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Business Research

The Next Big Opportunity – Moving up the Value Chain – From BPO to KPO

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1 Introduction

The success in offshoring Business Process operations with respect to reducing costs and often improving quality has encouraged many firms to start offshoring their high-end knowledge work as well. Their underlying expectation is that offshoring high-end processes will result in additional cost savings and operational efficiencies, coupled with access to very good talent in the low-wage offshore countries. In this paper, we will refer to this offshoring of higher-end services as Knowledge Process Offshoring (KPO).

This paper analyzes the evolving KPO market, the opportunities it offers, the associated challenges, and the key drivers associated with the move from BPO to KPO.

According to our estimate, the KPO market is expected to grow from USD 1.2 billion in FY¹ 2003 to USD 16 billion in FY 2010. The sectors that are expected to 'shine' within the KPO industry include data search, integration and management services, financial and insurance research, biotech and pharmaceutical research and computer-aided simulation and engineering design.

In terms of challenges, this paper analyzes the impact of key parameters such as quality, precision, confidentiality and project management expertise in the KPO industry. This paper also forecasts the number of professionals that are likely to be employed by this industry and we also present some important drivers behind the movement from BPO to KPO.

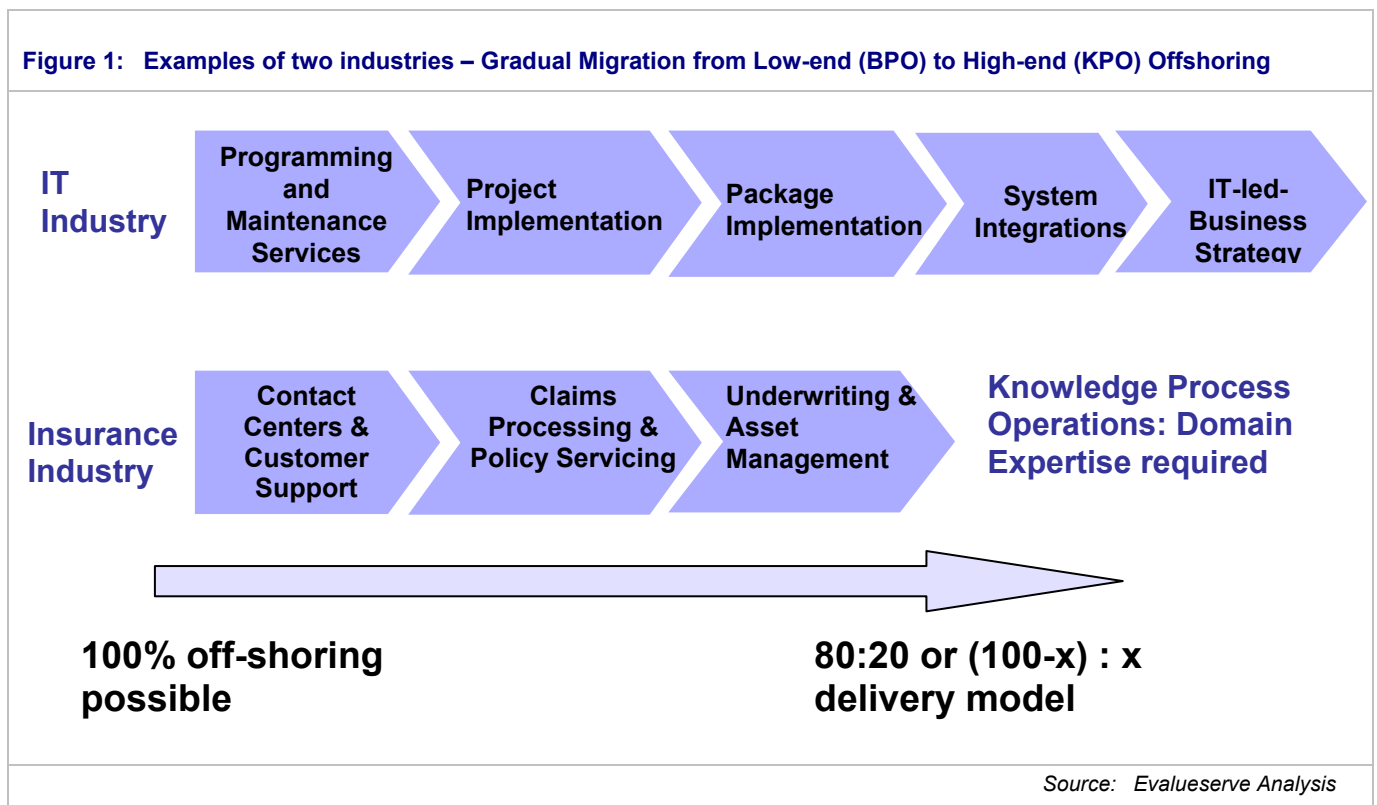
Finally, this paper attempts to compare countries (such as China, India, the Philippines, Ireland, Israel and Russia) that can provide KPO services with respect to labor costs, geographic location, demographic factors and other miscellaneous factors. The paper also discusses the future outlook of the global offshoring industry.

¹ FY stands for Financial Year, which starts from April 1st of one year and goes to March 31st of the next. E.g. FY 2003 refers to the period between April 1, 2003 and March 31, 2004

2 What is KPO?

The maturity and evolution of outsourcing strategies is leading businesses to shift towards the offshoring of high-end processes to low-wage destinations, a trend referred to as KPO. This involves offshoring of knowledge-intensive business processes that require significant domain expertise.

In comparison to BPO, KPO delivers higher value to organizations that offshore their domain-based processes, thereby enhancing BPO's traditional cost-quality paradigm. The central theme of KPO is to create value for the client² by providing business expertise rather than process expertise. Hence, KPO entails the shifting from simple execution of 'standardized processes' to carrying out processes that demand advanced analytical and technical skills as well as decisive judgment. Figure 1 provides two examples – one relating to IT services and the other relating to insurance services.



With global businesses becoming more competitive, the cycle time for introducing products and services has become smaller, and customers are more demanding with respect to the quality of services provided. This has forced enterprises to adopt systems and business models that will not only provide operational efficiency, but also add strategic value to their products and services.

KPO services can enable enterprises to reduce design-to-market lead times; manage critical hardware efficiently; provide research on markets, competition, products and services; enhance organizational effectiveness in business administration; and help in dealing with rapidly evolving business scenarios. Finally, the outsourcing solutions for high-end processes, unlike traditional BPO solutions

² Client refers to the organization that outsources its processes



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that are commoditized fixed-price solutions, are usually customized and value based. It is often this customization that enhances the value proposition of KPO.

3 KPO – The Opportunity and Associated Challenges

This section analyzes the opportunities presented by the KPO industry and also identifies some of the challenges that this emerging industry might face in the near future.

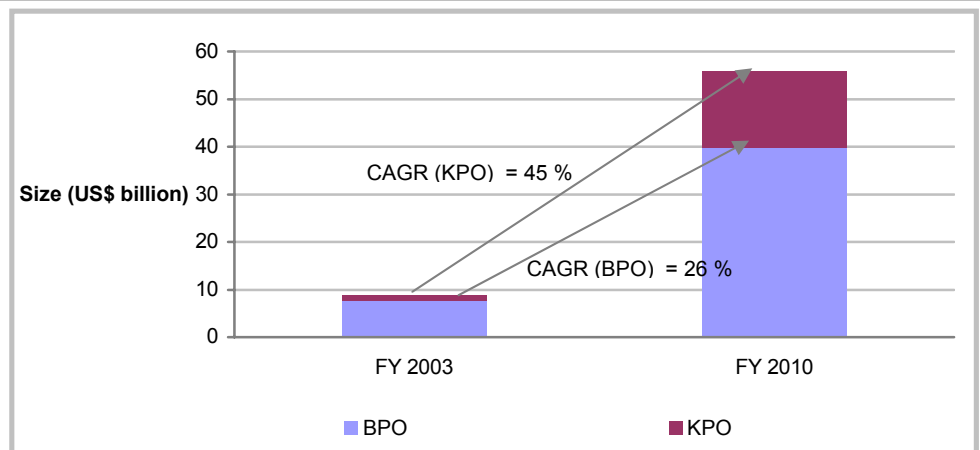
3.1 BPO and KPO – Estimated Size of Opportunity

Evalueserve predicts that low-end outsourcing services will grow globally from USD 7.7 billion in FY³ 2003 to USD 39.8 billion in FY 2010, which implies a Cumulative Annual Growth Rate (CAGR) of 26 percent.

In contrast, the revenue from the global KPO market was USD 1.2 billion in FY 2003 and this is expected to grow to USD 17 billion by FY 2010, which implies a CAGR of 46 percent (according to Evalueserve).

Figure 2 demonstrates the expected growth in the BPO and KPO markets over the next seven years.

Figure 2: Expected Growth in Global BPO and KPO Markets (2003-2010)



Source: Evalueserve Analysis

The following is a list of potential high-end services for the KPO sector.

1. Intellectual Property (IP) research
2. Equity, financial, and insurance research
3. Data search, integration, and management
4. Analytics (data analytics/risk analytics) and data mining services
5. Research and information services in human resources (HR)
6. Business and market research (including competitive intelligence)
7. Engineering and design services
8. Design, animation, and simulation services
9. Paralegal content and services

³ FY stands for Financial Year, which starts from April 1st of one year and goes to March 31st of the next. E.g. FY 2003 refers to the period between April 1, 2003 and March 31, 2004

10. Medical content and services
11. Remote education and publishing
12. Pharmaceuticals and biotechnology
13. Research and Development (IT and non-IT areas)
14. Network management
15. Decision Support Systems (DSS)

Table 1 provides the Evalueserve estimate on the market size of some of the above-mentioned high-end processes over the next seven years.

Table 1: Comparative Opportunities in the KPO Market (2003-2010)

KPO SECTORS	FY 2003	FY 2010	CAGR
Equity, Financial, Insurance Research	0	0.4	N/A
Data Search, Integration and Management	0.3	5.0	50%
Research and Information Services in HR	0	0.2	-
Market Research and Competitive Intelligence	0.01	0.4	70%
Engineering and Design	0.4	2.0	29%
Animation and Simulation Services	0.1	1.4	46%
Paralegal Content and Services	0	0.3	N/A
Medical Content and Services	0	0.3	N/A
Remote Education and Publishing	0	2.0	N/A
Biotech and Pharmaceuticals (CRO, lead optimization, and manufacturing processes)	0.28	3.0	40%
Research and Development	0.2	2.0	39%
Total (USD Billion)	1.29	17.0	46%

Source: Evalueserve Analysis

3.2 High-end KPO Opportunities – Some Examples

The following are some examples of high-end KPO:

3.2.1 Intellectual Property Research (IPR)

- Drafting and filing of patent applications with the United States Patent and Trademark Office (USPTO) is expensive; and a typical patent application may cost between USD 10,000 and USD 15,000.
- An Intellectual Property (IP) specialist in an offshore location can produce a preliminary draft of a patent application, which is then reviewed and modified by a registered US patent attorney, before it is filed with the USPTO.
- Offshoring even a small portion of the patent-drafting process can save up to 50 percent of the total cost (for the end client).
- IP asset management, IP landscaping of technology domains, IP licensing, IP docketing, and IP commercialization services are some other services that can be offshored in a similar manner. These services can be provided not only for patents but also for trademarks, copyrights, and other Intellectual Property.
- Some law firms in the US have already set up their back-end centers in India, and others are joining hands with Indian companies for this purpose.

3.2.2 Offshoring R&D in Pharmaceuticals and Biotechnology

- Contract research organizations are being widely used by pharmaceutical companies. Other emerging areas within this sector include lead optimization and improvement of manufacturing processes.
- The global contract research market is estimated to grow to USD 20 billion by 2004.

- Destinations such as India offer significant cost advantages – often as much as 40-60 percent – in the areas of contract research and clinical trials.
- Recently, companies such as AstraZeneca and Glaxo-Smith-Kline have set up drug discovery centers at low-cost destinations thereby offshoring their R&D.

3.2.3 Analytics and Data Mining Services

- Companies can save significantly – as much as 60-70 percent – by offshoring data mining, analytics, and inventory management work to low-wage countries.
- Demand and channel planning, manufacturing scheduling, and transport planning are examples of some supply-chain management solutions that require the use of mathematical programming, statistical analysis, and computer-aided simulations.
- Destinations such as Russia and India are ideal for these services because they provide a large pool of engineers and even PhDs at substantially low costs. The cost differential between a PhD in the Sciences and Engineering in the US and in India (or between the US and Russia) can range between USD 60,000 and USD 80,000, respectively.

3.3 Challenges in KPO

KPO presents substantial opportunities for players in the outsourcing business. However, there are some formidable challenges in the path of their development, which include the following:

- Processes executed within the KPO domain require higher quality standards because the stakes for the clients are high. Furthermore, the clients are likely to be apprehensive about the quality of services delivered (especially in view of the fact that these services are being provided by low-cost destinations) and these may be difficult to alleviate.
- In some cases, investment in KPO infrastructure is expected to be higher than that in traditional BPO. For example, a company involved in Simulation and Finite Element Analysis will require high-end workstations, whereas one involved in simple data collection, sorting, and analysis may require moderate capital. Similarly, contract research organizations are likely to require higher amounts of capital.
- The lack of a good talent pool for the execution of projects may often prove to be a hindrance in many countries.
- KPO projects require a higher level of control, confidentiality and enhanced risk management. Laxity in any of these parameters will not only jeopardize the KPO services being provided, but may also affect the entire business conducted by the client.
- In comparison to traditional BPO services, scaling up of KPO operations will be difficult, primarily owing to difficulty in finding highly trained professionals.

3.3.1 Problems in Sourcing, Retaining, and Nurturing Talent

KPO companies are faced with the challenge of hiring the best talent and imparting continuous training to these professionals. It is advisable for offshoring companies that venture into the KPO industry to focus on initial training and continuous development modules.

Another key challenge in the management of KPO is the identification of 'performance criteria'. This involves setting the right expectations with the end client, as well as its professionals; continuous assessment and monitoring, constructive feedback, appropriate coaching and mentoring, and identification of the right career path for the company's professionals.

4 Drivers Behind the BPO to KPO Shift

The gradual shift from BPO to KPO in some offshore countries is expected to change the dynamics of job migration. Evalueserve predicts that more low-end jobs will migrate to emerging low-cost countries (from a percentage perspective and not as an absolute number) such as Ukraine, the Czech Republic, Belarus, Romania, China, the Philippines, and Malaysia. At the same time, KPO jobs are likely to be created in India, Russia, Ireland, Israel, and Canada. Even though some emerging countries, especially those in the Central and Eastern European Region (e.g., Ukraine and the Czech Republic), can provide KPO services, the 'brand equity' of these countries is quite low. Therefore, it is predicted that these emerging offshore locations will not attract KPO services, at least for the time being.

4.1 Factors Fuelling the BPO to KPO Movement

Some key factors that may fuel the transition from BPO to KPO are discussed in the following sections.

4.1.1 *Buyers of Offshoring Services Save More at the Higher End*

Buyers of offshoring services save more at the high end of the value chain, compared to the low end. Therefore, many of the current low-cost destinations will become a logical choice for companies for offshoring their high-end processes.

4.1.2 *Scarcity of Highly Trained Specialized Talent Pool in the Developed Countries*

Developed economies such as the US, the UK, and Western European countries are already facing a shortage of highly trained and specialized professionals in some knowledge-intensive high-skill sectors, such as R&D in VLSI, engineering design, IT, financial risk management, etc. One way to mitigate this skill shortage is to source talent from low-wage developing countries, which produce highly educated scientists and professionals. This has been the practice in the US for the past several decades. The US permits emigration of engineers, scientists, and medical doctors from developing countries, such as India and China. With tighter visa regulations (in the developed countries) and cost-reduction pressures on MNCs, global offshoring of high-end services to low-wage countries to tap the existing talent pool in a cost-effective manner is a viable and lucrative option.

4.1.3 *Maturity and Evolution of Present Low-end Destinations to the Higher-end of the Value Chain*

The evolution of present low-end destinations to the higher end of the value chain, aided by the maturity of the processes, will result in organizations moving up the value chain to provide KPO services. Commoditization of BPO services will further boost this transition and the better margins expected at the higher end of the value chain might act as a deterrent for companies in accepting low-end work. The barriers to entry in the KPO industry are also higher, and therefore, offshoring companies may not have the same competitive pressures as are there in traditional BPO.

4.1.3.1 *Some of the Present Low-cost Destinations May No Longer Remain Low Cost*

Some current low-cost destinations may no longer remain low-cost due to increase in salaries and hence, may not be able to provide cost-arbitrage benefits to companies that want to offshore these services. For example, Indian salaries have increased at an average of 14 percent per year. If this trend continues, they are expected to increase 2.5 times the current salaries (in constant dollars) by FY 2010, thereby reducing the cost-arbitrage benefit from the present 40 to 25 percent.

4.2 Increasing Number of Professionals in the Offshoring Industry

The number of professionals working in the offshoring industry is expected to increase as more and more companies decide to become involved in BPO and KPO. This will further drive the trend towards the migration of low-end services to high-end services, especially as offshore service vendors (as well as the professionals working in this sector) gain substantial experience and capabilities to provide high-value services.

During 2000-2003, the US offshored 238,000 IT service jobs. Evalueserve predicts that this is likely to increase to 775,000 jobs by FY 2010. Further, by the end of March 2004, the US had offshored about 136,000 BPO (non-IT) jobs, mostly in the call centre segment. Forrester predicts that it is likely to offshore 1.314 million BPO (non-IT) jobs by FY 2010.

Evalueserve estimates that the UK had offshored 35,000 IT service jobs by FY 2003, and this is expected to grow to 110,200 jobs by FY 2010. Evalueserve also estimates that 30,000 BPO (non-IT) jobs (mainly in call centers) have already been offshored by the UK by FY 2003, and 201,100 BPO (non-IT) jobs are expected to move from the UK by FY 2010.

Table 2 provides a summary of Evalueserve estimates for jobs offshored from the US and the UK by FY 2003 and FY 2010.

Table 2: Jobs Offshored by the US and the UK in the IT and 'non-IT BPO' Sectors (By FY 2003 and corresponding Estimates for FY 2010)

	IT JOBS	NON-IT BPO JOBS	TOTAL JOBS OFFSHORED
UNITED STATES			
FY 2003	238,000	136,000	374,000
FY 2010	775,000	1,314,000	2,089,000
UNITED KINGDOM			
FY 2003	35,000	30,000	65,000
FY 2010	110,200	201,100	311,300

Source: Evalueserve Analysis

4.3 The Big Irony – Protectionist Lobby is in Reality Boosting the Offshoring Trend

Ironically, the protectionist lobby and their anti-BPO drive in the US and the UK are indirectly helping the proliferation of global offshoring by providing free publicity.

In this regard, Evalueserve recently examined the free publicity that the anti-offshoring drive in the US has given India Inc., especially for its IT and non-IT export services sectors. Evalueserve estimates show that India Inc. received more than USD 89 million worth of free publicity due to the anti-offshoring drive in the US and the UK during June 1, 2002 and May 31, 2004.

Most of this free publicity stemmed from about 1,980 distinct articles, columns, and discussion documents written in newspapers and magazines in the period between June 1, 2002 and May 31, 2004. This publicity was related to:

- Offshoring and outsourcing to low-wage countries
- Anti-BPO
- Anti-IT outsourcing
- Various legislations in individual US states
- Congressional and parliamentary hearings held at the state and the federal levels in the US and the UK

- Discussions by various legislative authorities including John Kerry (presidential candidate for the November 2004 elections in the US), US President George Bush, and their spokes-persons

In addition to the 1,980 or more articles, a simple Google search shows that the Internet web-logs and websites contain over 210,000 distinct references and 'threads' discussing these issues. Furthermore, CNN and one of its flagship programs, 'Money line' has been spending almost three minutes a day, five days a week, on this topic for the last six months, and it has been continuously updating the list of 350-400 companies that are offshoring to India and China.

Hence, the anti-offshoring drive has definitely increased India's brand image because American and the British companies now feel that Indian companies are capable of almost anything, even rocket science! This is indeed an interesting contrast from the situation four years ago, when the same companies were under the impression that Indian companies can only 'provide software coolies' and 'export cheap IT coders to solve the Y2K problem'. Because of this awareness, it has become easier for Indian companies to move from BPO to KPO, especially in the US and the UK.

Because of the anti-offshoring drive in the US and the UK (and to a small extent in other countries like Canada and Australia), not only India and China but also other low-wage countries including the Philippines, Russia, and Mexico, have gained in publicity. Hence, with the passage of time, this anti-offshoring movement is likely to help even these low-cost countries in improving their brand image and thereby moving up the value chain.

5 Key Low-wage Offshore Locations: A Comparative Study

This section attempts to analyze key offshore destinations that are likely to emerge as the hubs of the BPO and KPO sectors. A comparative assessment of key low-wage destinations, with respect to some critical parameters, is provided in Table 3.

Table 3: Comparison of Key Low-wage Offshore BPO/KPO Locations

	CHINA	INDIA	PHILIPPINES	IRELAND	ISRAEL	RUSSIA
Cost of Manpower (Case of IT Services)	IT salaries – USD 6,360 to 9,540 per annum	IT salaries – USD 5,375 to USD 8,960 per annum	IT salaries – USD 4,250 to USD 6,800 per annum	IT salaries – USD 25,500 to USD 35,700 per annum	IT salaries are approximately USD 25,000 per annum	IT salaries – USD 6,120 to USD 9,180 per annum
Geographic Location	24X7 support as China spans 5 different time zones	24X7 support	24X7 support	Close proximity to Europe makes it a good near-shore destination	Close proximity to Europe makes it a good near-shore destination	Close proximity to Europe makes it an ideal near-shore destination
Demographic Factors	Low proficiency in English	High degree of proficiency in English	Compatibility with the Western corporate culture	Compatibility and proximity with the Western culture and proficiency in English	Compatibility and proximity with the Western culture and proficiency in English	Compatibility and proximity with Western culture
Government Policies	Favorable, Special Economic Zones (SEZs)	Friendly government policies for IT exports; creation of Software Technology Parks (STPs)	SEZs; license fee exemption; no export tax; supports the IT exports industry	Technology education fund, favorable tax laws and incentives	Strong policies with respect to IP rights, including copyright, trademark and patents	Old laws and tax structure
Other Advantages	Uniquely positioned to tap Japanese and Korean markets due to language compatibility	Large labor pool with high quality IT training and good project management skills	380,000 graduates proficient in English	Advanced telecom infrastructure	Strong presence in niche software products and services	Moderate labor costs, highly talented labor pool, third-largest pool of engineers and scientists
Disadvantages	Language and cultural incompatibility; Insufficient project management skills	Unreliable power infrastructure	Scarcity of trained IT personnel, lack of project management skills	Small labor pool; high labor cost	Population less than six million and hence a small labor pool	Poor infrastructure; high bandwidth; weak telecom structure; cultural problems due to its past isolation from other western countries

Source: Evalueserve Analysis

The above-mentioned destinations offer both IT and non-IT BPO services. Among them, India offers the widest range of IT and non-IT BPO services; the Philippines currently offers mainly BPO services; and Israel and Russia offer niche services especially in the IT offshoring domain. The maximum benefits of offshoring are currently being realized in the Philippines and India. Moreover, China and India are geographically best located to provide 24x7 support although the Philippines is a close contender in this aspect. From the perspective of cultural compatibility and with respect to proficiency in written and spoken English, Canada, Ireland and the Philippines seem to score over other countries.

Investment and labor policies have been made ‘offshoring friendly’ by most governments in these countries. Countries such as India, Russia, and Israel have the requisite talent pool to move up the value chain and provide KPO services.

The major impediments faced by offshore destinations taken up in this study are their small talent pools (e.g., the Philippines, Ireland and Israel) and non-English speaking population (e.g., China and Russia).

5.1 Future Outlook

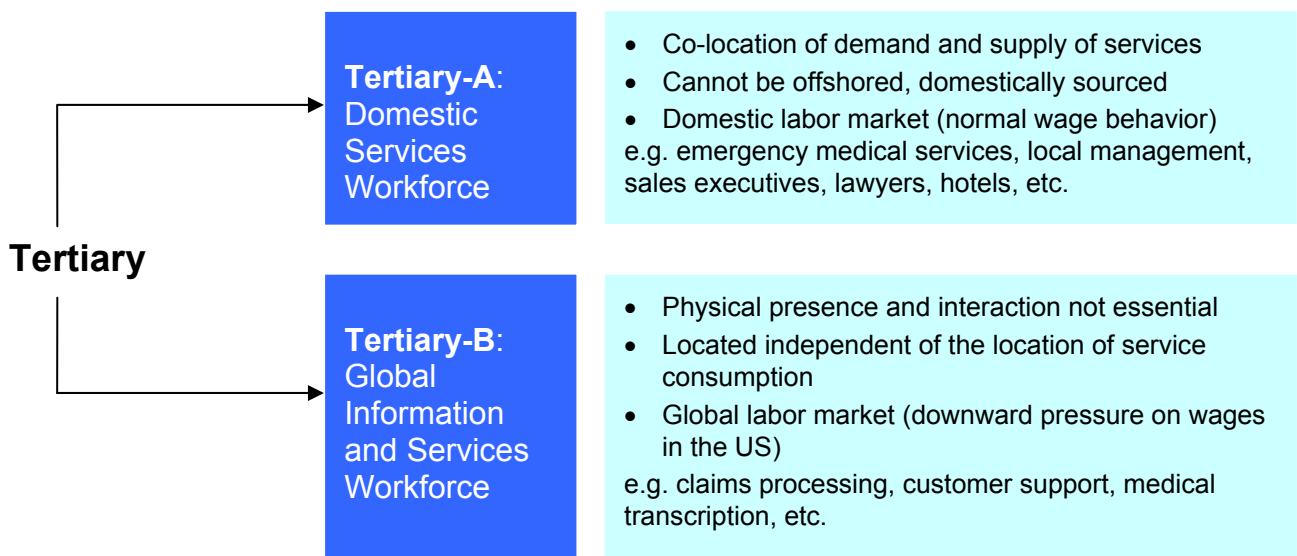
Globalization of services is in its nascent stage. In fact, even in the IT services sector, only 1.9 percent of the total jobs are being carried out in low-wage countries. By FY 2010, we expect the following scenario:

- Commoditization of low-end services is likely to occur because the potential barriers to entry are minimal.
- New business models will be created and older ones will cease to exist. The next level of productivity improvements may emanate from this ‘creative destruction’ of the current ‘supply chain of services’.
- Many new business models will rely on re-arranging the supply chain of a given ‘process’ and on using IT to enhance productivity. One such interesting new model of conducting research has been provided in the Appendix.
- By FY 2010, India and other such destinations might become too costly to provide low-end services at competitive costs. Therefore, low-end work may move to relatively cheaper countries such as Ukraine, Belarus, the Czech Republic, and Malaysia.

5.1.1 Offshoring is Likely to Restructure the Global Workforce

With the proliferation of global offshoring and distributed delivery models, the emergence of a strictly onshore services workforce (as part of Tertiary-A) and a global information and services workforce (as part of Tertiary-B) is expected, as depicted in Figure 3.

Figure 3: Likely Structure of Global Workforce in the Near Future



Source: Evalueserve Analysis

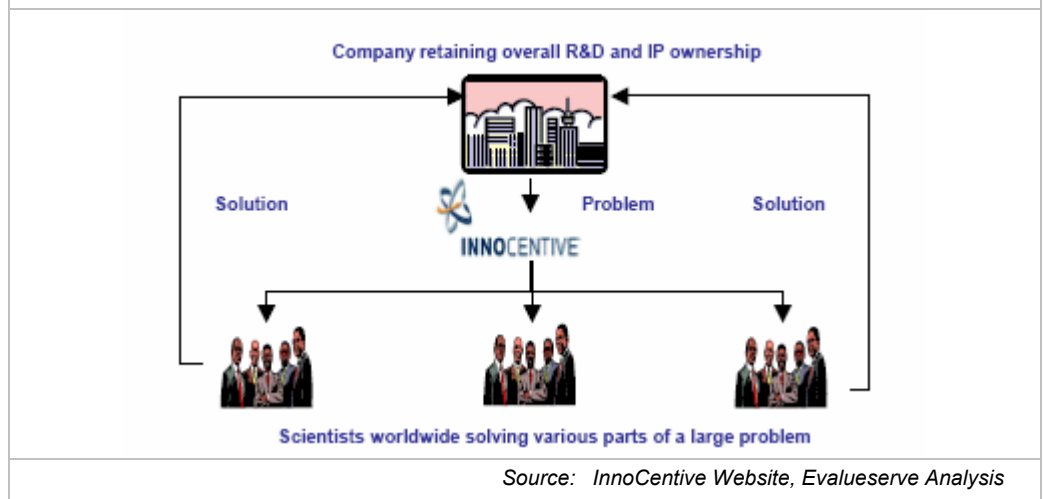
6 Appendix

6.1 Emerging KPO Sourcing Models – InnoCentive: A Case Study on Research and Development

Global sourcing is constantly evolving, as industries are exploring new avenues to increase the scope of their operations and become globally competitive. With increasing R&D costs, US firms are finding it difficult to train their employees to carry out research. Therefore, these firms are increasingly on the lookout to tap the available talent pool. This has led to the emergence of a new R&D model that is being called ‘open innovation’.

Large corporations are reducing their internal spending on R&D and are increasingly tapping external resources to solve their problems. A case in point is InnoCentive, an independent venture launched by Eli Lilly and Co., which enables firms to tap into the global scientific community. Figure 4 illustrates the sourcing model used by InnoCentive to leverage the globally distributed scientific talent pool.

Figure 4: Global Sourcing Facilitated by InnoCentive



InnoCentive is an interface between corporations beset by unsolved R&D problems and the global scientific community. The scientific community assists corporations to solve their problems by submitting solutions via the Internet. InnoCentive already has over 30,000 scientists from more than 125 countries around the world. Table 4 provides the geographic split of the scientific talent pool that is registered with InnoCentive:

Table 4: Break-Up (by geographies) of Scientific Talent Pool Sourced by InnoCentive

GEOGRAPHY	PERCENTAGE OF TOTAL TALENT POOL
North America	47
Western Europe	14
Asia-Pacific	13
South Asia	11
Eastern Europe / Russia	9
Africa / Middle East	3
Other Regions	1

Source: InnoCentive Website



Large chemical companies such as Proctor and Gamble (P&G), Dow Chemical Co. and BASF regularly post their problems by using the services offered by InnoCentive, and are realizing quick and cost-effective solutions to their problems. These companies usually pay between USD 5,000 and USD 100,000 per problem, in return for the Intellectual Property provided by the external scientists in solving their problems.

According to a study conducted by the Technology Review magazine of the Massachusetts Institute of Technology, most leading companies in struggling industries, including aerospace, computers, semiconductors, and telecommunications have trimmed their R&D budgets over the last few years. However, the pace of innovation has not really slowed down because many of these companies are now offshoring their R&D work to captive centers or third parties located in low-wage countries.



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