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Breaking Out of Lock-In:
Insights from Case Studies into Ways Up the Value Ladder for Indian Software SMEs

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ABSTRACT

Small and medium enterprises in the Indian software development industry, like their larger counterparts, are mostly low on the value ladder. This paper examines the difficulties confronting them in moving up the ladder and the strategies and circumstances conducive to success, drawing on three case studies. Human resource development emerges as central. Though SMEs have meager resources for moving up, compared to large firms, they have a greater incentive to do so, and this organizational interest accords with the interests and motivations of their employees for career development. It is found that the keys to success are to treat employees as co-investors in their own human capital in order to form an effective community of practice across the firm and to find market opportunities that stretch the firm in the right direction and to the right extent. For the last of these, the main contribution is made by existing clients, but an important role may be played by venture capitalists, particularly those that are US-based.

Keywords: *client relationship; communities of practice; HR issues; Indian software industry; moving up value ladder; small and medium enterprises; venture capitalist-enterpreneurial team relationship*

INTRODUCTION

The Indian software industry today has more than 7,000 firms operating domestically, of which about 90% are small and medium-sized (i.e., less than 250 employees). It has seen dramatic growth during the last decade. The industry grew at a compound annual growth rate of over 50% from 1994 to 1999 and from 1999 to 2002 at over 26%. Its output has been forecast to exceed $50 billion US by 2008 (NASSCOM, 2002, 2003). While in 2003, SMEs accounted only for 10 to 15% of revenues, this share was forecast to grow to 50 to 60% by 2008 (NASSCOM, 2004). The growth of the industry has been heavily dependent on exports, particularly to the

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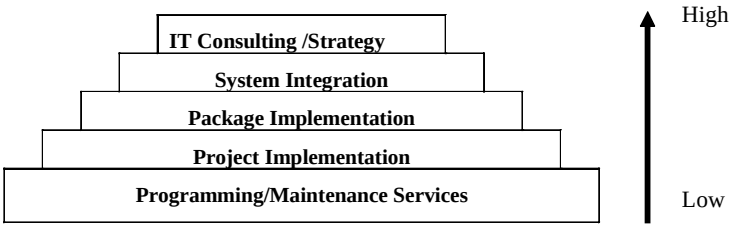
Figure 1. The software value ladder



(Adopted from Presentation by Nilekani, N., Managing Director, Infosys Technologies, India, at the NASSCOM-IT Conference, 2001)

U.S.; total software and service exports rose from $489 million in 1994 to 1995 to $9.6 billion in 2002 to 2003. Indian firms have been operating mostly at the lower end of the software value ladder — programming/maintenance services; but even these have seen a switch from over 95% body shopping in the early 1990s (NASSCOM, 1999) (work undertaken for clients at their site of operations) to offshore software development, in which India has become dominant. A survey by Merrill Lynch (NASSCOM, 2002) predicted that the proportion of IT spending outsourced to India would increase from below 5% to over 15% in 2002 to 2004. The software exports increasingly include the output of the Indian operations of large consulting firms like IBM, Accenture, EDS, and CSC.

Indian firms have been trying to move up the software development value ladder (Figure 1). The activities that Indian firms are undertaking now vary from high-value consulting, system integration, packaged software integration, and custom application development to low-value legacy application management, maintenance, and migrations. One indication of this is the number of firms with an SEI-CMM level rating. This system of ratings was developed by the Software Engineering Institute (SEI) of Carnegie Mellon University and represents the level of maturity of the development processes used by a software development firm. There are five levels, from 1 (fair) to 5 (very good) of the Capability Maturity Model (CMM). An SEI-CMM rating brings credibility to the process of software development being used by the firm. India has the highest number of firms with such a rating (out of 58 firms with an SEI-CMM level 5, there are 36 from India) (NASSCOM, 2002). As firms grew in size, spinoffs began from large companies, some of which have been the nursery to some of the most dynamic software and service startups in the Indian industry.

The strength of the software-producing industry in India by no means has been matched by local demand for its services. This has been hindered by lack of PC penetration within the Indian industry, among other factors. Although it has seen growth from $298 million in 1994 to 1995 to $2.6 billion in 2001 to 2002 (NASSCOM, 2002), the domestic market is still small relative to exports, and, moreover, it is deficient qualitatively in the sense that few software us-

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