



Moving Tata Consultancy Services into the “Global Top 10”

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Abstract. This case study examines three strategic questions that India’s largest software services firm, Tata Consultancy Services (TCS), faced in 2003. TCS had pioneered the industry and remained the market leader; of late, its lead over domestic rivals had been slipping, even while much larger multinational rivals were establishing large Indian operations. TCS needed a strategy to move up the software value chain. Meanwhile, a new industry was emerging, namely business process outsourcing, growing at 50 percent per year. There seemed to be synergies between BPO and software services, but also differences. TCS’s Indian rivals had made major investments in BPO, while TCS had only a small presence. TCS had to quickly settle on its BPO strategy. The questions are: 1. How may TCS move up the software value chain? 2. Should TCS enter the BPO business? If so, 3. Should it make a major acquisition or grow organically?

Keywords: software, business process outsourcing, India, Tata Consultancy Services, value-chain, strategy.

TEACHING NOTE

1. Case Summary

Begun with the formation of TCS in 1974, India’s software exporting industry has grown impressively since. In the fiscal year ended March 2003, India’s software industry generated \$9.98 billion in annual revenue, of which \$7.5 billion was export revenue. Almost all this revenue is in software services, particularly the programming of customized applications.

TCS pioneered the industry and remains its market leader, employing over 20,000 persons. Of late, its lead over the competition has been slipping. Meanwhile, since 1999, an export-oriented business process offshoring and outsourcing (BPO) industry has emerged in India and is growing rapidly. BPO has links to TCS’s traditional business of software development; however, as of 2003, TCS had only a small presence in this business.

1. What strategy should TCS use to move up the software services value chain?

2. Should TCS enter the BPO business?
3. If you believe TCS should enter the BPO business, then should it make a major acquisition or grow organically?

2. Key Issues, Target Audience and Approach

Key issues for consideration:

1. The software services value-chain, its de-integration and globalization.
2. The growth of India as an important part of the global production of software services, TCS’s leading position in the industry and its strengths and weaknesses.
3. The specialization by most Indian firms – including TCS – in the limited segment of applications programming and in only a few industries.
4. The BPO value-chain, its de-integration and globalization.
5. The recent growth of India in the provision of BPO services and TCS’s relatively minor position in the industry.
6. Acquisition versus organic growth.

It is recommended that this case be taught to graduate management students. Students should be encouraged to read about the software development cycle and the business process offshoring cycle prior to analyzing the case. The case contains references to these; the Internet is also a good source for such material. Alternatively, the instructor may extract it from the material below.

3. Case Answer

The answer is developed as follows: The first step is to understand the software service development cycle commonly called the “Waterfall Model”. Moreover, the Waterfall Model can be extended to Business Process

Outsourcing. The second step is to place TCS into the context of Michael Porter's Five Forces model.

The Waterfall Model

The Waterfall Model is a convenient method for understanding the software services development cycle (or value-chain). This model illustrated in Table 1 conceptualizes software development as a series of sequential processes, each of which (with one exception) is less skill-intensive than the earlier one. The initial processes typically use less labor, and later ones use more. At its apex is strategic consulting, which includes the starting points of conceptualization, requirement analysis, and architecture and technology determination. Of all stages in the cycle, this work typically requires the highest level of technical expertise, the closest interaction with the client and the deepest domain skills. Downstream follow engineering services (the integration of the technical capabilities of the core product into the program) leading to a system specification and design, and the programming of the resultant system (termed applications programming). The work of engineering services, like consulting, requires domain skills (in product engineering) and close interaction with the client. System specification and design requires fewer domain skills but higher-end software skills than engineering services. Once the system is specified, the program is written; this work primarily requires programming skills. After the program is written, it needs to be finished through testing and debugging code; once finished, it needs maintenance and quality assurance support. With the development of the Internet, offering software as a web service is increasingly being integrated into the earliest stages. Hence, web services (also called e-business or infrastructure services) are spread across the cycle. Finally, the work of systems integration makes the components of software and hardware compatible and interoperable. It requires some domain expertise, though less than engineering services, primarily requiring hardware and software skills.

This is shown below:

Table 1: The waterfall model

Process =>	Strategic consulting	Engineering services and system design	Applications development and maintenance	Systems Integration	Web services and other
Relative advantage of geographical proximity to the client.	H	H	L	M	M
Share of labor hours (%).	10	17	48	15	10
Share in global value-chain (%).	31.5	21.8	15.6	27.1	3.9
TCS revenue share (%).	3	0	70	22	5

- Notes:
1. H = high, M = medium, L = low, derived from materials in the case.
 2. Share of labor hours from Industrial Note.
 3. Share in global value-chain derived from Industrial Note, after excluding IT education and training.
 4. TCS revenue share obtained from Supplementary Table 2 of the case.
 5. Figures are for 2001.

The software services value-chain started to globalize in the mid-1980s with the use of Unix and C as the standard operating system and programming language and the development of workstations (the case has termed this the “U-W standard”). Indian firms till then had mostly been doing conversion work, i.e., converting users’ applications to new operating systems and hardware, mainly as a result of IBM’s growing market share. The U-W standard enabled some portions of the software development process, notably applications development, to be done remotely from others. TCS began such work in the mid-1980s, developing along the way complex competences such as the remote management of software projects, a capability that it pioneered in the Indian software industry.

TCS currently earns revenue mostly from applications programming (see the table above). Such work receives only 15% of the value of a software project and is at the bottom of the value-chain.

The waterfall model can be applied to the offshoring of a business process as well. At its apex are strategic consulting and reengineering services, followed by process specification and design, process implementation and

process migration services (including process integration and quality assurance). The comparison with software services is shown below:

Table 2: Comparison of components of work in BPO and software services.

BPO =>	Strategic consulting	Reengineering Services	Process specification and design	Process implementation	Migration services, including process integration & Quality Assurance
Software services =>	Concept, technology determination and system architecture	Engineering Services	System specification and design	Applications programming and Quality Assurance	System integration
Use of open standards	L	M	M	H	M

The kinds of BPO work being offshored to India are at the lowest end of the value chain, particularly process implementation, while higher end work continues to be done by clients or their consultants. Thus, TCS takes the risk that doing such work will perpetuate its current position as a low-end services provider.

Michael Porter's Five Forces

In the case of both software outsourcing and BPO, for TCS there are few important suppliers, because TCS' inputs are standard commodities and there is little opportunity for differentiation on the input side. The four forces that are most problematic are the bargaining power of customers, the threat of new entrants, the threat of substitutes, and the competitive rivalry with existing players. We examine each of these four forces in their turn for both software services outsourcing and BPO.

Table 1 in the context of competitive forces helps to explain why TCS built its business around applications programming: given the problems of distance, and operating from India, this was the easiest component of the business to build. In the early days of the software exporting business, the software vendor market was dominated by a few large global suppliers such as IBM. Indian

firms were viewed as too small to matter for obtaining significant business. In addition, they competed actively with each other at the low-end. The result was that TCS and its Indian peers chose components of the business that were relatively low value-added and relatively simple to do.

TCS also faced a client market that was dominated by the large banks and insurance companies. While it actively sought alliances with larger vendors as a competitive strategy, its most successful strategy was to directly approach clients and accept the lower rates that its competitive position necessitated.

Looking ahead, TCS must continue to work to reduce the bargaining power of customers by trying to move the purchase decision away from price. This means that TCS must deliver more than undifferentiated programming by moving up the value chain. Such a movement is difficult in software services because the customers have deep domain expertise and almost invariably wish to retain the tasks grouped under strategic consulting in Table 1. Moreover, customers understand that if they outsource the strategic consulting, then their bargaining power will be reduced. TCS must develop sufficient expertise so as to make outsourcing these tasks a compelling value proposition. Of course, it is exactly in these realms that the multinational outsourcing firms such as IBM, Accenture, and EDS are the most ferocious competitors.

Forging alliances is often viewed as a good strategy to offset clients' bargaining power. However, building alliances with firms working in clients' locations should be discounted as this would further focus TCS in applications' development. On the other hand, the acquisition of a medium-sized American firm with strong client relationships and domain skills could provide an attractive opportunity. Although costs per employee would rise, the rise would be small since labor requirements are lower for higher value-added work (see the table above).

Meanwhile, the threat of new entrants is declining rapidly as the larger firms have rapidly increased their size, market share, and credibility with customers. However, although firms strive to reduce their direct competition through product differentiation, in each market segment there continue to be numerous players.

A key concern for TCS is competition from existing players as it has generated competition for existing business and created significant pricing pressures. Globally, firms such as EDS have positioned themselves as capable of undertaking large, “turnkey” projects in order to differentiate themselves from competitors such as IBM and Accenture that focus on higher value-added work such as consulting. This suggests an organically-driven growth strategy for TCS: that TCS continue to do the same kinds of work that it currently does, but try to capture a greater portion of the value-addition by undertaking larger projects. Though it has already demonstrated a capability in remote project management, it would be required to further increase this capability.

However, there are some risks to this strategy. TCS' large size suggests that it may have already maximized economies to scale in applications development. Adding scope, however, offers the potential for large gains since it necessarily involves higher value-added activities. In the early days, this was difficult, partly due to the technical difficulty in de-integrating the value-chain beyond the modularization of applications programming. Over the past few years, however, engineering services, systems design, and systems integration work have increasingly been outsourced (within the U.S.), suggesting that, if the skills are at hand, such work could be done in India.

Most American providers of such services offer domain and software skills. TCS already has the software skills to move into these areas. But domain skills are a challenge. This is illustrated by TCS's focus on a few industries, notably banking and financial services (Supplementary Table 4 of the case). This reflects a general lack of domain expertise outside the financial services sector in India. Put differently, India does not have global-class, non-technical knowledge in various other industries. As a result it is difficult to offer the full panoply of services a firm would want when it considers outsourcing a software development activity. This may be being rectified as the liberalization of the Indian economy since 1991 has led to the development of a host of new industry capabilities, such as in insurance. This promises an expansion of domain-specific skills in fields outside the traditional industries – but these will develop only gradually.

These facts indicate that it will be difficult for TCS as an organization based and staffed primarily in India to change its revenue mix through organic growth. Acquiring Indian firms doing higher value-added business is a possibility, but there are few such firms in the Indian business environment. Essentially, the constraint that TCS faces is environmental rather than firm specific. In most sectors, Indian business conditions are sufficiently dissimilar to overseas client conditions that local domain expertise is of low relevance.

The threat of substitutes in software services does exist as technology tools to speed coding etc. However, at this time the threat of substitutes seems rather remote.

In summary, the answer to the first question posed above is that TCS should grow in software services through (1) Acquisition of a medium-sized American firm with strong client relationships focusing on software-intensive areas complementary to TCS, such as system design and systems integration in financial services; A natural direction is to move first into areas adjacent to applications programming that require more IT-related skills and fewer domain skills, such as system design and systems integration. There are several such firms in the U.S. that could be attractive acquisition targets. However, managerial and cultural issues could also play a significant role. (2) Organic growth through undertaking larger projects; (3) Adding domain capabilities in step with the development of such skills in India. However, it

should not consider overseas strategic alliances in allied domains or overseas acquisitions that provide new industry skills.

4. TCS and BPO

TCS’s decision on whether to make a large investment in BPO is analyzed as follows:

1. What is TCS’ competitive position in the BPO industry?

Unlike software services, TCS is a relatively small player in the BPO industry in India. The BPO business is divided into broad segments: call-center work (which includes a large component of IT-intensive technical support work) and back-office work. TCS entered the business much later than its traditional software rivals and initially focused primarily on call-center work. Nevertheless, TCS has some advantages over others in the industry. The first is that it can use its software business to improve its competitive position in the industry. Many of its software clients might become BPO clients due to their familiarity with TCS and its credibility in doing work overseas. On the other hand, the BPO business might affect TCS’ software business as well. These linkages are analyzed as follows:

- a) Retaining client relationships: BPs, unlike software development, are transaction-oriented rather than project-oriented. Once a software project is completed, it is common for the client to put the next project up for open bidding (despite a satisfactory experience). However, it is less likely that a client will switch its BP provider, as the migration process involves high initial costs and a long migration cycle. Hence, the software division may retain clients better if the firm also provides BP services.
- b) Obtaining work linking software and BP: Some BPs, but not all, involve a considerable amount of software work. For example, TCS might automate a client’s payroll system (a software project) and then manage payroll processes as well (a BP). Thus, its BP capabilities might allow it to earn higher value for a software project by offering to fulfil the service outcome of the project. This is a successful model in the U.S.: large firms such as EDS offer such integrated services.

c) Building domain expertise: Although TCS and other Indian firms currently do low-end, back-office work, over time more high-end work and even transitioning to front-office work might be possible. For example, a stockbroking operation might begin by offshoring post-deal settlement work, but then add automated trading and some of the more routine research functions over time. Over longer periods of time, even more sophisticated work such as sales call updates might be added. The advantage of BPO is that it lends itself to incremental increases in the number of services provided, with small value-added slices being added to the offshored work as the offshored operation gains in capability. This reflects the nature of BPs, that they will typically either be provided by a single outsourced provider or done in-house. This allows for the BP provider to build domain expertise that may then be leveraged to also climb the software value chain. By contrast, a firm that only offers software services will find it difficult to get clients to agree to add incremental work since there typically will already be other firms fulfilling the clients' needs in adjacent fields such as engineering services and systems integration.

2. How will the BPO business be affected by the software business?

a) There are key operational areas in which the impact of software work on BP is low: (1) skills sets needed for BPO at the operational level are different, requiring accountants, sales clerks, telephone operators, and so on, rather than software engineers. (2) The clients, though they might be in the same firm, are likely to be different, especially if the client-firm is large. Software services are normally marketed to the firm's CIO or CTO, while BP services are marketed to the firm's operations departments, such as accounts and HR.

b) There are also areas of synergy. The greatest for TCS is its long-established domain expertise in financial services that could help the firm obtain BPO work in the financial services industry. Further, TCS's credibility in software services should assist in securing BPO business from the same firm. Also, the BP operations can leverage off a similar set of IT-infrastructure management capabilities as

are required for software services, such as remote project management and network management.

- c) Moving up the BP value-chain: to the extent that TCS has the capability of moving up the software value-chain, this may assist in migrating up the BP value-chain.

3. Should TCS enter BPO and, if so, how?

As noted for software outsourcing, TCS is not affected by the competitive position of suppliers because its inputs are standard commodities with little scope for differentiation. The key challenges remain the bargaining power of customers and the competitive rivalry with existing players, although the threat of new entrants and substitutes is not negligible.

As noted in the case, TCS has hitherto made a few small investments in BPO, one as a joint venture and a small airline-industry related acquisition. An outcome of the above analysis is that, since software operations are to be TCS's core business for several years to come and since moving up the value-chain is a desired goal, entering BPO is advantageous because it could assist TCS in achieving its core goals. There are several disadvantages and TCS will have to develop personnel and marketing teams that are appropriate for BPO. It seems important for TCS to enter the BPO field. Ideally, TCS should build a BPO business that can leverage off the software business, such as managing back-office processes in finance, rather than in less-linked businesses such as call-centers. However, it may be impossible to simply “cherry pick” the most desirable businesses where there are considerable synergies between software and BPO. Still building the business within TCS rather than through alliances is the better strategy.

In the BPO realm there are similar difficulties for firms offering undifferentiated services such as call centers or simple claims processing. Moreover, for many firms, activities such as claims processing, mortgage application screening, data entry, or GIS data entry are only the most routinized activities in a larger business process. Frequently, the entire business process may not be viewed as a core function, and therefore the firms are willing to outsource more of the higher value-added activities in the business process. This willingness could permit the BPO firm to capture a larger portion of the entire process and in the process more deeply enmesh the customer in the relationship. This can serve to reduce the power of the customer AND reduce the threat from rivals and new entrants.

Moreover, unlike the more mature software industry, the configuration of markets and the rivals is changing constantly. For example, IBM, which is TCS' ideal-typical rival (though much larger and more diversified), announced

in April 2004 that it was purchasing one of the premier independent Indian BPO firms, Daksh, for approximately \$150 million. The implication is that IBM will be a “new entrant” in the BPO business. Thus at this point in the maturation of the BPO industry rivalry is likely to increase as global IT service firms seek to integrate BPO into their overall offerings.

In the case of BPO, substitutes are definitely a possibility. In the case of call centers, voice recognition software is constantly improving and there are products on the markets that can operate effectively in highly defined situations. Though this software will surely improve, at this time it appears as though it will be able to substitute for only some percentage of the total number of calls. In the case of claims processing, mortgage scoring, etc., the use of e-forms and software-driven character recognition systems clearly will decrease the need for routine data entry. However, auditing, monitoring, or editing functions require human judgement, but can also be done in India. So, non-human substitute methods are being developed, but there are opportunities to move further up the value chain where judgement is required.

In fact, interestingly enough, in the apparently low value-added BPO fields, movement up the value chain may be easier than in software. The reasons for this are the complexity of business processes and the fact that firms outsourcing the process may not see the entire process as a core competency. This would make them willing to outsource the entire process, rather than trying to retain the highest value-added portions for themselves. This suggests that TCS should consider making a serious commitment to the BPO field soon.

Overseas acquisitions appeared to be the most appropriate route for TCS to build its software business. The corresponding advantage of this strategy for BPO work is that it would provide TCS with a base of clients. It might allow a more rapid ramp-up to doing higher-end work. However, unlike software, a more cautious approach seems to be in order. TCS needs to first increase its understanding of the business and create a process implementation capability of sufficient scale prior to acquiring value-added overseas capabilities.

A domestic acquisition is an option, its advantage being a quick start and existing clients. However, TCS’s existing client-base should make client acquisition relatively easy. Further, it is likely that its established project management skills can be leveraged for rapid ramp-up. This should ameliorate the risk of being left behind. For these reasons, TCS should grow organically rather than through acquisitions, with a focus on those domains (primarily financial services, but also manufacturing and telecommunications) in which it already has skills that have been used in its software services work.