Changing landscape and emerging trends

Indian IT/ITeS Industry

CII

Confederation of Indian Industry
Since 1895

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Foreword

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Wishing you a very happy and prosperous new year 2011.

The Indian information technology (IT) / IT enabled Services (ITeS) industry has played a key role in putting India on the global map. Over the past decade, the Indian IT-BPO sector has become the country's premier growth engine, crossing significant milestones in terms of revenue growth, employment generation and value creation, in addition to becoming the global brand ambassador for India.

The Indian IT-BPO sector including the domestic and exports segments continue to gain strength, experiencing high levels of activity both onshore as well as offshore. The companies continue to move up the value-chain to offer higher end research and analytics services to their clients.

The Indian IT-BPO industry has grown by 6.1 percent in 2010, and is expected to grow by 19 percent in 2011 as companies coming out of recession harness the need for information technology to create competitive advantage.

India's fundamental advantages—abundant talent and cost—are sustainable over the long term. With a young demographic profile and over 3.5 million graduates and postgraduates that are added annually to the talent base, no other country offers a similar mix and scale of human resources.

Realising the wealth of potential in the IT-ITeS sector, the central and state governments are also working towards creating a sound infrastructure for the IT-ITeS sector. CII aims to make the Indian IT and ITeS industry world class by continuously providing a platform for understanding and adoption of the new developments & best practices worldwide in this sector, taking up issues and concerns of the Indian industry with the relevant ministries at National and State level, coming up with studies, reports and surveys to help understand the potential of Indian IT and ITeS market and the issues faced.

Our first report generated a huge appreciation. The CII - PwC report "Indian IT/ITeS Industry - Changing landscape and Emerging trends", keeping in view the strengths and potential of the Indian IT / ITeS industry, strives to enhance these aspects so as to transform the Indian IT identity to an iconic status.

CII believes that this report would help turn the goals envisaged by the Industry into realities, and result in directing the world's focus on India as the hub of IT.

We thank all the participants associated with this survey for their immense support and vital inputs. We hope that you find this report enriching and meaningful.

Foreword

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Leader – Technology sector
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We wish you all a very happy and prosperous 2011!!

After the stupendous success of our first report on the Indian IT/ITeS industry with Confederation of Indian Industry (CII) titled "Indian IT/ITeS industry – Evolving business models for sustained growth", we are happy to bring out our second report on the industry.

As one of the key growth engines of the economy, the Indian IT/ITeS industry has been contributing notably to the economic growth accounting for around 5.6% of the country's GDP and providing direct employment to about 2.3 million people and indirect employment to many more.

The sector witnessed an interesting 2010 which saw the industry move beyond the economic slowdown and shift its focus on building revenues, creating innovative service models, broadening geographical reach and optimising cost. Amidst the growth story, however, the falling margins and subdued growth of many small and mid-tier companies served as a wakeup call for that segment. Going forward, we expect to see a consolidation wave in the years to come, where small and medium players would merge to compete for large scale deals and keep up with the changing industry dynamics.

Emerging trends in service delivery like Cloud Computing and Platform BPO are likely to remodel the industry by creating new business opportunities for the IT/ITeS vendors and driving changes in the traditional service offerings. Today, margin pressures are pushing companies to proactively look for ways to contain costs while enhancing output. For long, Tier-2 cities have played around the fringes of mainstream IT/ITeS delivery. Today, we are seeing more and more companies moving into Tier-2 cities to set up delivery centres.

The report is a result of our global thought leadership, real world survey of leading industry practitioners, research and interviews with the facilitators of the industry like the Software Technology Parks of India (STPI) and IT-parks. Through a judicious mix of secondary and primary research, we aim to bring out a holistic perspective on the changing industry dynamics and the emerging trends.

We express our sincere gratitude to CII for selecting us as the Knowledge Partner for the conference and supporting us in the completion of the survey. We would also like to thank all the executives who participated in the survey for providing their valuable insights and views.

Industry Landscape

With a compounded annual growth rate (CAGR) of over 24% in the last decade, the Indian IT/ITeS industry has emerged as a key growth engine for the economy, contributing around 5.6% to the country's Gross Domestic Product (GDP) in FY 2010 and also providing direct employment to about 2.3 million people (from just about half a million in 2001). It remains one of the biggest sectors for wealth generation in the country. As per the industry body, NASSCOM, the sector is estimated to provide direct employment to 10 million and indirect employment to 20 million by 2020.

Size of the Industry
The Industry is categorized into four broad segments

1 IT services
2 Software products and engineering services
3 IT enabled services (ITeS - BPO)
4 Hardware

These segments generated combined revenues of $73.1 billion in 2009-10[1] from $69.4 billion in 2008-09 - a growth of 5.3%.

The revenue from IT services constitutes about 50% of the total industry revenues. It has grown at a CAGR of 21.8% from $13.5 billion in 2004-05 to $36.2 billion in 2009-10 (refer figure 1).

The total ITeS revenues reached $14.7 billion in 2009-10 from $5.2 billion in 2004-05, with a CAGR of 23% (refer figure 1). While IT services continue to be the largest contributor, the ITeS segment has grown faster over the last five years.

About 85% of the ITeS-BPO revenues come from exports, thereby making it more export bound than the IT services segment (about 75% of IT services revenue come from exports).

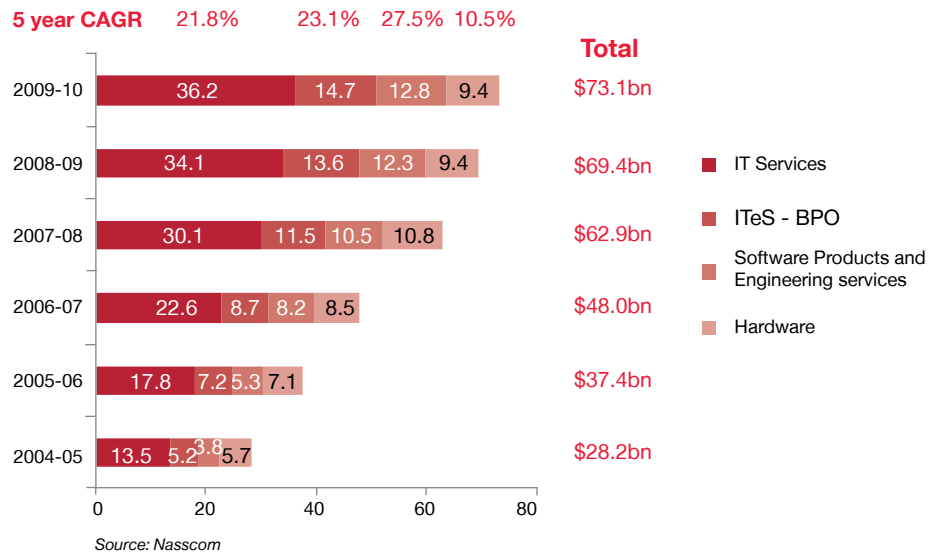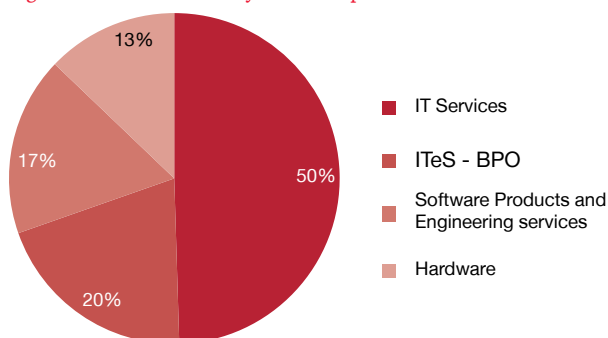Figure 1: Revenue contribution by main components (in $ billion)

Source: Nasscom

Figure 2: Revenue share by main components

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[1] Revenue figures for 2009-10 mentioned in this section are estimates

Export and Domestic Market

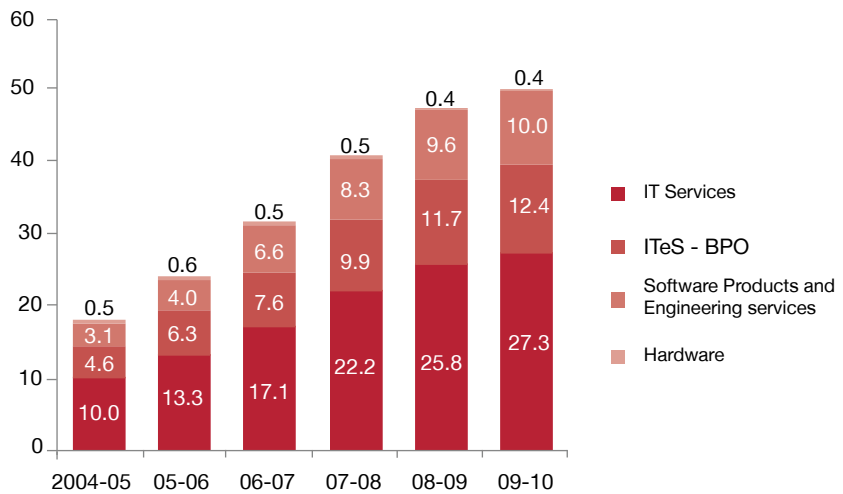The export revenues touched $50.1 billion in 2009-10, accounting for over 68% of the total Indian IT/ITeS Industry revenues. The export revenues have grown at a CAGR of 22.4% in the last five years (refer figure 3).

India has become one of the fastest growing IT markets in Asia Pacific, owing to its increased IT spending in the last few years. The domestic IT/ITeS market revenues are at $23 billion for the year 2009-10 compared to $21.9 billion in 2008-09 (refer figure 4). Over the last five years, the domestic market has grown from $10 billion in 2004-05 at a CAGR of 18.1%.

The IT services segment has been the major contributor (54%) to the export revenues (refer figure 5). The export revenues from IT services have grown from about $10 billion in 2004-05 to $27.3 billion in 2009-10 at a CAGR of 22.2% (refer figure 3).

Over the years, the ITeS/BPO segment has been the second largest segment in the Indian IT/ ITeS sector and in growth, the second fastest. The growth of the segment for the next five years is expected to be driven by a shift in the service mix towards higher value services like business analytics, knowledge process outsourcing (KPO) including legal services, etc.

> *While the India ("Domestic") revenues lag in CAGR, the growth has been relatively better in FY2009-10 i.e., post the economic slowdown. Most of the large companies, prior to the slowdown, had not focused on the domestic market. However, after the slowdown, there has been an increased focus on the domestic market, thus resulting in better growth in FY 09-10.*

Figure 3: Component-wise contribution – Export revenues (in $ billion)

Source: Nasscom

Figure 4: Component-wise contribution – Domestic revenues (in $ billion)
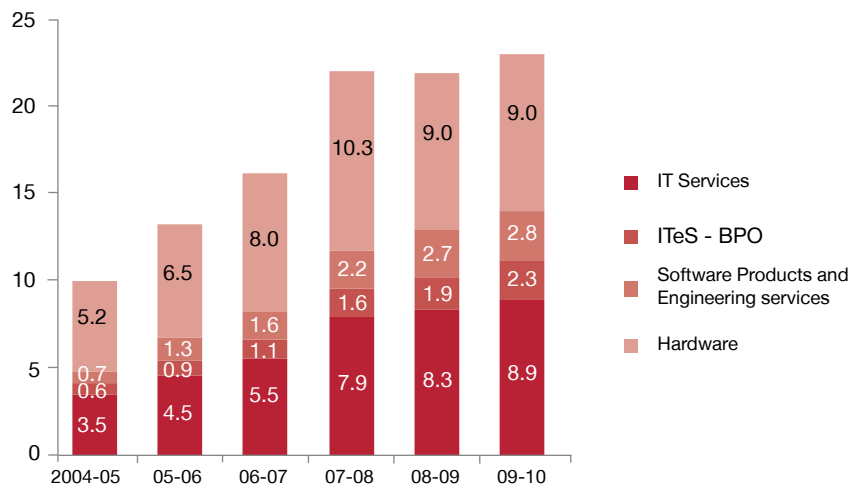
Source: Nasscom

In the case of the domestic market, Hardware continues to account for the largest share (39% in 2009-10) of the total revenues (refer figure 6). The high share of hardware spend points to the fact that the Indian users are still in the nascent stages of IT adoption. However, Hardware revenues have either declined or remained flat over the last two years.

On the other hand, the IT services segment has grown by about 5% in 2008-09 and 7.2% in 2009-10. The growth in this segment is driven by an increased demand in the system integration (SI) and custom application development (CAD) space.

The ITeS-BPO revenues grew by 21% in 2009-10, slightly higher compared to about 19% in 2008-09.

The growth in the IT services and Software product segments in the domestic market is led by increased IT adoption in some of the key domestic sectors like Telecom, Manufacturing and BFSI. Emerging segments like Media, Retail and Healthcare are expected to drive additional growth in the next five years.

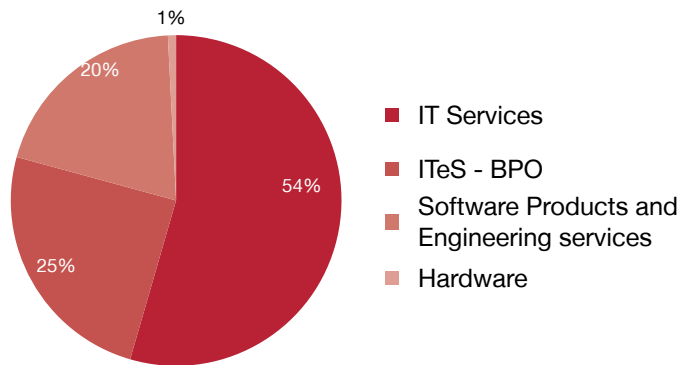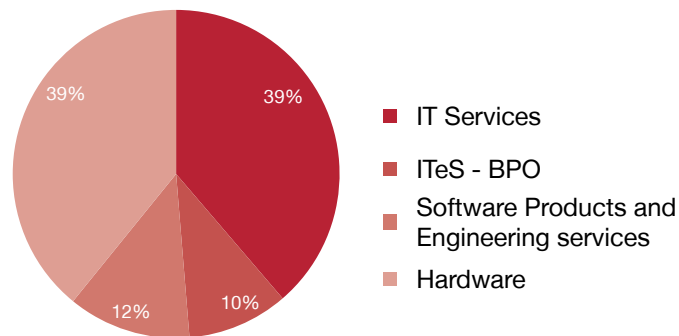Figure 5: Export revenue contribution – 2009-10

- IT Services
- ITeS - BPO
- Software Products and Engineering services
- Hardware

Figure 6: Domestic revenue contribution – 2009-10

- IT Services
- ITeS - BPO
- Software Products and Engineering services
- Hardware

Key verticals

In terms of verticals contributing to IT consumption, the Banking, Financial Services and Insurance (BFSI) vertical continues to be the dominant IT consuming vertical. It contributes to over 40% of India's total IT/ITeS exports (refer figure 7).

The Telecom vertical is the second largest consumer of IT, after the Financial Services vertical, contributing to about 20% of India's IT/ITeS exports in the year 2009-10.

With a contribution of about 16% to Indian exports, the Manufacturing vertical becomes the third largest IT consuming vertical. Together the top three sectors account for around 76% of the total exports.

Mirroring the export market, the BFSI vertical has been a dominant contributor to the domestic market as well with a share of 41% followed by the Hi-Tech/Telecom and Manufacturing verticals with a share of 20% and 19% respectively (refer figure 8). Together the big 3 sectors (BFSI, Hi-Tech/Telecom and Manufacturing) account for around 80% of total IT spend in the Indian market.

Figure 7: Export contribution by key verticals – 2009-10

- BFSI — 41%
- Telecom — 20%
- Manufacturing — 16%
- Retail — 9%
- Media — 2%
- Construction & Utilities — 3%
- Healthcare — 4%
- Airlines and Transportation — 3%
- Other — 2%
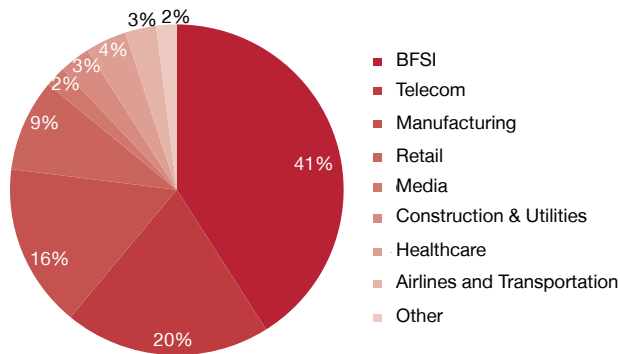
Figure 8: Domestic contribution by key verticals – 2009-10
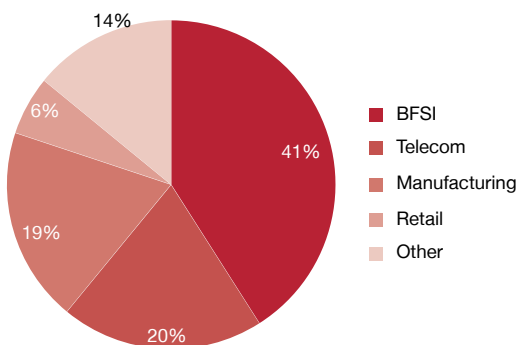
- BFSI — 41%
- Telecom — 20%
- Manufacturing — 19%
- Retail — 6%
- Other — 14%

Source: Nasscom

Key markets

In terms of markets, US still accounts for a lion's share of the business generating more than 61% of India's export revenues (refer figure 9). UK has been the second largest IT/ITeS market with around 18%, followed by Continental Europe, which accounts for 12% of India's export revenues. However, with the focus on geographic diversification, Indian companies are also extending their reach to other markets like Asia Pacific, Australia, Middle East, etc. apart from the US and European markets.

With the US and UK continuing to be our India's top export destinations, we see that the focus of the Indian IT/ITeS industry to diversify geographic risk may need to pick up steam soon if the industry is to insulate itself from business turbulence in these markets.

Figure 9: Geography-wise export revenue split – 2009-10

- US
- UK
- Continental Europe
- Asia Pacific
- Rest of the world

2%
7%
12%
18%
61%
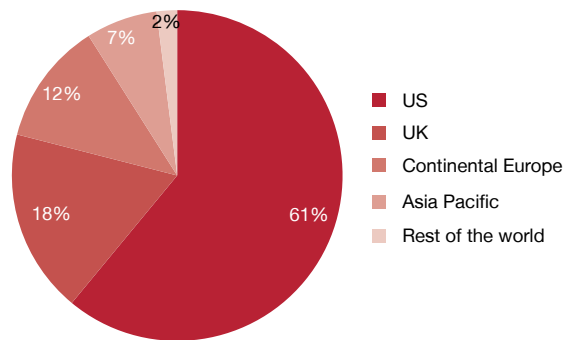
Source: Crisil

Return of the good times

The year 2010 has been a comeback year for the Indian IT/ITeS sector with the demand picking up after the global economic meltdown. The sector had demonstrated remarkable resilience during the downturn.

The sector, which witnessed around 75000 to 1 lakh job cuts and a drop in salary increments from about 14-18% levels to 6-10% during the slowdown, saw a turnaround in 2010 with the industry providing a positive outlook on the hiring scenario as well as on remuneration.

Most of the large IT companies have shown healthy project pipelines, in addition to a significant growth in revenues this year, indicating a strong recovery. There is also a strong focus on both market and business line expansion. However, the small and medium companies faced a tough year with sluggish growth, in sharp contrast to their bigger counterparts. In our last year's report "Indian IT/ITeS industry – Evolving business models for sustained growth", we had a dedicated section on the small and medium IT/ITeS providers bringing out the critical focus areas for them to be winners.

As per Nasscom, the Indian IT industry has added close to 90,000 jobs during FY'10, taking the total workforce to 2.3 million professionals. The industry also saw an average salary hike of 10-14% and an increased number of promotions this year.

Despite the positive vibes around the industry, there are trends emerging (refer to the inserts on Large tier versus Mid tier companies) which indicate that the small and medium players could face slower top-line growth compared to larger players and a drop in profit margins. We expect a phase of consolidation in the coming years where small players would merge or collaborate to be able to compete for large deals. The iGate-Patni merger is likely to be the harbinger of many more such deals. With clients looking at consolidating suppliers, the size and scale of the company plays an important role while competing for large deals.

The year 2011 should also witness companies starting to focus on many emerging trends and discontinuities which will shape the future of the industry in the years to come. This is imperative if the industry is to maintain its growth and profit performance and achieve NASSCOM's estimated revenues of US$ 225 billion by 2020.
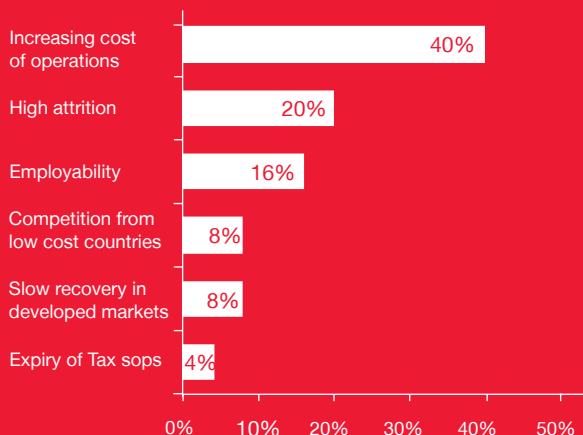
We have briefly described a few of those trends like Cloud Computing, Platform BPO, Emergence of Tier 2 cities as IT/ITeS destinations, growth of Indian software products industry, etc. in the next chapter.

Large tier[2] versus Mid tier[3] companies

As per the recent earnings, many of the large tier companies showed growth similar to the growth witnessed by them prior to the slowdown. However, in the case of mid tier companies, it is a mixed bag. The smaller companies were impacted more by the slower Euro zone recovery, currency fluctuations, employee attrition and rising employee costs.

Figure 10: Challenges faced by mid-tier companies in the current market scenario

Challenge	Percentage
Increasing cost of operations	40%
High attrition	20%
Employability	16%
Competition from low cost countries	8%
Slow recovery in developed markets	8%
Expiry of Tax sops	4%

Source: PwC-CII IT/ITeS survey

As per the PwC-CII survey, increasing cost of operations is seen as the major challenge facing the mid-tier IT/ITeS service providers. High attrition and employability (a term referring to the skills and educational readiness of fresh graduates) are the other challenges being faced by them.

[2] Large Tier companies include Tata Consultancy Services, Wipro, Infosys, HCL, Tech Mahindra, Cognizant

[3] Mid Tier companies include Patni Computers, Mphasis, Mindtree, Sonata, Polaris, 3i Infotech, Hexaware, NIIT Technologies

The Tier 1 IT companies are expected to return to their trend growth rates exhibited until 2008, but the script is likely to be quite different for the Tier-II companies in the Indian IT industry. Those companies that can maintain their pace of new client acquisition at a reasonable cost per new client will emerge on the right side of a wave of mergers, acquisitions and consolidations that we foresee.

The larger companies, except for Wipro, have shown considerable growth in HY 2010[4] when compared to HY 2009 (refer table 1). These growth rates are in close to the growth rates achieved by these companies during the FY 2008-09. Wipro's growth was slower than its large peers owing to operational inefficiency, forex volatility and wage hikes (as stated by the company). Cognizant has shown a significant growth of 42.5% in the HY 2010 vis-à-vis HY 2009.

On the other hand, most mid-tier companies showed slow growth with the exception of NIIT Technologies, Polaris, Mphasis and Mindtree.

In aggregate terms, large tier companies have grown at 20.8% for the half year period ending September 2010, whereas for the same time period, the mid tier companies have grown at 11.4% (refer table 1).

TABLE 1: Revenue growth (in %) – HY 2009 vs. HY 2010 i.e., April to September

Large tier		Mid tier	
Large tier	**20.8**	**Mid tier**	**11.4**
TCS	19.5	Patni Computers	5.3
Wipro	13.1	Mphasis[5]	17.3
Infosys	18.9	Mindtree	18.3
HCL	18.5	Sonata Software	0.4
Tech Mahindra	18.3	Polaris	16.2
Cognizant	42.5	3i Infotech	4.4
		Hexaware	2.0
		NIIT Technologies	38.5

Source: Company reports

[4] The latest quarter (quarter ending December) results were not considered as some companies had not yet announced their results while the report was being drafted
[5] For Mphasis, the HY period considered is May to October

During this period, though some mid-tier companies managed a revival in revenues, companies like Mindtree and Hexaware had to face a significant drop in their net profit percentages (refer figure 11).

Figure 11: Net profit margins (HY 2009 vs. HY 2010)
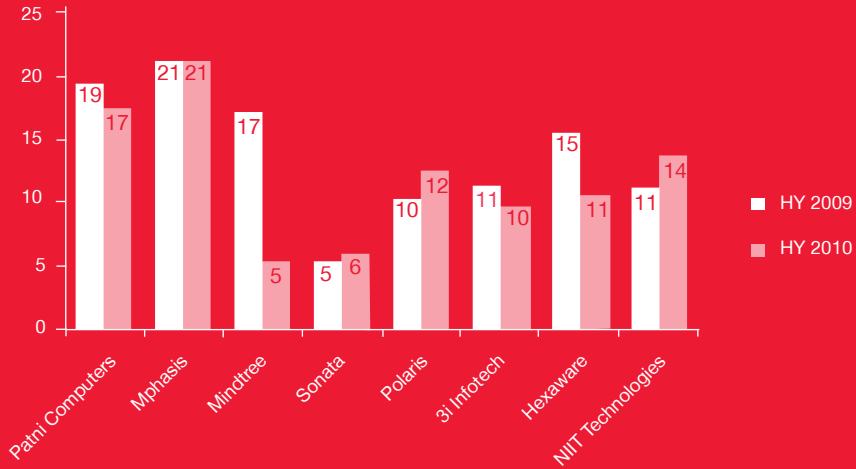
Also, the mid tier companies face margin pressure due to currency fluctuations and a slow recovery in verticals like telecom and manufacturing that they operate in. Given these challenges, the revival in terms of profit is likely to be slow paced for these companies.

The aggregate client concentration (contribution of Top 10 clients to revenue) of large tier companies is around 28%, where as for mid tier companies, the client concentration is about 52%

Mid- tier companies are also being impacted by high client concentration (over dependence on few clients), high cost of new client acquisition, increasing attrition and non-availability of talent. Some of the mid-tier companies are showing 25-40% attrition.

With the larger players making a comeback in the recruitment field by hiring in huge numbers including freshers from campuses, the mid-cap IT companies are being affected. As the larger players get high priority in the campuses during recruitment, the mid-cap firms are being denied access to top-quality talent.

The other challenge faced by these mid and small tier firms nowadays is that the structure of demand has changed fundamentally. There are many vendor consolidation exercises and as well as a significantly higher number of integrated deals. Mid-cap IT services vendors might be specialised with certain specific services but are not well diversified. So, in the case of a diversified deal, the larger IT companies have a distinct advantage.

With the withdrawal of STPI benefits, the mid-tier companies could see their tax-incidence go up as they have been slow to move much of their operations from STPI premises to SEZs. This may further impact their profitability.

Mid-tier companies can still remain competitive in the marketplace by carving out niches to differentiate themselves from the rest. They should also focus on increasing the mindshare among the clients by showcasing their domain and service expertise. Such differentiated value propositions can serve as a stepping stone for this segment to achieve future growth in the competitive marketplace.

Emerging Trends

Cloud Computing

Business case for moving to a cloud-oriented environment

Today's IT environments are built on a series of costly compromises that drive unintended consequences. IT environments are configured and over-provisioned for just-in-case traffic scenarios and then sit largely idle until the extreme case occurs, if ever. Hardware, too, is often planned and purchased to meet long term operational goals such as transaction increases; although in the immediate term the technology sits underutilised. Ironically, by the time the anticipated long term goal arrives, the hardware can be purchased for less.

Cloud enables IT to reduce its capital footprint

A cloud-oriented environment avoids these compromises even as it enables high levels of efficiency, flexibility, and responsiveness while ensuring a way to control IT costs. At the same time, a cloud environment enables new business models and opportunities. For example, it can deliver levels of customer self-service previously not possible or allow for the creation and delivery of new automated on-demand revenue producing services.

Specifically, a cloud-oriented environment enables the following:

- **Efficiency** - through automation, which becomes essential to handle the scale of operations that can be supported.
- **Flexibility** - through the ability to configure and provision systems and resources on demand, effectively scaling systems up or down as needed.
- **Control IT costs** - by eliminating the need to over-buy and over-provision IT resources far ahead of demand, relying instead on an on-demand pay-for-use only when you use it model and virtualisation of shared computing resources.
- **Scalability** - enables organisations to scale resources up or down as needed.
- **Extensibility** - through hybrid clouds organisations can extend the scalability of their private cloud temporarily through linkages to public clouds based on a pay-per-use model.

The above mentioned efficiency, flexibility, cost control, scalability - can alone save the enterprise enough and improve operational performance sufficiently to justify
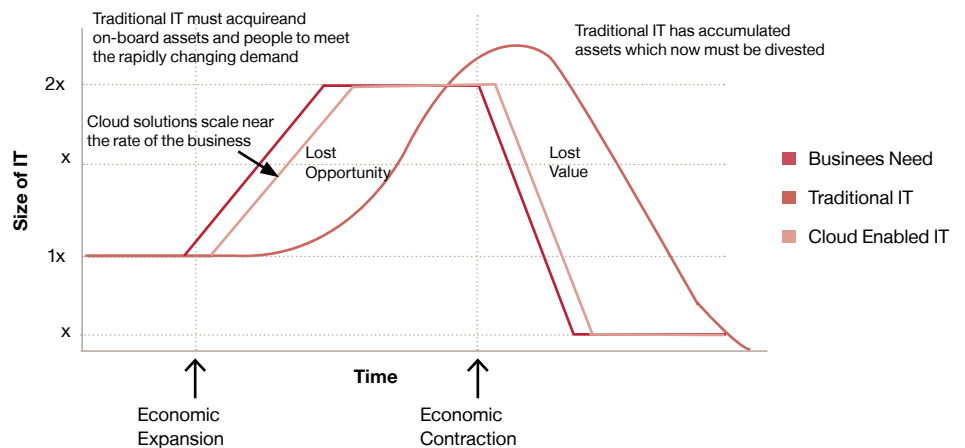
moving to a cloud-oriented environment. Then, on top of that, add the revenue captured through new business models and revenue opportunities, typically revolving around on-demand services, and the business case for a cloud-oriented environment starts to look very attractive. The level of attractiveness would however depend on the creativity and innovation of the organisation.

IT has a new mandate
- IT is being asked to shift it's focus from cost reduction (automation to increase productivity through the elimination of manual labour and contraction of elapsed time required to execute a process) to value delivery (creating a strategic advantage by increasing revenue)
- This shift requires strategic alignment with the business
- The business has learned to be agile by minimizing it's capital footprint (leverage the assets of others)
- How does IT meet the agility require-ment with its capital intensive footprint?

So far IT is behind the curve...
- Business agility is threatened:
  — Of 1,150 global CEO's, 76%[6] say the ability to adapt will be a key source of strategic advantage.
- Complexity is growing:
  — CIO's see complexity as a threat to the very survival of their business

- Operation costs exceed hardware costs:
  — CEO's view growth as a key focus area
  — Operational costs far exceed the budgets for new hardware

...resulting in serious challenges for IT today
- **Significant cost pressure** and budget constraints; economic climate calls for companies to do more with less
- Innovation and transformation capabilities to **enable and manage new business demand, models and products/services**
- Ability to **support a more global ecosystem and leverage** global capabilities in- and outsourced
- Ability to acquire new talents, develop and **retain the best resources**
- **Increase IT credibility** throughout the business
- Build capabilities to **respond quickly to new business opportunities and challenges,** optimise business processes and develop new applications
- **Modernise and rationalise a complex and inefficient** technology environment
- **Implement a service-driven operation** and a value-based delivery balancing demand and supply
- **Improve quality of services and**

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[6] Source: PwC's 11th Annual Global CEO Survey

flexibility to internal and external customers and partners
- Improve visibility/data to manage risk, portfolios and demonstrate IT performance and its contribution to the business
- Ability to support business security and recovery

- Highest level of agility possible for IT
- Built on a collaborative model enabling the sharing of logic, data, and processes
- Costs are variable, driven by consumption
- Shift spending from CapEx to OpEx
- Minimizes time to market

So, what does cloud deliver?
- Efficient use of infrastructure possible through sharing of resources

Figure 12: Reasons for adopting Cloud computing (amongst IT users)

Reason	Percentage
Increased mobility / flexibility	92%
Lower implementation time	83%
Lower Total Cost of Ownership	75%
Easier maintenance	75%
Access to latest technologies	50%
Increased Customer satisfaction	42%
Increased Client base	17%
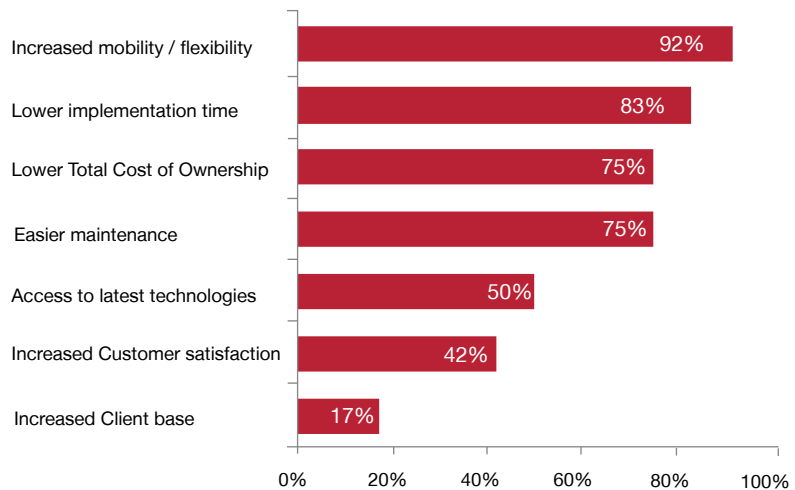
Source: PwC-CII IT/ITeS Survey

> *Cloud computing enables the business to work around IT departments who are seen as part of the problem*
>
> *With the help of cloud, companies will reduce IT operating costs and improve agility*

As a result cloud delivers on top business imperatives

Business needs	Cloud delivers
CEOs want IT cost reductions	Maximises return on assets
Move from fixed to variable cost	Cost based on consumption (ext.)
Improve agility	Assets used where/when needed
Reduce complexity	Abstraction layers trap complexity
Adopt a global capability	Network focus enables global footprint
Business continuity during disasters	Inherent redundancy
Platform for innovation	Enables new business solutions
Time to market	Near real-time provisioning

Organic emergence of Cloud

Organisations are not moving to the cloud as part of a deliberate Big Bang migration or strategic decision. Rather, virtualisation and other cloud technologies are being adopted organically, from within, often to address the IT department's cost and complexity in an ad hoc way and ease immediate pain points. However, by doing so without a strategy and roadmap significant gaps and risks are emerging.

In fact, when organisations stop to tally the number of cloud-oriented elements already deployed they may be quite surprised. Our research suggests that many CIOs are unaware of how far down

the cloud computing path some operations staff have taken their organisations without the benefit of strategy or architecture. What they need is a controlled way to move purposefully toward the cloud -something like the systematic pursuit of the five levels of cloud components
(**Level 1**: Basic Virtualisation,
Level 2: Automated Provisioning,
Level 3: Cloud / Application Alignment,
Level 4: Automated Orchestration,
Level 5: Strategic Agility) -
rather than the piecemeal assembly of various components, new and existing, which is mostly the case today.than the piecemeal assembly of various components, new and existing, which is mostly the case today.

The result of this ad hoc, organic activity, while admirable in some ways, can prove troublesome as well. In it grows the roots of yet another round of dysfunctional IT: silos of tightly coupled applications, data and infrastructure; and a limited use of process automation, which translates into higher costs, less efficiency, and less agility for the business. In short, the three indirect constraints facing IT are more important than ever—time, cost, and distance— but without a strategic cloud roadmap they will inevitably be negatively impacted.

With such an approach, a number of gaps are left, thereby creating more risks. These include:
- Inconsistent, confusing governance
- Incomplete, conflicting standards
- Insufficient, inconsistent policies
- Misalignment of enterprise strategy, lines of business, and IT
- Lack of integration with existing IT strategies and enterprise architectural frameworks

Instead, companies need a way to move purposefully toward the cloud; a way that would identify and address gaps as they appear while mitigating risk. The goal of such an approach is IT and business efficiency and agility, not cloud computing per se.

So what might this more deliberate approach to the cloud look like? We see it consisting of four core architectural targets:
- Loose coupling between distinct layers of the IT stack
- Systematic transition of IT operations from manual to automated
- Modernisation of legacy systems
- Continuously refreshing all aspects of IT as needed without worrying about interdependencies between layers

The result would be a business value-driven, methodical approach for the adoption of cloud computing technologies based on the five levels of cloud computing components. It would utilise a customisable framework and business focused, strategy-led approach similar to ITIL (Information Technology Infrastructure Library) and COBIT (Control Objectives for Information and related Technology) while reducing the risk of adopting cloud technologies by identifying and prioritising likely solutions based on the business case. Through the framework it would ensure the solutions integrate with the business and technology environments, effectively preventing isolated implementations.

Private, public, hybrid clouds

Mainframe data center veterans don't understand the high levels of interest in virtualisation, software-as-a-service (SaaS) and infrastructure-as-a-service (IaaS), or cloud computing. As they see it, the mainframe data center was the original internal cloud. It also was the original virtualised computing platform. Certainly, the technologies involved today have evolved considerably, but these data center veterans are correct from a historical perspective.

Today some might describe the enterprise data center, the classic glass house, as a private cloud simply because it is a single resource delivering IT as services over the network to applications and to users behind the corporate firewall. What mainframe veterans may be forgetting, however, is the huge moving van that showed up every two or three years with a bigger and better mainframe; this old style private cloud actually introduced huge amounts of unused capacity and a risky transition from one machine to the other during which applications would be unavailable for hours or days.

A better definition of private clouds is the acquisition, provisioning, and management of data center resources in a hyper efficient and agile way. This approach emulates the best practices of public cloud service providers such as Google, Microsoft, and Amazon while adding needed security and controls appropriate to specific enterprises.

Today organisations should approach cloud computing as an architectural option driven by the desire to extract the maximum efficiency and agility possible from infrastructure. Such a proposition calls for the delivery of computing resources on demand, where and when needed. And, as noted previously, cloud computing maximises business agility while minimising the time and distance dimensions, which reduces the indirect cost of IT while aligning the technology footprint to the needs of the business.

Cloud computing, private and public, produces a highly dynamic technology environment that can drive multiple value propositions. These include green IT, continuous application availability, and instant environment scale-up/scale-down in a consumption based cost model.

Organisations, as noted above, tend to evolve their cloud computing capabilities organically starting in the existing data center, implementing various components on an ad hoc basis to address immediate needs. Gradually, they need to develop and execute an appropriate strategy that delivers their desired cloud computing outcome, which will likely be some form of private cloud.

The public cloud exists today and many organisations already use it for SaaS solutions or to augment their existing IT capabilities through IaaS offerings. By extending the private cloud to access public cloud resources, usually IT infrastructure resources, the organisation creates a hybrid cloud, which combines both private and public cloud resources. Policy-driven automation can be used to initiate requests through the hybrid cloud for IT resources or data residing in the public cloud. In this way, organisations create an environment that can scale up or down as needed on demand.

What disruptions will cloud bring in?

People
- Alignment of roles and responsibilities to service delivery
- Staff training
- Reorganisation to adopt a service focus
- Update of success metrics
- Knowledge management

Process
- Project planning
- Capacity planning and compute resource procurement
- Application prioritisation

Cloud computing is a disruptive technology which will transform how IT does business

- Developing and managing service levels
- Vendor evaluation and implementation
- Technology adoption (PoC, Pilot, Deploy)
- End-user support

Technology
- Utility computing architecture
- Identity management
- Data security
- Data management
- Systems management startegy
- Vendor evaluation and implementation

Strategy
- Defining a Cloud enabled IT strategy
- Budgeting and project funding
- Standard and guidelines
- Reference architecture for SaaS, PaaS and IaaS
- Enterprise architecture

Structure
- Government model
- Defining and implementing controls
- Identifying audit procedures

What are the cloud entry points and Approach to Cloud Computing?

Cloud entry points today
- Migrate expensive, compliance issue riddled desktop applications to lower cost web alternatives
- Eliminate expensive, complex collaboration platform management (email, instant messaging, calendar, etc.)
- Deploy point enterprise solutions for SFA, CRM, document management, etc.
- Use cheap storage to drive public internet capabilities
- Augment internal grids with on-demand server capacity

Approach to Cloud Computing in five phases
- **Phase 1 - Build Business Case**: Link the key initiative to the overall drivers or objectives of the business. Gain support from senior business leaders and senior stakeholders. Set a baseline for assessing the impact of the investigation. Estimate costs and resource requirements.
- **Phase 2 - Develop the Strategy**: Align the investigation with the business strategy, and show how it can deliver business value. Show how the investigation might lead to changes that will affect your business environment. Work with key stakeholders to identify business needs.
- **Phase 3- Assess Readiness**: Identify the budgetary, staffing, technology and other requirements necessary to prepare the business for the investigation. Develop a total cost of ownership analysis framework. Review established policies for assessing risk and managing governance.
- **Phase 4 - Pilot or Prototype**: Identify a group to pilot, or develop a prototype for the investigation. Develop and communicate detailed requirements. Manage the pilot/prototype. Assess and communicate the results.
- **Phase 5- Gain Approval**: Analyse findings of the readiness assessment and pilot or prototype effort, and revise the strategy and business case accordingly. Present findings of the investigation to senior stakeholders and business leaders.

Cloud Computing Success Stories

GE
Global procurement hosting 500k suppliers and 100k users in six languages on SaaS platform from Aravo to manage $55B/year in spend

Bechtel
Reduced infrastructure cost by 30% in part by achieving 70% server utilisation

Washington DC
Google Apps used by 38k employees reducing costs to $50/user per year for email, calendaring, documents, spreadsheets, wikis, and instant messaging

Eli Lilly
Using Amazon web services can deploy a new server in 3 minutes versus 50 days and a 64-node Linux cluster in 5 minutes versus 100 days

NASDAQ
Using Amazon storage to store 30-80 GB per day of trading activity

Risks associated with Cloud Computing

Business risks...

Governance – without oversight, business leaders will be able to create shadow IT components or entire organisations. And within IT there are fewer barriers to creating unapproved environments.

Competition – enables start-ups to avoid most of the hazards of building a technology foundation accelerating the rise from start-up to stalwart

Start-ups – it is important to understand the provider's business model to ensure they have a reasonable burn rate operating at a profit and not dependent on investment

Regulatory – ensuring compliance with the myriad of rules including SOX (Sarbanes-Oxley Act), HIPAA (Health Insurance Portability and Accountability Act), PCI (Payment card industry) and others while taking advantage of the economic model

Vendor alignment – many vendors are researching and developing cloud products so companies may be caught unaware if a

key vendor changes their business model from installed or dedicated hosting to a cloud SaaS only model

...and Technology risks

Bandwidth – network bandwidth is the most important component of the model without which the model is an illiquid asset

Data – location of data within the cloud may change so location restrictions must be incorporated to avoid global issues of privacy, ownership, security and discovery. When the data moves, the provider must ensure alternate/old copies are securely destroyed.

Security – securing data at rest and in transit is fundamental when using external network resources such as the internet. Once the data is secure, limiting access via identity management is critical but may require integration creating a point of vulnerability.

Staff – cloud expertise will be difficult to keep as more companies jump on the bandwagon and want to profit from the price paid by early adopters

As per the PwC-CII survey, security and confidentiality of data (92%) is perceived as a major challenge / disadvantage of cloud computing. Apart from data security / confidentiality, lack of clarity on laws and regulations (75%) and loss of control over data (67%) are also seen as a challenge.

Figure 13: Challenges / disadvantages of Cloud computing (amongst IT users)
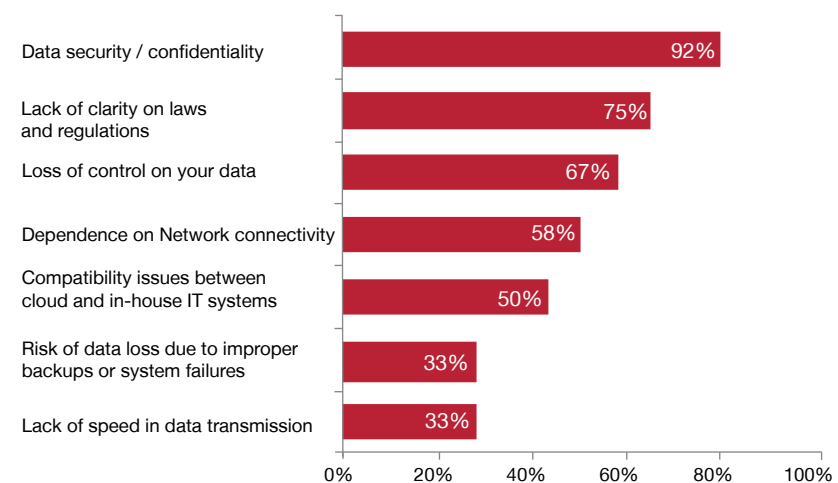
Source: PwC-CII IT/ITeS Survey

The road to cloud enablement

How Cloud Computing is applied depends on the company

- **Startups** benefit the most from **public cloud** solutions such as Amazon and Google (this is what most people refer to as Cloud Computing)
  — No legacy IT
  — Need fast up/down scalability
  — No capital + no income = perfect for "pay as you go" model

- **Fortune 500 companies benefit the most from**
  — server, storage, network virtualisation
  — application services (SOA)

- **Public Clouds** are the defacto standard for **startups** using solutions from Amazon, Google and Salesforce.com and increasingly required by VC firms

  — No legacy IT
  — Need fast up/down scalability
  — No capital + no income = perfect for "pay as you go" model

- **Private Clouds** are the focus of **Fortune 500** companies typically built using an **Evergreen IT** approach; building agile, flexible environments incorporating the building blocks of cloud computing into existing IT investments and using the savings to fund investment

Transformational cloud projects will begin to emerge as businesses recognize the competitive advantage of cloud in delivering the next level of customer service

Not all companies are equal ….

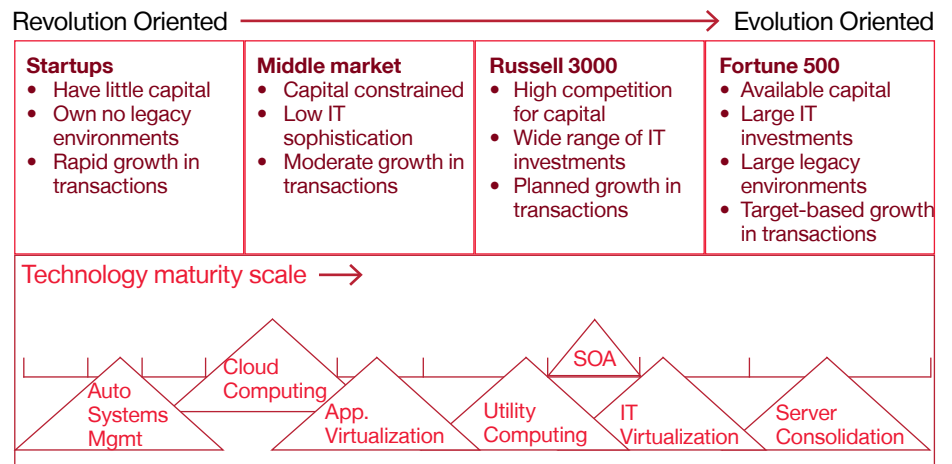Revolution Oriented ⟶ Evolution Oriented

Startups	**Middle market**	**Russell 3000**	**Fortune 500**
• Have little capital • Own no legacy environments • Rapid growth in transactions	• Capital constrained • Low IT sophistication • Moderate growth in transactions	• High competition for capital • Wide range of IT investments • Slow growth in transactions • Scalability is a competitive advantage	• Available capital • Large IT investments • Large legacy environments • Slow growth in transactions • Scalability is expected

Technology maturity scale ⟶

Cloud Computing

…. So the approach must be tailored to the need

Revolution Oriented ⟶ Evolution Oriented

Startups	**Middle market**	**Russell 3000**	**Fortune 500**
• Have little capital • Own no legacy environments • Rapid growth in transactions	• Capital constrained • Low IT sophistication • Moderate growth in transactions	• High competition for capital • Wide range of IT investments • Planned growth in transactions	• Available capital • Large IT investments • Large legacy environments • Target-based growth in transactions

Technology maturity scale ⟶

Auto Systems Mgmt   Cloud Computing   App. Virtualization   Utility Computing   SOA   IT Virtualization   Server Consolidation

Some applications are better prepared for the migration of Evergreen IT based on their dependencies

Application dependencies	Incompatible	Challenging	Ready to Roll
Processor	Alpha, VAX	Itanium, SPARC	X86, pSeries
Operating system	OS/400, VMS, OSF, OS/2	Solaris HP- UX, AIX	Windows, Linux
Language	Fortran, COBOL	C/C++, COBOL, Assembler	Java/J2EE, .NET, PHP. PERL, Python, REBOL
Data		VSAM	RDBMS, OODBMS, XML, Flat files
Integration	Shared memory	TCP ports, RPC, file transfer MOM	Web services, ESB

Identifying the right path for your company: 3 scenarios

When it comes to the enterprise view of the cloud computing opportunity today, we have determined that companies fall on a continuum from not considering cloud computing at all or to fully leveraging cloud computing, with most falling at various points in between. Where their data center operations specifically fall may not even be clear since, as noted above, the adoption of various cloud computing components often is ad hoc rather than the result of a systematic strategy to pursue cloud computing.

For conceptual simplification, however, we have defined three common paths that reflect where most organisations are today, which are explained below. For each path we have described its cloud component maturity level.

Senior executives should identify which cloud path their organisation appears to be on, determine which cloud path is most appropriate for the future, determine if there is a significant gap, and set a strategy for how closing the gap.

Path 1 – Have strategy and pieces but need to connect the dots
- **Starting point**: have some cloud components deployed and a strategy
- **Desired outcome:** transition to a an internal cloud environment with the ability to connect to the external cloud as desired
- **Likely gaps**: confusing governance, conflicting standards

- **Obstacles/challenges**: filling in the remaining cloud components internally, connecting legacy backend systems and porting applications to the internal cloud
- **Next steps**: continue to add cloud components, simplify governance, and enforce a single set of standards
- **Cloud component maturity level**: Level 1 and possibly some of Level 2 and Level 3

Path 2 – Have virtualisation and some cloud components but lack vision and strategy
- **Starting point**: mainly virtualisation components deployed, a few cloud components, implementing point solutions
- **Desired outcome**: transition to a fully virtualised environment capable of transitioning to an internal cloud environment
- **Likely gaps**: lacks vision, no cohesive strategy for cloud computing
- **Obstacles/challenges**: need to educate both IT and management on the opportunities and value of cloud computing, lack of technical and business leadership on this issue
- **Next steps**: identify a management leader; paint the organisation's vision for virtualisation and cloud, secure buy-in from management and IT
- **Cloud component maturity level**: Level 1 and possibly some of Level 2

Path 3 – Have the interest and vision but unsure of getting started

- **Starting point**: have interest and the beginnings of a cloud vision, not sure where they stand in regard to virtualisation, IT automation, and cloud computing.
- **Desired outcome**: transition to an efficient IT environment that uses virtualisation, SOA, and cloud computing to achieve an agile organisation
- **Likely gaps**: needs benchmarking to identify where they are and how to proceed.
- **Obstacles/challenges**: need to develop a workable strategy, need to begin an orderly implementation of cloud components
- **Next steps**: develop a business and IT strategy and initiate implementation based on the results of benchmarking
- **Cloud component maturity level**: may have implemented some of Level 1

Today most organisations have begun the migration to virtualisation technologies but due to concerns and lack of understanding they are excluding clouds from their plans. In organisations further along the path, IT already is virtualised, enabling private cloud solutions focused on customer and vendor integration. These organisations are implementing all or parts of Levels 1, 2, and 3. Other organisations are willing to let public clouds handle commodity collaboration and desktop productivity. Ultimately, everything should run on a cloud platform with both private and public versions of many applications, where access to compute resources are determined by policies.

The goal is to get to Level 5. Level 4 and Level 5 components address automation, orchestration, and management of policies, business process, service levels, and such. They use virtualisation and cloud resources but the goal is efficiency and agility, not cloud computing per se.

Platform BPO

What is Platform BPO?

Platform BPO is a technology-integrated BPO that provides a complete business solution by packaging a **technology platform with a domain application**. Some examples of domain applications include Insurance Policy Administration, Claims Processing, Mortgage Processing, Collection Management etc.

A Platform BPO provider takes care of software licensing, hosting, implementation, application support and the requirement of personnel for running process operations resulting in no capital expenditure for the buyer organisation.

The buyer is required to only pay a monthly fee based on usage of technology and BPO services (Pay-as-you-use model).

The service delivery moves from being people-centric in the traditional BPO model to platform-centric in this new approach. The chart below provides a comparison of the Traditional BPO and Platform BPO models.

Comparison Chart – Traditional vs. Platform BPO

Parameter	Traditional BPO	Platform BPO
Scope	Business process management (Business only)	Knowledge Management combining Data/Information management as well as Business process management (Technology + Business)
Pricing	**FTE model / Fixed price contract (manpower and timeline estimated** upfront and a lump sump payment decided) Or **Time and Material - T & M** model (billed per man-hour) • Price not related to customer's business cycle • Used when transaction volumes are not closely tied to service provider's cost drivers	**Transaction based pricing model (Pay-per- use)** - Typically, a base price is provided for a specified volume band, with a negotiated increase or decrease in price as usage fluctuates around the specified band. • Encourages productivity and efficiency • Suitable when transaction volumes are tied to service provider's cost drivers
Scalability	**Low** as specific/customised for each client	Very **High** – Same platform can be used for multiple clients ; configured as a package

The changing landscape of outsourcing

The major Indian IT companies have made progress on non-linearity in **transforming the basic pricing model** from a T&M rate card to per transaction (in BPO) and to some extent on business outcomes. (e.g. cycle time reduction, percentage of revenue generated)

In the non-linear models, **the break-even period for platforms is significantly longer** (at least 18 months), largely because the vendors need to set up data-centers themselves, incur capital expenditure, licensing costs (SAP, Oracle) and upfront expenses before clients adopt the platform on a monthly subscription or on a pay-as-you-go model.

Drivers for the success of the new platform-based outsourcing model

Prospective customers/buyers face the following issues as on date, which has propelled the growth of the Platform BPO Model:

- Economic uncertainty forcing organisations **to reset their operational costs** and technology related spending.
- The customers' intent on **transferring ownership of processes** and expectation of an integrated package from the BPO players.
- **Compliance** to standardized processes, regional statutory norms and internal controls.
- Decentralised operations and the **need for uniformity** across businesses and geographies.
- Well suited for small and mid-sized companies who **cannot make large upfront investments**.

Chart : The global sourcing landscape is maturing
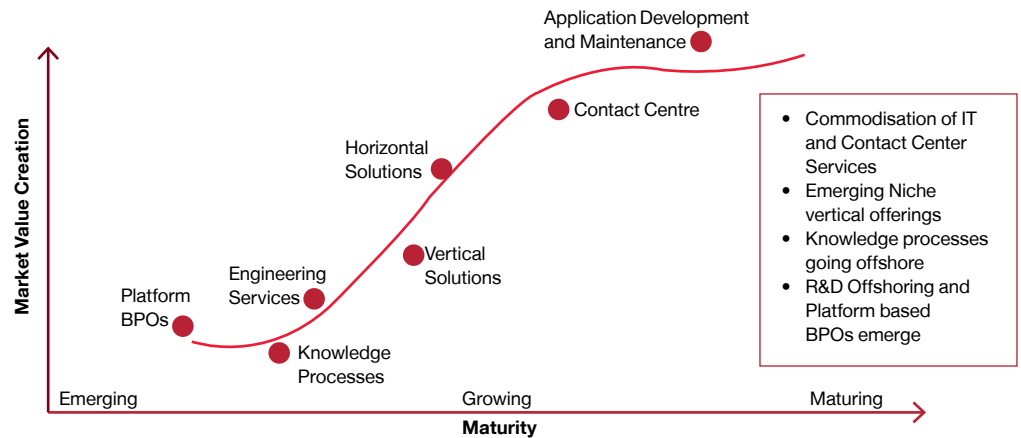
The ability to service niche sourcing areas brings an opportunity for emerging locations

Source: NASSCOM, Literature Reviews & Hewitt Analysis

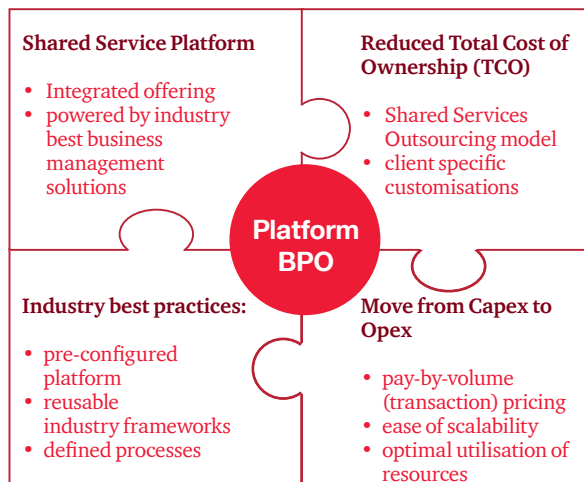## Business Benefits of the Platform BPO model

The benefits **from a service provider's perspective** are as follows:
- A key advantage of the Platform BPO model is that it offers **more credibility to the capability of the BPO service provider**. In today's competitive marketplace, prospective customers expect to view domain applications which can prove the capability of the service provider. The platform BPO model provides a solution approach to the buyers.
- A Platform-based BPO would allow service providers to **de-linearise growth** through standardisation and **large-scale productivity payoffs**. Since it is an end-to-end process application it can be easily re-used and configured to meet customers' business needs.
- **Better profits** by charging a premium for the value created and the risks undertaken.
- A Platform BPO model **showcases expertise and contributes to branding**. Licensable solutions by showcasing domain-centric ability could act as a pull for the client to push through implementation-oriented work. The model can serve as a useful branding exercise despite its modest revenues. This acts as a differentiating factor while showcasing services to the client.

The benefits **from a customer's perspective** are as follows:
- The service provider executes, maintains and takes care of up-gradations, thus, **freeing the client's resources**.
- More flexible and scalable **pricing model**
- **Reduces implementation time/ business cycle tim**e by incorporating configurable plug-in templates and shared synergies through a multi client system architecture.
- Effective **selection of service provider** based on per transaction price.

> *As per PwC-CII survey, about 34% of IT users are planning to avail platform BPO services and they intend to avail them for benefits like operational efficiency and process standardisation – thereby better quality.*

Shared Service Platform
- Integrated offering
- powered by industry best business management solutions

Reduced Total Cost of Ownership (TCO)
- Shared Services Outsourcing model
- client specific customisations

Platform BPO

Industry best practices:
- pre-configured platform
- reusable industry frameworks
- defined processes

Move from Capex to Opex
- pay-by-volume (transaction) pricing
- ease of scalability
- optimal utilisation of resources

Key challenges for the Platform BPO model

Being a relatively **complex model**, this requires a good understanding of the transactions and costs by **both the customer and the service provider**.

From a **customer's perspective**, the challenges are:
- Being a new service delivery model, customers are not overtly convinced to adopt the model as it is not yet a proven methodology. Additionally, this calls for a **cross-functional decision process** cutting across business functions and IT within the customer organisation. This needs a holistic mindset from customers.
- Customers have some **security concerns** with the Platform BPO system **as the same platform is used to service different clients**. The platform based model requires the customers to look at the BPO provider as a trusted partner who will manage critical functions and handle confidential and sensitive information for them.

From a **service provider's perspective**, the challenges are:
- Many organisations operate **fragmented, heterogeneous** ERP systems. As a result, achieving seamless global delivery and cost effectiveness is an uphill task for the service provider.

- Also, as large potential buyer/customer organisations have **already invested in their own complex IT systems**, targeting and converting them to Platform BPO users would be difficult.
- A Platform BPO requires **high upfront investment in fixed costs for the service provider and relatively low** variable costs. This is the reverse of the traditional Indian BPO model. Basically, this means that until the business gets to scale, margins remain negative. This is one of the prime reasons that only **large service providers** who have the capability to make such an investment would be able to cash in on this trend. As a result, the smaller companies will be left behind.

Suggestions to overcome the challenges:
- Emphasis on uniformity in processes across business verticals and locations for the customer.
- Plan for a comprehensive change management effort which must include getting the support from the top management, syndication of key stakeholders and end-user education programs.
- Develop an environment of trust by incorporating transparent practices.

Amongst the IT users who are planning to avail platform BPO services, 75% of them prefer the following platform based services - Human Resource outsourcing (HRO) and Analytics / Business intelligence.

Major segments in the Platform BPO space

1. Finance & Accounting

F&A platform BPO helps clients streamline their finance and accounting processes, and also contain the high costs of implementing, maintaining and upgrading finance applications.

A key consideration in this case would be to identify the finance and accounting processes that need to be outsourced. Transactional processes (such as accounts payable, travel and entertainment, accounts receivable, billing, cash management etc.) tend to be the most popular to outsource. More recently, with improvements in provider capabilities, there has been a move to outsource higher end or higher value services such as statutory/regulatory accounting, financial reporting and tax. In some cases, more strategic processes such as management accounting, budgeting & forecasting and financial analysis may be suitable for outsourcing.

2. Human Resources Outsourcing (HRO)

The HRO Platform is pre-configured to align to the industry's best practices for HR processes and frameworks. The Platform offers standardised, global HR outsourcing services with a combination of technology transformation and service delivery. It drives on operational expertise gained through various HR outsourcing projects across administrative activities, with proven results.
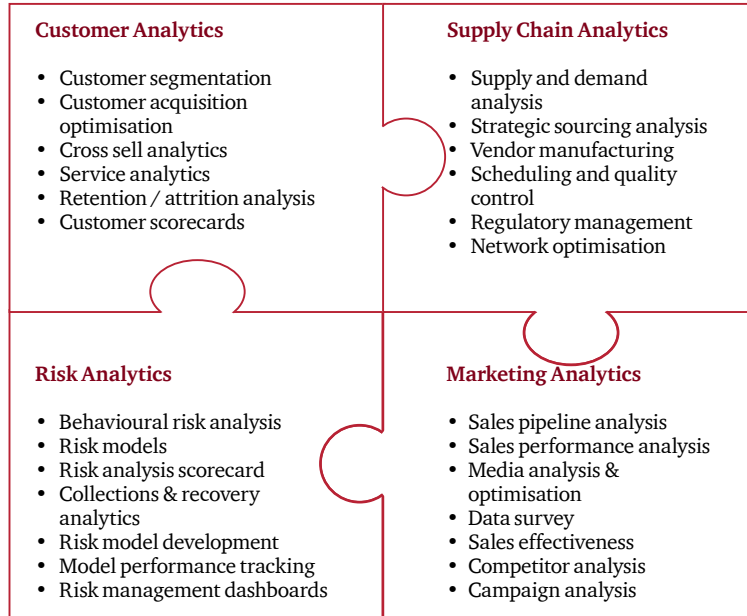
Some of the key services provided by the Platform are mentioned below:

Key service	Areas covered
Resourcing Services	• Candidate sourcing and screening • New employee on boarding
Workforce Management	• Personnel & event management
Payroll processing	• Generation of paycheck • Tax processing & reporting online • Managing attendance
Talent Management Services	• Setting goals • Managing competency • Performance appraisals & analysis • Career management
Compensation & Benefits	• Salary administration • Job evaluations • Managing monetary rewards/bonus

3. Analytics / Business Intelligence

The key focus areas for the Platform BPO service providers are:

Customer Analytics

- Customer segmentation
- Customer acquisition optimisation
- Cross sell analytics
- Service analytics
- Retention / attrition analysis
- Customer scorecards

Supply Chain Analytics

- Supply and demand analysis
- Strategic sourcing analysis
- Vendor manufacturing
- Scheduling and quality control
- Regulatory management
- Network optimisation

Risk Analytics

- Behavioural risk analysis
- Risk models
- Risk analysis scorecard
- Collections & recovery analytics
- Risk model development
- Model performance tracking
- Risk management dashboards

Marketing Analytics

- Sales pipeline analysis
- Sales performance analysis
- Media analysis & optimisation
- Data survey
- Sales effectiveness
- Competitor analysis
- Campaign analysis

Apart from these, BPO companies are planning to extend Platform offerings to product, price, online and operations analytics.

4. Procurement Outsourcing

There has been an increased focus on Procurement BPO services as the return on investment of 10-20% acts as a key value driver. It involves outsourcing key procurement activities relating to sourcing and supplier management, helping reduce cost of purchasing goods and related services. Companies now offer comprehensive '**Source-to-Pay**' offerings that ensure streamlined and standardised business processes on a superior technology platform.

Some of the key services provided as part of the procurement platform services:

Key service	Areas covered
e-procurement	• Supply Sourcing (online tendering & auctioning) • Vendor Management • Catalogue & Contract Management • Inventory Management
Web based ERP	• Resource planning implementation
Tactical Procurement	• Purchase Order Award Change Management • Contract Execution, Compliance, Administration Management • Receipt and Return Management • Supplier Helpdesk • Vendor MIS • Payment Processing
Procurement Analysis	• Market/Demand analysis • Master Data Management • Research and Remodeling

Recent Platform BPO deals

TCS has several deals for its platform-based BPO services. TCS has signed a large deal with the **Nielsen Company** where it would deliver outsourced finance, accounting and HR services on proprietary platforms built by the company. TCS also acquired **Diligenta**, a BPO platform for processing insurance policies.

TCS views non-linearity as a large revenue driver (opening up the market through its unified in-a-box offerings for the SMB segment).

Infosys' approach towards BPO platforms lies in making multiple smaller themes. In FY10, Infosys rolled out a **SaaS version of its banking product Finacle** (not a fundamentally new domain offering).

Infosys has developed platforms in **HR, procurement and media & entertainment**. For example, Newspaper-in-a-box (NiaB), HR outsourcing (Hire-to-retire) and Shopping Trip 360 (retail analytic solution). One of the biggest BPO platform play for Infosys is its acquisition of **McCamish Systems** (a platform-based insurance processing solution provider) in FY10.

Wipro, has an **order-to-cash platform (ready-to-market platform based offerings using SAP as the backbone)** for manufacturing companies that it monetizes based on the number of concurrent users.

Caliber Point, a subsidiary of Hexaware Technologies, recently launched **Republic,** a multi-tenant HR services delivery solution on the platform as a service model.

…a shift in strategy to vertical specific processes

Platform BPO provides an immediate and sustained cost savings solution that can be deployed in a short period with no upfront capital investment. At the same time, it helps the buyer organisations gain control of their operations and supplier relationships.

Platform BPO provides a comprehensive solution and an ideal outsourcing model for the small and medium businesses for a nominal operating expense.

Many service providers have already been offering such services for a while. A welcome feature of the platform based BPO service is that it appeals to SMB's with tremendous market potential. This provides an opportunity to progress from transaction processing to truly transformational service.

A shift in strategy to vertical-specific processes is expected henceforth. Over the next 18 months, the suppliers will reorient their approach to target industry-specific processes. This refocusing will enable them to turn their platform development into a more IP/expertise-led approach. Instead of a pure cost-reduction story, this vertical model will enable firms to showcase the process improvements that they have built into the platform.

Top 100 Indian Software Product vendors
Ranked by world-wide software product revenues (in INR crore)

Rank	Company Name	Software product revenues -Worldwide	Total revenues – Worldwide	Software product revenues - India
1	Tata Consultancy Services	943.7	30029.0	129.9
2	Infosys	925.0	21140.0	165.6
3	3i Infotech	790.1	2469.0	355.5
4	Teledata	725.1	3030.0	10.6
5	Persistent Systems Ltd	601.2	601.2	120.2
6	Geodesic	579.9	644.3	463.9
7	Educomp	467.8	1039.5	374.2
8	Cranes	461.3	508.7	52.1
9	Rolta	459.8	1532.6	253.3
10	Geometric Limited	409.6	512.0	163.8
11	Sonata Software (SITL)	379.2	1393.0	379.2
12	Subex	375.1	463.1	98.2
13	Take Solutions Inc, Hyderabad	293.1	366.4	58.6
14	OnMobile	272.6	454.4	203.7
15	Polaris Software	270.6	1353.0	52.7
16	Ramco Systems	175.8	175.8	86.1
17	Nucleus Software	174.0	291.8	27.6
18	KLG Systel	169.5	242.2	169.5
19	FT India Ltd.	164.3	310.0	136.4
20	CMS	155.9	1039.5	155.9
21	IBS Software Services	148.8	372.0	119.0
22	Tally Solutions	128.4	151.0	127.1
23	Quick Heal	105.0	105.0	94.5
24	Vsoft Technologies Pvt. Ltd.	94.9	146.0	14.2
25	Four-Soft	93.1	133.0	9.3
26	Infrasoft Technologies	67.9	97.0	23.8
27	Lasersoft Infosystem Ltd.	60.4	71.0	59.7
28	Elitecore Technologies Ltd	51.8	74.0	36.3
29	Seeinfobiz Pvt. Ltd.	45.0	90.0	31.5

Rank	Company Name	Software product revenues -Worldwide	Total revenues – Worldwide	Software product revenues - India
30	K7 Computing	45.0	45.0	30.6
31	Excelsoft Technologies Pvt. Ltd	42.5	85.0	4.3
32	Nelito Systems Limited	40.7	67.9	40.3
33	Pathfinder Software	40.5	45.0	24.3
34	Accel Frontline Ltd.	39.8	265.2	27.8
35	Sify	37.3	745.4	36.5
36	Busy Infotech Pvt Ltd	35.0	50.0	31.5
37	Manthan Software Services	33.0	55.0	16.5
38	Bodhtree	32.0	80.0	20.8
39	Wings Infonet Limited	27.0	30.0	18.9
40	Advance Technologies	27.0	45.0	17.6
41	Magna Quest	27.0	45.0	13.5
42	Nucsoft Ltd.	24.0	40.0	20.4
43	Godrej Infotech Ltd	21.4	47.5	4.3
44	ChainSys	20.0	50.0	8.0
45	Chenab Information Technologies Pvt. Ltd.	19.3	35.0	15.4
46	Intense Technology Ltd.	19.2	19.2	8.7
47	Nihilent Technologies Pvt Ltd	18.0	150.0	5.3
48	Sanovi Technologies	17.3	23.0	14.7
49	Pramati Technologies	16.1	23.0	6.4
50	Gamut Infosystems Limited	16.0	20.0	15.2
51	Unistal Systems Pvt. Ltd.	16.0	20.0	4.0
52	Fusion Charts	15.2	19.0	15.2
53	Aptegra Solution Pvt Ltd	14.8	37.0	14.8
54	Ontrack Systems LTD	14.8	29.6	7.4

Rank	Company Name	Software product revenues -Worldwide	Total revenues – Worldwide	Software product revenues - India
55	GoFrugal Technologies Pvt. Ltd	14.4	18.0	14.4
56	Srishti Software	13.5	15.0	8.8
57	RDM India	12.5	25.0	3.8
58	Integra Micro Software Services	12.3	35.0	11.0
59	Nextstep Infotech	12.0	20.0	10.8
60	Nippon Data Systems Ltd.	12.0	20.0	10.8
61	Shawman Softwares	12.0	12.0	9.0
62	ACS Infotech Pvt. Ltd.	12.0	12.0	7.7
63	Suntec Business Solutions Pvt. Ltd.	12.0	20.0	3.6
64	Compulink Systems India	11.3	16.2	5.1
65	Infosoft Consultants	11.2	32.0	11.2
66	Marg	10.8	18.0	10.6
67	Anadocs	10.8	18.0	6.5
68	Eastern Software Systems	10.0	25.0	4.5
69	Wrench Solutions	9.8	14.0	3.9
70	Dewsoft Solutions Pvt. Ltd.	9.4	17.0	5.6
71	Hofinsoft Technologies	9.0	10.0	5.4
72	Product Dossier Solution Pvt Ltd	9.0	15.0	4.5
73	Xalted Information Systems Pvt. Ltd.	8.8	16.0	5.3
74	NMSWorks Software Private Limited	8.4	12.0	8.4
75	Phoenix IT Solutions Ltd., Vizag (A.P.)	8.4	12.0	7.6
76	Micropro	7.7	11.0	6.9
77	Sathguru Management Consultants	7.2	18.0	3.6

Rank	Company Name	Software product revenues -Worldwide	Total revenues – Worldwide	Software product revenues - India
78	Summit India	7.2	8.0	3.6
79	In-Solution Global Pvt Ltd	6.6	11.0	5.6
80	Pratham Software	6.0	10.0	6.0
81	Net Guru Ltd	5.9	23.8	5.9
82	Cooptions Technologies Ltd.	5.9	9.0	5.9
83	Technoforte	5.6	8.0	4.5
84	Mithi Software Technologies Pvt Ltd	5.4	9.0	5.4
85	Quantum Link Communication Pvt Ltd	5.3	15.0	5.1
86	Interface Business Solutions (I) Pvt. Ltd.	4.9	7.0	4.9
87	Excellon Software	4.8	6.0	4.8
88	Sapphire IT Solution Pvt Ltd	4.8	6.0	3.4
89	Dynamic Vertical Software Pvt. Ltd.	4.5	7.5	3.2
90	Seabit Technologies	4.4	5.5	4.4
91	Paramatrix Technologies Pvt. Ltd	4.3	5.0	4.3
92	Ginni Systems ltd.	4.0	5.0	4.0
93	Micro Pro, The Computer professionals	4.0	5.0	4.0
94	Kalsofte	3.6	4.5	3.6
95	Valgen Infosystems Pvt. Ltd.	3.6	4.5	3.6
96	Orell	3.3	6.5	3.3
97	R. K. Softwares	3.2	4.0	3.2
98	Soft World India	3.2	4.0	3.2
99	Infoton	3.2	4.0	3.2
100	Odyssey Technologies	3.2	4.5	3.2

Concentration of Top 100 Indian Software product revenues

Figure 15: Concentration of Top 100 Indian software product revenues

Legend:
- Top 1
- Top 2-10
- Top 11-50
- Top 51-100

Pie chart values: 3%, 10%, 36%, 51%
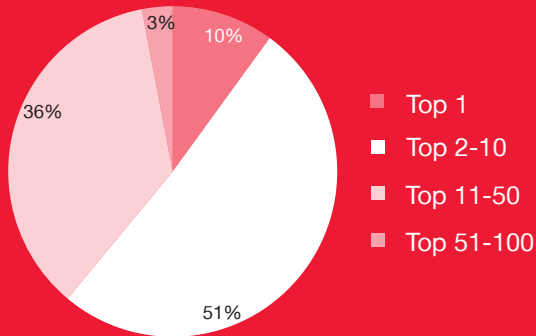
Source: Springboard Research (PAC Partner for Asia)

Global and Domestic activity of the Top 100 software vendors
(% of aggregate revenue from the home country and outside of home country)

Figure 16: Global and Domestic activity of the Top 100 software vendors

Bar chart:
- Top 1-10: Domestic 32.8%, Global 67.2%
- Top 11-50: Domestic 59.2%, Global 40.8%
- Top 51-100: Domestic 74.8%, Global 25.2%

Legend: Domestic, Global
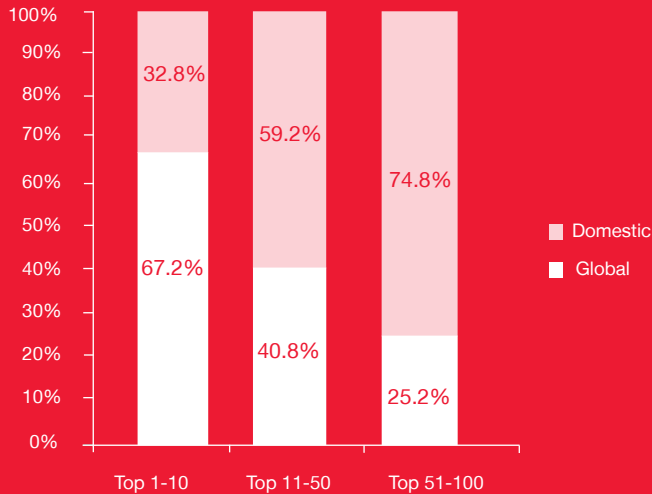
Source: Springboard Research (PAC Partner for Asia)

While larger companies are export focussed, smaller ones are home focussed – vindicates the premise that the financial and marketing muscle is required to establish a brand beyond India's shores.

India's Software Product Industry

An overview

The Indian IT industry is primarily identified with software services. The focus on services had relegated the Indian software products industry to the background. The software products segment, excluding offshore product development and engineering services, contributes only about 5% to the $73 billion Indian IT industry.

The Indian software products industry, however, has been evolving over the years and has grown from just over hundred million dollar in FY 1999-00 to about $3.87 billion in FY2009-10 (refer figure 14).

There has also been a steady increase in the number of software product companies in addition to the revenue growth. The last decade has seen the number of Indian product companies - not including captive R&D centres - grow from about 100 in 1999 to 525 today. But most of these companies are small and medium business units with a turnover in the range of Rs 2 crore to Rs 50 crore.

According to the study conducted by PwC and Pierre Audoin Consultants (PAC), the top 10 Indian independent software vendors (ISVs) in terms of software product revenue worldwide, contribute to more than one-third of the total revenues.

As per the recent market indicators, we understand that the software product segment is undergoing a rapid change and is approaching a new phase of accelerated growth. We have conducted a study to compile the Top 100 Indian Software Product vendors (based on the world-wide software product revenues) many of whom are likely to drive this growth in the coming years.

Unlike the IT services – where 75% of the revenues come from exports, domestic revenues form the bulk of the total software products revenues. In 2009-10, the domestic revenues constituted more than 70% of the total revenue.

Figure 14: Indian Software products industry revenue

Total

Year	Export	Domestic	Total
2009-10	1.1	2.77	$ 3.87 bn
2008-09	1.0	2.68	$ 3.68 bn

in $ billion
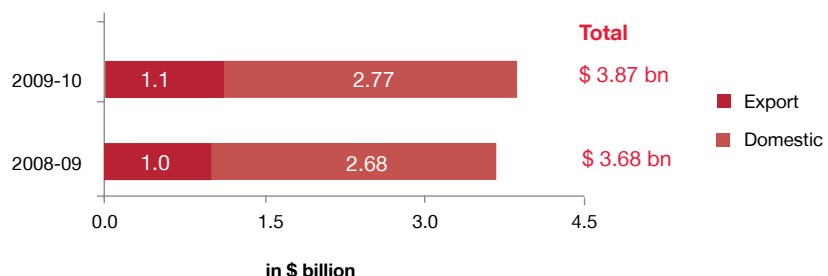
Source: Nasscom

Maturing ecosystem – driving growth

Improvements across several ecosystem factors such as venture capital funding, disruptive technologies, incubation centers and an increase in entrepreneurial talent have also spurred the start-up activity with more than 125 start-up firms being incorporated in the last three years.

Incubation centers

Indian start-ups today have a larger support system in the form of incubation centers to help them expand their operations. The country currently has about 40 incubation centres spread across and they are keenly focused on assisting technology start-ups with funding and mentorship. Incubation programs have been complemented by various mentoring programs by professional/industry associations that are playing an instrumental role in boosting entrepreneurship by providing active support to technology start-ups in India.

Venture Capital

Venture capital and private equity (PE) firms, which were earlier focusing on the services businesses, have now expressed a growing interest in Indian software product businesses.

Currently there are about 275-290 venture capitalists, 250-280 angel investors and about 10 to 15 corporate VC funds operating in India to provide funding support and encourage start ups in India.

Technology disruption

Apart from the factors mentioned above, disruptions in the global market in the areas of technology, business and delivery model are also creating opportunities for start-up firms. Disruptive technologies such as virtualisation, Service Oriented Architecture (SOA), innovative delivery models like web-services, Software-as –a-service (SaaS) and subscription/ transaction/on-demand business models have facilitated many new entrants to compete with incumbents and has helped expand the addressable opportunities for Indian software product businesses in the export as well as domestic markets.

The SaaS model of software delivery has increased the penetration of IT across small and medium businesses (SMBs) and is likely to be the growth driver.

Growing addressable market

According to Nasscom's Software Product study, over the next five years, Indian software product businesses have an addressable market opportunity of $290 to 315 billion. The Indian software product industry can leverage on emerging businesses from sources such as the UID project — the world's largest biometric project that is slated to provide new business worth $4 billion by 2015.

Enterprise application software will present the largest opportunities with BI
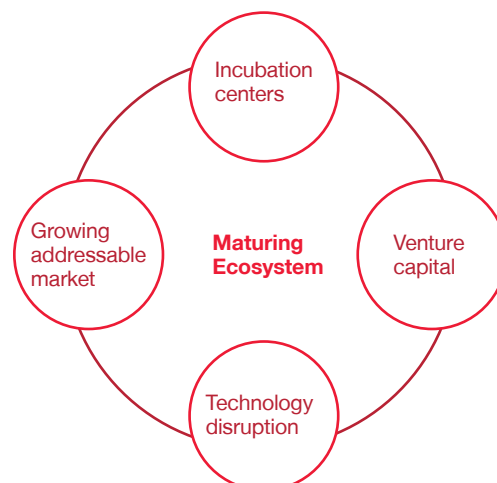
and ERM, with storage and security being the key priorities. The global demand for BI software and ERM software products is expected to reach $15 billion and $59.8 billion respectively by 2015.

Further, vertical-specific software demand from BFSI, Telecom and Retail will also offer considerable opportunities for growth. Search Engine Marketing, Mobile Applications and Online Gaming will be other high-growth areas, especially in the home-user segment of the domestic market.

With the evolution of the above ecosystem parameters, the Indian software product industry is poised for growth.

Challenges faced by the Indian software product industry

The Indian software product industry has been showing remarkable growth during the past decade and with the maturing ecosystem, is likely to meet Nasscom's estimated revenues of $9.5 to 12 billion by the FY2015. But growth could be stunted due to the challenges being faced by the industry.

Entry barriers due to MNC presence
The various liberalisation and deregulation initiatives taken by the government in the early 1990s have brought in many MNCs into India and created intense competition in the domestic market. A few of the established MNC vendors with their financial and marketing muscle are able to attract more business and their bundling of software

with infrastructure products is creating new challenges for domestic software product companies. Additionally, MNCs have also started targeting small and medium businesses, which have been the primary target for Indian companies as well, thereby creating further competition.

Entry barriers for large deals
For many of the large deals, there are barriers created for the smaller firms by setting higher qualification criteria in terms of turnover or number of deployments. This acts as a major set back for the smaller companies as these large deals otherwise would have created more opportunities for growth.

Lack of sufficient talent
As mentioned earlier, India already has a strong base of R&D talent in the industry with capabilities of working across the product business value-chain. However, about 85% of these professionals are employed with MNC subsidiaries or Indian service providers – leaving only about 20,000 to 25,000 individuals in the Indian software product business.

The current available talent pool in India, moreover, rates low in the skills category for product architect, product management, product marketing, user interface and design and release and configuration which are critical for the software products business. A recent employability study of technical graduates, by Aspiring Minds, has shown
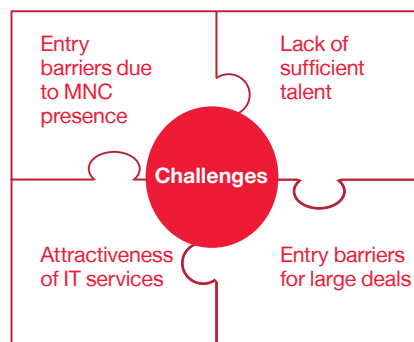
that the employability with regard to IT product companies is as low as 4.22 % (amongst computer and electronics related branches).

Attractiveness of IT services

The increased focus of IT companies on the opportunity in IT outsourcing takes away a lot of focus from the Indian product businesses. If the software product firms face slow growth or a lack of growth, they switch their focus to services for survival and growth, thereby, abandoning products.

….well poised for the next phase of growth

Banking sector products from India have been the most visible in the international arena. iFlex (acquired by Oracle in 2005) was the most notable example with its core banking solution, Flexcube. Other core banking solutions being sold worldwide are Finacle (from Infosys) and BaNCS (from TCS - Tata Consultancy Services). Companies like Polaris, Nelito systems, 3i Infotech, Infrasoft and Nucleus software have also made a mark in banking.

More recently, software product development in education and training, logistics, healthcare, cleantech, talent management and mobile applications (including mobile stock trading) are triggering what industry observers believe will be the next wave in the India's software revolution.

Developing and commercialising software products have traditionally required significant investments in product development, branding and marketing, which have put this beyond the reach of smaller firms. Disruptive technologies like cloud computing, social networks and the telecom revolution have reduced the cost of technology development and the cost of market reach.

For example, for mobile applications, a developer uses shared resources on a cloud to build applications and leverages the marketing muscle of a telecom provider to sell them. Traditional software services companies are building standard platforms for service delivery which could be sold as products in their own right.

With innovation and Intellectual Property (IP) led growth strategies becoming more mainstream, in addition to the maturing ecosystem, we believe that the Indian software product industry is well placed for the next phase of growth. The Indian software industry body, Nasscom, expects the revenue from this industry to be between US$9.5-12 billion by 2015.

Tier 2 IT/ITeS destinations – moving to mainstream

The tier 1 or the larger cities in India have been the initial torchbearers of the Indian IT/ITeS industry's remarkable growth. Availability of talent, better infrastructure, connectivity, and an evolved ecosystem were some of the major drivers for focussing on these larger cities.

This unprecedented growth was not easy to handle. While the large cities witnessed severe pressure on the civic infrastructure, service providers faced myriad issues around the rising cost of operation, employee attrition, employee work-life imbalance etc.

During this phase, many other states in India woke up to the benefits that the IT/ITeS industries could bring to their economy and began to frame beneficial IT policies to attract the companies. The IT/ITeS industries which were looking for alternative locations to increase their delivery footprint and tap more resources, were happy to leverage this. The figure 17 provides the service provider's perception on the potential benefits of moving or expanding to Tier 2 cities.

The tier 2 cities have done extremely well over the years to fulfil the requirements of the IT/ITeS service providers, issues notwithstanding. Many of them have demonstrated strong delivery and development capabilities to be treated as independent delivery centres. In addition to the quality of resource available, most of the tier 2 cities boast of productivity levels that are at par or sometimes even higher as compared to tier 1 cities. High or at par productivity levels are owed to the much lesser commuting time to office and better work-life balance vis-à-vis larger cities. Some of these cities have also started to establish their authority in niche areas (e.g. Thiruvananthapuram has a well developed animation and gaming industry and Jaipur is considered to possess good Finance and Accounting BPO resources). The service providers have also reported a much lower attrition in tier 2 cities.

> *As per PwC-CII survey, about 50% of the IT/ITeS service providers are looking to move or expand to tier 2 cities for perceived benefits like availability of low-cost skilled resources, lower real estate cost and lower attrition.*

Figure 17: Potential benefits of moving or expanding to Tier 2 cities (among IT/ITeS service providers)
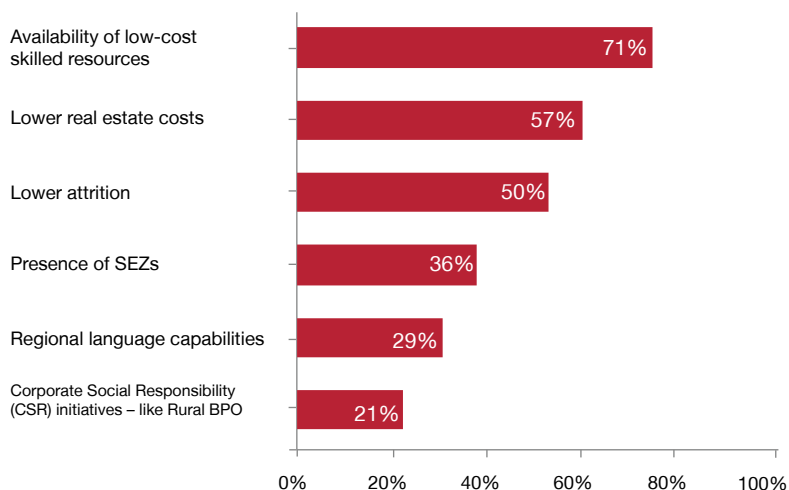
Source: PwC-CII IT/ITeS Survey

All these advantages are provided in addition to an operational cost savings of approximately 20-25%. Most of the tier 2 cities have also recognised the significance of supplying adequate manpower to the industry and have started re-orienting their education policies. Private investment in professional education has been encouraged to significantly increase the skilled manpower output (e.g. the number of engineering college seats in of Odisha have gone up from 2,000 to approximately 38,000 in last 12 years).

In all leading tier 2 cities, the presence of large players has also developed the ecosystem. Local players are finding it much easier to operate. Additionally, the state governments and the STPI have also been aiding the local players during incubation. This in itself is creating a self sustaining ecosystem for the wholesome growth of the IT-ITeS industry.

The tier 2 cities have their share of challenges as well. Scaling up is not as easy as it is in a tier 1 city, particularly for high end technologies or skills. There are difficulties in attracting management talent. Infrastructure and resources take time to come in and there are still direct connectivity issues to international locations. The figure below brings out the challenges faced by the IT users while consolidating IT operations in Tier 2 cities.

The local authorities of leading tier 2 cities are proactive in dealing with these challenges. Many states are in the process of setting up international airports. The connectivity to tier 1 cities in India has increased significantly. State governments have launched programmes to invite expats to come back and work from the state. The local governments have also learnt lessons from the tier 1 cities. This includes creating proper infrastructure and a supply of talent pool for the industry.

This section provides the profiles of four leading tier 2 cities – Jaipur, Thiruvananthapuram, Bhubaneswar and Chandigarh Tricity that have gained prominence in the recent years.

> *IT users feel that the lack of connectivity to major cities, below par business infrastructure and sourcing of talent are the challenges they face while consolidating their IT operations to tier 2 cities. In our interaction with a few of the executives, we also learnt that the scaling up of operations is also an issue in smaller cities.*

Figure 18: Challenges faced by IT users while consolidating IT operations in Tier 2 cities
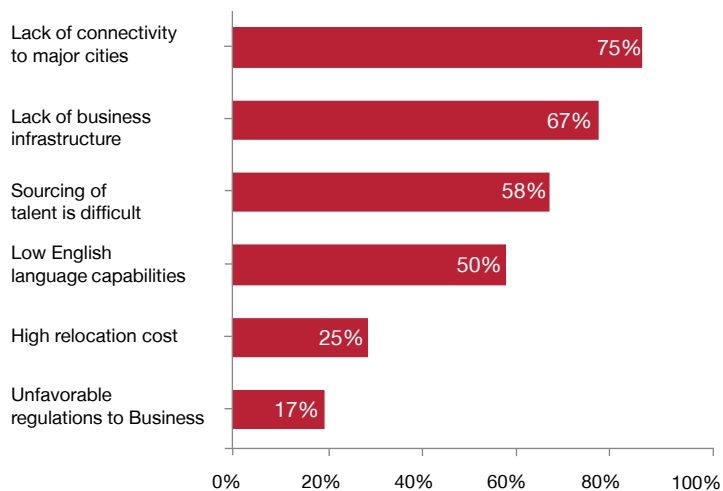
Source: PwC-CII IT/ITeS Survey

Jaipur

The first major development took place in Jaipur in 2002, when Genpact opened their BPO centre in the city. The Rajasthan government then realised the potential of the city and started working on steps to make the city an IT-ITeS destination. Some of the initial steps taken were to develop infrastructure (in collaboration with Mahindra World City – a multi industry SEZ with a dedicated IT/ITeS business zone) and align the education policy to attract more private participation in engineering colleges. The government of

Rajasthan also joined hands with NASSCOM to undertake a series of road shows to promote the city. The city was successful in getting some marquee clients like Infosys and Wipro, who were trying to expand their footprint in north India. The presence of these clients had helped the city to draw attention from the IT/ITeS community. Subsequently, the city was able to attract a lot of NCR based companies who were looking for an alternative location with a lower cost of operations. Currently there are approximately 100 companies (IT-ITeS combined) operating out of the city.

IT-ITeS exports

INR Crore

- 2009-10: 521.0
- 08-09: 358.0
- 07-08: 275.3

■ IT and ITeS

Break up of companies

- 2%
- 98%

■ Indian IT and ITeS and Local / Regional companies

■ Multinationals
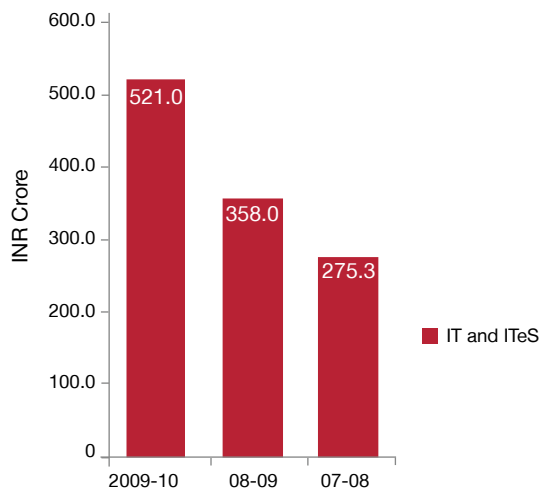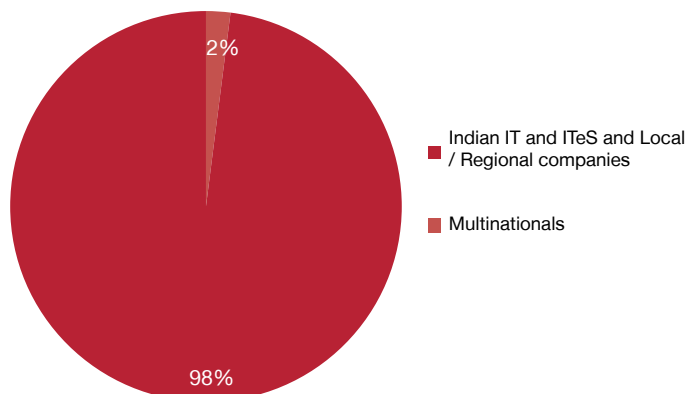
** Local / Regional companies would typically include start-ups / home-grown companies / companies that do not have multi-city presence

Jaipur is considered as the education hub of northern India. Being the capital city of Rajasthan and a major tourist centre, the city has a strong infrastructure in place. Jaipur lies on the confluence of northern and western India and thus, enjoys a large catchment area for talent pool. Being an international tourism destination, local authorities are very particular about the law and order standards. The social infrastructure is also geared up for a large amount of floating population. Apart from these, industry experts believe that the city of Jaipur provides approximately 18-20% savings in operations cost vis-à-vis a tier 1 city.

In terms of talent, Jaipur is considered to be a great place for finance and accounting (F&A) specific work. Approximately 35% of India's Chartered Accountants and commerce graduates belong to the state of Rajasthan. As a result, many Jaipur based companies have a clear F&A focus, particularly in the non-voice based BPO space.

Unlike many of its peer tier 2 cities, Jaipur maintains a balanced growth amongst both the IT and ITeS industry. Marquee names from both IT (Infosys, Wipro) and ITeS (Genpact, EXL) have set up their centres in the city. A wide variety of companies (software development, ADM, product development) are present within the IT space, in the city.

Jaipur, however, has scope for improvement. Industry experts believe the soft skills of the local talent can be refined to suit the requirement of international call centres. The city also needs to improve its domestic and international connectivity (by air).

Top IT-ITeS skills available	
IT skills	ITeS skills
BFSI ERP / Banking Software	Finance and Accounting BPO
Software Testing	BFSI KPO
JAVA	

Top IT-ITeS companies operating out of the city	
IT companies	ITeS companies
Infosys	Genpact
Wipro	Deutsche Bank
Data Infosys	EXL BPO
Nucleus Software	Cognizant
HCL Software	TruWorth Infotech

Growth catalysts for IT-ITeS	
Total IT & ITeS employees in the city	18,100
Total number of engineering graduates (including MCAs) passing out every year in the city	15,000
Total number of general graduates passing out every year in the city	50,000
Total available office space in IT parks and SEZs (in sq. ft.)	Two IT parks - 100 acres Mahindra world city – 2500 acres of multi product SEZ with dedicated zones for IT/ITeS

| Cost of operations	
Rentals in IT parks and SEZs (Rs/sq. ft./month)	Rs. 20-40
Electricity cost in IT parks/ SEZs (approx)	Commercial 2 KW (300Kwh/month) – Rs. 556.7
Approximate savings for cost of operations (compared to tier 1 cities)	18-20%

Thiruvananthapuram

Thiruvananthapuram is an education hub and houses many high end R&D institutes (Vikram Sarabhai Space Centre, Electronics Research and Development Centre India, Rajiv Gandhi Centre for Biotechnology, Centre for Earth Science Studies etc). The city also has very good data connectivity owing to the three submarine cables that land in Kerala. It was also one of the early movers to identify the importance of the IT-ITeS industry for its economy, especially since the manufacturing industry wasn't faring well in the state. As a first step, the government of Kerala created Technopark, an autonomous society promoted by the Government of Kerala in the early 90's. It was India's first technology park and is now amongst the three largest IT parks in the

IT-ITeS exports
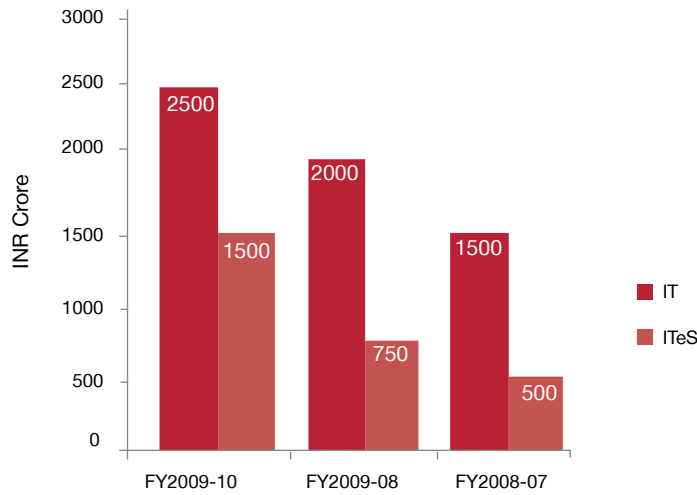
Number of IT-ITeS companies
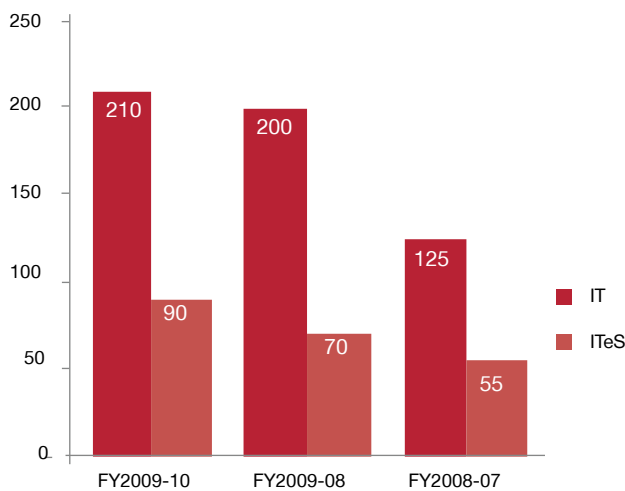
country. Secondly, the government augmented the education infrastructure by increasing engineering college seats in the state.

All these measures were very effective and today, Thiruvananthapuram is the biggest software exporter among the tier 2 cities. The added advantage of Thiruvananthapuram is that, it attracts talent from the southern part of its neighbouring state, Tamil Nadu. The government has made excellent industry friendly arrangements. The Technopark acts a single point of contact for all set up related activities including providing clearance for utilities and permission to construct facilities. There are government funded finishing schools that regularly produce skilled manpower for the industry.

Being an international tourist destination, law and order is given prime importance. The city has also become one of the favourite destinations for the expats. This explains the presence of a sizable number of MNCs in the city. As far as availability of middle management talent is concerned, the city is comfortably placed compared to its peers. Due to their presence over many years, the companies in the city have been able to create their own cadre of middle management.

Thiruvananthapuram also has an operational international airport that is well connected with the rest of the world by major airports in

Break up of companies

- Multinationals
- Indian IT and ITeS
- Local / Regional companies

40% 40% 20%

Break up of employees

- Multinationals
- Indian IT and ITeS
- Local / Regional companies

30% 15% 55%
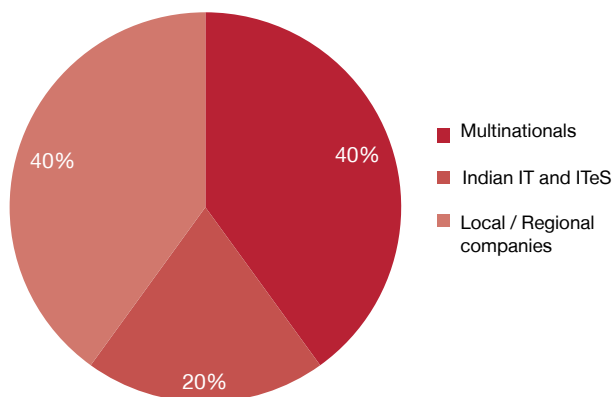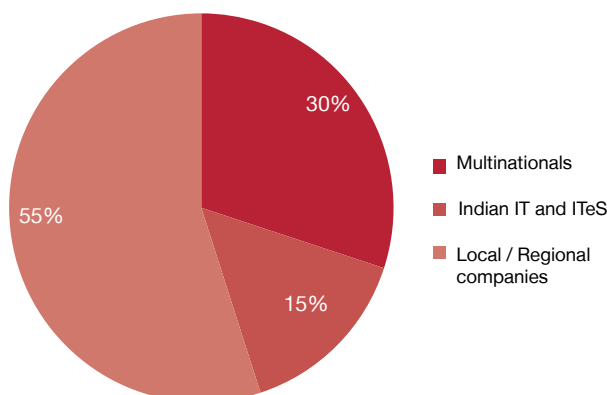
the Gulf region. Most importantly, industry experts claim savings in the range of 30-35% on cost of operations vis-à-vis tier 1 cities.

The profile of the companies operating out of Thiruvananthapuram and the services offered is diverse. Both IT-ITeS have witnessed a fair amount of growth. Some of the IT companies are taking up high end work like embedded software (Tata Elxsi), VLSI design (Infosys), product development etc.

Thiruvananthapuram has also created a niche for itself in the animation and gaming arena and is considered as a big hub for such activities.

On the other hand, Thiruvananthapuram has its list of improvement areas. The city needs to boost its connectivity within India. Sometimes, the disruptions due to the political situation can hamper service delivery.

Growth catalysts for IT-ITeS	
Total IT & ITeS employees in the city	40,000
Total number of engineering graduates (including MCAs) passing out every year in the city	20,000
Total number of general graduates passing out every year in the city	60,000
Total available office space in IT parks and SEZs (in sq. ft.)	6 million

Cost of operations	
Rentals in IT parks and SEZs (Rs/sq. ft./month)	Rs. 26.70 in Technopark
Electricity cost in IT parks/ SEZs (Rs/unit)	Rs. 3.25 per unit
Approximate savings for cost of operations (compared to tier 1 cities)	30-35%

Top IT-ITeS skills available	
IT skills	ITeS skills
Embedded Systems	Animation/Gaming
ERP	Insurance Processing/ Healthcare
Networking/ Mainframe	Accounting/Legal

Top IT-ITeS companies operating out of the city	
IT companies	ITeS companies
Infosys Technologies Ltd	Allianz Cornhill
Tata Consultancy Services	R R Donnelley Co
Tata Elxsi Limited	Accentia Technologies
UST Global	Toonz Animation
IBS Software Solutions	McKinsey & Company (VGCS)

Source: Technopark, Thiruvananthapuram

Bhubaneswar

The capital city of the eastern Indian state Odisha[7] was an early mover in developing the IT industry in the state by starting its STPI operations at Bhubaneswar in the early 90's. During the same time, the government of Odisha was also proactive in setting up the Orissa Computer Application Centre (OCAC) in order to impart the required IT training that will create a supply base for the IT-ITeS industry.

Privatisation of engineering colleges saw the number of engineering graduates grow from 2,000 to 38,000 in a span of 10-12 years. The

IT-ITeS exports
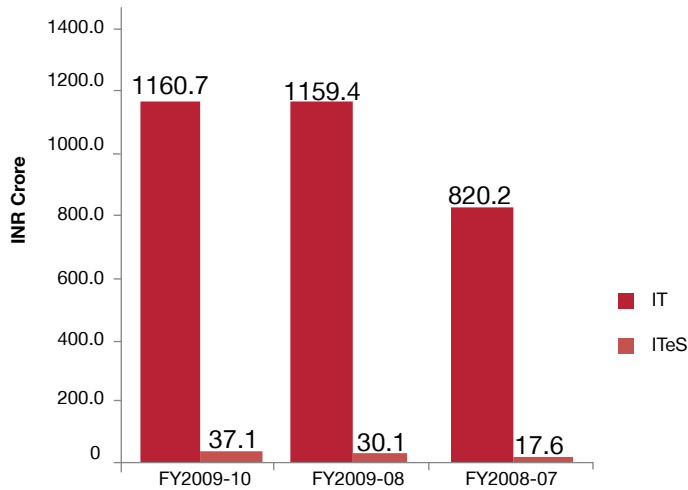
Number of IT-ITeS companies

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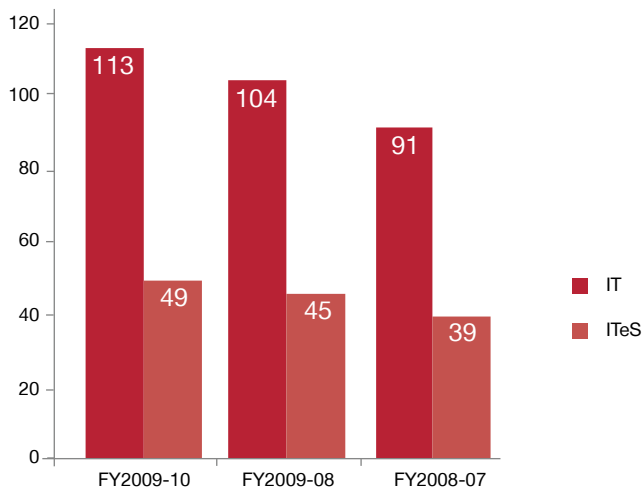
[7] Odisha was known as Orissa till recently. The Lok Sabha passes the bill for renaming the state in November 2010.

government also created required infrastructure for the IT/ITeS industry in the form of Infocity. The data communication gateway of the STPI was operational in 1996-97. During the same time two marquee companies, i.e. Infosys and Satyam (now Mahindra Satyam) also set up their facilities in the city. Early 2000 attracted many big players and the city of Bhubaneswar grew into prominence. Bhubaneswar now ranks among the top 3 (after Thiruvananthapuram) STPI centres in terms of software exports.

Of late, Bhubaneswar is being recognised as the knowledge hub of eastern India. Thus, there is a steady supply of resources for the IT-ITeS industry. The city is one of the earliest cities to have been developed based on a proper city plan (along with Chandigarh). Thus, it has been able to manage the rapid

growth in a much better fashion than its peer cities. The rise in cost of living has been moderate compared to many other fast growing cities. The city has also provided extraordinary stability for operations. Infosys, one of its marquee occupants, has witnessed service disruption of only one day in the last 15 years of operations. Both physical and social infrastructure has witnessed significant improvements to keep pace with the development of the IT-ITeS industry.

Odisha is one of the few states in India to enjoy an electricity surplus situation. Industry experts maintain that the cost of operations in Bhubaneswar is 20% lower compared to a tier 1 city. All of these factors position

Break up of companies

- Multinationals
- Indian IT and ITeS
- Local / Regional companies
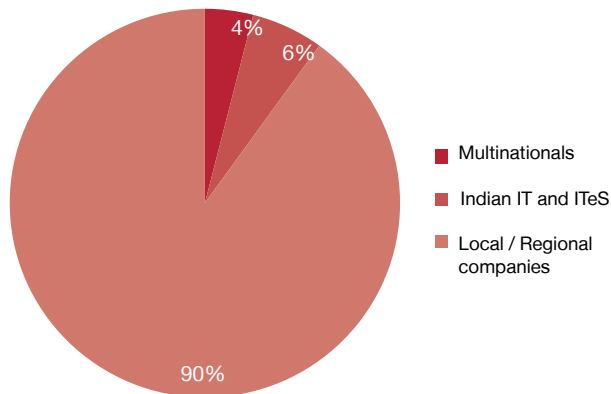
Bhubaneswar as an excellent option in the eastern part of India. In fact, this is the only tier 2 city to host the top four Indian IT companies –TCS, Infosys, Wipro and Mahindra Satyam. Infosys has seen tremendous growth in its operations in last 15 years. They have been able to ramp up to 4,000 employees from a mere 34.

Bhubaneswar, however, needs to work on some areas. The growth of ITeS has been less than spectacular in the city. However, this situation is expected to change once Genpact opens up its centre in the city that will house 4,000 employees. The proposed new IT policy is also expected to provide impetus to product and embedded systems companies. The STPI and the government with its new IT policy are working towards making the city friendlier for SMEs by providing more incubation facilities like data centres, marketing support, software library, and tie ups with foreign incubators. A quick ramp up may face some challenges as the city is building up its office space capacity in a steady manner.

Growth catalysts for IT-ITeS	
Total IT & ITeS employees in the city	12,000
Total number of engineering graduates (including MCAs) passing out every year in the city	20,000
Total number of general graduates passing out every year in the city	50,000
Total available office space in IT parks and SEZs	STPI – 11,000 Sq. ft. IDCO SEZ – 172 Acres land JSS IT Park – 35,000 Sq. ft. IDCO Tower 2,000 – 92,000 sq. ft.
Upcoming IT Parks / IT SEZs	IDCO InfoValley – 300 Acres DLF IT Park – more than 52 Acres K. Raheja IT SEZ – more than 25 Acres IDCO Tower 2010 Mindspace IT Tower OCAC IT Tower – 50,000 sq. ft.

Top IT-ITeS skills available	
IT skills	ITeS skills
Web technologies	Medical Transcription
ERP	E-Commerce
ADM	On Line Education

Top IT-ITeS companies operating out of the city	
IT companies	ITeS companies
Infosys Technologies Ltd.	Edusys Services Pvt. Ltd.
Tata Consultancy Services	Auroinfotech Solutions
Wipro Technologies	Medwrite India Software Solutions P. Ltd.
Mahindra Satyam	RamTech Software Solutions P. Ltd.
Exilant Technologies	Accentia Oak

Cost of operations	
Rentals in IT parks and SEZs (Rs/sq. ft./month)	Rs. 25-40
T1 leased line	1.5 - 2.0 lakhs per annum
Approximate savings for cost of operations (compared to tier 1 cities)	20%

Source: STPI, Bhubaneswar
** Information on break-up of employee base was not available

Chandigarh Tricity

The Chandigarh Tricity (Chandigarh, Mohali and Panchkula) started software exports back in 1998. From 1998, where the export was around 30-40 crores, the Tricity area has come a long way. Today, the STPI in Mohali (which caters to the Tricity) is the top exporter of software among the tier 2 cities in northern India. It is also one of the top three software exporters amongst the tier 2 cities in India (along with Thiruvananthapuram and Bhubaneswar). The city of Chandigarh got a boost for IT investments when the government set up the Rajiv Gandhi Chandigarh Technology Park (RGCTP). Infosys was one of the early marquee

IT-ITeS exports
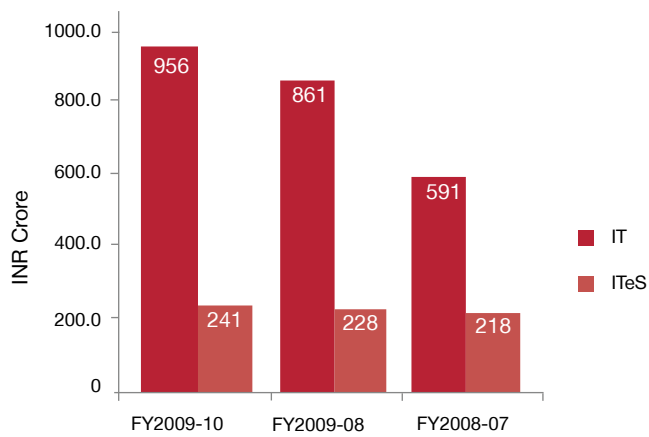
Number of IT-ITeS companies
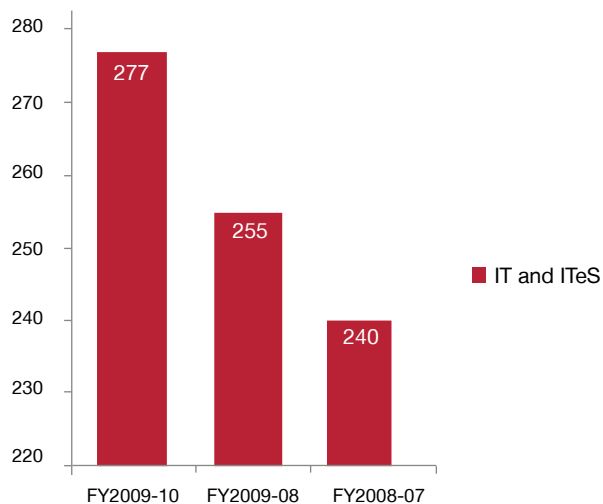
occupants. This put the city on the IT map of India.

Chandigarh, being one of the first planned cities in India, always had an extremely good civic infrastructure and power situation. The city also boasts of an extremely good quality of life. The connectivity to Delhi was also excellent due to the Shatabdi trains and has therefore attracted many companies to consider the Tricity as an alternative location in north India.

The Tricity IT landscape is very diverse as it has a significant contribution from the local industry. Due to the entrepreneurial nature of its workforce, the local industry contributes to nearly 50% of the total revenue. There are some very successful product companies that have set up their facilities in the Tricity region (e.g. there are companies that have products like helpdesk software, virtual environment software). The city is also gradually making

Break up of companies

1%

99%

■ Multinationals

■ Indian IT and ITeS Local / Regional companies

Break up of employees

20%

80%

■ Multinationals
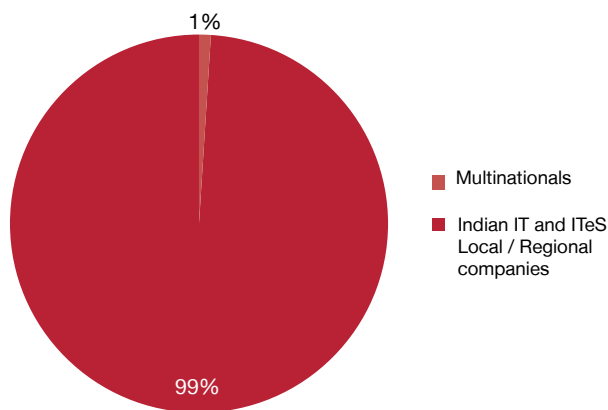
■ Indian IT and ITeS Local / Regional companies
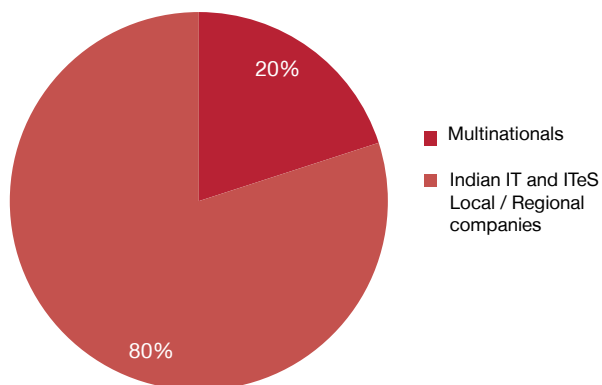
its mark in some niche areas like Search Engine Optimisation (SEO). Recently, the Tricity has also managed to attract the biggest investment in animation for North India. Even though the Tricity is spread across two states and one union territory, service providers seldom get entangled in administrative hassles.

In the Tricity region, Chandigarh has been the biggest contributor to IT/ITeS exports (approximately 65%), followed by Mohali (approximately 30%) and Panchkula (approximately 5%). Chandigarh, as a city faces geographic restrictions and thus, has a limit to which it can develop infrastructure for the IT/ITeS industry. It becomes important that both Mohali and Panchkula take up the bulk share of the new initiatives. The governments also need to augment the education system to bring in more skilled workforce into the system. International airport will also aid the growth of IT/ITeS industry in the region.

Growth catalysts for IT-ITeS[8]	
Total IT & ITeS employees in the city	15,000
Total number of engineering graduates (including MCAs) passing out every year in the city	2,000
Total number of general graduates passing out every year in the city	5,000
Total available office space in IT parks and SEZs	280 Acre (IT Park) 80 Acre (SEZ)

Cost of operations	
Rentals in IT parks and SEZs (Rs/sq. ft./month)	• Rs. 25-30 (IT Park) • Rs.30-35 (SEZPark)
E1 leased line	Rs. 1.50 Lakhs /E1 / annum
Electricity cost in IT parks/SEZs (Rs/unit)	Rs. 4-5/ Unit
Approximate savings for cost of operations (compared to tier 1 cities)	20-25%

Top IT-ITeS companies operating out of the city	
IT companies	ITeS companies
Infosys Technologies Ltd.	Dell International Services
Seasia Consultancy	IDS Infotech Ltd.
Fidelity Information Services (I) P. Ltd.	Emerson Design Engineering Centre
Quark Media House	Agilyst Consulting Pvt. Ltd
Nvish Solutions Pvt. Ltd.	OPK e Services

Top IT-ITeS skills available	
IT skills	ITeS skills
System Software Development	Customer care
Web Based Application	Marketing back office
Embedded System	KPO

Source: STPI, Mohali
[8]This data is for Chandigarh only and not for the Tricity area

Increasing focus on People – an integral asset to the Indian IT/ITeS industry

India's people advantage has been one of the prime reasons for the burgeoning growth of the IT/ITeS sector. Often termed as intellectual capital, people have been the main drivers and value creators. Gone are the days when IT/ITeS industry attracted the best of minds. With all the other sectors moving on a high growth trajectory, the talent war is increasing. Attracting and retaining such an integral asset becomes very critical for the IT/ITeS sector.

The Indian IT/ITeS sector would need to employ around 10 million people to achieve Nasscom's projections of USD 225 billion by 2020, a daunting task indeed, considering the challenges - employability, talent attraction and talent retention.

Employability

Over the years, India has been known for its "demographic dividend" of a younger population compared to developed countries and recent reports indicate that India might have a quarter of the world's workforce by 2025. To retain this edge, India should look at effectively harnessing the potential of its young and productive population.

The employability of this growing workforce has become a big issue across high-growth industries like IT, retail, financial services, telecom and aviation. The need for skilled man-power has gained more importance largely due to increased competition amongst various industries for the limited employable talent that is available. Moreover, competing low cost nations are going all out to impart English language training and other necessary skills to create a talent pool. At the same time, the Indian IT industry, one of the fastest growing industries and also one of the biggest job employers in India has been facing issues concerning availability of an employable workforce.

A recent employability study of technical graduates, by Aspiring Minds, has shown that the employability rate with regard to BPOs and Technical Support Jobs (TSJ) is 38.2% and 25.9% respectively. For the IT services companies, the employability rate is about 17.84% (wherein the company gives 3-6 months of in-house training) - which is lower than the commonly quoted blanket figure of 25% for employability in IT/ITeS sector. For the knowledge process outsourcing (KPO) companies, only 9.5% of the technical graduates are employable. The employability rate for the product companies drops to a low of 4.22% (amongst computer and electronics related branches) (refer figure 19).

To retain its competitive edge, the Indian IT industry requires an industry-ready workforce and not one that needs to be trained/re-trained in-house by companies before they could start working. The percentage of such people is just 5.97%.

To improve the employability of the workforce, the industry has to address the industry-academia disconnect by partnering with engineering and other technical institutes and also by beefing up their in-house training facilities. A few companies have already initiated this, but the effort needs to be more broad-based and should include tie-ups with educational and training institutes in both major and smaller cities, helping them design the curriculum, training faculty in both relevant content and teaching methodologies, offering internships, and setting up their own training schools.

IT companies, especially the larger ones, should also explore the possibilities of investing their huge cash reserves for creating a sustainable educational set-up in alignment with industry needs. This would help in making the workforce more industry facing and in turn, help India retain its global competitiveness. The opening up of the education sector should make a significant difference in creating a more employable workforce.

Attracting talent

The Indian IT/ITeS sector has for long, been the most attractive sector to work in and consequently, has been able to attract the finest talent available. A good working environment, attractive salary compensation, good career growth opportunities and challenging assignments have been the face of IT/ITeS industry jobs. The industry provides an admirable work ambience with facilities like pantry / canteen, library, day care, transport, fitness and recreation facilities.

The situation, however, changed considerably when the IT/ITeS companies went in for salary cuts, down sizing and the tightening of perks to cope with the economic downturn. This has resulted in a number of engineering and management graduates to move their interests to other sectors like financial services, telecom and manufacturing. The rising salary levels and job security in these sectors has further triggered this shift of interest among the graduates and existing employees. It is seen that the churn of experienced employees from IT to other sectors has gone up by 15-20% over the past year.

Figure 19: Employability in various sectors (in %) - Tier 1 cities vis-à-vis other cities
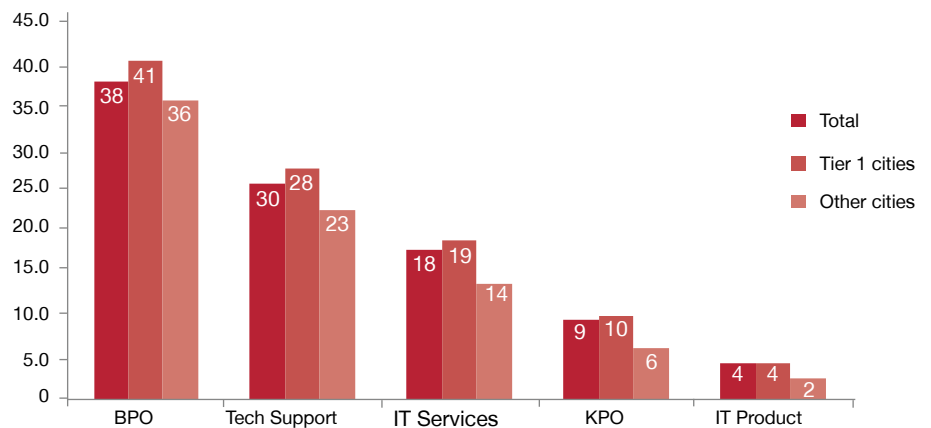
Source: Aspiring Minds

The IT companies are now visiting colleges for campus placements only during the eighth semester of the course, giving an opportunity to firms from other sectors to attract the best talent prior to them. Nasscom has informed its members to recruit graduating students only during their eighth and final semester so that academic sessions are not disrupted.

Nonetheless, to get back to the good old times, many of the IT companies are now focusing on few areas like - having a strong employer brand – which has now become an important differentiator to project the uniqueness of the organisation, building a strong culture, meritocracy as the basis for rewards, gender diversity and inclusivity policies to attract women talent.

Motivating talent

With most of its operations being routine and monotonous, motivating employees seems to be one of the biggest challenges facing the industry today. India's value proposition, as an outsourcing destination, has been its productivity and the quality of work done. As these factors are critically dependent on the morale of the employees, the need to keep the individuals motivated becomes imperative.

The Indian software and services companies have put in place special HR strategies over the last year or so. Increasing salaries has been an important element of these plans. But beyond the money factor, employees do look for other

motivators like global career opportunities, family benefits, higher studies and learning opportunities, career development programmes, etc.

Most of the IT/ITeS companies are also focusing on the above mentioned motivators and other people management tools and strategies to keep their employees happy. For example, one of the leading BPO companies has created a learning environment and has also initiated performance recognition programs. Another mid-tier IT company has been promoting work-life balance amongst its employees with their newly launched flexible working hours policy. Additionally, the company has also been focusing on enhancing the leadership skills of their mid-level management.

Retaining talent

While the above cited factors are essential, job satisfaction through challenging, cutting-edge assignments, and ample growth opportunities are without doubt the major determinants for retention. Retaining talent, especially during the growth phase of the industry, has been a major challenge for companies. With the job market opening up, after a lull during recession, the attrition has been at an all time high this fiscal.

Figure 20: Attrition rates of few IT/ITeS players (in %) (quarter ending Sep 2010 vs. Sep 2009)
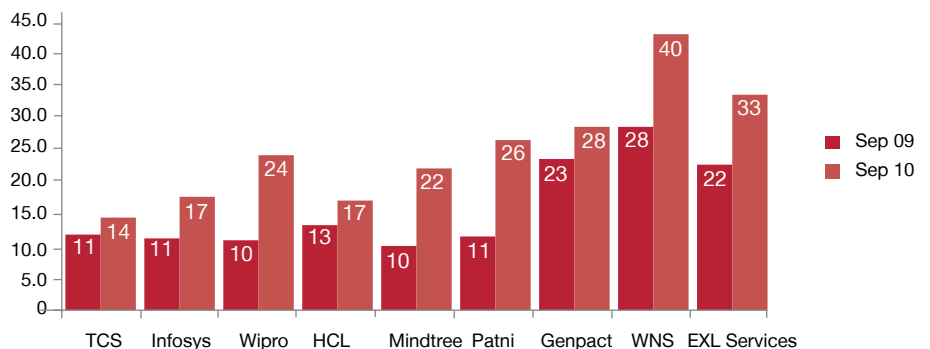
Source: Company results

The attrition rate for IT services companies this fiscal year (as of quarter ending September 2010) was in the range of 14 - 25 percent as compared to 10 - 13 percent last year. The BPO companies reported attrition rates in the range of 28 - 42 percent this year as compared to 22 - 28 percent in the previous year.

Over the past few months, IT/ITeS companies have taken various measures to reduce attrition rates. Firms have increased the pay scale of the existing employees and are also exploring possibility of one more round of pay hike and promotions.

….the onus is on the Government and Industry

To address the above mentioned issues, there needs to be a synergy between the government and the industry. The government should take measures to improve the quality of infrastructure, curriculum and teaching methods in engineering institutes. The companies need to look into various options like rewards, flexible working hours, personality development programs, inspiring leadership at the mid-level, providing a stronger career path to employees to motivate and retain talent. Additionally, the industry should also work with academic institutions for periodic updation of the curriculum to maintain its relevance.

If India has to retain its competitive edge over other outsourcing destinations, the industry and the government will need to work closely together.

As per PwC-CII survey (refer figure 21), the IT/ITeS service providers, in order to retain talent, are focusing on the following top 3 key areas - providing professional training and development, offering competitive rewards and employee empowerment.

Figure 21: Talent retention measures taken by IT/ITeS providers
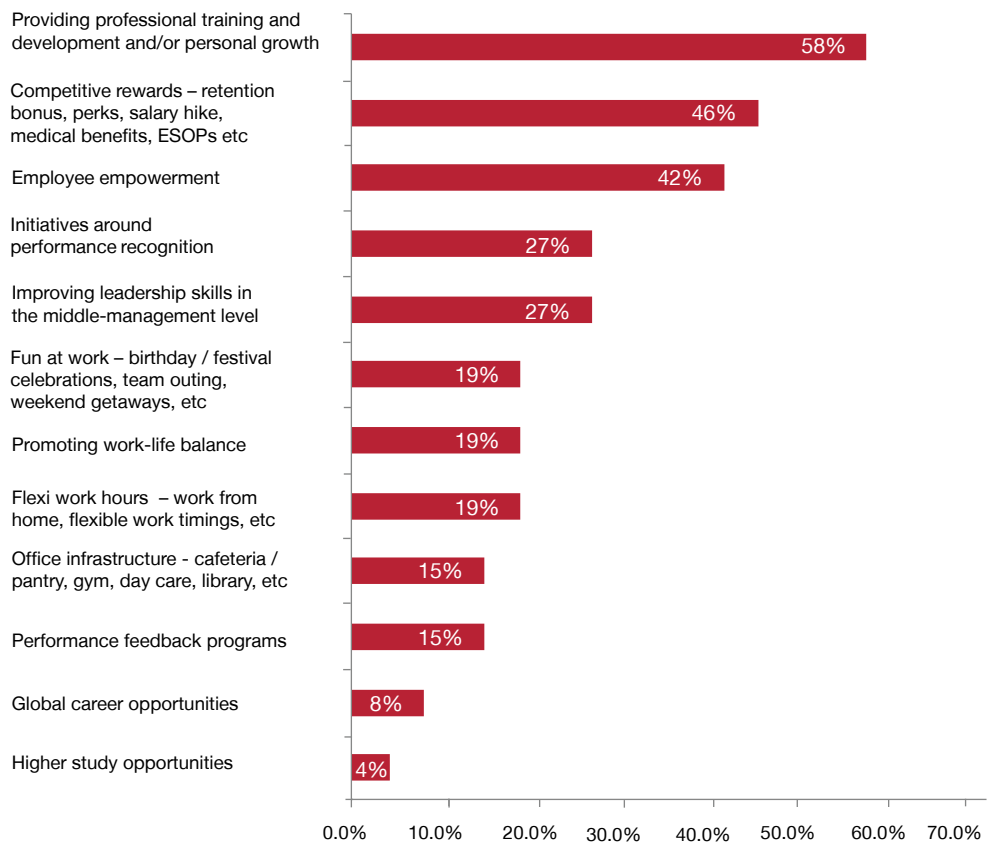
Source: PwC-CII IT/ITeS survey

The growth conundrum - *Operational Management vs. Inspirational Leadership*

The flip side of higher growth is high employee attrition levels. The traditional logic has been to combat attrition with wage hikes with complete acceptance of the fact that "while wage hikes are not the real answer to plug attrition, it is the only response possible in the short run."

In our opinion, the core issue may also be the lack of inspirational leadership, especially at the middle management level. People have grown very fast during the last decade of hyper-growth, to occupy these positions. The middle management layer in the IT industry in India has good, young operations managers with high energy levels and a strong grasp of the operating metrics. However, it is also a layer where the bandwidth is stretched leaving little time for the finer aspects of personal growth like thought leadership and instilling the value system that comes from working for a higher purpose.

Plugging this leadership gap may be the only long term answer to reduce attrition levels in an energetic but restless generation of knowledge workers primarily seeking a "learning experience" and mentoring from the people who lead them.

The Road ahead

A new avatar

The IT industry in India was forced into critical self-examination during the global meltdown and its aftermath over the last two years. Today, the industry is back on its feet albeit with a slightly changed profile with vendor consolidations and significantly higher multi-sourcing deals. However, with the US and UK markets still accounting for more than a lion's share of revenues, a phase of rapid diversification is in order if the Indian industry has to insulate itself from the global turbulence. We can look forward to a lot more activity especially in the European and Asia-Pacific markets in the days to come.

Local is the new Global

The Indian domestic market is fast emerging as a globally significant market for services. Critical areas like Aerospace, Defence and e-Governance beckon Indian IT vendors and global giants eager to participate in the Indian growth story driven by domestic consumption and demand for services.

From Service to Product

Companies are increasingly investing in developing their Indian operations as think-tanks to their global operations.

Companies like GE have already been successful in developing rule changing healthcare solutions through their Indian R&D set up. This is enabling them to establish a presence in the cost conscious SE Asian market in the short run and remain globally relevant in the long run.

Cloud – the new rainmaker

By enabling the efficient use of IT through sharing of resources, high agility, enhanced collaboration and consumption driven costing, Cloud Computing is fast emerging as an answer to the business need of driving down IT costs as a proportion of operating and capital expenditure. However, this is still at an initial stage and there are many regulatory and security related wrinkles that need to be ironed out. We expect this to be a potent disruptive force to the IT service delivery model, over the next five years.

Platform BPO – transaction to value

By marrying technology capability with domain expertise, the platform BPO is poised to push the Indian service provider community into a Strategic Business Partner (SBP) mode from a transactional vendor mode. By moving the service

delivery away from the traditional people-centric BPO, this new approach introduces an element of profit non-linearity which is essential for the industry.

From Employment to Employability

By increasing the industry-academia engagement, many educational institutes are trying to make the curriculum more relevant to the industry needs and thus, enabling the service providers to save on initial training costs while creating a workforce capable of hitting the ground running. We expect to see the engagement deepening in the coming years accompanied by a marked improvement in the quality of workforce.

Cracking the retention conundrum

With recruitment and training costs contributing to the erosion of the cost arbitrage, service providers are focussing more on retention as a means to both retain expertise as well as to drive down internal costs. Towards this end, there has been a renewed focus on innovative R&R mechanisms to make the organisation an employer of choice.

We believe there has to be a very strong focus on leadership coaching, mentoring and development especially across the middle management layer to ensure that the industry is able to train and retain a strong workforce that can convert human capital to shareholder dividends.

Inclusive development – the emergence of new "Bangalores"

The increasing participation of various states in India to tap into India's IT/ITeS growth story has opened up entirely new possibilities for both, companies as well as the people at large. An attractive business centric taxation and benefits regime has seen a greater interest amongst the IT/ITeS provider community as well as a more widespread distribution of wealth across the country. We expect this trend to continue in the near future.

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About CII

The Confederation of Indian Industry (CII) works to create and sustain an environment conducive to the growth of industry in India, partnering industry and government alike through advisory and consultative processes.

CII is a non-government, not-for-profit, industry led and industry managed organisation, playing a proactive role in India's development process. Founded over 115 years ago, it is India's premier business association, with a direct membership of over 8100 organisations from the private as well as public sectors, including SMEs and MNCs, and an indirect membership of over 90,000 companies from around 400 national and regional sectoral associations.

CII catalyses change by working closely with government on policy issues, enhancing efficiency, competitiveness and expanding business opportunities for industry through a range of specialised services and global linkages. It also provides a platform for sectoral consensus building and networking. Major emphasis is laid on projecting a positive image of business, assisting industry to identify and execute corporate citizenship programmes. Partnerships with over 120 NGOs across the country carry forward our initiatives in integrated and inclusive development, which include health, education, livelihood, diversity management, skill development and environment, to name a few.

CII has taken up the agenda of "Business for Livelihood" for the year 2010-11. Businesses are part of civil society and creating livelihoods is the best act of corporate social responsibility. Looking ahead, the focus for 2010-11 would be on the four key Enablers for Sustainable Enterprises: Education, Employability, Innovation and Entrepreneurship. While Education and Employability help create a qualified and skilled workforce, Innovation and Entrepreneurship would drive growth and employment generation.

With 64 offices and 7 Centres of Excellence in India, and 7 overseas in Australia, China, France, Singapore, South Africa, UK, and USA, and institutional partnerships with 223 counterpart organisations in 90 countries, CII serves as a reference point for Indian industry and the international business community.

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Complementing our depth of industry expertise and breadth of skills is our sound knowledge of the local business environment in India. We are committed to working with our clients in India and beyond to deliver the solutions that help them take on the challenges of the ever-changing business environment.

The Indian firm has offices in Ahmedabad, Bangalore, Bhubaneshwar, Chennai, Delhi NCR, Hyderabad, Kolkata, Mumbai and Pune.

Acknowledgement

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