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GROUND VIEW

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ENGINEERING R&D: THE WORLD AT INDIA'S DOOR

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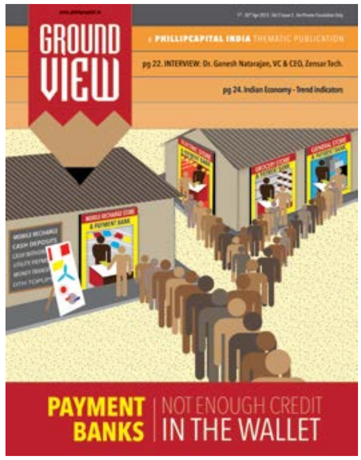

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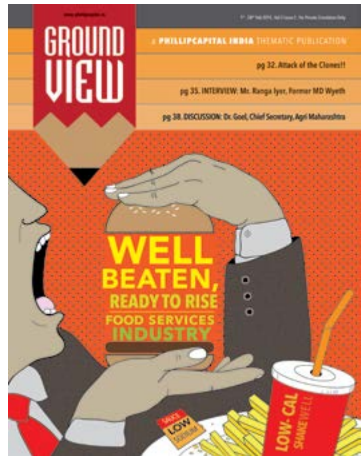

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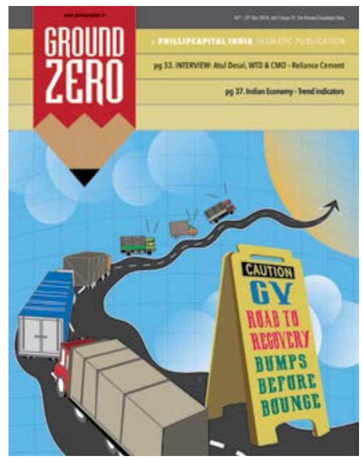

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LETTER FROM THE MANAGING DIRECTOR

The Indian IT sector has come a long way from the traditional cost-arbitrage model that it once operated on. While there has been gradual progress on the quality of work being outsourced to Indian companies, bigger in roads have been created in engineering. Indian IT companies are now engaged with the who's who of global engineering companies and helping them with their research and development work.

With Engineering Services Outsourcing (ESO) emerging as the next big wave for Indian IT companies, apart from the SMAC revolution, we publish our cover story on the Engineering R&D domain and its potential for Indian IT companies. The story "Engineering R&D: The World at India's doors", penned by our IT services analyst, Vibhor Singhal, is an interesting analysis of the evolution of the ESO model, the challenges the segment faces, and the potential opportunity in this space. With the new government's 'Make in India' initiative set to provide a huge impetus to the segment, ERD is surely the space to watch.

We have also interviewed Mr D K Vyas, CEO of Srei BNP Paribas, one of India's largest construction- and mining-equipment financiers with an AUM of around Rs 190bn. We spoke to him about the current situation of the industry and emerging trends in the sector.

Best Wishes

Vineet

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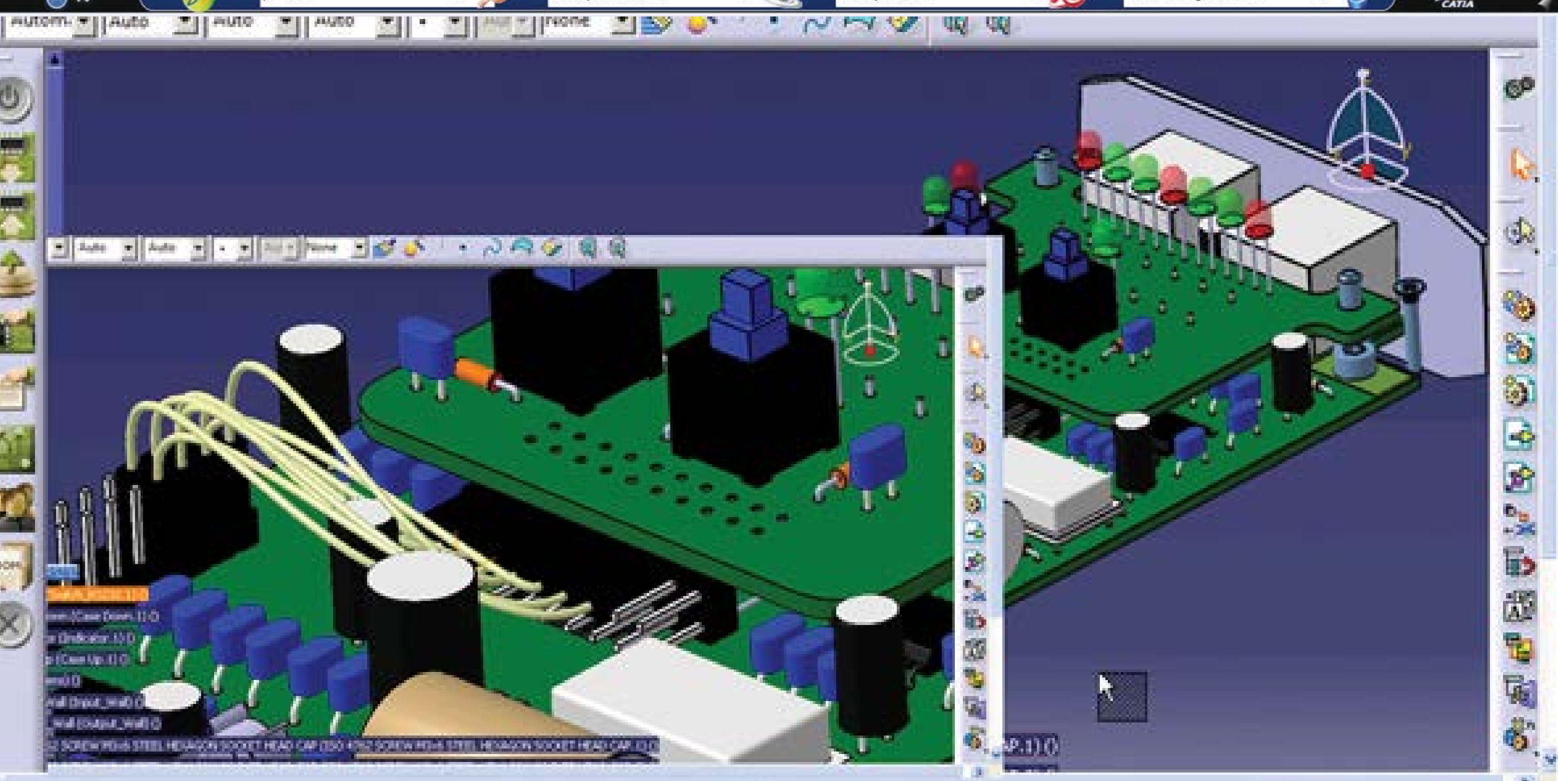


ENGINEERING R&D: THE WORLD AT INDIA'S DOOR

Across sectors, R&D has always been treated with the utmost confidentiality and hence, there has never been scope for any form of collaboration in this field. However, shrinking R&D budgets, reducing time-to-market, and the rapidly evolving technological landscape has forced many companies to consider outsourcing as an option. Due to the changing mindset, the quality of the work being outsourced has evolved significantly. With the largest pool of engineers at their disposal, Indian IT companies (captives and third-party) have a mammoth opportunity before them. Let's read further to find out how the sector has evolved and what challenges and opportunities lie in store...

BY VIBHOR SINGHAL & DEEPAN KAPADIA

The global landscape

Engineering research and development (ERD) has emerged as the next-gen domain for the Indian IT industry. In this domain, Indian IT companies have seen robust growth over the last five years (15% CAGR); more importantly, the quality of the work being outsourced to the Indian companies has evolved significantly—to innovation and development-driven high-end projects from cost-arbitrage driven low-end tasks. Having extensively tapped BFSI and manufacturing across US and Europe through the wide palette of service lines such as ADM, IMS, and BPO, Indian IT companies are now looking at the huge potential in the ERD domain.

Engineering Research & Development – as the name suggests, involves research and development in various engineering domains. The segment is primarily related to sectors that involve high-end engineering capabilities such as automotive, aerospace, telecom, electronics, and medical devices. Companies in these sectors spend huge amounts of resources to continuously develop new products or product enhancements.

In FY14, global ERD spend grew by ~3% to US$ 1.44tn. Automotive and consumer electronics sectors accounted for over 25% of this spend—automotive driven by safety and emission-efficiency requirements and consumer electronics driven by increasing demand for new products and interfaces. US and Europe continued to account for over 2/3rd of this spend with Asia (excluding Japan) constituting 10% and growing fast.

Sectors

Among sectors, automotive, aerospace, electronics, and medical devices are expected to see continued high levels of investment in engineering R&D. Key drivers of higher ERD spends in these sectors are:

Automotive: Regulatory compliance, green energy, enhanced customer experience, energy efficiency, higher electronics content.

Aerospace: Innovation in product design, green energy.

Medical devices: Regulatory compliance, innovation in product design, enhanced customer experience.

Consumer electronics: Innovation in product design, enhanced customer experience, digitization.

Regions

Amongst geographies, US continues to spearhead the global investment in ERD, accounting for over 35% of the global spend, followed by Europe, Japan, and China.

Companies

In FY14, Volkswagen stood out as the highest spender on R&D at US$ 13.5bn. Samsung, Intel, Microsoft, and Roche fill up the remaining spots in the top-5. Among the top-20 R&D spenders across the globe, 10 belonged to the manufacturing sector (primarily automotive and electronics), seven were from healthcare, and three were from software. Geographically, the US and Europe accounted for 15 of the top-20 R&D spenders (eight and seven respectively) while four companies from Japan figured on the list.

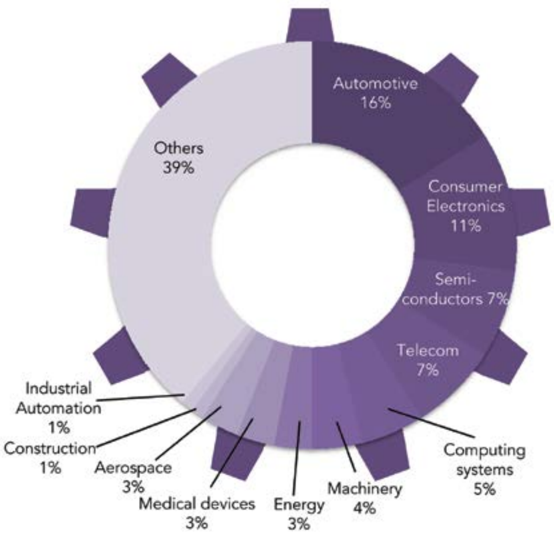
Focusing on ERD expenditure, the following companies claim the top-5 spots in their respective segments:

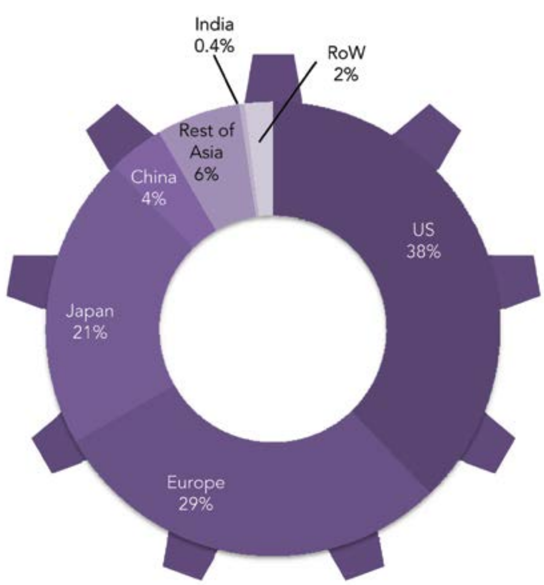
Top spenders on R&D across the globe

Automotive	Aerospace	Electronics	Medical Devices	Core manu-facturing
Volkswagen	Boeing	Samsung	J&J	Caterpillar
Toyota	EADS	Intel	GE	Cummins
GM	Lockheed Martin	Nokia	Medtronic	Komatsu
Honda	General Dynamics	Panasonic	Siemens	Mitsubishi
Damler	Dassault Aviation	Sony	Baxter	ABB

Company	ERD spend (US$ bn)	ERD spend as % of sales	Country	Sector
Volkswagen	13.5	2.5%	Germany	Manufacturing
Samsung	13.4	6.4%	South Korea	Manufacturing
Intel	10.6	20.1%	US	Manufacturing
Microsoft	10.4	13.4%	US	Software
Roche	10.0	19.0%	Swiss	Pharma
Novartis	9.9	16.8%	Swiss	Pharma
Toyota	9.1	3.5%	Japan	Manufacturing
J&J	8.2	11.5%	US	Pharma
Google	8.0	13.2%	US	Software
Merck	7.5	17.0%	US	Pharma

Break-up of global R&D spend



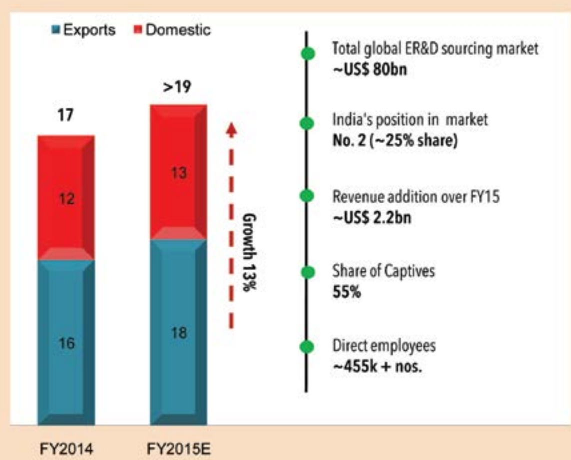


Source: Zinnov

India's position

As per NASSCOM's estimates, the Indian ESO market stood at US$ 19bn in FY15, an addition of US$ 2.2bn over FY14's market size. The country holds the second position in the ERD global sourcing market (US$ 80bn) with 25% market share trailing China.

The Indian ESO market



Source: NASSCOM

Key trends in the Engineering R&D verticals

Key Market Trends

Computer Hardware and Storage
US, China, Japan and Korea are the fastest growing markets in this domain. The market is expected to be $220bn+ by 2020

Medical Devices
One of the fastest growing market globally - primarily due to increased govt spend on healthcare (in US and Europe) and increased instances of lifestyle diseases

Aerospace
Europe remains the leading market - esp France. By 2030, regions other than US and Europe are expcted to own more than half the commercial aircrafts in service

Consumer Electronics
Dominated by US and China - the market is expected to reach $1.3 trillion by 2020. Japan and South Korea are also sizeable markets in this domain

Automotive
While sales in Europe have been muted, US and China have been growing at significant pace. The market is also expected to witness higher expenditure in coming decade on the back of enviromental norms and higher automation

Semiconductor
Asia continues to account for over 50% of the market, aided by Japan and South Korea - SE Asia will remain a dominant market

Telecom
India and China are fulfilling the growth prospects for the industry - which is facing decline in mature markets of US and Europe

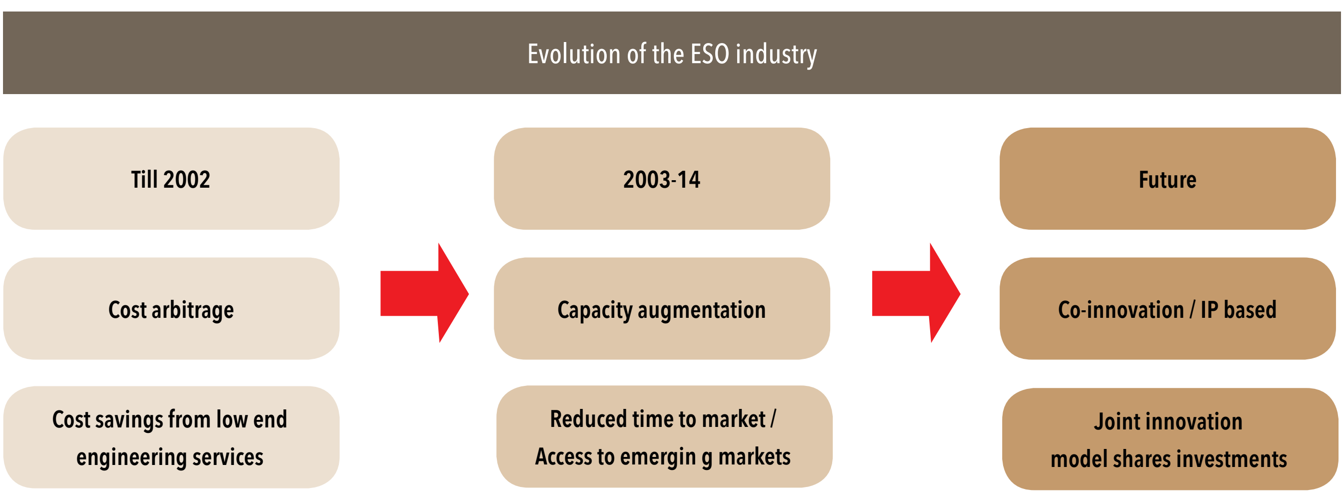
Evolution of the ESO industry

Traditionally, R&D has been perceived as intellectual property and a core activity. Outsourcing or partnering for R&D was considered a threat to the functioning of an organization. However, lately managements have been forced to consider outsourcing ERD due to global competition, reducing time-to-market for products, and cost pressures. This shift has led to a significant change in the ERD services portfolio, with greater emphasis on product engineering and innovation compared to staff augmentation. The focus is not on products alone, but also on the ecosystem of services around the product, including its geo-specific variants and associated platforms.

The evolution of the Indian ERD Outsourcing (ESO) industry can be broken down into three phases defined by the nature of work and the changing outsourcing business model.

Generation 1, until 2002—cost arbitrage: The first stage of ESO was largely based on cost arbitrage. Original Equipment Manufacturers (OEMs) and Independent Software Vendors (ISVs) leveraged Engineering Service Providers (ESPs) for engineering support by using staff-augmentation models. ESPs were able to provide scale, whenever and wherever required, with abundant talent pool across the globe. Project execution was limited to basic activities such as scanning and digitizing of engineering drawings to engineering change order management. Product engineering was considered to be a core and IP-centric activity and therefore beyond the realms of outsourcing.

2003-2014—capacity augmentation: The second stage was the movement to capacity augmentation from pure cost arbitrage. The second stage can be broken down into two phases: (1) 2003-2010 and (2) 2010-2014. In the first phase, growth in ESP was driven by customers' need to reduce time-to-market, which the ESPs provided by use of relevant manpower and capacity augmentation. ESPs helped them to accelerate product development and provide scale on need basis. The second phase was largely to gain access to emerging markets, as these markets became important due to rising customer spends. However, project execution remained largely related to non-core product development and helping customize on-going designs for faster market launches. Partial product engineering was outsourced; but core R&D activity



and IP-centric were still off limits for outsourcing.

The future, 2014 onwards: The third stage is largely driven by globalization, reducing R&D spends, and product lifecycle pressures. Managements are focused on developing effective outsourcing strategies that drive significant improvement in global ERD operations. The ESO market has seen substantial growth and has evolved to encompass a broad range of new product development, value engineering, and product-support functions. Going ahead the growth of the ESO industry will be driven by product innovation capabilities and by how players collaborate with customers to share the risk-reward of R&D investments.

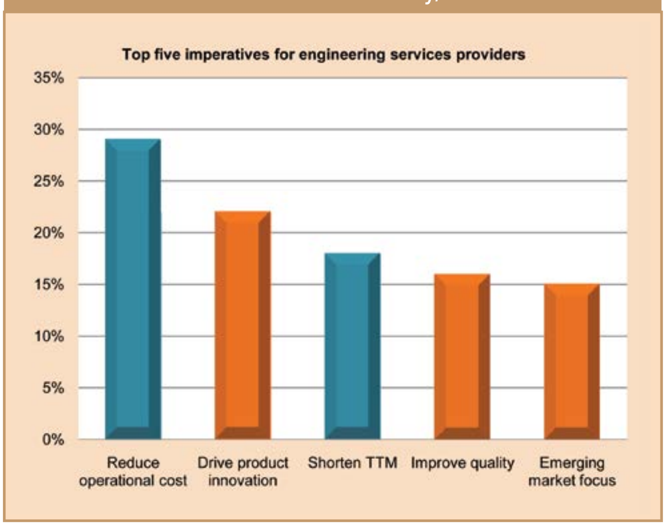
Levers for outsourcing R&D

There are four major motivations for outsourcing: efficiency, market, resource, and technology.

Efficiency factors: Outsourcing largely to improve efficiency in terms of cost and increase the management bandwidth to focus on core activities. With reducing budgets and R&D spends, companies are looking to expand their footprint in low-cost countries to leverage the cost differential in the engineering effort.

Market factors: Increase in per-capita income in emerging markets has resulted in increasing consumer spends. Also, phased launches across the globe are no longer considered effective, as global/local competition can enter emerging markets quickly due to the shortening product lifecycles. Outsourcing has helped customers improve access to global markets with an ability to address emerging and adjacent markets simultaneously. It can also help companies meet temporary product development needs, without imposing a long-term commitment.

US corporate priorities and spending patterns for R&D/PE servies: IDC survey, 2013



Source: HCL Tech

"It all started with GE taking the leap of faith in early 90s, and outsourcing part of their R&D work - other companies soon followed"

- A senior manager in one of the top-4 Indian IT comapnies, with over 17 years of experience in the ERD domain.

Resource factors: As the technological complexity of product engineering is increasing at a rapid pace, it is becoming increasingly difficult for ERD companies to get a flexible pool of engineers with the relevant capabilities and competencies. Outsourcing allows them to address technological and process innovations, when size and/or time constraints prevent them from establishing these capabilities in-house. Obtaining the necessary expertise and skills outside can help a company move ahead of its competitors.

Technology factors: The world is becoming more connected, with consumers expecting seamless experience across devices with advanced features and functionalities. OEMs and ISVs need to ensure that the product platform can integrate with an entire ecosystem of devices with different form factors and can be consumed in different manners (touch, voice, and video). All of this has increased the importance of embedded software as a means to merge the device with the application to provide a seamless experience.

Perceived barriers and threats

While the levers for outsourcing are fairly obvious, the customer's mind set towards outsourcing, especially R&D, remains fraught with barriers. The perceived barriers to R&D vary according to the clients' industry, size, and R&D

spends. The perception of barriers increases as R&D activities increase. The companies' need to guarantee proximity to clients is one of the main barriers for ERD sourcing. Overall, if the costs of the sourcing operation exceed benefits it is generally considered an important barrier.

Barrier 1: Fear of lack of control over product development

Most companies consider their product-development roadmap to be an important differentiator and do not show willingness to disclose details of their next-generation products and solutions for fear of leakage to competitors. This leads to fear of outsourcing work related to product development.

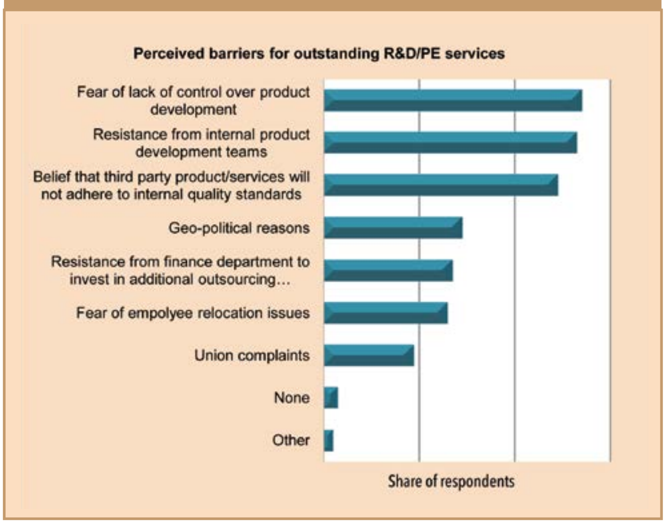
Barrier 2: Quality of outsourced work

Companies believe that outsourced work created by third-party vendors will not adhere to their quality standards. The belief comes from loss of complete control over labour and processes. There is a widespread perception that vendor employees are less loyal and have much lower incentive to produce good work at a reasonable pace.

Barrier 3: Geo-political reasons

Geo-political barriers arise out of diversity across countries and include cultural barriers, physical distance, time difference, and political instability.

Perceived barriers to outsourcing



Source: HCL Tech

Besides these, other major barriers are

- Legal or administrative barriers
- Taxation issues
- Trade tariffs
- Concerns about employees (including trade unions)
- Concerns surrounding violation of patents and/or Intellectual Property Rights
- Conflicting social values of companies
- Linguistic or cultural barriers
- Difficulties in identifying potential/suitable providers abroad and once identified, educating them (vendor development).

What can be outsourced?

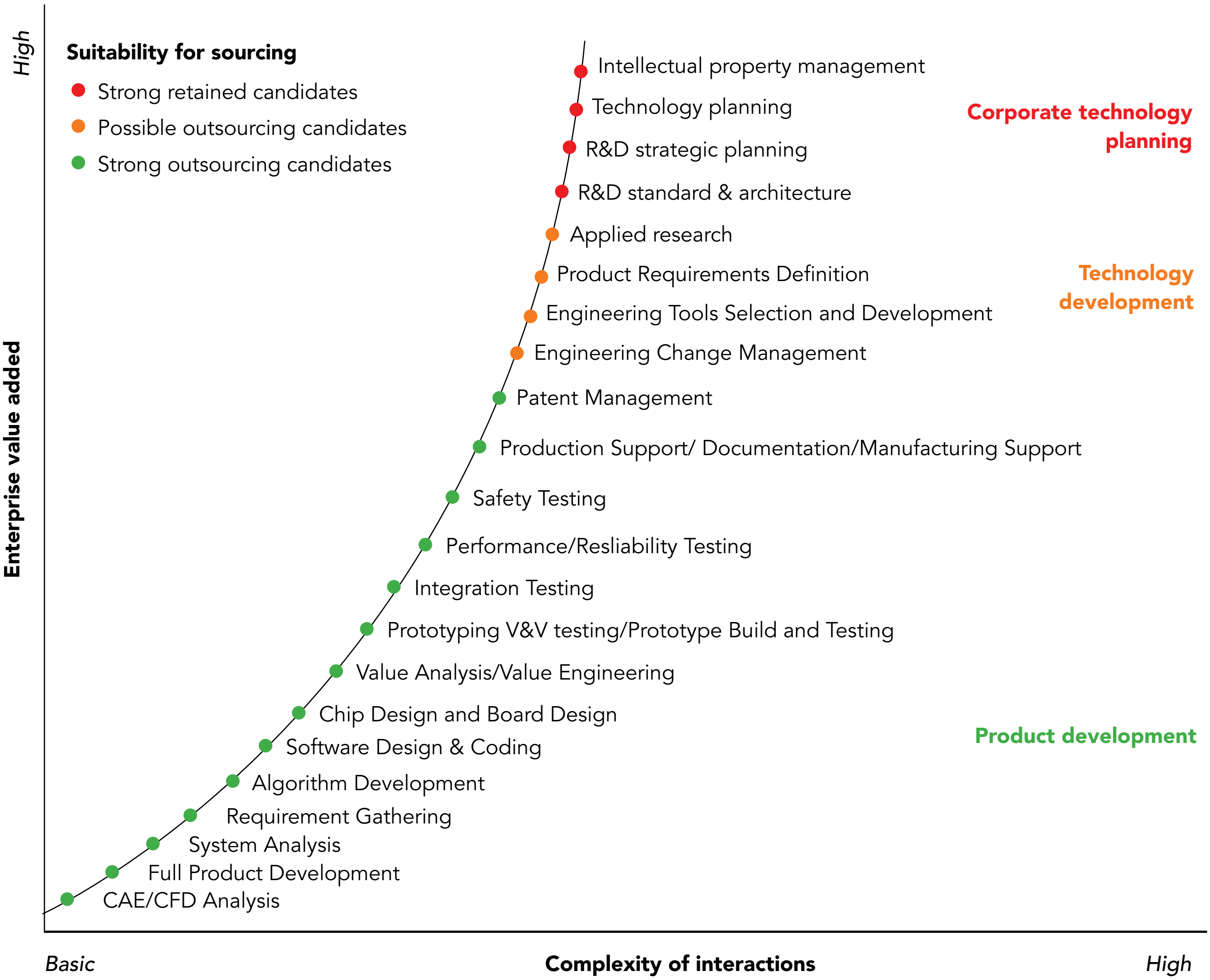
ERD is currently in its early days of outsourcing (relatively) where customers are facing the same kind of questions that haunted those who chose to outsource functions such as CRM and ERP a while back. The key question is which function to outsource and which to retain in-house. It represents a classic dilemma for any industry, where the company tries to determine what its 'core' business functions are (critical to success, important to clients) and what are relatively 'non-core'. Once the company is able to resolve this dilemma, it just needs to map the delivery capability of the vendor—which is a function of the vendor's vertical expertise, global footprint, scale, and value proposition—and take the decision accordingly.

While the product development and lifecycles of various ERD verticals (aerospace, automotive, consumer electronics) differ significantly, functions that they can/cannot, or rather would/would not outsource are fairly similar.

Over the last two decades, ESO vendors have established strong credentials in product lifecycle management (production support, integration testing, and software design) by building/investing in vertical domain knowledge and technical competencies. Because of these enhanced capabilities, the range of functions that are strong candidates for outsourcing in the product development stage has expanded significantly.

Building on the domain knowledge and technical expertise of the last two decades of work in the ERD space, these ESO

The outsourcing matrix



Source: ISG

vendors have expanded their value analysis/value engineering (VA/VE) proposition across all verticals, especially in the last five years. They now offer full services for computer-aided engineering/computational fluid dynamics (CAE/CFD) analysis, full product development, prototype build and testing, and manufacturing support across nearly half the industry verticals. Customers are increasingly outsourcing domains such as applied research, system analysis, and algorithm-development.

However, the outsourcing vendors still have a long way to go, before they can hit upon the most lucrative target of getting their customers to outsource corporate technology planning. The domain would include R&D architecture and planning, IP management, and technology strategy.

It is interesting that outsourcing growth in mechanical and hardware product development has been half of the outsourcing growth in electronics, software, and embedded software product development. The main reason is that manufacturing (broadly) requires far more specific expertise in industry, domain, and products than electronics/software. Because of this, growth trajectory for outsourcing in the manufacturing vertical will always lag behind electronics and software.

Special section – The future of Engg services

Exclusive contribution by the Information Services Group (ISG)

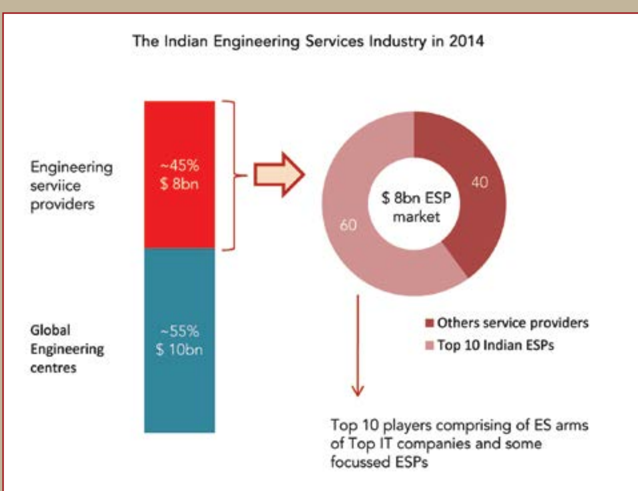
Engineering Services Redefined – It'sa new game.

Engineering services (ES) has been defined as services that are required across the lifecycle of a product,from its conceptualization to its retirement. Traditional product design and development, which is core to the engineering function, leveraged Information Technology through tools and databases and some automation of processes. Now IT is enveloping products and integrating more tightly with engineering. The change will impact not only how products are being made but also how enterprises will engage with engineering service providers.

India-based ES providers and delivery centers account for nearly a quarter of the overall engineering services market (outsourced or offshored), market that is worth approximately US $80 billion annually. NASSCOM predicts that the engineering services revenue base in India will grow from $18 billion in 2014 to $30-38 billon in 2020, with a CAGR of 12-13 percent, a growth rate greater than the overall IT-BPM industry. With this growth, we believe, the virtual oligopoly enjoyed by a dozen plus India-based service providers is expected to break up as the new service delivery and pricing models evolve.

Engineering Services as it exists today

Seen as an extension of an enterprise's engineering organization, outsourced engineering services have conventionally been less intense than IT Applications, IT infrastructure or BPO. ES have been traditionally delivered though time-and-material contracts of short project durations (12-18 months) and restricted to relatively small groups of service providers based in India, China, parts of Europe and a few others.



In 2014, the Indian ES industry was worth about $18 billion. It could be divided into Global Engineering Centers (GECs) and the Engineering Service Providers (ESPs). The GECs constituting about 55 percent of Indian the ES industry are extension of Engineering and R&D arm of parent organizations, many of which are global technology giants. As per estimates,over half of the top global 500 R&D spenders operate in India through these GECs.

The other 45 percent of the industry revenues come from the 25 odd ES providers that make up large or medium-sized Indian IT companies, medium or small-sized ES-focused Indian firms (many of which are backed by Private Equities) and offshore delivery centers of global IT companies.

The Change and the drivers behind it

In the next five years, we will see some significant changes in the way Engineering Services is delivered:

Information technology and electronics are permeating the product engineering process, reshaping the way engineering service is being demanded and consumed. The top three drivers for change are

- Embedded software is adding intelligence to the product
- Internet enablement in products and services is requiring a direct interface between engineering and IT
- IT-enabled and engineered products are intersecting with manufacturing constructs, like the 3D printing

The Second wave: The Internet of Everything is disrupting engineering services delivery: The advancement in sensor technology, wireless communications, distributed computing and big data capabilities are enabling the Internet of Things (IoT) to rapidly transform the technol-

Changing landscape of the engineering services industry

Parameter	AS IS – 2015	TO BE - 2020
Offshore-Onsite delivery	Offshore: 80%;Onsite: 20%	Offshore: 60%; Onsite: 40%
Business Model	T&M/Staff Augmentation: 70% Fixed/Outcome based, others: 30%	T&M/Staff Augmentation: 50% Fixed, Outcome based, Risk-Reward: 50%
Key Drivers	Cost, Scale and Skills	Operational excellence and Innovation

ogy landscape. Information Technology is permeating products and services and creating a profusion of data and devices. This is creating unique opportunities to create intelligent engineering applications to customize, monitor, consume and engage the entire product experience.

Every company is now a software company: Across industries, software is the new interface for usability of products and services. Software plays a crucial role in acquisition, retention and satisfaction of end-users today. The ability of a product to capture its own usage data and establish a continuous feedback loop to its engineers and designers is leading to agility in product development and quicker development cycles.

Increasing intelligence in products is transforming traditional products into services

Furthermore, OEMs are increasingly moving to deliver their products 'as-a-service' and using software applications to define the customer experience. These trends have spawned huge demand for software engineering around newer and more engaging digital applications. As these trends emerge and the new coalition between IT in Engineering becomes more widely known,the field will experience aggressive growth, delivering on the NASSCOMs predictions.

The Third Wave: The Integration of IT, Engineering and Manufacturing will become the next BIG thing

As technology evolves, manufacturing is becoming an integrated part of the mix, creating the third-more pronounced wave of change. Initiatives such as Industry 4.0 in Europe and the Industrial Internet in North America are enabling the creation of the 'digital shop floor'. We expect this to happen in two phases:

Phase 1 – Evolution of the digital shop floor: This includes the integration of previously silo information systems in an enterprise like the Enterprise Resource Planning (ERP), Product Life-cycle Management (PLM), and Manufacturing Execution Systems (MES) among others. Such integration will increase productivity, optimize operational costs, enhance equipment utility, improve safety for employees and lessen environmental implications. Equipped with the right tools, skills, and key partnerships, ES providers are expected to play a key role in this development.

Phase 2 – Extending Fabless techniques to discrete manufacturing : The second phase will be based on more

Waves propelling the engineering service industry

	Technology Shift	Industry Examples
Wave 1, 2000-2010	Embedded software in the product and product ecosystem	- Auto manufacturing – telematics and infotainment - Healthcare – medical devices and implants - Consumer electronics – embedded intelligence in white goods
Wave 2, 2010-2017	IoT/M2M adoption and Digital transformation. (IT envelopes the product)	- Auto – V2V, V2I, driver assistance - Smart homes - connected home appliances - Healthcare- remote and continuous monitoring - Engineering information management
Wave 3, 2015 onwards	Integrating manufacturing with engineering and IT systems; and 3-D or Additive Printing (IoT evolution)	- Smart manufacturing - PLM-MES-ERP integration - Digital oil fields – integrated and optimized - 3-D and additive printing application

Key IoT application across Industries

Automotive	Connected car, advanced driver assistance Vehicle to Vehicle (V2V) and Vehicle to Infrastructure (V2I) communication
Energy/Utility	Smart Grid, smart buildings/energy consumption, proactive maintenance of production critical & expensive equipment
Healthcare	Remote monitoring, real-time & continuous clinical care, wearable devices, early interventions

disruptive concepts like additive manufacturing or 3-D manufacturing. As 3D printing becomes more widely applied, there will be immense opportunity to leverage it for economic growth. The 'design-to-print' concept will impact the maintenance and repair requirements and dramatically cut manufacturing costs and time.

Imagine a washing machine that can suggest the replacement of a spare part through a smart platform. The communication sent to the local vendor triggers a real-time spare part printing in a fraction of the time and cost required to otherwise source from a remote warehouse. Or consider 24x7 monitoring of the production of critical and expensive infrastructure equipment in which a predictive maintenance system generates a request to trigger a real-time 3-D printed replacement, minimizing productivity loss and cost. The 3-D printing concept is more operational than most people believe. Today, the hearing-aid industry is based on the simple but powerful application of 3-D printing.

But to ride the wave, ES delivery models need to change

To realize the full potential of these growth opportunities, engineering services delivery model needs to change.

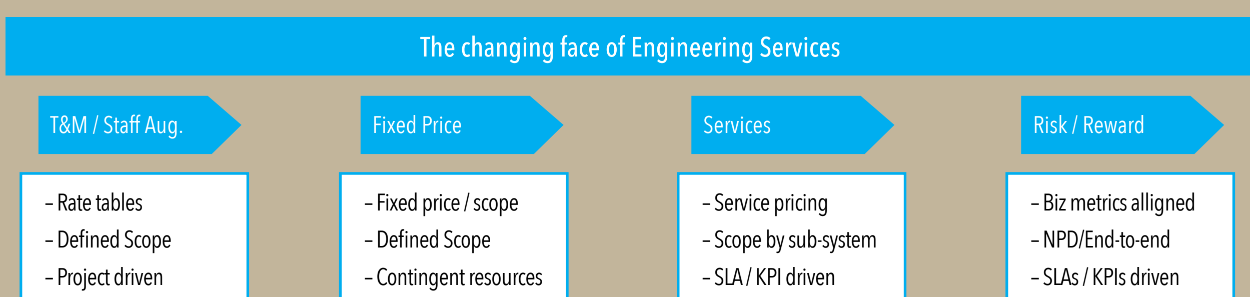
Global Engineering Centers that are currently entirely focused on engineering products will need to address the challenges of IT-enabled engineering by broadening their scope and enhancing their investments in new processes and technology. They will need to create integrated service models that add measurable value and innovation to the parent enterprise. GECs must also leverage the higher level of experience, exposure and investments of ES providers in a collaborative model.

Managed services contracts for ES providers will need to move away from the traditional engagement models to modify current thinking and demand more value and tighter service integration. This will include a combination of pricing aligned to the customer's business metrics, rigorous service level agreements and contractual operational efficiency and/or innovation. We see the business model slowly shifting to one with greater sharing of risk and reward between the customer and the service provider, transforming the role of the latter to a more strategic engineering partner than a mere vendor supplying engineering services.

So what's the point?

As service delivery evolves,we will see two important points:

- Enhancing the value of Global Engineering Centers in enterprises will result in
  - ✓ Stronger leverage of the centers through an integrated service delivery model
  - ✓ A more trusting and nurturing relationship with the service providers
  - ✓ A measurable and benchmarked value proposition to the enterprise
- Engineering Services will evolve to reflect more skin in the game for the service providers, much larger engagement portfolios and governance structure that enable innovation and topline & bottom line growth for the customer.



Models for outsourcing ERD

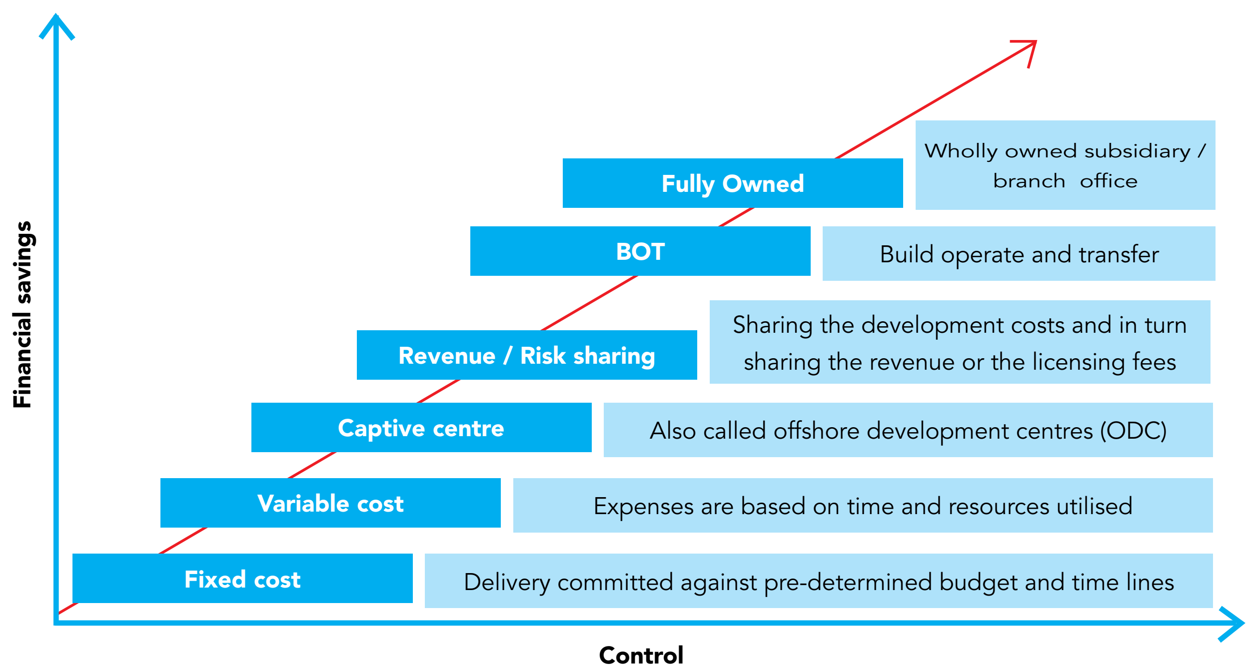
Typically, engineering services continue to be delivered primarily through hourly, daily, weekly, or monthly rates-based pricing models, staff augmentation relationships, or time and material (T&M) projects of various forms. These less-mature resource-based pricing models reflect the conservative nature of the client base; specifically, the lack of sourcing maturity within the engineering services community.

However, of late, buyers of engineering services are shifting towards more mature and advanced sourcing relationships that provide more predictable, stable, and higher quality of services and deliver the anticipated and contracted value to them. Chances of product success are higher if the service providers also have financial incentives to achieve business outcomes and hit target service levels and performance metrics.

Fixed cost outsourcing/subcontracting is one of the fastest methods and is best applicable for a short-term (project), when the outsourcing element is clearly a separate function—the two parties agree to a fixed cost that includes the vendor's margins. The control of the project (budget, timelines, and quality) can be a challenge here. Also, the IPR issues need to be considered. This model requires constant information sharing. Companies usually start with this model and graduate to other models over a period.

Variable cost outsourcing is a contract where the work is paid by the actual working hours and resources used (the standard industry time-and-material format). Here the buyer gets a better picture of the actual costs and price levels than in the fixed cost model. Also, if the project is done in phases, the risks are generally lower, as it is possible to regularly follow the development of the work.

Models for outsourcing



Captives With IP being one of the biggest concerns in the ERD space, many companies are using captives to simultaneously preserve control and exploit the benefits of outsourcing. On a large or long-term operation level, captives provide lower costs than prices charged by vendors. Recently, captives have been rapidly expanding their engineering capacities in India. With the Indian government encouraging FDI in setting up R&D facilities (captive R&D centres) many multinationals have increased investments in R&D in projects.

According to an Infosys study, about 70% of companies that have set up captives in India have done so through wholly owned subsidiaries. More innovative models, which involve a financial or operational partnership (e.g., JVs) with established Indian entities, are not widely popular. Negligible numbers have been created on a Build-Operate-and-Transfer model.

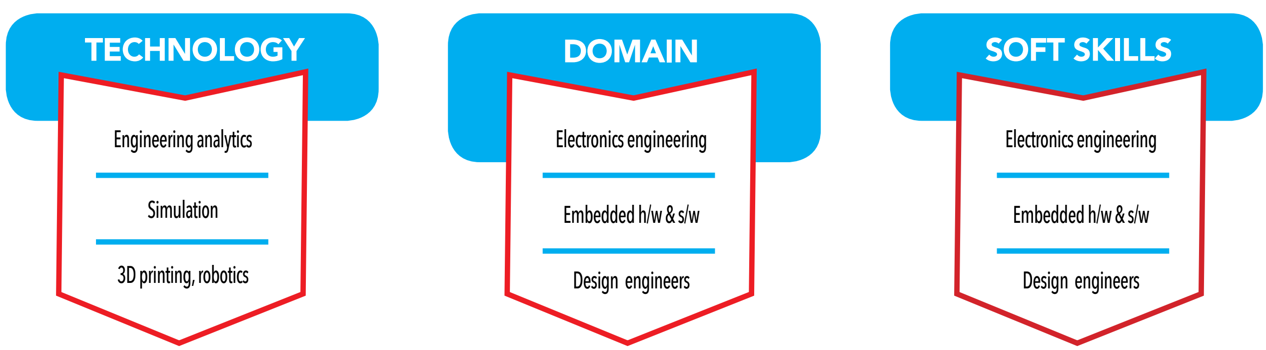
Difference between ESO and other IT service lines

ERD is fundamentally completely different from other traditional service lines, which constitute the portfolio of IT-services companies. While traditional service lines such as ADM, enterprise application and IMS require little engineering background and training, ERD requires a high level of understanding of engineering concepts and principles. Also, the kind of training that is required for ERD service lines is completely different from other domains—traditional service lines require a 'developer' to be trained in various coding languages and platforms (C++, Java, .net) while ERD requires 'engineers' to be trained on various CAD/design platforms (CATIA, SolidWorks, Pro/E). The deliverables are also completely different for traditional service lines and ERD.

Poles apart – ERD and other traditional IT service lines

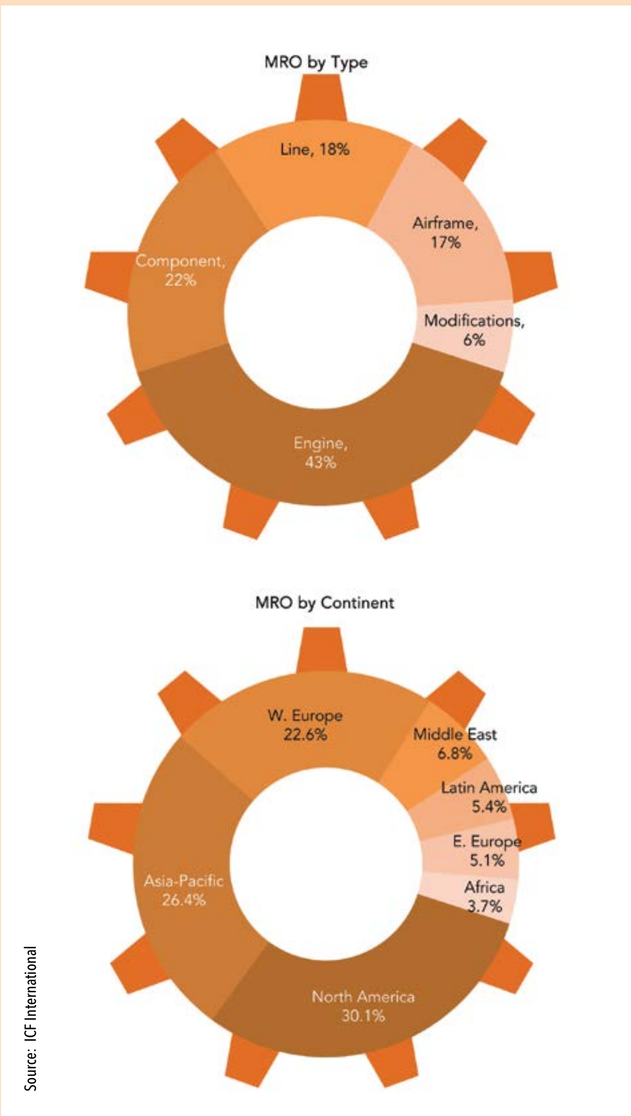
Parameter	Traditional service lines	Engineering research and design
Educational/technical qualification of the 'developer'	Software developers	Engineers–preferably Mechanical/Electrical
Training to be imparted to the 'developer' before induction	Various software platforms like Java, .net, C++	Various engineering design platforms like CATIA, SolidWorks, Pro/E
Nature of project deliverable	Customized software solution, with post-delivery maintenance	Parts of the Product Life-cycle Management (PLM), that can be integrated with various such deliverables from across the globe
Failure risk	Medium - Problems in the deliverable can be fixed in post-delivery maintenance period	High - Problems in deliverable can lead to faulty product design for the client; can lead to potential loss of client
Major verticals	BFSI, manufacturing, telecom - across the spectrum	Manufacturing - auto, aerospace, consumer electronics; healthcare - medical devices
Project duration	Medium to long: varying from 2- 7 years (for IMS)	Short: Less than 12-18 months

Skills in demand for ERD services



Case Study – MRO: A mammoth opportunity

Maintenance, repair and overhaul (MRO) is a sector that involves overhaul, repair, inspection, and modification of an aircraft/automobile or its components to keep it operational. The global aircraft MRO market is estimated to be around US$ 61bn (annual revenue) and is expected to see a CAGR of 3.8% over 2012-2020. India's current MRO market size is estimated to be around US$ 1200mn and is expected to see 13% CAGR for the next five years to reach US$ 2.2bn by 2020.



MRO market segment & type of MRO check

Line Maintenance:
* Performed approx. every 100-150 flights hrs
* Usually done overnight

Engine Overhaul:
* Performed approx. every 12-18 months
* After every 5000 hours

Airframe Heavy Maintenance & Modification:
* Most comprehensive check
* Approx. every 4-5 years

Component MRO:
* Performed approx. every 3 months
* Every 500-600 fit hours

Market segmentation for MRO

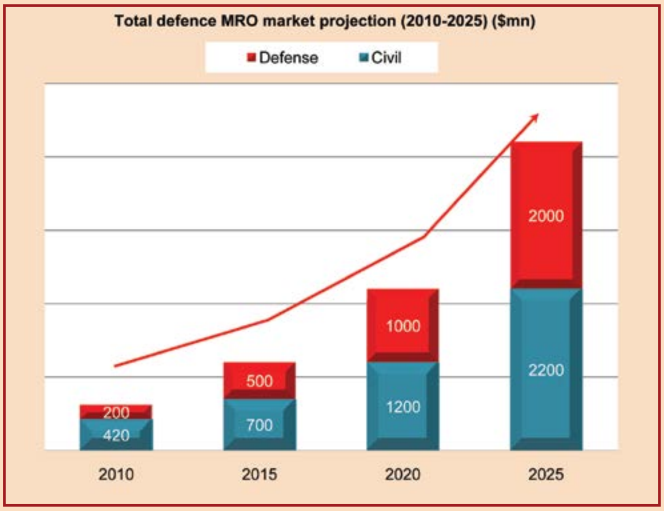
The market for the aircraft MRO sector is typically divided into four major segments, which include airframe heavy maintenance and modification, engine maintenance, line maintenance and component maintenance and modifications.

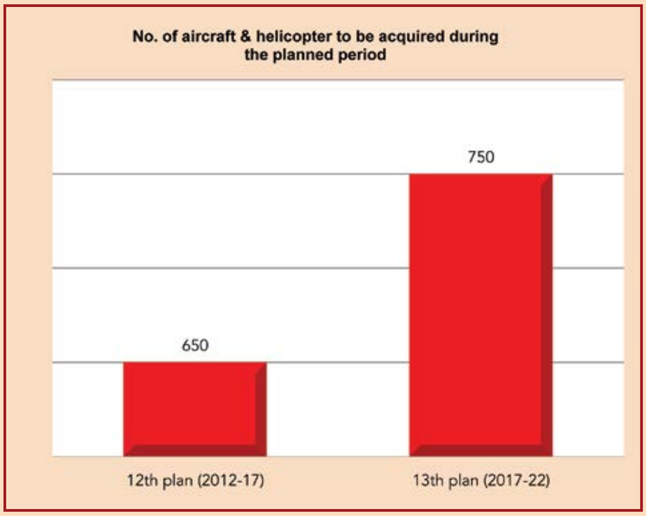
Estimated overall market size

The Indian MRO sector has the ability to absorb technology transfer at depot level for aircraft as well as components and has the potential of becoming the international hub for MRO needs. For a reputed MRO there is a huge market waiting to be tapped, especially considering that the engine, airframe, and MR blade & hubs facility is non-existent. Further, retro-fitment of essential components such as CVRs, FDRs, transponders, sand filters and even interiors is needed desperately.

Considering the increasing civil and defence spending on MRO every year, the total estimated market size of Indian MRO market in the next 15 years, which comprise of civil and defence spending (US$ 28.9bn in civil MRO + US$ 18.8bn in defence MRO) during the period from 2010-2025 is estimated to be around US$ 47.7bn.

The opportunity also originates from the fact that location-wise there are no MROs facilities between West Asia and South East Asia, and India is strategically located for over-fly-

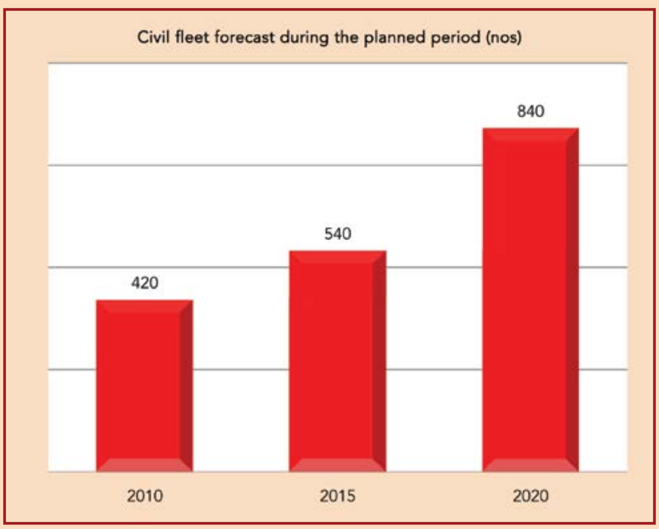




ing and transiting. In fact, there is no MRO hub within the 5 ½ hour fly zone over India.

Indian civil aircraft MRO market

The Indian civil aviation MRO market is at a nascent stage and at US$ 700mn in annual revenues, it represents only 1% of the total global MRO market. However, Indian carriers are expected to double their fleet size by 2020 to 900-1000 aircrafts. The rapidly growing aircraft fleet, growth in domestic traffic, and the increasing age of Indian aircrafts will lead to significant growth in MRO activities in India in coming years. By 2025, the market is expected to grow to US$ 4.2bn (CAGR of 13.5%). However, this would also be a small fraction as compared to China (US$ 2bn) and Singapore (US$ 5bn).



Indian defence MRO market

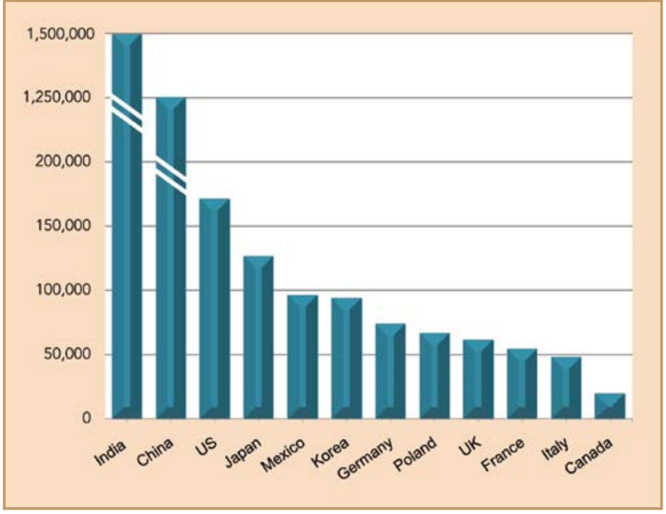
The Indian defence MRO currently stands at US$ 500mn in annual revenues – a paltry 0.5% of the total global MRO market. It is expected to grow to US$ 2bn by FY25 (15% CAGR). India is poised to become a large defence aircraft market – as the necessity for military MRO capabilities increases with increase in military expenditures.

The shelf-life/life-cycle of a typical aircraft/helicopter spans about 25-30 years. Considering that the age of more than 50% of its fleet is above 20 years, the IAF will have to replace these with new procurements in the next 10-15 years. Around 650 aircrafts are estimated to be acquired during the 12th plan period compared to around 300 during the last five years.

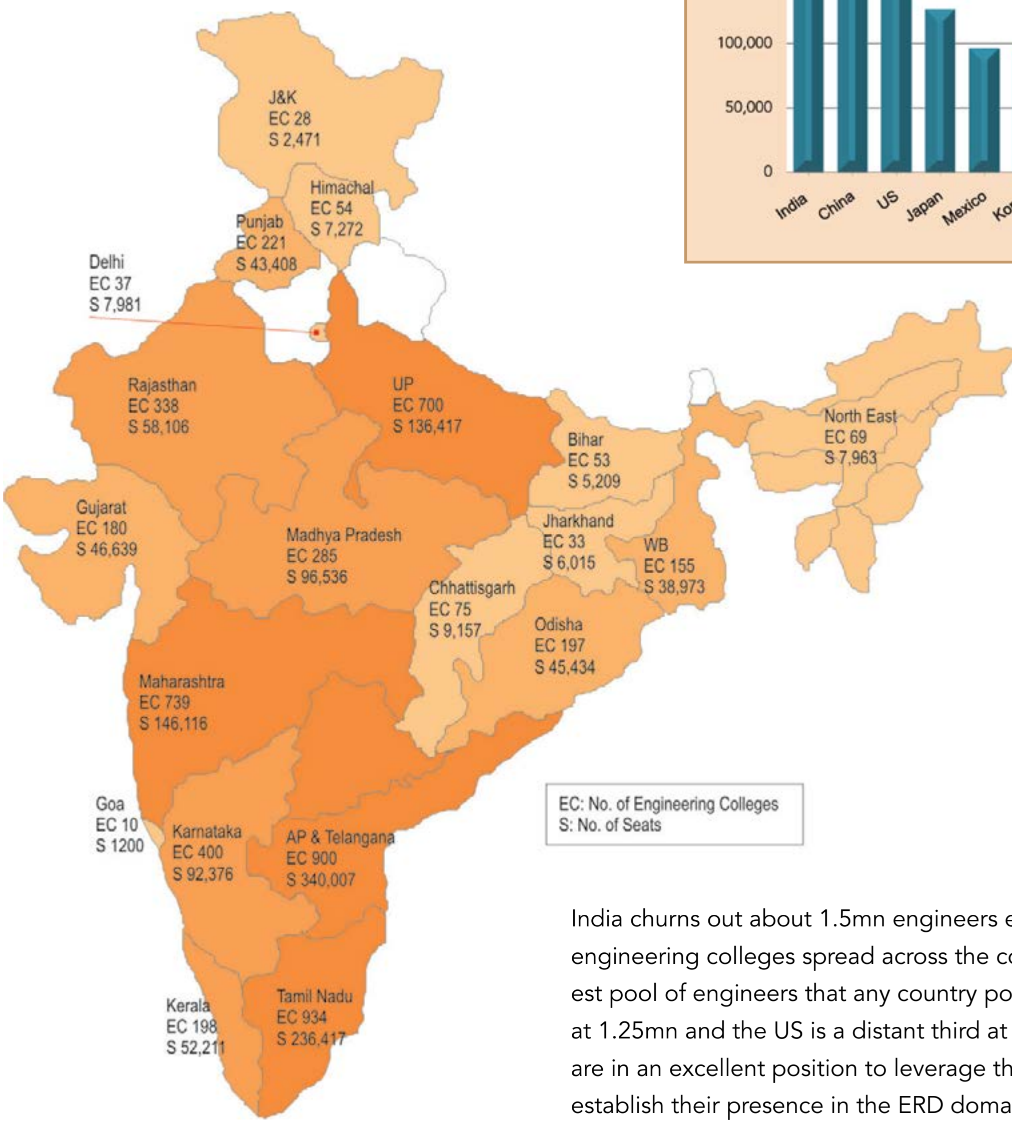
Indian IT companies: The supply advantage

While the complexity of the ERD vertical is a challenge for Indian IT companies, it also offers a much bigger and lucrative opportunity. The fact that the segment requires engineers with a high level of understating of the various domains and to be trained on various design platforms places the Indian IT companies on a superior pedestal as compared to global competitors, primarily because of the mammoth pool of engineers that the country possesses.

Global pool of engineers



Source: OECD, AICTE



India churns out about 1.5mn engineers every year, from around 6000 engineering colleges spread across the country. This is, by far, the highest pool of engineers that any country possesses; China comes second at 1.25mn and the US is a distant third at 170,000. Indian IT companies are in an excellent position to leverage this huge pool of engineers to establish their presence in the ERD domain.

Potential for Indian IT companies

Indian IT companies have an unprecedented opportunity to make ERD their forte over the next decade. The opportunity is driven by both demand- and supply-side factors. On the demand side, there is an increasing level of acceptance of the ESO model, driven by the need for companies to reduce cost, reduce time-to-market, and capture emerging-market opportunities. On the supply side, Indian companies have the world's largest pool of engineers at their disposal, providing them a highly competitive and inimitable advantage.

Indian companies can enhance their presence in the ERD domain on three fronts:

New clients: Leveraging their performance with the existing client base in the ERD domain, Indian IT companies can tap new clients—companies that have not outsourced till date.

Cross-selling to existing clients: Indian IT companies currently service many companies that spend significantly on ERD, but have outsourced other IT operations (ADM, IMS). Cross-selling to these companies should be relatively easy.

Moving up the value chain for existing ERD clients: In addition, companies can move up the value chain by engaging with their existing ERD customers on a more strategic level and capturing a larger share of their wallet.

Amongst the large Indian IT companies, HCL Tech and TCS have a significant presence in the ERD domain and are the potential beneficiaries of increased outsourcing towards this domain. Amongst smaller companies, Cyient, KPIT Tech, and Geometric Software's businesses are inclined towards this domain and could be potential beneficiaries. However, almost all IT services companies that have a presence in the manufacturing vertical have been trying to make inroads into this domain. Given the abundant pool of engineers available to them, it will not be surprising if a few new names make significant inroads into this domain over the next decade.

"Forget mundane work, Indian IT companies are now designing even the landing gear for aircrafts for top aerospace companies of the world"

- Head of manufacturing of one of the top-4 Indian IT companies

Key ESOs in each vertical

	Automotive	Aerospace	Energy & Utilities	Consumer Electronics
Captives	Bosch	Airbus	Shell	Samsung
	Daimler	Honeywell	Petrofac	LG
	Ford		Schlumberger	Phillips
Third party	KPIT	Cyient	Wipro	TCS
	Infosys	HCL Tech	Quest	Mindtree
	Tata Technologies	Tech Mahindra	Geometric	HCL
		TCS	Aker Solutions	Tata Elxsi

Key strengths of the key companies

TCS	Infosys	HCL Tech	Wipro	Tech Mahindra
All sectors - Auto/Aero/Consumer Electronics	Overall weak presence - mainly Aerospace	Avionics	Medical devices	Product design
Geometric Software	**Quest**	**Cap Gemini**	**IBM**	**Accenture**
Product Lifecycle management	After sales - esp for aerospace	Technical Publication / Documentation	Process Consultation / PLM implementation	Process Consultation / PLM implementation

Case Examples

QuEST

Acquires NeST Software to strengthen embedded services, engineering s/w, mechanical systems/structures
– Expand portfolio to healthcare, semiconductors, consumer & communication
– Strengthen presence in the US, W. Europe, Japan

AXISCADES

– Built a localised, customisable cowl chassis, for the world's 2nd largest truck manufacturer, for Indian market

Tata Motors

– Implemented SAP business objects/BW to analyse ~48 mn data points a year - enable firm to design lower cost variants

Infosys

– Engineering an IP telephony product for regulatory compliance for a North American supplier
– revenue sharing model

Various client engagements by Indian companies

1. – Infosys' Connected Car solution for a global OEM – integrates smart watch, Android platforms to enable safer driving
2. – HCL's Data integration/ analysis from sensors on on-board aircraft systems reduced need for extra test flights
3. – L&T Technology Services' end-to-end Telematics app on cloud for predictive analytics for early recalls
4. – 2mpower's wearable fitness tracking device GetActive helps one monitor fitness activity statistics
5. – Wipro recently set up its 3D printing plant (USD 2mn investment)

Rapidly evolving eco-system

M&As

Cyient's majority stake in Invati Insights

Provide analytics frameworks and solutions around IoT, advanced analytics to oil & gas, aerospace, utilities, energy, communications, transportation

Start-ups

- Cars connected to cloud - realtime decision making
- Multi-function Bluetooth device-works as camera trigger and alert on motion
- Low-power SOC for wearables and IoT markets
- Pluggx Switch-smart switch to control home lighting/ appliances via smartphone

Partnership

Tech Mahindra and Bosch Software Innovations

Create IoT ecosystem to develop proof of concepts solutions for smart cities /homes, enterprises, etc.

L&T Technology Services-Tele2 AB

Jointly develop solutions around M2M, IoT. Initially target mass transit, transportation & commercial, and associated industries

CoEs

RobertBosch's Research & Technology Centre Internet of Things & Services (IoTS):

- Technologies for smart networking of devices with enhanced reasoning assistance capabilities
- Enable design of lower cost variants and competitive pricing

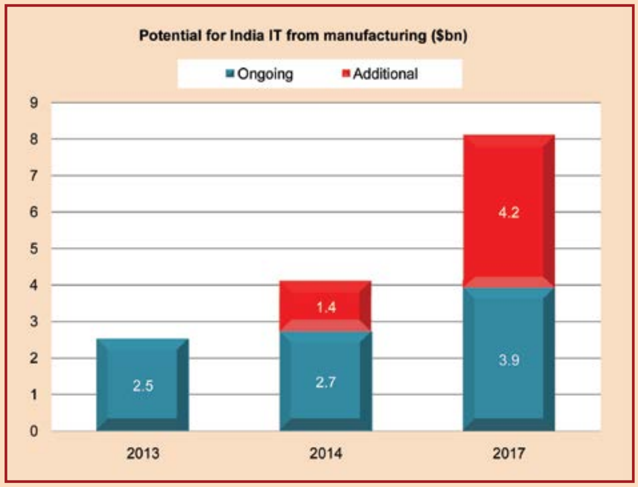
Tech M's "HUB for Airbus Group"

- Shift to platform based approach in product development and ER&D
- Multi-domain services and solutions for Airbus Group

Case Study – Make in India

The ESO domain in India is also likely to benefit immensely from the 'Make in India' initiative by the new Prime Minister, Mr. Narendra Modi. The Modi government is trying to revive the manufacturing sector in India, by luring global MNCs to start manufacturing their products in India. At the same time, the government will try to promote growth of local manufacturing firms, along with focus on skill development for the workforce.

The government intends to increase the share of manufacturing in India's GDP to 20% by 2020 from 14% currently. That would entail a potential US$ 8bn opportunity for the Indian IT sector, over the same period. Large part of this opportunity will come in the form of higher ESO spending, as local as well as global manufacturing companies outsource higher quantity and quality of R&D work, to the Indian IT companies (captives or third-party). Govt policies like favourable and transparent tax regime, investments in dedicated freight and industrial corridors and implementation of its skill development programmes are expected to provide the necessary impetus for the sector.



Govt's Push for manufacturing
MNCs setting up manufacturing base in India
Growth of local manufacturing firms

Govt's push for skill development
HRD ministry's initiative to focus on key skill development
Enhanching the 'employability' of the vast pool of engineers

Make in India

Increasing adoption of IT in manufacturing
Outsourcing of higher quality work in R&D
Wider deployment of SCADA, MES, ERP systems across small scale industries

Increasing IoT relevance in the manufacturing industry
Growing use cases of IoT in factories
Deploying cloud based services with intelligent analytics

Execution Plan

FDI in defence sector → Labour intensive industries → Investment in DFCC → NMIZs and DMICs → Better tax policy

DK Vyas, *CEO, Srei BNP Paribas,*

shares his view on the current situation of the construction and mining-equipment industry and emerging trends in the sector

Srei BNP Paribas is the largest construction- and mining-equipment financier in India with an AUM of around Rs 190bn. It is a 50:50 joint venture between Srei Infrastructure Finance Ltd and BNP Paribas Lease Group, the largest leasing group in Europe. Last two years have been poor for infrastructure with many projects getting stalled and very few new projects coming up. In our interview with Mr DK Vyas, Chief Executive Officer, Srei BNP Paribas, we discussed the current situation of the construction- and mining-equipment industry and emerging trends in the sector

BY PRADEEP AGRAWAL & MANISH AGARWALLA

Q. What is the overall size of the equipment-finance industry in India? What is your market share?

A. The total size of this industry should be about Rs 250-300bn. Around 50% of the sector comprises loaders and excavators. We are the leading player in the infrastructure and construction equipment (ICE) segment with over 30% market share. We have partnerships with more than 210 leading domestic- and international-equipment manufacturers and hold 20-40% market share across leading OEMs such as JCB, Volvo, TATA, and L&T. With other financiers exiting the business, we will dominate and maintain our leadership position in the market.

Q. Can you throw some light on your customer profile and the segments that you operate in? How do you see your NIMs shaping up over the next 2-3 years?

A. We cater to a wide range of customers including project owners, large fleet owners, first-time owners, and first-time buyers. Around 65% of our customers are wholesale and 35% are retail. While 90% of our CME (Construction and Mining Equipment) portfolio is comprised of new equipment, 10% is in pre-owned equipment. We aim to take our pre-owned equipment share to 20% by FY18. We are also diversifying into other segments such as IT, health care, material-handling equipment, and tractors. The change in product mix towards higher-yielding segments will aid our margin improvement. We expect NIMs to improve substantially in the coming 2-3 years.

Q. What makes SREI different from other ICE financiers?

A. We are an end-to-end solutions provider present across the value chain starting from procurement to disposal. Be it asset purchase, asset deployment, asset management and asset resale, we are present across the value chain. We also advise our retail customers on what type of equipment would be ideal for their projects. In cases where a customer is not able to deploy his assets, we help him in deploying his assets in our own projects or other projects where we have relationships. The SREI group has interests in eight road projects of which four are operational. We also have around 56 yards across the country to take care of the assets' wear and tear. This helps in better customer-relationship management. We have a client base of more than 40,000 customers.

Q. From the industry perspective, which segments are seeing higher stress? Any particular geography or regions that are more stressed?

A. Stress is seen across all infra segments such as mining, road, and construction. In road, equipment cost constitute 20-25% and in mining,equipment cost constitutes almost 40-50% of the overall project cost. With lot of projects getting stuck in the last two years in road and mining, utilisation levels of equipment went down significantly. This impacted the repayment capability of equipment owners. South region is relatively showing more stress, especially Andhra Pradesh—most of the sales of construction and equipment happen in this region as the largest number of construction companies and contractors come from here; the problem has escalated after the split of the state.

Contract mining is doing well, while project mining has not picked up yet. Road segment is showing some signs of improvement as around Rs 250bn worth of road projects are underway—these include EPC road projects worth Rs 200bn where tenders have already been in process.

Q. What are the major challenges in the ICE sector?

A. Large number of stalled projects (due to environmental issues, land acquisition, and funding issues) has been affecting corporate cash flows. Many claims are stuck with the government in various projects like roads, where there is change in scope of work (like change of routes).

If you look at our customer profile, around 65% of the buyers are strategic while instead of with 35% are retail. Most of these strategic customers are facing cash-flow problems as their payments are stuck. Retail segment is also facing problems as it is not able to deploy equipment due to lack of operational projects.

Q. What is the capacity utilisation level in the system? How do you read it?

A. There is no exact data on this, but our interaction with customers suggest that the idle capacity in the system should be around 25-30%, which is the highest in many years. We do not expect the idle capacity to come down significantly in the next 6-9 months. Over 1-2 years, we expect this to come down to 5-10% as the economy picks up.

Q. How has the resale price moved in the last year?

A. There is not much activity in the resale market as utilisation is at its trough. Over the last two years, resale prices have been declining and in the last one year, there has been a fall of another 10%. With pick up in utilisation over the next 1-2 years, we expect the price in the resale market to stabilise.

Q. What is your cost of funds? What is your outlook?

A. The cost of funds stood at 10.8% in the last quarter. We aim to reduce cost of funds through diversifying with wide spectrum of lenders. We are exploring new avenues and increasing the share of retail funding through options like NCDs. We have recently closed our maiden public issue of NCD, and raised Rs.4.1bn.

Q. What is your growth guidance for the current year? How do you see asset quality going ahead for SREI?

A. We expect the industry to grow by 5-10% in FY16 and 18-20% in FY17. The growth will be driven by road and urban infrastructure, construction, and contract mining. Construction equipment picks-up first as the equipment find use in other segments as well. This will be a year of impact and we expect provisions and write-offs to remain similar to last year's levels. At the same time, we do not see things getting worse from current levels and expect GNPA to come down to moderate levels by FY18.

Indian Economy – Trend Indicators

Monthly Economic Indicators

Growth Rates (%)	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14
IIP	0.4	2.7	(1.2)	(1.3)	(0.2)	0.8	(1.8)	(0.5)	3.4	5.0	3.9	0.4	0.4	0.2
PMI	48.5	49.6	49.6	51.3	50.7	51.4	52.5	51.3	51.3	51.4	51.5	52.2	50.6	-
Core sector	3.7	8.0	(0.6)	1.7	2.1	1.6	4.5	2.5	4.2	2.3	7.3	2.7	5.8	-
WPI	7.0	7.0	7.2	7.5	6.4	5.2	5.0	5.7	5.2	6.2	5.7	5.2	3.7	3.4
CPI	9.5	9.8	10.2	11.2	9.9	8.8	8.0	8.3	8.6	8.3	7.5	8.0	7.8	6.5
Money Supply	12.2	12.5	13.0	14.5	14.9	14.5	14.5	14.2	13.9	13.2	12.2	12.7	-	12.7
Deposit	13.1	14.1	14.4	16.1	15.8	15.7	15.9	14.6	15.1	13.8	12.2	12.7	(100.0)	13.0
Credit	17.1	17.8	16.6	15.5	14.5	14.7	14.4	14.3	14.1	12.8	13.1	13.1	(100.0)	9.4
Exports	13.0	11.2	13.5	5.9	3.5	3.8	(3.7)	(3.2)	5.3	12.4	10.2	7.3	2.4	2.0
Imports	(0.7)	(18.1)	(14.5)	(16.4)	(15.2)	(18.1)	(17.1)	(2.1)	(15.0)	(11.4)	8.3	4.3	2.1	10.5
Trade deficit (USD Bn)	(10.9)	(6.8)	(10.6)	(9.2)	(10.1)	(9.9)	(8.1)	(10.5)	(10.1)	(11.2)	(11.8)	(12.2)	(10.8)	(9.8)
Net FDI (USD Bn)	1.7	3.3	1.8	2.4	1.9	0.4	(0.1)	2.9	2.2	4.8	2.4	3.6	2.1	-
FII (USD Bn)	(2.0)	0.2	(0.4)	-	2.9	2.6	1.5	5.4	(0.1)	7.7	4.8	5.4	2.1	-
ECB (USD Bn)	2.3	3.3	1.9	2.2	4.6	1.8	4.3	3.6	3.2	1.5	1.9	3.7	0.5	-
NRI Deposits (USD Bn)	1.2	5.9	4.5	14.6	2.0	0.7	0.7	2.5	1.4	1.1	(0.0)	-	-	-
Dollar-Rupee	63.0	63.8	61.6	62.6	61.9	62.1	62.2	61.0	60.4	59.3	60.2	60.1	60.9	-
FOREX Reserves (USD Bn)	275.5	276.3	283.0	291.3	295.7	292.2	294.4	303.7	309.9	312.4	315.8	320.6	318.6	-

Quarterly Economic Indicators

Balance of Payment (USD Bn)	Q3FY13	Q4FY13	Q1FY14	Q2FY14	Q3FY14	Q4FY14	Q1FY15	Q2FY15	Q3FY15
Exports	74.2	84.8	73.9	81.2	79.8	83.7	81.7	85.3	78.2
Imports	132.6	130.4	124.4	114.5	112.9	114.3	116.4	123.8	117.1
Trade deficit	(58.4)	(45.6)	(50.5)	(33.3)	(33.2)	(30.7)	-34.6	-38.6	-38.9
Net Invisibles	26.6	27.5	28.7	28.1	29.1	29.3	26.8	28.5	30.5
CAD	(31.8)	(18.2)	(21.8)	(5.2)	(4.1)	(1.3)	-7.9	-10.1	-8.3
CAD (% of GDP)	6.5	3.5	4.9	1.2	0.8	0.3	1.7	2.1	1.6
Capital Account	31.5	20.5	20.6	(4.8)	23.8	9.2	19.8	18.7	23.1
BoP	0.8	2.7	(0.3)	(10.4)	19.1	7.1	11.2	6.9	13.1

GDP and its Components (YoY, %)	Q1FY14	Q2FY14	Q3FY14	Q4FY14	Q1FY15	Q2FY15	Q3FY15	Q4FY15
Agriculture	2.7	3.6	3.8	4.4	2.6	2.1	-1.1	-1.4
Industry	5.9	4.2	5.5	5.5	8.1	7.2	3.8	7.2
Mining and Quarrying	0.8	4.5	4.2	11.5	4.3	1.4	1.5	2.3
Manufacturing	7.2	3.8	5.9	4.4	8.4	7.9	3.6	8.4
Electricity, gas and water supply	2.8	6.5	3.9	5.9	10.1	8.7	8.7	4.2
Services	8.9	9.7	8.3	5.6	8.4	10.2	11.1	8.0
Construction	1.5	3.5	3.8	1.2	6.5	8.7	3.1	1.4
Trade, hotels, Transport, & Communication	10.3	11.9	12.4	9.9	12.1	8.9	7.4	14.1
Financing, Insurance, Real Estate& business services	7.7	11.9	5.7	5.5	9.3	13.5	13.3	10.2
Public administration, defence, & other services	14.4	6.9	9.1	2.4	2.8	7.1	19.7	0.1
GVA at Basic Price	7.2	7.5	6.6	5.3	7.4	8.4	6.8	6.1

Annual Economic Indicators and Forecasts

Indicators	Units	FY7	FY8	FY9	FY10	FY11	FY12	FY13	FY14	FY15	FY16E
Real GDP growth	%	9.6	9.3	6.7	8.6	8.9	6.7	4.5	4.7	5.5	6.2
Agriculture	%	4.2	5.8	0.1	0.8	8.6	5	1.4	4.7	1.5	3.5
Industry	%	12.9	9.2	4.1	10.2	8.3	6.7	0.9	(0.1)	3.6	4.3
Services	%	10.1	10.3	9.4	10	9.2	7.1	6.2	6.0	6.9	7.2
Real GDP	Rs Bn	35,644	38,966	41,587	45,161	49,185	52,475	54,821	57,418	60,576	64,332
Real GDP	US$ Bn	787	967	908	953	1,079	1,096	1,008	950	993	1,038
Nominal GDP	Rs Bn	42,937	49,864	56,301	64,778	77,841	90,097	101,133	113,551	125,424	141,166
Nominal GDP	US$ Bn	948	1,237	1,229	1,367	1,707	1,881	1,859	1,878	2,056	2,277
Population	Mn	1,122	1,138	1,154	1,170	1,186	1,202	1,219	1,236	1,254	1,271
Per Capita Income	US$	845	1,087	1,065	1,168	1,439	1,565	1,525	1,519	1,640	1,640
WPI (Average)	%	6.6	4.7	8.1	3.8	9.6	8.7	7.4	6.0	2.1	2-2.5
CPI (Average)	%	6.8	6.4	9	12.4	10.4	8.3	10.2	9.5	6.4	5.0
Money Supply	%	20	22.1	20.5	19.2	16.2	15.8	13.6	13.5	12.0	14.0
CRR	%	6	7.5	5	5.75	6	4.75	4.0	4.0	4.0	4.0
Repo rate	%	7.5	7.75	5	5	6.75	8.5	7.5	8.0	7.5	6.75-7.0
Reverse repo rate	%	6	6	3.5	3.5	5.75	7.5	6.5	7.0	6.5	5.75-6.0
Bank Deposit growth	%	23.8	22.4	19.9	17.2	15.9	13.5	14.4	14.6	12.0	13.0
Bank Credit growth	%	28.1	22.3	17.5	16.9	21.5	17.0	15.0	14.3	10.0	12.0
Centre Fiscal Deficit	Rs Bn	1,426	1,437	3,370	4,140	3,736	5,160	5,209	5,245	5,126	5,555
Centre Fiscal Deficit	% of GDP	3.3	2.9	6	6.4	4.8	5.7	5.2	4.8	4.1	3.9
Gross Central Govt Borrowings	Rs Bn	1,460	1,681	2,730	4,510	4,370	5,098	5,580	5,641	6,000	6,000
Net Central Govt Borrowings	Rs Bn	1,104	1,318	2,336	3,984	3,254	4,362	4,674	4,536	4,603	4,564
State Fiscal Deficit	% of GDP	1.8	1.5	2.4	2.9	2.1	2.3	2.2	2.2	2.5	2.0
Consolidted Fiscal Deficit	% of GDP	5.1	4.4	8.4	9.3	6.9	8.1	7.4	7.0	6.6	5.9
Exports	US$ Bn	128.9	166.2	189.0	182.4	251.1	309.8	306.6	318.6	323.1	340.0
YoY Growth	%	22.6	28.9	13.7	-3.5	37.6	23.4	-1.0	3.9	1.4	5.3
Imports	US$ Bn	190.7	257.6	308.5	300.6	381.1	499.5	502.2	466.2	469.0	484.4
YoY Growth	%	21.4	35.1	19.7	-2.5	26.7	31.1	0.5	-7.2	0.6	3.3
Trade Balance	US$ Bn	-61.8	-91.5	-119.5	-118.2	-129.9	-189.8	-195.6	-147.6	-145.9	-144.4
Net Invisibles	US$ Bn	52.2	75.7	91.6	80.0	84.6	111.6	107.5	115.2	111.0	116.9
Current Account Deficit	US$ Bn	-9.6	-15.7	-27.9	-38.2	-45.3	-78.2	-88.2	-32.4	-34.9	-27.5
CAD (% of GDP)	%	-1.0	-1.3	-2.3	-2.8	-2.6	-4.2	-4.7	-1.7	-1.7	-1.2
Capital Account Balance	US$ Bn	45.2	106.6	7.8	51.6	62.0	67.8	89.3	48.8	69.5	67.5
Dollar-Rupee (Average)		45.3	40.3	45.8	47.4	45.6	47.9	54.4	60.5	61.0	62.0

Source: RBI, CSO, CGA, Ministry of Agriculture, Ministry of commerce, Bloomberg, PhillipCapital India Research

PhillipCapital India Coverage Universe: **Valuation Summary**

		CMP	Mkt Cap	Net Sales (Rs mn)		EBIDTA (Rs mn)		PAT (Rs mn)		EPS (Rs)		EPS Growth (%)		P/E (x)		P/B (x)		EV/EBITDA (x)		ROE (%)		ROCE (%)	
Name of company	Sector	Rs	Rs mn	FY16E	FY17E	FY16E	FY17E	FY16E	FY17E	FY16E	FY17E	FY16E	FY17E	FY16E	FY17E	FY16E	FY17E	FY16E	FY17E	FY16E	FY17E	FY16E	FY17E
Bajaj Auto	Automobiles	2,218	641,816	245,399	279,266	49,995	57,327	38,022	43,350	131	150	15.1	14.0	16.9	14.8	5.2	4.5	12.7	11.1	30.9	30.4	31.9	31.6
Bharat Forge	Automobiles	1,198	278,957	82,898	95,141	19,028	21,993	10,480	12,622	45	54	26.6	20.4	26.6	22.1	6.9	5.5	15.1	12.8	25.9	25.0	20.8	21.5
Hero MotoCorp	Automobiles	2,548	508,784	337,606	391,423	50,782	59,674	36,353	42,425	182	212	34.0	16.7	14.0	12.0	6.1	4.9	10.0	8.5	43.7	40.5	49.7	45.7
Ashok Leyland	Automobiles	67	190,105	141,303	175,510	12,869	17,731	4,796	8,625	2	3	387.8	79.8	39.6	22.0	3.4	3.1	17.4	12.4	8.6	14.2	7.1	10.6
Tata Motors	Automobiles	451	1,426,933	2,838,955	3,575,221	497,645	589,946	217,278	258,966	67	80	56.1	19.2	6.7	5.6	1.5	1.2	3.9	3.2	21.7	20.6	13.9	13.9
Mahindra & Mahindra	Automobiles	1,196	742,578	514,518	602,052	64,529	75,137	46,709	54,958	76	90	12.5	17.7	15.7	13.4	3.1	2.6	11.5	9.8	19.7	19.5	17.7	18.0
Mahindra CIE	Automobiles	206	66,626	65,061	75,351	7,769	10,138	3,501	5,203	11	16	98.0	48.6	19.0	12.8	3.4	2.8	10.1	7.7	17.8	21.6	11.9	15.5
Apollo Tyres	Automobiles	172	87,730	131,888	149,178	20,245	23,496	10,857	13,013	21	26	7.6	19.9	8.1	6.7	1.3	1.2	4.6	4.2	18.1	18.5	15.4	15.9
Maruti Suzuki	Automobiles	3,772	1,139,461	599,650	741,759	82,518	103,342	51,043	69,561	169	230	42.9	36.3	22.3	16.4	4.1	2.8	13.1	9.1	18.3	17.0	18.1	18.9
ACC	Cement	1,467	275,404	126,698	146,510	17,793	22,460	11,606	14,324	62	76	-0.1	23.4	23.8	19.2	3.2	3.0	15.0	11.9	13.4	15.7	11.3	13.2
Ambuja Cement	Cement	229	355,296	241,642	275,729	41,867	54,505	21,934	27,300	11	14	14.8	24.5	20.7	16.6	2.4	2.3	7.9	5.9	11.5	13.6	15.8	14.5
India Cement	Cement	82	25,296	58,814	65,319	8,224	9,926	966	2,430	3	8	n.a.	151.7	26.2	10.4	0.7	0.6	6.5	4.9	2.7	6.0	4.6	6.4
Mangalam Cement	Cement	240	6,407	10,756	11,489	1,252	1,817	431	825	16	31	13.8	91.5	14.9	7.8	1.2	1.0	9.1	5.7	7.8	13.5	6.4	9.6
Shree Cement	Cement	11279	392,929	82,787	98,156	25,895	32,516	12,982	17,747	373	509	99.1	36.7	30.3	22.1	5.9	4.7	14.8	11.2	19.6	21.4	18.9	23.0
JK Cement	Cement	595	41,603	42,133	53,591	6,030	8,803	1,616	3,394	23	49	89.8	110.0	25.7	12.3	2.2	1.9	11.2	7.3	8.4	15.5	6.1	9.1
Dalmia Bharat Ltd	Cement	578	46,940	41,090	50,462	8,320	12,570	1,770	4,557	22	56	n.a.	157.5	26.5	10.3	1.5	1.3	11.5	7.2	5.5	12.5	5.5	8.9
OCL India	Cement	507	28,837	25,843	30,098	4,866	6,425	2,395	3,661	42	64	76.3	52.8	12.0	7.9	2.0	1.7	5.9	4.0	16.7	21.4	13.6	19.6
JK Lakshmi Cement	Cement	319	37,549	27,011	34,300	5,266	7,079	1,905	3,244	16	28	5.7	70.3	19.7	11.6	2.4	2.1	10.5	7.3	12.2	18.1	8.4	11.5
HeidelbergCement I	Cement	66	14,888	19,012	19,943	3,072	3,567	862	1,318	4	6	159.7	52.9	17.3	11.3	1.5	1.4	7.9	6.2	9.0	12.1	6.3	7.8
Ultratech Cement	Cement	2,868	787,011	335,540	395,684	69,594	85,444	38,787	50,112	141	183	84.8	29.2	20.3	15.7	3.5	2.9	12.3	9.4	17.3	18.8	13.1	15.5
ABB India	Cap Goods	1,280	271,190	78,201	84,116	6,863	7,805	3,861	4,606	18	22	69.0	19.3	70.2	58.9	8.9	8.2	39.6	34.8	12.7	13.9	12.2	13.2
BHEL	Cap Goods	248	607,005	286,307	345,968	31,207	47,859	20,733	33,089	8	14	46.1	59.6	29.3	18.3	1.7	1.6	16.1	10.9	5.8	8.7	4.6	6.9
Alstom T&D	Cap Goods	528	135,090	44,867	53,501	4,732	6,286	2,475	3,651	10	14	105.4	47.5	54.6	37.0	9.3	8.2	28.7	21.4	17.1	22.1	17.5	22.2
Crompton Greaves	Cap Goods	164	102,473	135,533	162,810	9,898	13,348	4,425	6,757	7	11	140.3	52.7	23.2	15.2	2.5	2.2	12.1	9.2	10.7	14.6	7.2	9.9
Engineers India	Cap Goods	200	67,320	18,239	20,215	2,144	3,374	3,273	4,199	10	12	11.2	28.3	20.6	16.0	2.5	2.3	19.5	12.2	11.9	14.1	12.3	14.7
KEC International	Cap Goods	110	28,395	88,551	98,381	6,514	7,820	1,420	2,241	6	9	101.3	57.9	20.0	12.7	2.0	1.7	7.4	6.1	9.8	13.7	9.6	10.3

PhillipCapital India Coverage Universe: Valuation Summary

		CMP	Mkt Cap	Net Sales (Rs mn)		EBIDTA (Rs mn)		PAT (Rs mn)		EPS (Rs)		EPS Growth (%)		P/E (x)		P/B (x)		EV/EBITDA (x)		ROE (%)		ROCE (%)	
Name of company	Sector	Rs	Rs mn	FY16E	FY17E	FY16E	FY17E	FY16E	FY17E	FY16E	FY17E	FY16E	FY17E	FY16E	FY17E	FY16E	FY17E	FY16E	FY17E	FY16E	FY17E	FY16E	FY17E
Alstom India	Cap Goods	733	49,298	23,419	28,472	1,687	2,385	1,569	2,134	23	32	12.5	36.0	31.4	23.1	4.5	4.0	24.2	16.3	14.4	17.3	15.3	18.5
Larsen & Toubro	Cap Goods	1,662	1,546,146	1,040,271	1,325,900	125,938	169,044	42,945	68,319	46	73	-2.8	59.1	36.2	22.8	3.5	3.1	19.0	14.5	9.6	13.5	4.7	6.3
Siemens	Cap Goods	1,344	478,590	103,975	113,400	7,350	8,987	5,559	7,961	16	22	56.6	43.2	86.1	60.1	10.3	9.4	61.8	49.5	11.9	15.7	9.6	12.8
Cummins India	Cap Goods	901	249,785	50,118	58,687	8,088	10,059	7,662	9,512	28	34	-2.5	24.1	32.6	26.3	7.7	6.8	30.8	24.7	23.7	26.0	21.1	23.7
VA Tech Wabag	Cap Goods	707	38,382	26,765	30,575	2,562	2,970	1,494	1,763	28	32	33.6	18.0	25.7	21.8	3.8	3.3	14.3	12.2	14.7	15.3	12.8	13.6
Thermax	Cap Goods	952	113,443	54,538	57,060	5,233	5,540	3,074	3,603	26	30	17.3	17.2	36.9	31.5	4.8	4.4	21.7	20.1	13.1	13.9	10.3	11.0
Voltas	Cap Goods	331	109,556	58,871	68,893	4,786	5,898	3,838	4,863	12	15	12.9	26.7	28.5	22.5	4.6	4.0	22.4	18.1	16.1	17.7	16.5	18.1
Coal India	Power	389	2,454,223	825,499	923,637	223,145	254,223	182,514	203,039	29	32	33.0	11.2	13.4	12.1	5.1	4.4	8.4	7.0	38.1	36.0	40.9	38.6
NTPC	Power	137	1,128,804	801,747	836,639	184,031	200,381	92,713	100,737	11	12	11.6	8.7	12.2	11.2	1.3	1.2	11.2	10.9	10.8	11.0	6.4	6.3
Power Grid	Power	144	755,180	207,147	250,272	179,790	218,812	62,469	74,541	12	14	24.3	19.3	12.1	10.1	1.8	1.6	10.0	8.7	15.4	16.3	6.1	6.6
PTC India	Power	62	18,441	151,103	168,281	11,179	13,360	3,229	3,776	11	13	1.2	17.0	5.7	4.9	0.5	0.5	6.5	6.7	9.6	10.3	7.9	7.9
Inox Wind	Power	419	93,084	48,874	56,159	8,842	10,577	6,199	7,050	28	32	134.0	13.7	15.0	13.2	5.0	3.9	11.2	9.1	33.2	29.3	26.7	25.0
Chambal Fertilisers	Agri Inputs	60	24,762	104,067	99,639	8,753	8,837	3,671	3,740	9	9	33.7	1.9	6.7	6.6	1.0	0.9	6.6	5.8	14.9	13.8	6.5	6.6
Coromandel Fertiliser	Agri Inputs	241	70,264	113,491	121,817	11,464	13,453	6,091	7,588	21	26	49.9	24.6	11.5	9.3	2.3	1.9	7.2	6.1	19.8	21.0	20.7	22.0
Tata Chemicals Ltd	Agri Inputs	421	107,367	185,584	190,064	24,173	25,159	8,904	9,593	35	38	11.3	7.7	12.1	11.2	1.8	1.6	6.2	5.6	14.6	14.4	9.0	9.5
Kaveri Seeds	Agri Inputs	856	59,080	14,472	16,884	3,765	4,470	3,775	4,572	55	67	24.8	21.1	15.5	12.8	5.5	4.1	14.7	11.9	35.5	32.3	40.2	36.1
PI Industries	Agri Inputs	671	91,608	22,735	27,086	4,453	5,299	2,854	3,596	21	26	16.1	26.0	32.1	25.5	8.1	6.4	20.3	16.7	25.1	25.1	25.9	25.7
Rallis India	Agri Inputs	222	43,094	21,803	25,268	3,367	3,885	1,873	2,320	10	12	21.3	23.9	23.0	18.6	4.5	3.9	12.6	10.6	19.6	21.2	20.0	20.4
United Phosphorus	Agri Inputs	561	240,233	133,799	147,892	26,276	28,156	13,809	14,781	32	34	17.1	7.0	17.4	16.3	3.6	3.2	9.9	8.7	21.8	20.8	17.7	16.8
Zuari Agrochemicals	Agri Inputs	197	8,296	57,372	n.a.	3,416	n.a.	1,016	n.a.	24	n.a.	554.2	n.a.	8.2	na	0.9	na	8.8	na	11.4	-	10.2	-
Deepak Fertilisers	Agri Inputs	122	10,748	33,995	n.a.	5,176	n.a.	2,610	n.a.	30	n.a.	13.0	n.a.	4.1	na	0.6	na	2.9	na	15.2	-	11.6	-
Monsanto India	Agri Inputs	2,752	47,505	6,601	8,153	1,452	1,697	1,363	1,616	79	94	13.1	18.5	34.8	29.4	14.0	14.9	32.1	27.5	40.2	50.7	27.6	31.4
Andhra Bank	Financials	70	42,410	48,149	56,151	34,980	40,162	12,330	15,976	20	25	61.0	29.6	3.6	2.8	0.6	0.5	1.2	1.1	12.8	14.7	0.6	0.7
Bank of Baroda	Financials	162	357,599	165,825	171,547	121,506	129,317	63,241	63,186	21	29	27.8	37.6	7.6	5.5	1.1	0.9	2.9	2.8	15.2	14.2	0.8	1.0
Bank of India	Financials	183	121,678	131,777	151,856	98,089	109,896	31,526	38,568	49	60	25.1	22.3	3.7	3.1	0.6	0.5	1.2	1.1	10.9	12.3	0.5	0.5
Canara Bank	Financials	318	163,652	107,311	138,654	80,092	102,497	29,994	45,155	85	81	24.8	-4.8	3.8	3.9	0.7	0.7	2.0	1.6	10.2	14.0	0.5	1.0

PhillipCapital India Coverage Universe: **Valuation Summary**

		CMP	Mkt Cap	Net Sales (Rs mn)		EBIDTA (Rs mn)		PAT (Rs mn)		EPS (Rs)		EPS Growth (%)		P/E (x)		P/B (x)		EV/EBITDA (x)		ROE (%)		ROCE (%)	
Name of company	Sector	Rs	Rs mn	FY16E	FY17E	FY16E	FY17E	FY16E	FY17E	FY16E	FY17E	FY16E	FY17E	FY16E	FY17E	FY16E	FY17E	FY16E	FY17E	FY16E	FY17E	FY16E	FY17E
Corporation bank	Financials	53	44,231	46,373	55,993	34,976	42,505	10,776	15,844	64	95	54.0	47.0	0.8	0.6	0.1	0.1	1.3	1.0	10.0	13.6	0.4	0.6
HDFC Bank	Financials	1,015	2,546,476	264,087	314,568	212,048	252,451	120,821	145,211	48	58	13.4	21.0	21.2	17.5	3.7	3.2	12.0	10.1	18.2	19.0	1.9	2.9
ICICI Bank	Financials	290	1,683,744	212,598	247,136	222,955	252,819	118,124	140,525	20	24	5.1	18.7	14.2	12.0	2.0	1.8	7.6	6.7	14.0	15.1	1.7	2.7
IOB	Financials	39	47,870	73,446	n.a.	48,072	n.a.	11,896	n.a.	8	-	72.2	n.a.	4.6	na	0.5	na	1.0	na	7.1	-	0.3	-
Oriental Bank	Financials	191	57,256	58,422	66,674	48,309	54,419	14,727	17,875	47	57	15.1	21.4	4.1	3.4	0.5	0.5	1.2	1.1	10.4	11.4	0.6	0.9
PNB	Financials	145	268,633	177,394	204,470	124,506	138,211	36,739	48,306	24	32	13.1	35.9	6.2	4.5	0.9	0.8	2.2	1.9	9.4	11.3	0.6	0.7
SBI	Financials	258	1,949,055	820,195	960,397	533,283	622,652	203,410	275,029	30	36	23.4	23.2	8.7	7.1	1.3	1.1	3.7	3.1	11.4	13.5	0.7	1.3
Union Bank	Financials	155	98,736	96,321	109,560	58,239	65,255	25,584	34,969	37	51	32.8	36.7	4.2	3.0	0.6	0.5	1.7	1.5	12.3	15.0	0.6	0.8
Indian Bank	Financials	156	74,950	55,367	64,173	33,963	37,940	14,415	17,601	31	38	18.1	22.1	5.0	4.1	0.7	0.6	2.2	2.0	11.3	12.7	0.7	1.1
DCB Bank	Financials	127	35,910	6,249	7,787	3,634	4,570	2,094	2,693	6	8	5.3	24.4	19.6	15.8	2.2	1.9	9.9	7.9	12.8	14.3	1.2	1.2
AXIS Bank	Financials	556	1,321,171	168,176	198,343	155,870	178,217	85,058	98,631	36	43	15.7	18.9	15.5	13.1	2.7	2.3	8.5	7.4	17.6	17.6	1.7	1.7
Indusind Bank	Financials	847	449,735	41,944	52,744	38,784	47,859	21,535	26,744	38	48	15.5	24.2	22.0	17.7	3.1	2.7	11.6	9.4	16.4	15.5	1.8	2.9
HDFC	NBFC	1,216	1,915,890	317,028	368,526	100,750	117,912	69,475	81,488	33	40	20.4	-	36.7	30.7	5.5	4.4	19.0	16.2	21.1	-	2.6	-
Shriram Transport Fin	NBFC	816	185,159	n.a.	n.a.	35,277	41,584	13,572	17,209	60	76	9.6	26.8	13.6	10.8	81.6	81.6	5.2	4.5	13.6	15.0	2.1	2.3
SKS Microfinance	NBFC	443	55,961	11,186	15,082	3,305	4,450	2,413	3,239	19	26	29.1	34.2	23.1	17.2	4.4	3.5	16.9	12.6	20.7	22.4	4.4	4.3
LIC Housing Finance	NBFC	403	203,505	126,148	148,175	25,655	30,601	16,734	19,999	33	40	20.4	19.5	12.2	10.2	2.0	1.7	7.9	6.7	17.8	18.2	1.4	1.4
Cholamandalam Fin	NBFC	593	85,241	20,425	24,510	11,975	14,938	5,258	7,313	34	47	16.8	39.1	17.5	12.6	2.6	2.2	7.1	5.7	15.7	18.8	2.0	2.4
Mah & Mah Fin	NBFC	251	142,874	33,337	37,228	21,896	24,339	8,715	10,934	15	19	15.9	25.5	16.2	12.9	2.3	2.0	6.5	5.9	14.7	16.5	2.5	2.8
Shriram City Union Fin	NBFC	1,638	107,922	25,471	30,822	15,424	18,661	7,092	8,791	108	133	23.0	23.9	15.2	12.3	2.3	2.0	7.0	5.8	16.3	17.7	3.6	3.6
Hindustan Unilever	FMCG	823	1,780,057	333,008	377,348	66,378	77,424	44,794	52,062	21	24	22.7	16.2	39.7	34.2	24.8	18.3	26.1	22.0	62.5	53.5	72.6	61.7
Marico Industries	FMCG	425	274,032	64,116	73,375	10,503	12,555	6,894	8,307	11	13	20.2	20.5	39.7	33.0	12.0	9.5	25.9	21.2	30.2	28.8	28.5	28.2
Jubilant Foodworks	FMCG	1,731	113,534	27,052	35,812	3,569	5,528	1,682	2,712	26	41	34.6	61.3	67.3	41.8	13.2	10.1	31.5	20.0	19.7	24.1	20.5	26.0
Godrej Consumer	FMCG	1,124	382,526	92,161	104,787	15,311	17,654	10,083	11,689	30	34	15.0	15.9	37.9	32.7	7.6	6.6	25.5	21.8	20.2	20.3	18.0	19.4
ITC	FMCG	302	2,417,481	395,481	431,498	145,686	156,292	98,101	109,177	12	14	2.2	11.3	24.6	22.1	7.0	6.1	16.1	14.6	28.3	27.4	24.4	24.2
Nestle	FMCG	6,004	578,923	104,457	115,919	21,416	24,118	12,322	14,099	128	146	3.9	14.4	47.0	41.1	18.7	17.0	26.3	23.3	39.7	41.4	41.2	43.1
Colgate	FMCG	1,923	261,555	44,608	50,698	10,020	11,490	6,614	7,771	49	57	23.4	17.5	39.5	33.7	35.6	31.5	25.8	22.4	90.0	93.6	92.5	99.3

PhillipCapital India Coverage Universe: **Valuation Summary**

		CMP	Mkt Cap	Net Sales (Rs mn)		EBIDTA (Rs mn)		PAT (Rs mn)		EPS (Rs)		EPS Growth (%)		P/E (x)		P/B (x)		EV/EBITDA (x)		ROE (%)		ROCE (%)	
Name of company	Sector	Rs	Rs mn	FY16E	FY17E	FY16E	FY17E	FY16E	FY17E	FY16E	FY17E	FY16E	FY17E	FY16E	FY17E	FY16E	FY17E	FY16E	FY17E	FY16E	FY17E	FY16E	FY17E
Glaxo Smithkline Con	FMCG	6,290	264,534	45,365	52,030	6,359	5,161	6,558	6,558	156	156	10.1	-0.0	40.3	40.3	11.2	10.3	38.1	45.6	27.8	25.5	28.8	26.5
Agro Tech Foods	FMCG	595	14,500	7,871	8,314	688	830	379	461	16	19	1.3	21.9	38.3	31.4	4.2	3.8	21.2	17.1	10.9	11.9	10.6	11.7
Asian Paints	FMCG	760	728,607	158,237	190,330	28,120	35,717	17,753	22,383	19	23	28.1	26.1	41.0	32.6	12.5	10.5	25.2	19.7	30.4	32.2	31.6	33.6
Emami	FMCG	1,077	244,376	25,929	30,315	6,733	8,070	5,929	7,018	26	31	22.1	18.4	41.2	34.8	14.1	13.8	35.0	28.8	34.3	39.5	37.0	35.3
Britannia	FMCG	2,580	309,457	89,031	102,663	9,796	12,295	7,022	8,725	59	73	32.0	24.2	44.0	35.4	20.3	15.1	30.6	24.1	46.2	42.7	41.1	41.9
Bajaj Corp	FMCG	447	65,955	9,677	11,403	2,908	3,380	2,674	3,008	18	20	21.1	12.5	24.7	21.9	12.0	10.6	21.9	18.6	48.8	48.1	42.1	48.2
Apcotex Industries	FMCG	445	4,614	5,333	6,542	707	975	467	677	45	65	62.3	45.1	10.0	6.9	2.3	1.8	5.6	3.0	23.2	25.6	24.8	27.7
Dabur	FMCG	256	449,307	88,063	100,862	15,508	18,672	12,731	15,104	7	9	19.1	18.6	35.3	29.7	11.0	9.1	28.8	23.5	31.1	30.7	28.7	29.2
NCC	Infrastructure	74	41,334	82,975	95,418	7,053	8,588	2,928	4,153	5	7	161.9	41.8	14.1	10.0	1.2	1.1	8.5	6.9	8.4	10.6	9.7	11.0
Ashoka Buildcon	Infrastructure	173	32,344	28,276	35,487	7,098	10,307	1,156	1,838	6	10	20.3	59.0	28.0	17.6	1.7	1.5	9.9	6.9	5.9	8.6	4.1	6.1
GMR Infrastructure	Infrastructure	13	69,110	82,008	98,433	25,769	39,980	-15,716	-1,481	-3	-0	-48.6	-90.6	-4.4	-46.7	0.9	0.9	18.7	11.2	-20.3	-2.0	0.4	2.6
GVK Power	Infrastructure	8	11,923	26,962	48,605	17,950	28,264	-8,105	-3,880	-5	-2	59.3	-52.1	-1.5	-3.1	0.9	1.0	13.5	8.5	-59.6	-31.2	0.8	3.3
IRB Infrastructure	Infrastructure	242	84,963	51,995	56,316	28,927	32,124	5,266	6,646	15	19	-3.0	26.2	16.1	12.8	1.6	1.4	7.7	7.5	10.1	10.7	3.5	3.6
KNR Construction	Infrastructure	509	14,315	10,514	12,616	1,609	1,956	855	1,155	30	41	17.1	35.1	16.7	12.4	2.2	1.9	9.5	7.7	14.0	16.3	13.0	15.2
J Kumar Infraprojects	Infrastructure	631	20,341	17,058	22,176	3,156	4,103	1,339	1,928	42	60	41.9	44.0	15.2	10.6	2.3	1.9	7.8	6.0	15.8	19.6	12.9	15.3
Adani Ports & SEZ	Infrastructure	311	644,200	70,310	86,162	47,201	58,344	26,413	36,307	13	18	14.0	37.5	24.4	17.7	4.9	3.9	16.8	13.2	20.1	22.0	12.8	14.5
HCL Technologies	IT Services	941	1,322,412	417,377	480,484	96,148	110,356	76,037	87,460	54	62	5.9	15.2	17.4	15.1	4.7	4.0	13.7	12.0	26.8	26.1	27.1	27.0
Infosys	IT Services	2,028	2,329,159	584,246	653,168	161,729	179,995	127,812	141,684	112	124	3.7	10.9	18.1	16.4	4.0	3.7	12.0	10.6	22.2	22.4	22.7	23.4
TCS	IT Services	2,606	5,103,759	1,087,258	1,253,966	299,299	331,871	241,618	272,053	123	139	23.0	12.6	21.1	18.8	7.7	6.3	16.9	15.1	36.5	33.7	38.6	35.5
Persistent Systems	IT Services	757	60,556	21,544	24,627	4,509	5,176	3,271	3,760	41	47	12.5	14.9	18.5	16.1	3.7	3.1	13.0	11.2	19.8	19.4	19.9	19.6
KPIT Technologies	IT Services	101	19,896	32,700	36,630	3,079	4,576	1,666	2,743	9	15	-29.8	64.6	11.3	6.9	1.3	1.1	7.0	4.6	11.5	16.2	9.8	14.4
Wipro	IT Services	553	1,364,715	496,661	547,774	104,485	110,542	86,973	93,077	35	38	0.5	7.0	15.7	14.6	2.9	2.6	12.0	11.2	18.7	17.7	18.9	17.9
Tech Mahindra	IT Services	557	535,715	273,204	320,708	45,839	57,124	29,076	37,478	30	39	19.7	28.9	18.3	14.2	3.4	2.8	11.0	8.5	18.5	19.9	19.6	21.4
NIIT Technologies	IT Services	399	24,357	26,180	28,821	3,809	4,401	2,181	2,716	36	45	91.4	24.5	11.1	8.9	1.6	1.4	6.2	5.0	14.5	16.0	14.1	15.8
Zee Entertainment	Media	325	312,482	56,763	66,309	14,738	19,196	9,275	12,117	10	13	-5.1	30.6	33.7	25.8	5.8	5.2	20.7	15.9	17.1	20.1	19.6	22.1
HT Media	Media	94	21,878	24,775	27,423	3,318	3,820	2,262	2,626	10	11	25.8	16.1	9.7	8.3	1.0	0.9	6.7	5.0	10.2	10.4	11.0	11.4

PhillipCapital India Coverage Universe: **Valuation Summary**

		CMP	Mkt Cap	Net Sales (Rs mn)		EBIDTA (Rs mn)		PAT (Rs mn)		EPS (Rs)		EPS Growth (%)		P/E (x)		P/B (x)		EV/EBITDA (x)		ROE (%)		ROCE (%)	
Name of company	Sector	Rs	Rs mn	FY16E	FY17E	FY16E	FY17E	FY16E	FY17E	FY16E	FY17E	FY16E	FY17E	FY16E	FY17E	FY16E	FY17E	FY16E	FY17E	FY16E	FY17E	FY16E	FY17E
Sun TV Network	Media	359	141,634	27,024	30,652	18,625	21,306	8,945	10,767	23	27	21.1	20.4	15.8	13.2	3.9	3.4	7.1	5.9	24.9	26.1	25.4	27.1
Jagran Prakashan	Media	124	40,537	21,300	23,185	5,471	5,981	2,562	2,850	8	9	12.6	11.2	15.1	13.5	2.6	2.3	8.0	6.9	17.5	17.2	14.6	13.2
Hathway Cable	Media	48	39,864	27,804	40,401	6,124	10,900	1,270	5,270	8	34	58.4	315.1	5.8	1.4	0.5	0.4	8.1	4.3	8.8	28.4	5.8	17.3
Den Networks	Media	149	26,614	23,573	34,431	6,203	11,872	1,353	4,775	9	33	4.0	253.0	16.2	4.6	1.1	0.9	3.8	1.6	6.6	19.8	8.6	19.0
Dish TV	Media	99	105,175	32,862	37,377	9,718	11,577	2,239	3,896	2	4	7,031	74.0	46.9	27.0	-122.9	34.6	11.7	9.5	-261.8	128.1	54.9	59.7
Hindalco Inds	Metals	121	250,483	1,138,507	1,181,106	123,862	132,846	34,163	38,605	17	19	22.3	13.0	7.3	6.5	0.6	0.6	6.5	5.6	8.2	8.6	5.7	5.9
NALCO	Metals	44	112,368	78,957	81,109	16,336	15,547	12,921	12,101	5	5	10.1	-6.3	8.7	9.3	0.8	0.8	3.3	4.0	9.5	8.5	8.8	7.8
Hindustan Zinc	Metals	169	714,079	146,625	152,433	74,010	86,651	73,548	85,934	17	20	-4.3	16.8	9.7	8.3	1.5	1.3	4.9	3.5	15.2	15.6	15.1	15.6
Tata Steel	Metals	308	299,183	1,379,552	1,428,575	144,855	162,604	19,557	31,477	20	32	61,985	61.0	15.3	9.5	0.9	0.9	7.0	6.1	5.9	8.9	3.9	4.6
JSW Steel	Metals	876	211,833	538,735	626,165	102,742	125,629	27,853	42,174	115	174	51.1	51.4	7.6	5.0	0.9	0.7	5.5	4.1	11.2	14.7	7.4	9.2
Jindal Steel & Power	Metals	106	97,163	253,120	275,903	70,175	77,489	10,090	15,262	11	17	-16.3	51.3	9.6	6.4	0.4	0.4	6.9	5.9	4.5	6.4	3.9	4.5
SAIL	Metals	62	257,098	555,943	600,778	78,006	89,478	35,374	36,637	9	9	85.9	3.6	7.3	7.0	0.6	0.5	6.6	5.8	7.7	7.5	5.7	5.8
Sesa Sterlite	Metals	184	546,097	830,260	899,048	257,476	289,367	60,812	82,062	21	28	1.8	34.9	9.0	6.7	0.7	0.6	4.4	3.5	7.3	9.1	6.7	7.5
ONGC	Oil & Gas	301	2,578,197	1,575,249	1,847,063	630,097	712,597	277,127	333,773	32	39	22.3	20.4	9.3	7.7	1.3	1.1	4.5	3.9	13.6	14.6	11.7	12.8
Petronet LNG	Oil & Gas	182	136,725	287,804	368,036	15,937	18,782	8,186	10,417	11	14	-7.2	27.2	16.7	13.1	2.2	2.0	10.0	8.3	13.1	14.9	9.8	11.1
Cairn India	Oil & Gas	186	348,348	123,092	149,277	64,940	87,898	38,974	51,513	21	27	-36.9	32.2	8.9	6.8	0.6	0.6	4.6	3.2	6.5	8.6	5.9	7.7
GAIL	Oil & Gas	374	474,601	583,930	634,989	57,593	70,621	34,491	43,749	27	34	8.7	26.8	13.8	10.8	1.5	1.4	9.6	7.2	11.0	12.9	7.8	9.3
Indraprastha Gas	Oil & Gas	392	54,936	43,984	48,003	8,780	9,519	4,690	5,180	34	37	7.4	10.4	11.7	10.6	2.3	2.3	5.9	5.4	21.0	21.7	15.7	16.3
Gujarat State Petronet	Oil & Gas	117	65,672	12,888	13,563	11,501	12,093	5,746	5,973	10	11	24.0	3.9	11.4	11.0	1.6	1.4	5.9	5.1	13.8	12.9	11.4	10.8
Oil India	Oil & Gas	471	282,895	119,237	127,243	58,603	63,358	37,321	40,308	62	67	39.0	8.0	7.6	7.0	1.2	1.0	4.5	4.0	15.2	14.9	11.1	11.2
Berger Paints	Other	203	140,668	54,368	n.a.	6,498	n.a.	3,868	n.a.	11	n.a.	22.0	n.a.	18.2	na	4.3	na	22.2	na	23.7	-	20.8	-
Kajaria Ceramics	Other	822	65,324	26,368	32,042	4,509	5,479	1,778	2,800	22	35	-15.8	57.5	36.7	23.3	7.8	6.1	15.0	12.2	21.3	26.0	22.7	28.5
HSIL Ltd	Other	336	24,313	22,797	26,440	4,098	4,775	1,492	1,924	21	27	71.4	28.9	16.3	12.6	1.7	1.5	7.6	6.3	10.3	12.0	6.6	8.2
Havells Ltd	Other	277	172,917	59,749	68,906	8,420	9,783	5,547	6,548	9	10	19.3	18.1	31.1	26.4	6.4	5.5	19.9	16.8	20.5	20.8	21.2	21.7
Greenply Industries	Other	985	23,773	17,579	19,870	2,408	2,822	1,340	1,583	56	66	19.3	18.1	17.7	15.0	4.2	3.3	11.0	9.4	23.8	22.2	17.2	17.5
Phoenix Mills	Real Estate	359	52,045	23,899	25,955	13,172	13,601	4,345	4,352	30	30	203.5	0.2	12.0	11.9	2.3	2.0	6.1	5.8	19.6	16.9	13.3	10.1

PhillipCapital India Coverage Universe: **Valuation Summary**

		CMP	Mkt Cap	Net Sales (Rs mn)		EBIDTA (Rs mn)		PAT (Rs mn)		EPS (Rs)		EPS Growth (%)		P/E (x)		P/B (x)		EV/EBITDA (x)		ROE (%)		ROCE (%)	
Name of company	Sector	Rs	Rs mn	FY16E	FY17E	FY16E	FY17E	FY16E	FY17E	FY16E	FY17E	FY16E	FY17E	FY16E	FY17E	FY16E	FY17E	FY16E	FY17E	FY16E	FY17E	FY16E	FY17E
DLF	Real Estate	111	198,061	92,069	103,875	39,877	46,228	8,484	11,629	5	7	27.5	37.1	22.4	16.3	0.6	0.6	9.9	8.7	2.9	3.9	5.2	5.8
Oberoi Realty	Real Estate	299	98,301	18,517	27,170	9,020	14,152	5,305	9,164	16	28	67.3	72.8	18.5	10.7	2.0	1.7	12.1	6.7	10.7	16.2	12.0	16.2
Unitech Ltd	Real Estate	10	24,839	33,596	44,206	4,432	8,649	3,261	5,889	1	2	7.2	80.6	7.6	4.2	0.2	0.2	19.8	9.8	2.7	4.7	1.9	4.2
Future Retail	Retail	111	45,280	116,853	133,529	12,738	14,690	2,704	4,282	6	10.02	251.9	58.4	17.5	11.1	0.9	0.8	6.2	5.0	4.9	7.2	5.8	7.1
Shoppers Stop	Retail	395	32,896	47,544	53,341	2,470	3,585	260	869	3	10.44	-38.7	233.9	126.1	37.8	5.9	5.1	15.5	10.6	4.7	13.6	4.8	11.2
Raymond Ltd	Retail	410	25,178	60,731	68,679	5,375	6,387	1,665	2,212	27	36	47.7	32.8	15.1	11.4	1.5	1.3	7.0	6.0	9.8	11.5	8.0	9.0
Bata India	Retail	1,031	66,230	24,592	28,451	3,222	3,841	1,817	2,293	28	36	-28.1	26.2	36.5	28.9	5.9	5.2	19.6	15.9	16.1	18.0	17.0	19.1
Titan Company	Retail	362	320,935	135,027	160,918	12,963	16,092	9,151	11,688	10	13	12.1	27.7	35.1	27.5	8.6	7.0	24.1	18.4	26.8	28.1	27.7	30.0
Trent	Retail	1,156	38,411	28,583	36,365	2,305	3,379	1,654	2,593	50	78	148.5	56.8	23.2	14.8	2.8	2.4	15.7	9.5	12.1	15.9	9.7	13.0
Bharti Airtel	Telecom	416	1,664,517	999,419	1,114,978	341,732	384,292	69,919	64,217	17	16	15.8	-8.2	23.8	25.9	2.3	2.0	7.9	6.7	9.5	7.7	6.8	6.5
Reliance Comm	Telecom	60	149,712	234,448	n.a.	82,810	n.a.	14,143	n.a.	7	n.a.	47.7	n.a.	8.8	na	0.4	na	5.5	na	4.8	-	4.2	-
Bharti Infratel	Telecom	435	825,270	80,099	87,244	56,483	63,555	23,155	27,390	12	15	16.3	18.3	35.5	30.0	5.0	5.2	14.6	12.9	14.1	17.3	10.7	12.3
Idea Cellular	Telecom	174	626,111	371,665	416,001	127,477	147,917	39,744	31,084	11	9	28.5	-21.8	15.7	20.1	2.3	2.1	7.6	6.0	14.7	10.3	8.1	7.4
Tata Communication	Telecom	406	115,596	220,736	233,464	35,330	37,982	3,003	4,033	11	14	92.5	34.3	38.5	28.7	12.5	10.0	5.2	4.7	32.6	34.8	5.7	6.4
Aurobindo Pharma	Pharma	1,313	383,314	139,440	153,476	31,653	36,681	20,003	23,719	69	82	22.7	18.6	19.1	16.1	5.4	4.1	13.3	11.1	28.2	25.5	24.5	26.1
Biocon	Pharma	435	87,040	34,752	41,143	8,424	10,181	5,068	5,970	25	30	25.1	17.8	17.2	14.6	2.4	2.2	10.0	7.9	14.1	-	12.5	-
Cadila Healthcare	Pharma	1,822	373,083	97,441	111,234	20,935	24,513	14,216	17,213	69	84	20.5	21.1	26.2	21.7	6.9	5.4	18.4	15.4	26.2	24.8	19.4	20.6
Divi's Laboratories	Pharma	1,813	240,674	36,860	43,461	13,822	16,472	10,314	12,257	78	92	19.6	18.8	23.3	19.6	5.7	4.7	17.5	14.5	24.5	23.9	29.9	29.4
Dr Reddy's Labs.	Pharma	3,422	582,798	177,059	201,017	43,025	50,053	27,817	32,676	164	192	22.0	17.5	20.9	17.8	4.1	3.4	13.8	11.6	19.7	19.0	14.0	14.2
Glenmark Pharma	Pharma	835	235,436	79,162	94,541	17,419	21,937	10,246	13,724	36	49	37.3	33.9	23.0	17.2	4.8	3.8	14.6	11.3	20.9	22.1	14.8	16.8
Ipca Laboratories	Pharma	636	80,295	37,641	44,473	8,639	10,524	4,663	5,941	37	47	74.2	27.4	17.1	13.4	3.0	2.5	10.1	8.1	17.7	18.8	15.3	16.8
Lupin	Pharma	1,750	787,076	144,975	167,251	68,866	83,352	25,641	31,311	57	70	6.7	22.1	30.7	25.1	7.0	5.6	11.5	9.4	49.1	47.7	31.0	-
Sun Pharma	Pharma	832	2,001,012	312,039	353,317	96,570	117,866	66,579	77,562	28	32	12.2	16.5	30.0	25.8	6.4	5.3	20.0	15.9	19.7	20.8	16.3	17.5
Concor	Midcaps	1,747	340,532	66,073	78,090	15,456	18,324	12,091	14,126	62	72	15.4	16.8	28.2	24.1	3.9	3.5	20.1	16.5	14.0	14.6	14.0	14.7
Praj Inds.	Midcaps	85	15,040	11,852	14,700	1,083	1,691	648	1,072	4	6	42.4	65.4	23.2	14.0	2.4	2.2	13.5	8.4	10.2	15.8	8.6	13.2
Pennar Inds.	Midcaps	45	5,464	15,728	19,290	1,553	2,132	596	903	5	8	66.0	51.6	9.2	6.0	1.1	1.0	4.1	3.0	12.5	16.4	15.3	18.1
Allcargo	Midcaps	314	39,696	63,634	72,953	5,762	7,150	2,966	3,772	24	30	23.7	27.2	13.3	10.5	1.8	1.6	7.3	5.4	13.7	15.2	11.7	13.4

Note: For banks, EBITDA is pre-provision profit

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