bray, Lee, Smith, & Yorks, 2000; Cooperrider & Srivastva, 1987; Heron & Reason, 2008).

One KMT shortcoming is that little attention has been paid to the process of actually applying knowledge resources in production (Spender, 1994). A result is that the field is somewhat unclear about the best organizational structure for creating and transferring knowledge (Nickerson & Zenger, 2004). Some authors assert that formal hierarchical control can help to facilitate knowledge transfer because sharing through horizontal communication may not occur without structured direction and support (Arrow, 1971; Kogut & Zander, 1992, 1996; Nahapiet & Ghoshal, 1998). However, most authors warn that overly hierarchical structures impede creativity and innovation because they constrain the creation and transfer of tacit knowledge, which they see as best done via flatter, more flexible, decentralized structures promoting horizontal communication (Argyris, 1990; Conner, 1991; Conner & Prahalad, 1996; Demsetz, 1988). Winter (1997) asserts that only nonbureaucratic rules and directives are compatible with knowledge integration requirements, involving decentralized decision making and team-based structures with fluid membership tapping into specialized individual knowledge as needed. Grant (1996), echoing contingency thinking, prescribes *hybrid structures* in which the amount and form of hierarchical control vary according to the degree of reciprocal interdependence needed to integrate knowledge—with softer, more organic controls for teams, and more bureaucratic controls where knowledge workers contribute in more pooled or sequential fashions (similar to Thompson’s [1967] rationale for

functional structure). In regard to incentive systems for encouraging knowledge transfer and integration, Grant (1996) and Foss and Foss (1998b) assert that *social incentives* that arise from developing a sense of *shared context* (i.e., an open organization culture that values inquiry, shared understanding and mental models, trust, appreciation, and reciprocity) will be more effective than instrumental incentives based on wages, bonuses, and promotions earned by performance on objective measures.

Another KMT shortcoming is that knowledge processes are simply assumed to be better conducted through longer term employment arrangements (Grant, 1996; Winter, 1987). This tends to neglect the potential of market dynamics for creating and transferring knowledge (Argyres & Zenger, 2012), and the potential transactional (asset exchange) conflicts arising out of self-interested opportunism by independent knowledge “agents” (Spender, 1996), and thus does not compare the impacts of different economic governance structures for managing knowledge exchanges (e.g., arm’s-length transactions versus longer-term employment contracts), as discussed next in the TCE section.

In summary, KMT contributes to the further development of organization capabilities particularly applicable to cPHS firms by helping us more deeply understand the importance of knowledge, and especially tacit knowledge, as the most strategically important organization resource. It posits that the key to superior performance capability lies in developing distinctive meta-routines for managing knowledge dynamics better than competitors. Such routines would create beneficial “spirals” of knowledge generation, accumulation, transfer, and integration to unleash and leverage highly specialized knowledge for advantage. Because of the criticality of tacit knowledge generation and exchange, highly effective knowledge processes would require fostering *cultures* that accelerate socialization and the development of shared context and mental models. However, although KMT elevates attention to knowledge resources and the integration of tacit knowledge, and informs the process for dynamically unleashing the potential of knowledge assets, standing alone it is vague on how to appropriately procure knowledge assets and structurally configure them to harness their potential.

Transaction Cost Economics (TCE)

TCE essentially views firms as governance structures for managing bundles of asset transactions (exchanges) between providers and buyers (Coase, 1937; Williamson, 1975, 1985, 1996). Assets can be tangible (e.g., facilities, equipment) or intangible (e.g., brands, human capital and knowledge). TCE asserts that organization performance

can be greatly enhanced by finding the most *comparatively efficient* ways of arranging its economic exchanges. Accordingly, TCE grapples with determining when it is better for a firm to secure and manage its asset exchanges *externally* via arm’s-length market transactions versus *internally* by bringing them inside the firm. The critical role of management is seen to be as agents constantly aligning the firm’s economic structure for asset control (i.e., external versus internal) with the constantly changing nature of its key exchange relationships in a way that minimizes transaction costs.

For TCE, it is the *attributes and costs of exchange relationships* that drive choices regarding firm governance (economic) arrangements (for fuller treatment of transaction cost sources and types see, e.g., Rindfleisch and Heide’s [1997] comprehensive review of TCE literature). The two key transaction attributes most relevant to us here are the *specificity* and *uncertainty* of asset exchanges. “Asset specificity” refers to the highly customized and nontransferable nature of assets that may be involved in certain transactions (Williamson, 1975, 1985), rendering them difficult to redeploy to other transactions and limiting their “salvage value” (or second-best use) should the transaction be abandoned. This creates risks of “holdups” should either of the exchange parties asymmetrically incur substantial costs in renegotiating a prior transaction. Both environmental and behavioral uncertainties also contribute to transaction costs. Reminiscent of contingency theory, “environmental uncertainty” refers to the unpredictability, complexity, and/or changeability of the circumstances surrounding an exchange (Klein, Frazier, & Roth, 1990). “Behavioral uncertainty” arises from the difficulty of monitoring and evaluating the contractual performance of exchange partners, leading to potential transaction conflicts; in fact, risks from possible opportunistic exploitation of assets by either party are a central focus of TCE (Williamson, 1985).

These attributes create two types of transaction costs (Rindfleisch & Heide, 1997). “Opportunity costs” arise from the failure to anticipate the need for and thus invest in certain assets (adaptation failure), and the failure to properly select appropriate providers and the consequent productivity losses due to adjustment problems. “Safeguarding costs” arise from the amount of effort needed for *ex ante* screening and negotiating, and *post hoc* monitoring and coordinating of contracts to protect against risks of opportunism.

TCE prescribes *arm’s-length market-based exchanges* as the default preferred economic structure for the firm to manage its exchange relationships (Hayek, 1945). At the extreme, this might include leasing all its equipment and information systems, and engaging all its human capital as independent contractors through

pay-for-performance arrangements (i.e., outsourcing, contingent employment). TCE then considers circumstances where deviation from market-based transactions would economize transaction costs. Greater *internalization of assets* is seen as increasingly more efficient when transactions with providers are (or become over time) highly frequent, uncertain, and specific (Barnard, 1938). That is because high transaction uncertainty and specificity (customization requirements) create risks for the firm relying primarily on market-based economic structure. Negotiating, monitoring, and enforcing the contractual safeguards required in order to induce parties to make highly customized asset investments (such as in buildings, equipment, brand, and learning) become very costly, particularly in the face of uncertainty and bounded rationality (Simon, 1991), which limits the ability of agents to foresee all future contingencies and contract against them in an efficient way.

With its roots in the then industrial economy of the mid 1930s (e.g., Coase, 1937), TCE has been criticized for being inattentive to economics of *knowledge transactions*, and particularly neglectful in regard to *tacit knowledge and learning costs* (Foss, 1996a, 1996b; Foss & Foss, 1998b; Jiang, 2011). Knowledge assets have qualities that require special treatment in conducting transaction cost analyses. For instance, *ex ante*, it is especially difficult for the buyer to inspect knowledge assets or develop tangible criteria for their evaluation and pricing. *Ex post*, it is especially difficult for the buyer to judge easily whether the purchase has been fulfilled as contracted, and the seller of knowledge assets often can still own and exploit its knowledge (Barney, 1999). For example, university professors still “own”, to varying degrees, their course syllabi and publications. Williamson (1981, p. 1562) acknowledged that “when requisite information is distributed among a number of individuals—all of whom understand their specialty in only a tacit, intuitive way—a simple contract to transfer the asset cannot be devised.” Further, “the corporation is not just an instrument for organizing transactions; it is also an instrument for learning” (Teece, 1990, p. 59). Therefore, on top of the contractual “hazards” that TCE is accustomed to handling, capitalizing on knowledge assets involves costs relating to the learning process through which knowledge assets get absorbed, assimilated, and internalized by the buyer.

It is important to note here that some work in TCE and evolutionary theories of economics (Dosi & Marengo, 1994, 2000; Foss, 1998; Nelson & Winter, 1982) has attempted to integrate elements of KMT to partly remedy some of TCE’s traditional gaps in regard to tacit knowledge and learning. For example, Jiang (2011) introduces

the concepts of “*knowledge specificity*” and “*learning costs*” to better account for the difficulty of transferring and integrating the tacit knowledge embodied in individuals. For her, knowledge specificity arises with “tacitness” and the unique developmental paths that create it. Learning costs refer to the more intangible costs (human and intellectual capital, rather than financial capital) involved in assimilating and integrating knowledge assets. She asserts, therefore, that calculation of knowledge-management transaction costs must include not only opportunity and safeguarding costs but also learning costs.

Other authors use ideas from the property rights literature to provide economic interpretations of knowledge management dynamics that explain the transaction efficiencies that can arise from integration of tacit knowledge and organizational learning routines (Foss, 1998; Foss & Foss, 1998a, 1998b; Hart & Moore, 1990). They reinforce Grant’s (1996) assertion that hierarchical rational control and instrumental incentives (e.g., pay, bonus) impede the development and utilization of local knowledge, and that social incentives to create a shared context (valuing common goals, mutual understanding, appreciation, trust, reciprocity) can help integrate and use local knowledge and produce comparative advantage.

In summary, TCE posits that the key to superior performance lies in maximizing the economic efficiency of an organization’s asset exchanges. It has generated considerable empirical support for, and is prescriptively informative about, the causal relationship between transaction attributes (such as asset specificity and uncertainty), transaction risks and costs, and the choice of best economic governance mechanisms. Internalization of exchanges is viewed as a decidedly more efficient economic structure for producing and using knowledge assets than external, arm’s-length market-based contracting. The infusion of evolutionary theory begins to address some of TCE’s shortcomings by introducing knowledge specificity and organizational learning costs to economic theories of organization. However, although TCE and evolutionary theory together are quite informative about creating the appropriate economic relationships with knowledge-asset providers, for the most part they ignore how to functionally organize human knowledge assets to unleash and harness their potential.

Synthesizing the theoretical domains

In this section we integrate the complementary strengths of the three theoretical domains discussed in the preceding and focus on the key bridging themes and constructs that emerge at their intersections. Figure 1 shows our

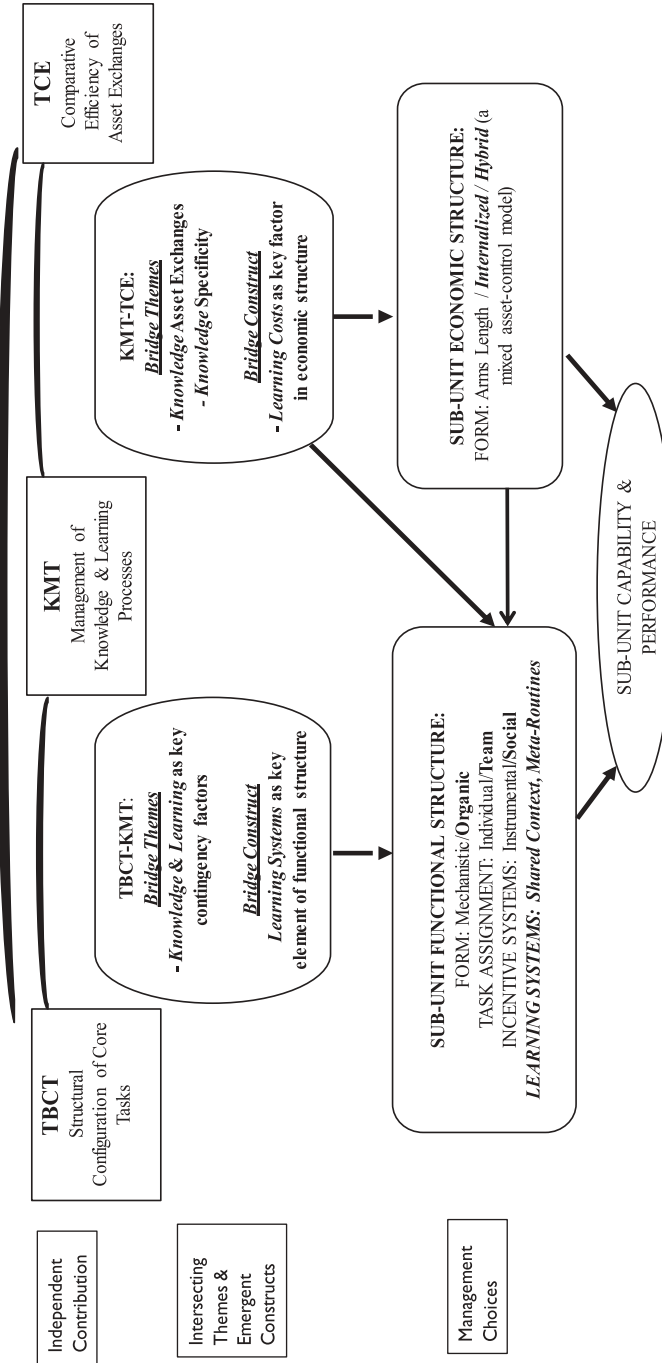


Figure 1. Integrated framework for managing knowledge assets as a path to building organization capability.

integrated framework for managing knowledge assets as a path to building organization capability.

Bridging TBCT and KMT: Learning systems and functional design

The “stitching together” of TBCT’s contributions regarding the structural configuration of core tasks and KMT’s contributions regarding the management of knowledge and learning processes leads to an expanded view of methods and tools for applying knowledge to solve core-task problems. As shown on the left of [Figure 1](#), the themes of *knowledge and learning* surface at the nexus of these two theoretical domains as key contingency factors to consider, particularly for cPHS organizations. Accordingly, the bridging construct of *learning systems* emerges as a preeminent guiding objective in designing functional structures. Prescriptively, in terms of design choices, building such learning systems would require “organic” team-based structures that facilitate collaborative interdependence, along with highly effective organizational *meta-routines* for managing knowledge dynamics, supported by social incentives aimed at fostering a culture characterized by shared context and reciprocity. Thus, the fusion of these two domains instructs us that strengthening the performance capabilities of cPHS organizations requires *both* processes (i.e., learning systems) for dynamically unleashing the potential of knowledge assets, and structural arrangements (e.g., organization form, grouping schemes, cultural context, incentive systems) to harness and coordinate that potential.

However, the conjugation of the two theory streams already described still remains largely blind to knowledge providers as potentially self-interested and political beings and the economic arrangements by which they transact with the organization. Drawing on TCE’s strengths partially addresses this shortcoming.

Bridging KMT and TCE: Learning costs and economic structure

Combining TCE’s contributions regarding the comparative efficiency of asset exchanges with KMT’s emphasis on knowledge management leads to elevating knowledge assets as a central consideration in managing economic structure. As shown to the right of [Figure 1](#), two key themes surface at the nexus of KMT and TCE (with evolutionary theory included): *knowledge asset exchanges*, and *knowledge specificity*. The bridging construct of *learning costs* thus emerges as a significant factor for determining the most comparatively efficient asset-exchange structure for cPHS firms in which transactions with individuals embodying

highly specific tacit knowledge predominate, along with a strong need for knowledge exchanges among members of cross-disciplinary teams. This fusion instructs us that strengthening the performance capabilities of cPHS organizations requires constructing the appropriate economic relationships with knowledge asset providers (predominately internalized but also arm’s length when advisable) that adequately take into account the real costs of creating the knowledge assimilation and integration processes necessary to fully capitalize on the economic potential of those assets.

Synthesizing TBCT, KMT, and TCE

[Figure 1](#) further depicts the fuller integration that results from synthesis across all three theory domains. As noted already, some recent work in TCE and evolutionary theories of economics reinforces the importance of contingency constructs emerging from the integration of TBCT and KMT—*learning systems*, *meta-routines*, and *shared context* as critical contingency factors driving operational design choices. In addition to the traditional TCE prescription for internalizing such exchanges due to high asset specificity and uncertainty, prescriptions for *hybrid* economic structures manifest, with varied economic governance structures recommended depending on the intra-organizational variation in team knowledge-exchange interdependency: a contingency-like core task operating structure variable. Finally, the learning costs to implement appropriate learning systems for hybrid economic arrangements become an important, if challenging, design factor.

This three-way fusion suggests that stronger performance capability in cPHS organizations will result from (a) the appropriate procurement and governance of superior knowledge assets, along with (b) superior learning processes to dynamically develop and unleash the potential of those assets, and also (c) appropriate structural arrangements to harness and coordinate those assets. *All three* are thus essential components of capability formation in cPHS organizations that need to be managed synergistically.

Applying the synthesized framework

We continue to illustrate the synergistic components of our integrated framework by applying them to two prominent types of cPHS organizations in different sectors—higher education and health care. Our purpose is to briefly demonstrate how the bridging constructs—*learning systems and learning costs*—that emerge at the nexus of the three theoretical domains we drew upon can provide greater utility

for decision making by managers of cPHS firms. An in-depth examination of the great variation and complexity within and across different types of higher education and health care organizations is well beyond the scope of this article. For simplicity, we confine our illustrative applications to one specific type of organization in each sector, as specified in the following. For further simplicity, we concentrate on key issues facing these types of organizations only in the United States, while fully recognizing that meaningful differences exist across international settings.

U.S. university-based business schools

Our focus here is on the business schools (or colleges) offering undergraduate and graduate (master's in business administration, MBA) business-education programs as subunits within four-year, nonprofit (public or private) universities. We further focus on those whose primary mission is teaching (versus research). From a strategic contingency perspective, the instructionally oriented "core task problem" for a successful teaching-oriented business school can be looked at as how to most effectively educate individuals about the nature of business and the practices needed for organizational and personal success, in a way that provides the school with some distinctiveness and comparative advantage over rivals (Holtom & Dierdorff, 2015). Two of the key issues facing administrators of U.S. business schools concern curriculum innovation and cost containment. Some context may help to better appreciate these issues.

The typical business school may be viewed as a quasi-professionalized entity engaging in an increasingly uncertain core task due to constant proliferation of new content knowledge and an ever-changing mix of students. This core task mainly requires tacit knowledge embodied in individuals about how to effectively apply new knowledge and emerging educational support technologies. These tacit knowledge assets may be fairly common (e.g., basic, core-type courses) or highly specific (e.g., specialized electives). Individual educators may be engaged as (a) full-time tenure-track faculty with (typically) six years to earn enduring (essentially lifetime) employment, (b) full-time lecturers and instructors on one- to three-year contracts, or (c) part-time "adjunct faculty" with short-term arm's-length contracts to teach one or two courses. All are expected to teach and keep office hours to meet with their students, but only full-time faculty are expected to also engage in substantial scholarly and service ("citizenship") activities, such as publishing in academic journals, advising students beyond their classes, serving on university committees, and engaging in significant curriculum innovation efforts. Business-school educators are usually organized

(grouped) along fragmented disciplinary lines (e.g., separate departments of economics and finance, marketing, management and entrepreneurship, operations, and decision sciences). Knowledge is mostly applied in pooled and sequential fashions (i.e., teaching one course or a sequence of courses) with relatively little knowledge transfer and integration across departments. Although most business schools have committees composed of representatives from each department to oversee educational policy and curricula, such committees rarely engage in intensive and sustained cross-disciplinary curriculum development initiatives (for reasons discussed in the following).

The challenge of *curriculum innovation* centers around how to create greater curriculum relevance, coherence, and integration. There has been strong and consistent criticism of the dominant "cookie-cutter" design of business schools typically comprised of "siloes" specialized knowledge assets that lack appropriate multidisciplinary integration (e.g., Holtom & Dierdorff, 2015; Navarro, 2008; Porter & McKibbin, 1988; Watkins, 1996). Many authors have attributed this lack of innovative curriculum design and integration to the absence of organization structures, routines, and incentives that would motivate and enable faculty members to continually dialogue and coordinate their course contents, and to invest in labor-intensive approaches to instruction or developing new pedagogical skills (e.g., Arum & Roska, 2011; Malekzadeh, 1998).

In addressing the need for greater curriculum innovation and integration, our framework (Figure 1) would direct school administrators to focus on developing *task assignment and learning systems* (at the TBCT-KMT interface) to better unleash and harness their knowledge assets by dissolving silos of specialized functional disciplines and integrating disparate sets of tacit "know-how." This might involve the following types of actions:

- Developing complex overarching "meta-routines" for integrating faculty knowledge sets, including workshops, cross-mentoring programs, and cross-disciplinary team teaching.
- Assigning a much greater proportion of a school's faculty to multidisciplinary teams for cross-cutting curricula design innovation and collaborative delivery.
- Aligning processes, incentives, and culture to foster greater dialogue and coordination.
- Using performance-related incentives such as special bonuses contingent on team accomplishments to get faculty members to engage diligently in multidisciplinary team efforts.

- Using social incentives to strengthen shared context (culture), such as special recognition for cross-disciplinary collaboration and participation in college community events.
- Anticipating and funding the significant “learning costs” associated with all of the preceding.

The challenge of cost containment arises from such external contingencies as supply-side proliferation (e.g., spread of for-profit schools; Gaddis, 2000), demand-side stagnation (i.e., declining enrollments; Brown, 2012; Clinton, 2016; McLeod, 2013), and growing student debt, compelling attention to reducing the time and costs to complete a degree and graduate. The need to economize asset exchanges has led to a gradual shift toward a more “arm’s-length” and less costly economic governance structure, with increasingly greater numbers of “contingent” faculty (adjunct and part-time instructors) compared to full-time faculty (Arum & Roska, 2011; Nelson, 2016; Kezar & Maxey, 2013). Deriving precise statistics is difficult, due to varying definitions of full-time versus part-time faculty and different schemes for categorizing educational units. Looking at higher education in general, Kezar and Maxey (2013) noted that tenured and tenure-track positions had declined from approximately 78.3% of faculty in 1969 to 33.5% of the professoriate in 2009, with 47.7% now part-time faculty. Although the growth of part-time faculty is greatest at community colleges, they now make up a large portion of the faculty at both public and private nonprofit four-year comprehensive universities—about 45% and 53%, respectively. The trend in business schools may be less extreme, at least in accredited schools that are required to maintain a higher level of professionalization. The primary accrediting body for business schools, the American Association of Collegiate Schools of Business (AACSB), reports that the proportion of part-time faculty members in member schools only increased from 15.5% in 2011 to 17.2% in 2015 (Nelson, 2016). Given that the preponderance of business schools are *not* accredited, we can speculate that the percentages in nonaccredited schools would be somewhere between that cited by AACSB and that for higher education more generally. The considerable cost savings that can accrue from greater reliance on part-time faculty reflects significant differences in average salaries—\$78,625 (not counting benefits) for full-time faculty on nine-month contracts across all ranks and disciplines in four-year universities, to teach between four to eight courses per year (National Center for Education Statistics, 2014), whereas part-time adjuncts usually receive in the range of only \$3,000 to 6,000 per

course (little changed over a decade). Garth-James (2016) notes that effective implementation of the part-time adjunct model can be challenging, and its effects on instructional quality and student success rates have not yet been established.

In thinking through the wisdom of this shift in economic relationship structure, our framework would direct administrators to focus on the implications for their unit’s *knowledge dynamics and learning costs* (at the KMT–TCE interface). This might involve the following types of actions:

- Creating the “hybrid” economic structure and functional structure that can simultaneously govern effectively *both* full- and part-time knowledge workers—very different types of cadres.
- Continuing tight management control over arm’s-length knowledge workers (e.g., part-time adjuncts, instructors) using a pooled, hierarchical, formalized, “mechanistic” approach with instrumental incentives for quality program delivery.
- Simultaneously using a highly “organic,” reciprocally-interdependent, team-based learning system for full-time faculty, with strong social incentives for collaborative innovation and “citizenship” contributions.
- Implementing strategies to minimize negative impact of a greater amount of arm’s-length market-based exchanges on the socialization routines needed for critical tacit-knowledge exchange and the greater degree of integration being called for by these types of units.
- Considering strengthening mentoring programs for on-boarding adjunct faculty.
- Exploring opportunities (and costs) to more fully engage part-time faculty in department meetings, curriculum development efforts, and school ceremonies and events, while increasing compensation to reflect their greater involvement.
- Implementing strategies to protect against the exchange risk of arm’s-length contractors appropriating the school’s knowledge assets (e.g., programs and syllabi).
- Carefully evaluating the impacts on student success and on whether sufficient comparative advantage is accruing to the school from increased arm’s-length economic arrangements.

U.S. general acute care hospitals

For purposes of this article, we define an acute care hospital as a nonsectarian, privately owned health care

facility licensed to provide medical treatment for emergent and urgent conditions on a short-term basis for a variety of health-related needs arising from the community it serves. While many such facilities have diversified along the continuum of outpatient and wellness services, we restrict our focus to inpatient care. Our focus is further limited to a single hospital entity (in contradistinction to a multihospital system) and to nonteaching institutions.

Although there is considerable variation in the structuring of hospital medical staffs, acute care hospitals are typically organized into a complex array of discrete and largely autonomous departmental units based on distinct professional disciplines (e.g., medical specialties, surgical specialties, obstetrics/gynecology, anesthesiology, radiology, pathology, emergency medicine). The existence (and persistence) of clinical silos is often necessitated by strict credentialing procedures and external accreditation guidelines. While laboring to comply with discipline-specific quality standards, acute care hospitals are concurrently challenged to create innovative programs that coordinate individual episodes of care across the delivery continuum and to assemble the resources required to manage the health outcomes for defined subpopulations of patients. Successful implementation of such innovative programs demands a fresh approach to managing agents of professional knowledge.

The core service task of acute care hospitals can be viewed as offering accessible and cost-effective health care to the communities they serve. In the context of professional health services, the degree of professionalization of knowledge workers (primarily physicians) and the amount of task (treatment) interdependence are meaningfully greater than in the educational context. Nevertheless, we suggest that placing heightened attention on our bridge constructs may yield superior performance outcomes for such organizations.

Practicing hospital managers are well aware that U.S. acute care hospitals are presently confronting several major challenges as they grapple with the demands of (and uncertainty surrounding) national health reform initiatives, shifts from retrospective to prospective reimbursement methods, and the trend toward transferring risk from insurers to providers. Chief among these challenges are pressures to create integrated delivery systems and growing demands from external stakeholders to provide greater “value” for the dollar. To successfully respond to these changing demands, hospital managers will need to forge stronger ties (economically and organizationally) with physicians (who typically are “contractors” versus employees in the United States), and cultivate innovative programs that demonstrate measurable value for health insurance

plans, employers, and patients. Recently reported data suggest that the number and growth rate of hospital–physician employment relationships are increasing; the percentage of hospitals employing physicians rose from 29% to 42% over the decade spanning 2003 through 2012 (Scott, Orav, Cutler, & Jha, 2017). While the presumption is that hospital–physician integration engenders greater efficiency and cost-effectiveness through reduction of transaction costs, emerging evidence indicates that such integration can be associated with higher prices and spending (Baker, Bundorf, & Kessler, 2014). This paradoxical observation may be attributable in part to inattention to the bridging constructs underscored in this article.

Application of our framework engenders several core questions: How might hospital executives best unleash and harness the tacit knowledge assets embodied in their service professionals? How might functional and economic arrangements need to be modified to align the behavior of knowledge providers with growing demands for improved quality of care at lower prices? How might hospitals use monetary and social incentives to engender *intrapreneurial* behavior, particularly among formerly independent physicians who have sold their practices to become salaried employees of the hospital? How might hospitals offset associated learning costs in the face of shrinking reimbursements? Responses to these questions that reflect a TBCT-KMT-TCE synthesis might evoke managerial actions, such as:

- Designing “hybrid” *economic* structures to govern the required mix of knowledge-asset providers (at the TCE–KMT interface):
 - Maintaining or instituting arm’s-length arrangements with physicians that provide highly specialized services that are best acquired on the “spot market.”
 - Establishing employment arrangements and long-term contracts to govern the exchange of healthcare services provided by physicians whose knowledge is central to the core mission of various hospital programs and centers of excellence.
 - Implementing overarching economic and legal structures to ensure that all knowledge providers are organized into an integrated delivery system that is capable of coordinating and monitoring the quality and cost of services rendered across the continuum of care.
- Designing “hybrid” *functional* structures to control and coordinate the activities of different groups of part-time and full-time knowledge assets (TBCT–KMT interface):

- Organize part-time medical staff, those with *courtesy* or *affiliate* appointments who only occasionally admit patients or have strictly consulting privileges, using a hierarchical functional structure with coordination and control mechanisms that are more formal than are currently deployed by most U.S. hospitals.
- Encourage independent physicians with *active* medical staff appointments to participate in care delivery initiatives that call for greater interdisciplinary orchestration of services. To induce such engagement, hospital leaders might add an assessment of “teamwork” to the standard litany of re-appointment criteria. This can be combined with instrumental incentives (e.g., pay-for performance, shared savings programs) to align the behavior of independent practitioners with the hospital’s imperative to deliver greater “value” for purchasers of care.
- Organize full-time physicians, who are governed by employment or long-term contract agreements with the hospital, into multidisciplinary teams that create unique meta-routines (knowledge sets combined into innovative care pathways) conducive to development of new treatment programs capable of yielding enhanced value to stakeholders. Link financial incentives (e.g., salary increases, bonuses tied to productivity) to such activities to more tightly couple clinical and economic performance.
- Supplement financial incentives with social incentives that reward team performance and encourage subunit cultures rooted in performance excellence and shared context. Recognition for exemplary citizenship behaviors, certificates of achievement, citations of appreciation from senior management, team festivities, celebrations of success, and corporate donations to a charity of choice are some examples of culture-building incentives to help transform rugged individualists into team players. Naturally, the specific nature of such incentives will need to be tailored to the strategic goals and cultural transformations being pursued by management.
- Envisage and support learning costs incurred to implement actions just listed with appropriate investments in technological and intellectual capital.

Discussion

This article seeks to aid managers and scholars concerned with the issue of how to manage knowledge

assets as a source of competitive advantage in complex professional human service (cPHS) organizations; a growing segment of modern economies. To do so, it attempts to address the call for *integration* of independent theoretical streams (Mahoney & McGahan, 2007), using a *typology* approach to theory building that reviewed existing literature and extracted interrelated theoretical dimensions and causal interactions (as suggested by Cornelissen, 2017). It further follows the lead of Kessler and Bartunek (2014) by “stitching together” existing bodies of theory to create an enhanced understanding (and greater systemic capacity to manage) their interrelated dynamics.

Our framework draws upon what we view as three particularly relevant theoretical domains—contingency thinking, knowledge management, and transaction economics. We show how the complementary strengths of these three theoretical streams offers the potential for integration and synthesis through the generation of important “bridging” constructs at their interface: surfacing “cross-domain” factors especially worthy of consideration by managers seeking superior performance in cPHS organizations. Our framework focuses at the level of core task activities for subunits of cPHS organizations, and the knowledge dynamics and asset exchange factors associated with those tasks. It purposefully focuses on organizational *subunits* as the level of analysis (consistent with TBCT) due to our interest in the behavior of *complex* organizations that, by their very nature, comprise constellations of mission-centric tasks that may vary considerably with respect to the variables being studied, with each searching for the best fit between their core task and structure.

We maintain that managers guided by our framework *bridging* the domains of TBCT, KMT, and TCE are more likely to focus attention on core issues facing cPHS firms. More specifically, we argue that effective management of such firms requires greater attention to (a) knowledge and learning as core contingency factors; (b) learning systems, meta-routines, and shared context as core features of operating structure; and (c) knowledge asset exchanges and learning costs as core elements of economic governance structure. To derive superior capabilities from their knowledge assets, we assert that cPHS managers must create organization systems that (a) appropriately procure knowledge assets (with learning costs factored into assessment of economic efficiency), (b) create processes (learning systems) to dynamically unleash their potential, and (c) create structural arrangements to harness and coordinate this potential. We further assert that all three elements are essential and synergistic; when any of these interdependent pieces is missing or poorly

managed, organizational capability and performance will suffer.

To illustrate the utility of learning systems and learning costs as emergent bridge constructs, we briefly applied these constructs to two specific types of cPHS organizations—U.S. university-based non-profit (public or private) business schools with teaching missions, and U.S. in-patient, acute care hospitals. The authors, based on their experience with both entities, have observed that some presently are partially implementing aspects and elements of the separate domains in our framework, either by design or by default. For example, both are extensively implementing information technologies to increase their information-processing capabilities (consistent with traditional contingency thinking). Both are also seeking to increase knowledge integration and coordination of services through greater team-based collaboration (partially fusing KMT and TBCT). Additionally, both appear to be following lessons from TCE, albeit in contrary ways: Business schools are moving toward *greater numbers of arm's-length contracts* with part-time faculty to economize transaction costs, while hospitals are *increasing the number of employment arrangements* with physicians (“internalization”) to gain greater control over utilization and coordination of knowledge resources. However, most of these actions seem to be instinctive or reactive, rather than intellectually guided and proactive. Very few initiatives seem to be unleashing the full potential of our framework by leveraging the bridge constructs it brings to our attention. For example, most of these organizations are not, in our experience, trying to properly adapt their behavioral management structures or to create the learning systems and shared context needed for the effectiveness of their increasingly hybrid economic structures: issues that have received precious little direct attention in prior literature. That might partly explain, for example, why business school curricula remain overly traditional and poorly integrated, and greater employment of physician by hospitals may not be leading to expected efficiencies, as noted by Scott et al. (2017).

Given that our primary purpose was to develop a novel framework integrating three particular theoretical streams, we confined our brief applications to one particular type of entity in the higher education and health care sectors, and to broad implementation guidelines briefly illustrating the framework’s potential. We readily acknowledge that many important variations and complexities within these and other cPHS arenas exist that warrant deeper attention and specificity.

Future research should endeavor to investigate the relationship we have outlined between the variation across cPHS organizations in their degree of focus on

our bridge constructs, the ways they are implemented, and their connection to subunit capabilities and performance. For instance, empirical researchers could seek to develop reliable measures of learning-system quality and learning-cost investment, and examine their linkages to established measures of capabilities and performance in various contexts. In addition, theoreticians could seek to identify other potentially important bridging themes and constructs drawn from additional theory domains. Also, the relevance of our bridge constructs could be examined in other types of cPHS firms than the two discussed here, and in varied international contexts.

When extending the application of our proposed framework to other professional service settings, variances likely exist in the relative importance of our bridging constructs and the consideration of others. How might the application of our framework be different for law or financial services firms or for different types of organizations within any particular cPHS sector? For instance, even business schools vary greatly in mission (teaching, research), programs, faculty size and composition, and size of student populations. Similarly, hospitals vary greatly in type (general acute care, specialized, teaching, sectarian), geography (urban, suburban, rural), and affiliation (freestanding or part of a multi-hospital system). Location factors may be particularly important. European employment law regulates the mix and duration of employment contracts, exerting greater constraining influences on choice of economic governance structure for organizations operating there. Further, employment of physicians may be regulated and constrained by state-specific “corporate practice of medicine” laws in the United States. Simply stated, such laws (in states where they apply) essentially restrict to varying degrees the practice of medicine to licensed physicians, based on the rationale that clinical decision making and accountability must be exclusively vested in the health care practitioner, and thus prohibiting corporate entities from directly employing medical doctors (Schaff & Prives, 2010).

In conclusion, we view the greatest potential contribution of our resulting multitheoretical framework to principally reside in elevating the bridging themes and constructs we have identified from the periphery of design thinking to *core* considerations for cPHS firm practitioners making design decisions, and for researchers seeking to empirically confirm the relative effectiveness of various cPHS organization design configurations. We posit that elevating *learning systems* and *learning costs* (our bridge constructs) to a more

central position in decision making has the potential to improve the management of knowledge assets, thereby producing superior and more sustainable cPHS firm capabilities and performance. This may lead cPHS organizations to more appropriately procure and govern their knowledge assets, while simultaneously unleashing and harnessing their potential—all of which need to be managed collectively and synergistically. With professional human services organizations constituting an increasingly large and important segment of our economy, improving their effectiveness should have a meaningful impact on our society.

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