Investigating India's competitive edge in the IT-ITeS sector

Sankalpa Bhattacharjee [a,*,1], **Debkumar Chakrabarti** [b,2,3]

[a] Economics Area, T. A. Pai Management Institute (TAPMI), Post Bag No. 9 Manipal, Karnataka, India
[b] Department of Economics, Ramakrishna Mission Vidyamandira, Belur Math, Howrah, West Bengal, India

Abstract   The paper investigates the factors instrumental in imparting a competitive edge to the Indian IT-ITeS sector using Porter's diamond model. The paper ascertains the relative superiority of the model in explaining India's prominence in the IT-ITeS sector. The study carries out a "complex" application of the model that is "instrumental" in its attitude by identifying certain distinct factors under the realms of the diamond, the interplay of which catapulted India into the most favoured outsourcing destination. The study posits that the sector is likely to retain its technological prominence in the foreseeable future.
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Introduction

The year 2012 was a landmark year for the Indian information technology − information technology enabled services (IT-ITeS)[4] industry with aggregate revenues crossing US$ 100 billion. Being the largest recipient of the global outsourcing pie with a market share of 55% in the Financial Year (FY) 2013, the industry has grown at a CAGR of over 21% during FY1998—2014. The sector's contribution to GDP increased from 1.2% in FY1998 to an estimated 8.1% in FY2014 (NASSCOM, 2014).

Researchers have attempted to develop models to trace the factors contributing to this success. The models/frameworks so far have attempted to club the factors under broad categories to frame a generalised structure, capable of explaining the dynamics emerging from the interaction of the factors that ultimately resulted in competitive advantage for countries in software and allied sectors. Four of these models deserve special mention—Porter's diamond model (1990); Heeks-Nicholson model (2002); Carmel's oval model (2003); and Joshi-Mudigonda's offshore attractiveness framework (2008). The basic tenets of these four models are outlined below:

1. **The diamond model (1990)**: Framed with a business policy perspective, Porter's model emphasized the need for enhancing productivity to retain the competitive edge in a particular industry through continuous

upgradation of technology. The incentive for upgradation stems from the interplay of four attributes, namely (i) favourable factor conditions; (ii) high domestic demand; (iii) firm strategy, structure, and rivalry; and (iv) existence of related and supporting industries. Apart from these four factors that constitute the diamond, Porter also emphasized the role of "chance" factors and government policies that often assume important roles in strengthening the diamond, notwithstanding their positioning outside the realms of the diamond.

2. **The Heeks-Nicholson model (2002)**: Heeks-Nicholson examined the factors contributing to the success of the three first-tier software exporting nations, viz India, Ireland, and Israel. Based on a competitive analysis of the three countries, Heeks-Nicholson proposed a software export success model by taking into consideration five factors, namely (i) demand (both domestic and foreign); (ii) national vision and strategy; (iii) international linkages and trust; (iv) software industry characteristics; and (v) domestic input factors/infrastructure.

3. **The oval model (2003)**: The oval model propounded by Carmel identified eight factors that contribute to software export success. In doing so, the model claims to enhance the Heeks and Nicholson (2002) model by explaining the success factors of even the third and fourth tier software exporting nations. The eight factors identified by Carmel include (i) government vision and policies; (ii) human capital; (iii) wages; (iv) quality of life; (v) linkages; (vi) technological infrastructure; (vii) capital; and (viii) industry characteristics.

4. **The offshore attractiveness framework (2008)**: Joshi-Mudigonda propounded the offshore attractiveness framework for evaluating a country's attractiveness for offshore work. The framework is based on three key factors (analogous to the motion of an automobile), namely (i) primary motivating factors (accelerator); (ii) inhibitors (brakes); and (iii) facilitating conditions (steering). While primary motivating factors are fundamental drivers for offshore work, inhibiting factors act as deterrents. The facilitating conditions on the other hand tend to support convenient initial entry, smooth transition, and efficient trouble free delivery. Joshi-Mudigonda argue that facilitating conditions act as the most important discriminator in the choice of a target country among countries of similar cost advantages and risk profiles.

A study of the models reveals that the basic factors considered in all the models are similar; it is the classification of the factors that differentiates them from one another. In that sense, the other models do not bring anything new to Porter's diamond model.

An additional advantage of Porter's model is that unlike the other models, it assigns "chance" factors an important role. This is significant, especially in the context of the Indian IT-ITeS sector whose success to a great extent, can be attributed to events that unfolded outside the geographical territory of the country.

The most comprehensive attempt at using Porter's model to assess the competitive advantage of the Indian IT-ITeS sector was by Heeks (2006). Other notable attempts include the ones by Krishna, Ojha, and Barrett (2000), Vedpuriswar and Chowdary (2001), and Kapur and Ramamurti (2001).

Heeks (2006) classifies the earlier attempts into three categories, namely naïve, basic and complex (Fig. 1). Naïve application refers to the usage of the four elements of the diamond as mere "dump bins" for allocating points with little engagement (either systemic or dynamic) with the content of those categories. Basic application is more analytical, wherein the elements of the diamond are used to characterize a software industry, without any engagement with the systemic or dynamic elements of the theory. Complex application is analytical and encompasses not only the components of the diamond but also two extra diamond categories (namely "chance" and government) in engagement with the systemic and dynamic aspects of Porter's construct. In other words, as compared to the basic or naïve applications of the construct, complex analysis is more holistic in its approach in terms of engagement with the systemic and dynamic aspects of the construct through interplay among the various components that it encompasses. This classification is mapped by attitude, which again has been classified into three categories, viz. instrumental work (which does not question Porter's theory and uses it towards a descriptive end); critical work (does not take the theory as accepted truth and uses it for instrumental purposes); hypercritical work (which seeks to refute the theory altogether).

Most of the studies are either naïve or basic in terms of the application and are either instrumental, critical or hypercritical in terms of attitude. In contrast, our attempt is instrumental and complex. Our study builds on the work of Heeks (2006), yet differs significantly from it as it captures the transformation that the industry has witnessed over the years. The rationale for capturing this transformation while investigating the competitive edge emanated from the fact that it takes time for an industry to attain a competitive
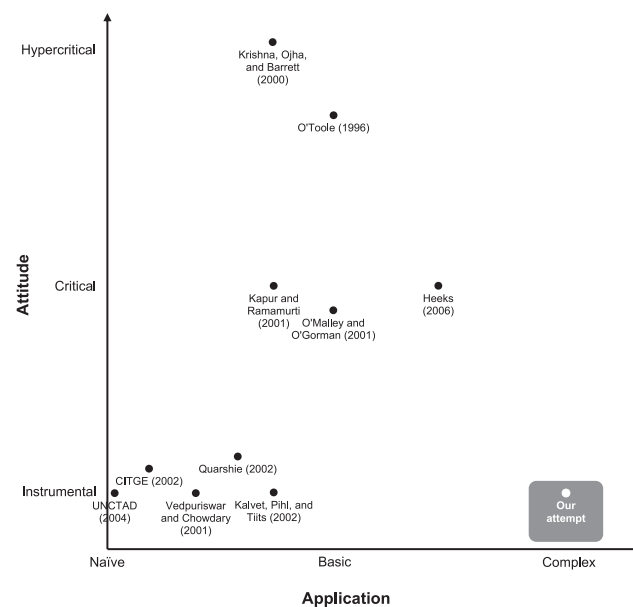

Figure 1 Researcher usage of Porter's theory. Source: Adapted from Heeks (2006).