ARTICLE IN PRESS

Technological Forecasting & Social Change xxx (xxxx) xxx–xxx

Contents lists available at ScienceDirect

Technological Forecasting & Social Change

journal homepage: www.elsevier.com/locate/techfore

Constructing a strategy on the creation of core competencies for African companies

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ARTICLE INFO

Keywords:
International technology transfer
Core competence
Knowledge management
Africa

ABSTRACT

A growing number of studies on economic development have relied on the premise that international technology transfer provides a mechanism for developing competitive advantages for companies of developing countries, and Africa in particular. In this article, we focus on the explicit nature of technology transferable to LDCs to argue that conventional technology transfer alone cannot create core competencies for African companies that lead to the sustainable economic development of the continent. Drawing on insights from the resource-based view and the knowledge based perspective, we develop a conceptual framework for constructing core competencies for African companies. More specifically, we explore the under-researched linkage between core competencies and knowledge management. By examining the roots of core competency in the resource-based view and knowledge-based perspective, we identify the knowledge underpinning core competencies. We then reconcile diverse knowledge management models to propose an integrative approach towards generating such critical knowledge, based on which we further argue that African companies should build their strategy on the creation of core competencies rather than solely relying on conventional international technology transfer.

1. Introduction

International technology transfer (ITT), "the diffusion of technology from the place of its introduction to other markets around the world" (Grosse, 1996, p. 782), is increasingly viewed as a mechanism for developing competitive advantages for indigenous companies of developing countries (Buckley and Hashai, 2014; Chen, 1983; Contractor, 1980; Cusumano and Elenkov, 1994; Glass and Saggi, 1998; Keller, 2004; Osabutey and Debrah, 2012; Radosevic, 1999). For example, based on a longitudinal study of 29 manufacturing industries in Shenzhen special economic zone of China, Liu (2002) argues that ITT through foreign direct investment (FDI) has significantly improved and strengthened the competitiveness of Chinese manufacturing industries. In recent years, there is growing evidence to suggest that ITT creates important conditions for African firms in certain sectors to catch up with technologically advanced economies (Amankwah-Amoah, 2015; Amankwah-Amoah and Sarpong, 2016; Osabutey et al., 2014; Osabutey and Jin, 2016).

While ITT may have a crucial role to play in reducing the technological gap between companies of industrial economies and African firms, substantial challenges remain. Several scholars (Hill and Hay, 1993; Maskus, 2003; Radosevic, 1999; Westphal et al., 1985) have found that conventional ITT between technologically advanced economies and less developed countries (LDCs) is often limited to the transfer of technical information and equipment rather than technological know-how, a critical source of competitive advantage (Leonard-Barton and Sensiper, 1998; Nonaka, 1994; von Krogh et al., 2000) directly linked to core competency of the recipient (Prahalad and Hamel, 1990). A large number of studies (Aitken and Harrison, 1999; Archibugi and Pietrobelli, 2003; Borensztein et al., 1998; Djankov and Hoekman, 2000; Keller, 2002; Kim, 1997; van Pottelsberghe de la Potterie and Lichtenberg, 2001; Xu, 2000) report that countries that are further from the global frontier often have limited collective learning capabilities to absorb and integrate the transferred knowledge effectively into their production and development systems. Hence, conventional ITT between industrial economies and LDCs alone does not necessarily facilitate the development of technological core competence of the technology recipient (Amman and Cooper, 1982; Maskus, 2003). Yet it is unclear from the literature how technology recipient nations can overcome such challenges and develop their own core competencies needed for their indigenous companies to create a distinctive competitive edge in the knowledge-based economy.

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http://dx.doi.org/10.1016/j.techfore.2017.08.008
Received 15 December 2016; Received in revised form 7 July 2017; Accepted 14 August 2017
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In this paper, we focus on the explicit nature of technology transferable to less developed countries (LDCs) to argue that conventional ITT alone cannot create technological core competencies for African companies that lead to the sustainable economic development of the continent. Drawing on insights from the resource-based view and the knowledge based perspective, we develop a conceptual framework for constructing core competencies for African companies. To accomplish this goal, we explore the under-researched linkage between core competencies and knowledge management. By examining the concept of core competency, and its roots in the resource-based view and knowledge-based perspective, we identify the knowledge that underpins core competencies. We then propose a knowledge management model to suggest the strategic means with which African firms can generate such critical knowledge, based on which we pinpoint that African companies should build their strategy on the creation of core competencies rather than solely relying on conventional international technology transfer mechnisms.

The discussion of core competencies for African firms in this paper is structured around five propositions, each has associated with it a certain critical issue identified in the literature on ITT strategies for developing countries, the resource-based view and the knowledge-based perspective, areas which we intend to contribute to.

2. Knowledge and technology

Knowledge is so intrinsically ambiguous and equivocal a concept that no single commonly agreed definition for this intangible factor exists despite the plethora of attempts (Birkinshaw et al., 2002; Grant, 1996; Phelps et al., 2012). Building on Polanyi's (1958) original assumption that knowledge cannot be fully expressed, some scholars (Ambrosini and Bowman, 2001; Griffith et al., 2003; Leonard-Barton and Sensiper, 1998) proposed a continuum view of knowledge. In contrast to the widely employed tacit-explicit dichotomy view of knowledge which tends to polarize knowledge types, the continuum perspective of knowledge sees knowledge as existing on a spectrum, with tacit and explicit knowledge at the two ends. At one end of the spectrum knowledge is totally tacit and thus difficult to explicate. At the other end of the spectrum, knowledge is completely explicit and can be easily codified. Most forms of knowledge fall somewhere in between these two extremes. This paper adopts this wider view of knowledge, based on which we outline our understanding of technology below.

Technology generally refers to the application of knowledge to industrial or commercial use. Technology may be a set of pieces of knowledge embodied in particular products or tangible equipment, systems and devices used in productive activities (Blau et al., 1976; Dosi, 1982; Leonard-Barton, 1992; Woodward, 1958). It may also be disembodied knowledge consisting of particular expertise, production techniques, expereince of past experiments, managerial methods, and know-how of complex business processes (Grosse, 1996; Perrow, 1967; Thompson, 1967). According to Grosse (1996), technology can be categorized as product technology (the knowledge used to specify the characteristics and uses of any product), process technology (the knowledge used in any production process such as know-how of organizing the inputs), and management technology (the managerial skills used in operating a business).

For classical and neo-classical theorists of value and distribution (Arrow, 1962; Jewkes et al., 1958; Solow, 1957), technology is codified technical information and, therefore, easily reproducible and transferable (Radosevic, 1999). However, recent economic theorists (e.g. Mowery and Rosenberg, 1989; Patel and Pavitt, 1994) argue that technology is part of the firm's firm-specific assets cumulated over time. In this perspective, a significant part of technology is tacit knowledge deeply rooted in the firm's local context, and thus, difficult to reproduce and transfer (Dosi, 1982; Radosevic, 1999). Yet a number of scholars (e.g. March and Simon, 1958; Orlikowski, 1992; Romer, 1993) suggest that technical information and the more tacit forms of technical know-how coexist in firms because the application process of scientific knowledge produces context-specific idiosyncratic knowledge. In this paper, we see technology as knowledge existing on a spectrum, with explicit technical information and highly tacit technological know-how (i.e. context-specific specialized knowledge) at the two ends.

3. Knowledge underpinning core competencies

3.1. The concept of core competency

The concept of core competency has been interchangeably used with core capability, distinctive competency or distinctive capability by different researchers (e.g. Brown and Duguid, 1998; Day, 1994; Meyer and Utterback, 1993; Prahalad and Hamel, 1990; Stalk et al., 1992). With the emergence of resource-based view in the late 1980s and early 1990s it has been widely used to refer to those resources that are unique, inimitable and universally applied in different markets.

Prahalad and Hamel (1990, p. 82) defined core competencies as "the collective learning in the organization, especially how to co-ordinate diverse production skills and integrate multiple streams of technologies". By quoting the example of Sony's miniaturization they further stated that "core competence is about harmonizing streams of technology, it is also about the organization of work and the delivery of value". This definition parallels Stalk, Evans and Schulman's (1992, p. 62) view of distinctive capabilities. They attribute organizational success to a capability that is defined as "a set of business processes strategically understood".

Similarly, by analyzing Wal-Mart's cross-docking logistic systems, Day (1994, p. 38) gave capabilities a more explicit meaning – "complex bundles of skills and collective learning exercises through organizational processes that ensure superior co-ordination of functional activities". He characterized "distinctive capabilities" valuable to customers, matched by rivals and used in different ways to "speed the firms' adaptation to environmental change" (Day, 1994, p. 40). Collis and Montgomery (1995, p. 120) suggest that strategies should be built on "valuable resources" – "an organizational capability embedded in a company's routines, processes, and culture". They emphasized the business context in which core competence is deployed.

Tampoe (1994) made the first effort to distinguish core competency and distinctive capability by emphasizing that the true competency of an organisation lies in its technical subsystem. However, this has been challenged by certain authors (e.g. Day, 1994; Marino, 1996; Stalk et al., 1992) in respect of its vulnerable nature amid environmental change.

Although capability-approach theorists have been trying to differentiate capabilities from competencies the dividing line between them is still unclear. Nevertheless, certain researchers (e.g. Day, 1994; Marino, 1996) have suggested that core competencies and core capabilities possess homogeneous characteristics and, thus, are equally important to the firm's business success. In this paper, core competencies will encompass both.

3.2. Core competencies in resource-based view

In the resource-based view, resources are classified as tangible and intangible. According to Grant (1991) tangible resources include financial resources and physical resources such as plant, equipment, and stocks of raw materials. Intangible resources range from intellectual property rights such as patents, trademarks and copyrights to the know-how of personnel, informal networks, organisational culture and a firm's reputation (Hall, 1992). However, the dividing line between the tangible and intangible is often unclear and how they are classified can vary from one writer to another. Nevertheless, agreement on the relative importance of the two types of resources has been achieved in spite of the problems over classification. Although it is clear that both types of resources are required for any business to operate, resource-

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