

INDUSTRIAL MARKETS

# Resilience and Renewal - Engineering Sector Looks Ahead

KPMG IN INDIA



# CII Foreword



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Despite the global financial challenges, Indian engineering sector has posted encouraging results. Though at some levels constraints do persist, Indian engineering sector by and large has been able to leave behind the trails of slack order book and is looking ahead for aggressive growth. The growth momentum is expected to continue for the next few years primarily on account of government's increased thrust on infrastructure development. The continuing growth of the infrastructure segments and favourable regulatory policies would further strengthen the fundamentals of the sector.

However, the larger question that lies for Indian engineering sector is how do we take the next lead?

Engineering Summit 2010, set in the backdrop of the evolving characteristics of Indian engineering sector, aims at identifying the key enablers that can empower the sector to become globally competitive and at the same time also deliver domestically. It is important to formulate a vision for Indian engineering sector for the coming few decades, so that processes of technology, opportunity and talent management get synchronized with the overall growth trajectory of the sector. The summit would aim at bringing out an outline of the Indian engineering industry's future which is world class in terms of output and cost and at the same time has the option of scalability.

Since the summit is set up in the context of engineering sector undergoing major industrial restructuring, it was important that we capture the landscape of the industry from the point of view of their experience and key learnings. This report by CII and KPMG suitably captures the experience of industry leaders from engineering sector regarding how have they adapted their businesses to the challenges that they faced during economic slowdown and how do they intend to integrate the lessons learnt into the future business processes. The report covers a wide segment of domains and sums up the over all experience in terms of the business way forward for the engineering sector. It also sets a perspective for engineering companies on the key trends that the companies may have to adopt to carve a smooth growth path ahead.

I am sure that the report will prove to be a ready reckoner for the engineering sector in India giving a comprehensive picture of the changes that have been slowly permeating in the sector and scripting a new era for the engineering business in the country.

# KPMG Foreword



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In an otherwise service sector dominated economy, manufacturing sector has been part of the India growth story over the last five to six years. Thus, it was only natural that the whole economy was affected adversely when the industrial manufacturing sector was caught amidst the global economic crisis.

However, there are now several indicators that the manufacturing and engineering sector in India is back on a path of renewal and growth. Though weak order intake over the financial year 2009 impacted the H1 2010 earnings growth, the revival of capital expenditure patterns and the resultant order intake for H2 2010<sup>1</sup>, indicates that the worst may be past us.

This recovery has been a result of the underlying resilience of the engineering industry which was demonstrated during the downturn. The introspection and the resultant restructuring of business models and cost structures has made this sector more focused and better equipped to support the India growth story.

In this report, KPMG, along with CII, has explored and described some of the strategies implemented by the industry leaders during the downturn to become more resilient, growth focused and ahead of the economic cycle. These learnings have been complemented by KPMG's view points on leading practices that need to be adopted while managing such unanticipated market upheavals.

In line with the theme chosen by CII for this summit: **'Indian Engineering Sector: The Way Forward'**, this report also attempts to highlight the key trends that are likely to emerge within this industry along with the next growth phase, and the challenges that the Indian engineering industry has to overcome to achieve its underlying growth potential.

With strong domestic markets and infrastructure investment plans, India and China have led the revival of the world economy from one of the worst economic recessions we have ever seen. There is an immense growth opportunity in this context for Indian capital goods and engineering companies. We hope that the collective insights shared in this report contribute to future business policies and government enablement that drive India's long term growth in this sector.

<sup>1</sup> KPMG analysis and KPMG engineering survey 2010



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## 1

## Introduction



The severity and world wide impact of the global downturn was in many ways an unprecedented event that froze economies around the world for more than two years. Indian economy was no exception and was bound to witness a slow down. However, it showed greater resilience than most others and was amongst the first few to emerge from the downturn.

The period from September 2008 to June 2009 impacted industrial manufacturers most adversely. The gloom created by the global downturn impacted Indian industry in more ways than one. There was a severe crunch in financial liquidity both on debt and equity sides, customers backtracked on their orders, there were inventory pileups and blockages in cash flows, to name a few.

Our survey respondents from the Indian engineering industry indicated that while the impact of the global crisis was widespread in their industry, its severity was not such that it threatened the survival of the major Indian players. In fact, successful companies found ways of effectively mitigating the worst outcomes of the crisis.

Presently, the engineering sector is showing signs of recovery. This is reflected in IIP numbers which grew by 11.7 percent in November 2009 within which manufacturing sector grew by 12.7 percent<sup>2</sup>. Though some end user industries are still cautious in their capital expenditure plans, the sector continues to benefit from the relatively 'recession proof' high growth infrastructure segments like power generation and transport infrastructure.

However, our interaction with engineering industry leaders indicated that looking beyond the numbers, the prospects of growth are still fragile. Though order books are growing, the current growth momentum cannot be compared to the one pre-recession and margins continue to be under pressure.

Having said that, we believe that the determination and grit shown by some of the Indian companies during the recent downturn, proves their durability and resilience. Looking at the future, leading companies are attempting to institutionalize the new or innovative ways of managing business which they had to develop to combat the downturn.

<sup>2</sup> [www.mospi.gov.in](http://www.mospi.gov.in)

*“Resilience and Renewal: Engineering Sector Looks Ahead”* is a joint KPMG – CII attempt to summarize the key learnings from some of the industrial leaders in this sector on how they coped with the downturn, and their lessons for ensuring continued growth and success in the future.

The future is not only about opportunities though; it is also about overcoming the key challenges that confront our manufacturing sector in general, and the engineering industry in particular. These challenges are multifarious, and relate as much to regulatory, governance, and other business environment issues, as they do to the task of reorienting corporate management teams towards investing in internal capabilities like quality systems, innovation, and flexibility in business models. Meeting these challenges inevitably means more change - change in the structure and in business practices of the engineering sector; thus we believe that **the change has just begun.**



## 2

## Methodology used for KPMG Engineering Survey 2010

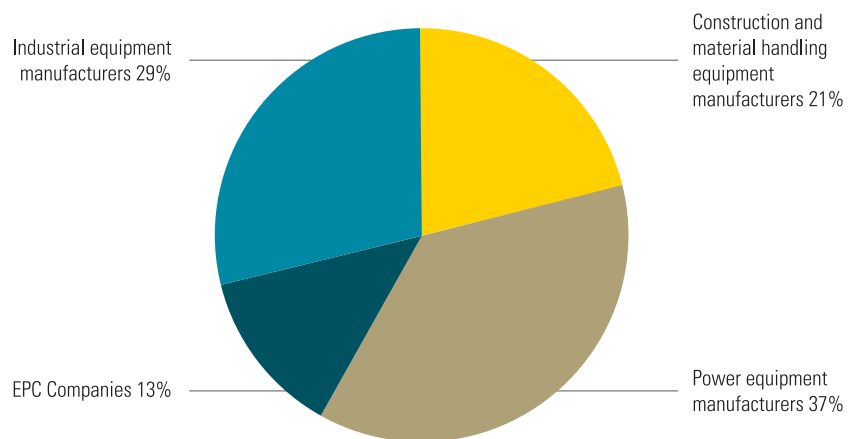


For the purpose of this report, we have considered the following key segments within the wider engineering industry:

- Power equipment manufacturers
- Industrial equipment manufacturers
- Construction and material handling equipment manufacturers
- Companies engaged in Erection Procurement and Commissioning (EPC).

The objective of the above profiling/classification was to ensure that we understand the challenges faced by the different sub-sectors within the engineering ecosystem.

### Survey participants by sector



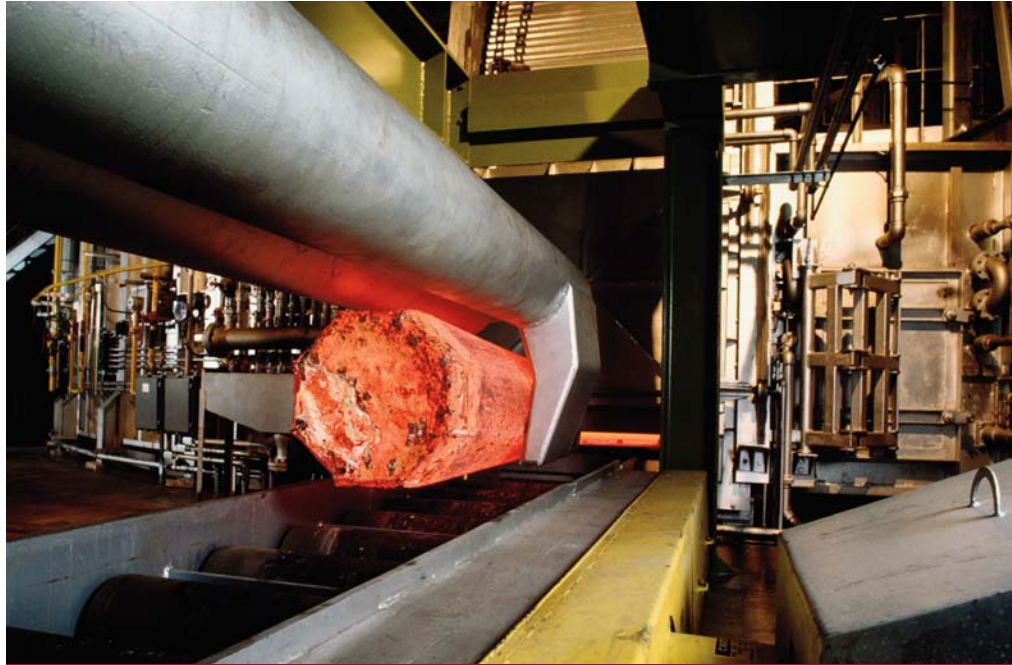
Source: KPMG Engineering Survey 2010

The respondents, which primarily consisted of MD / CFO / Strategy heads, were asked to share insights on various challenges faced by their organizations and different strategies implemented by them in overcoming those challenges. The respondents also shared their views on the way forward for the Engineering sector and the key challenges they expect to face during the next growth phase.

KPMG has also synthesized its own viewpoint, which has been developed while working with some of the industry players in helping them overcome the challenges brought about by the economic downturn. We hope that by encapsulating the combined experience of industry leaders and KPMG, our readers are better prepared to embrace the change that we foresee for this industry.

## 3

## Executive summary



It is commonly known that downturns are part of economic cycle, but it is often not equally emphasized that downturn is also the time when major competitive reordering happens. Economic slowdowns and crises force companies to shun complacency and challenge core assumptions underlying their business model. Likewise, slowdowns in their core markets force companies to look beyond, into new segments, customers and geographies.

### Resilience

Diversified operations and flexible business models are mantras for building resilience

Diversified operations and flexibility in business models were the two mantras that emerged quite consistently during our survey interactions. It was observed that companies operating in diversified business segments, geographies, or customer segments were better geared to face the volatile business environment during the downturn. This diversity helped offset the slowdown in any particular business segment. Similarly companies that had built flexibility in terms of their capacities and resources were better equipped to respond to the downturn. They were able to react more quickly and make the necessary changes to redeploy resources and capacities to alternate use.

## Focus on cash and working capital management

Recessionary environments led inevitable pressures on liquidity and sharp rises in working capital for most of our respondents. Hence, throughout the downturn, management attention of most of the respondent companies was firmly focused on ways to unlock working capital and enhance cash position. The variety of steps undertaken in this respect is reflective of the innovative mindset of the companies involved, and many of these steps are noted in the subsequent chapters.

## Technology and product innovation were not discarded

Quite contrary to the popular belief that recessionary times would call for cut backs in R&D and innovation efforts, our survey revealed that successful companies viewed the downturn as a period to consolidate and selectively invest in future and build a competitive edge. Increasingly, Indian companies have stopped considering R&D as a discretionary expenditure. Some of our respondents have during the downturn increased their outlay on new product development to ensure that once the markets recover, their company is ahead of competition with its new products.

## Renewal

Some of the trends highlighted in this report, which are expected to emerge during India's renewed growth phase are:

- Cost and quality leadership through automation
- Continued focus on process improvement
- Developing an innovation ecosystem
- Geographical expansion

## Roadblocks

As the industry readies itself for renewal and charts its growth strategies, it is also important to keep in mind that the business environment faces continued challenges in providing for the key enablers of this growth, viz. physical infrastructure, finance, skilled manpower, enabling regulations, transparent governance, to name a few. Lack of adequate progress on these fronts, besides rigidity in government policies is likely to impede the industry's progress and hence it is of paramount importance that the industry works collaboratively with policy makers to collectively develop an ecosystem that fosters this renewal and progress.

## 4

## Resilience - Strategies adopted to beat the slowdown

“Companies have to realize that it is important to build scalability in business models. The DNA of the company should be such that it can be duplicated in different markets.”

- Survey respondent, Managing Director of a large power equipment manufacturing company

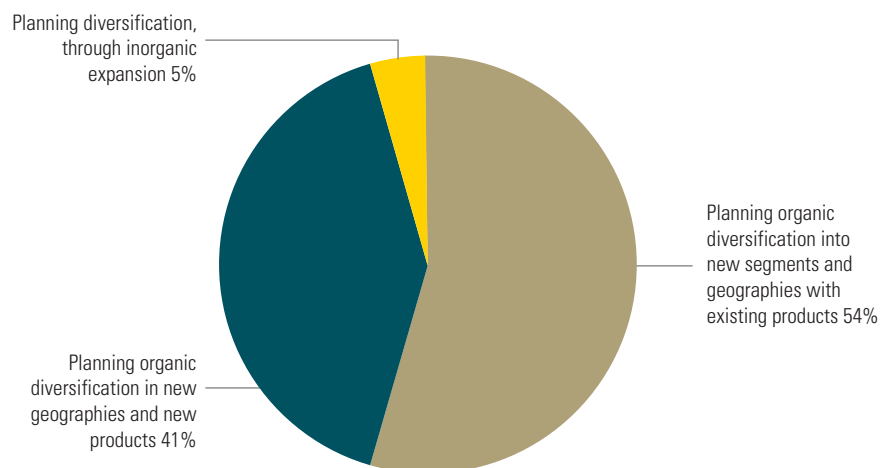
One of our respondents aptly summed up the experience of the downturn, by saying that business cycles aren't new to the engineering industry. However, the lessons learned by various participants during a pervasive downturn of the type we have witnessed, ensured there were some enduring themes and learnings for the future. Following were some of the key themes unearthed by our survey:

### Diversified operations showed higher level of resilience during slowdown

Companies with diversified operations showed higher level of resilience towards the downturn. During the harshest 'matter of survival' phase of the downturn, companies realized that diversification in different segments (geographies and verticals) shielded them from the downturn in a single business segment.

Our survey also reflected this desire of companies to diversify into both new categories and geographies. Clearly, the downturn has only served to hasten the need of engineering companies to de-risk their revenues.

### Survey response on diversification



Source: KPMG Engineering Survey 2010

**Case example:**

To deal with the economic downturn, one of the respondents to our survey, started exploring new markets. In western countries, customers were looking for cheaper products without compromising with quality. Grabbing this opportunity, the Company invested time, money and resources in international certification of its products for reaching out to the overseas market. It participated in various exhibitions and collaborated with various partners to establish credence to their brand name. All of these efforts helped the Company in establishing its footprint in foreign markets and capitalizing on the increased demand for better priced good quality products.

Market diversification appears particularly important for companies operating at the premium end of the quality and price spectrum. This is because price sensitivity of customers is enhanced during downturns, and premium priced vendors need to focus on segments that are less affected by the slowdown. In case of companies adopting a cost leadership strategy, even focused players can survive a slowdown since they will see a decline in margins but are still likely to maintain utilization due to increasing preference from price sensitive customers. Further, diversified companies with cost leadership strategies may find it more difficult than focused cost leaders during such slowdowns, since diversification usually results in higher overheads cost than that of focused competitors – overheads that impede the low cost player’s ability to compete with focused price warriors. Thus, for premium priced companies, diversification is an important step towards ensuring sustainability during downturns. Cost leaders intending to diversify, would need to evaluate the added complexity and costs of maintaining a diversified product and market presence while ensuring that they remain as cost competitive as their focused competitors during recessionary cycles.

**Diversification Matrix**



Source: KPMG analysis

“Employees have been our strength during the downturn and their involvement in various cost reduction strategies implemented by the company has been very helpful”

- Survey respondent, Managing Director of a large electrical equipment manufacturing company

#### Case example:

With declining product sales, one of our respondents started focusing on providing after sales service support to its customers. It re-trained its employees and redeployed them to the new service line. The Company capitalised on the opportunity and committed significant expenditure towards training its manpower and enhancing their skillsets to support the company's future growth plans.

## Reinforced commitment to human capital

In the wake of the downturn, a majority of companies had taken some actions to manage human capital and associated costs. However, with the recent war for talent fresh in the minds of top management, the overall response appears to have been measured. While companies did resort to steps like recruitment freeze, marginal or nil increments and restricted number of promotions, more drastic measures like reduction in staff count were rare.

There were fewer cases of retrenchment amongst Indian companies as compared to their counterparts in advanced economies. With expectations of quicker recovery than in the west, the talent pool was retained and was involved in managing initiatives such as cost optimization. Companies which had diversified businesses also managed to redeploy employees between businesses.

Our survey indicated that while a majority of the respondents experienced the problem of excessive manpower, only 9 percent of the companies actually resorted to manpower reduction. In fact, several companies viewed downturn as an opportunity to develop their in-house talent by focusing more on professional development and technical training.

Rather than altering their fixed manpower strength, a lot of companies tried to leverage the flexibility offered by the contract labour. To reduce people costs, companies increasingly resorted to reduced deployment of temporary and contract labor. This step was relatively easy and cost effective to implement, since semi-skilled contract labor is usually available when required.

## Cash is king

Liquidity, cash and working capital are keys to survival and growth of a business. The global credit crisis and the subsequent downturn restricted access to both equity and debt capital, and exposed companies to stricter credit terms.

Having learnt the lesson the hard way, companies are painfully aware that cash is king. In good times, it provides the ability to make acquisitions, invest in new plant and machinery and develop new products and services. And in bad times, it gives companies the capacity to absorb payment delays or defaults by customers and exposure to bad debt. It enables organizations to stabilize or even raise credit ratings and gain improved credit terms from suppliers.

Our survey indicated that companies with low leverage ratios were better positioned to overcome the challenges imposed by the downturn.

To preserve cash amid the global crisis, a lot of companies have also delayed their capital expenditure and other expansion plans besides focusing on working capital efficiency.

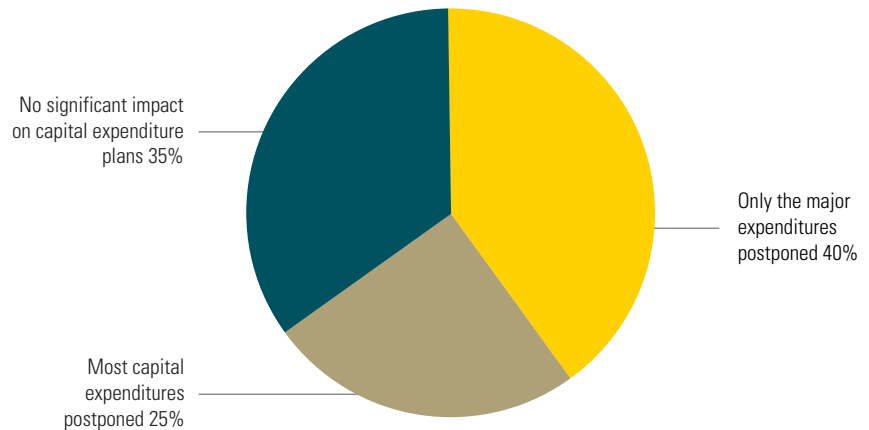
“Liquidity management has become critical for survival in these turbulent times. We do a weekly analysis of our cash flows to know our funding requirements in advance”

- Survey respondent, Managing Director of a large specialty equipment manufacturing company

#### Case example:

Realising that in turbulent times, cash is a cushion that one needs at hand, one of our respondents boosted cash consciousness across the business segments. They introduced annual incentive schemes for middle and senior management which were linked to operating cash flow. In response, managers dug deep into the company's working capital processes and gained intelligence on areas where efficiency could be enhanced.

#### Impact of downturn on capital expenditure



Source: KPMG Engineering Survey 2010

We realized that the slowdown had forced most of our respondents to find new ways to preserve cash, release working capital, and maintain liquidity, while managing risk. Companies had gained greater visibility and control over cash flows and understanding of minutiae regarding how it moves around the entire value chain, where it gets stuck and why. Some of the common approaches used to manage liquidity were:

- Improved visibility of cash requirements through shorter periods of forecasting (e.g. weekly rather than monthly forecasts)
- Improved accuracy of the forecasting process
- Identification and implementation of short term cash generation/ preservation initiatives
- Introduction of tighter controls over cash related procedures
- Introduction of cash related KPIs for executives charged with supply chain and working capital management
- Restructuring and renegotiating long term financing arrangements
- Sagacious distribution of dividends.

We sensed from our discussions that most companies planned to retain the discipline of cash flow management learned during recessions and use this as a longer term value driver for the business. Development of a 'cash-culture' and alignment of cash management related goals across functions were some of the longer term intentions.

### Case example:

One of the large engineering MNCs which was a part of our survey has managed to buck the trend partially by building flexibility in its manufacturing setup. Before the recession, the Company was growing at a 100% growth rate, but rather than going on an investment spree, the Company planned its growth rationally. It pruned its manufacturing capacity by realigning its various manufacturing processes and outsourcing the non core processes so as to ensure that the in-house capacity is available for increased level of core activities. In spite of the increased demand, the capacity was scaled up only in a gradual manner through outsourcing the non core activities. As a result of this cautious approach the company did not have excessive capacity during the recent downturn. Whatever excess capacity did exist was utilized by bringing in some of the non core activities in-house.

## Flexibility in business models is imperative to be successful in changing business environment

A company's selection of its business model is one of the most important strategic choices it makes. Hence it stands to reason that the same would perhaps be under scrutiny under extreme economic conditions. Most of our survey respondents agreed that having flexibility in business models and both downward and upward scalability of operations were the prerequisite to deal with economic uncertainties. While there is no prescription as to which model to adopt, all of these examples indicate that companies which had built in flexibility in their operations were better positioned to survive the downturn. Some of the examples noted during our survey, which benefited companies in this respect are enumerated below:

Bringing back outsourced activities in-house to boost capacity utilization

While some companies managed to limit their capital expenditure during the boom phase by outsourcing non-core activities while still managing to scale up, other companies brought in non core manufacturing activities in-house to manage unutilized capacity to tide over the downturn.

Reduce contract labour while retaining permanent staff

Companies dealt with excess capacity by utilizing the flexibility extended by contract staff. This resulted in the brunt of 'layoffs' (where they did occur) being faced by contract labor, while those on rolls were mostly retained.

Recalibrate order execution cycles across the value chain to respond to volatile demand

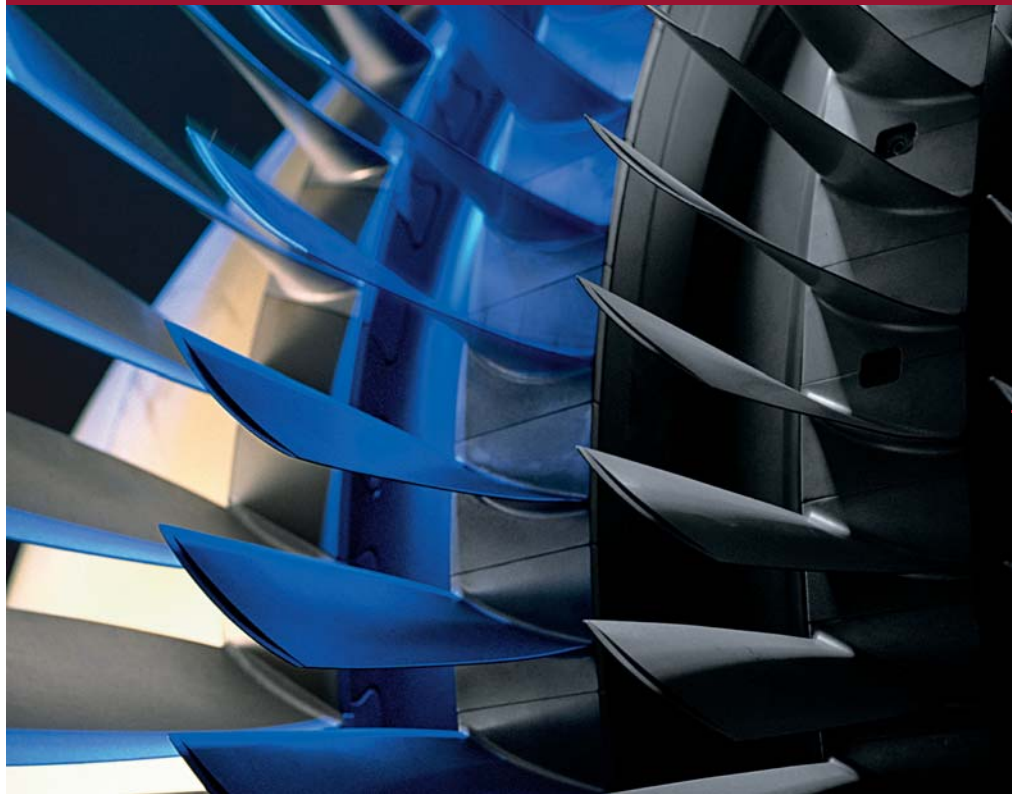
Hit by uncertainty and slowdown, customers of engineering products could predict demand for much shorter cycles than usual, and in turn, engineering companies had to respond to high degree of demand volatility and uncertainty. Monthly order books were reduced to weekly orders (for many component suppliers), and for equipment makers, lead times of six months or more during earlier period was reduced to one to four months in some cases. Each part of the value chain – vendors / procurement, manufacturing planning and logistics had to be recalibrated to respond to this demand uncertainty and shortened cycle.

Focus on service revenue streams from product customers

While product sales slowed down, some companies managed to compensate for some of the lost revenues by providing service to customers who had bought products from them in the past. This also had the welcome effect of providing an opportunity to redeploy employees otherwise engaged in product manufacturing. These product manufacturers in some cases realized the under-leveraged opportunity in services during the recession.

Changes in sales models: Use of 'Pay as you use' models to boost sales

With increasing capital expenditure constraints of customers, companies changed their sales model to boost sales. For example, a leading forklift manufacturer started offering pay as you use models to customers who had purchase constraints. Customers were offered an operator along with the forklift and had to pay as per the usage. Simultaneously, this company also entered into a collaboration with a foreign player to develop and introduce refurbished forklifts which being cheaper were well absorbed in the market. Such measures helped companies to increase their capacity utilization in an otherwise dampened demand scenario.



#### Case example:

One interesting trend involved some of the companies we surveyed, which were earlier focusing on product sales. They tried to expand their scope of services to the entire erection, procurement and commissioning (EPC) of projects.

Similarly erection companies are also shifting their focus from only erection to EPC contracts.

#### Need for growth and stable cash flows driving shift of focus from products to solutions

As discussed previously, with the downturn resulting in shrinkage of many of the product related revenue streams, engineering companies are increasingly driven towards becoming solution oriented. This involved the wrapping of various services and add-ons to the core products, as well as offering design and project management services. Increased focus on providing operations support and after sales services to the existing installed base, for example helped to create more stable sources of revenue for some engineering companies.

While shifting from products to solutions seems logical enough, the capabilities required to move from developing products to providing solutions are quite different. The systems, processes, culture and organization metrics that drive an integrated solution and services provider are also very different from that of a pure product manufacturer.

While several companies in our survey sample have introduced solutions and services to their products customers in an effort to broaden the revenue base, most have not yet geared their organization capabilities optimally to reflect this change in focus and mind-set.

“Recession had an impact of commoditizing the product, as a result of which we had to increasingly rely on our R&D to ‘dress-up’ the product and provide value to customer”

- Survey respondent, Managing Director of a large industrial equipment manufacturing company

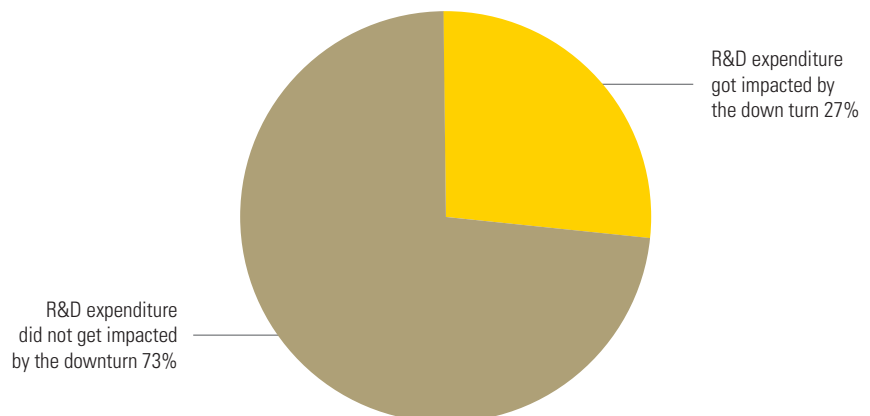
#### Case example:

One of the respondents to our survey, being a MNC, started providing R&D support to its global counterparts. This not only emerged as an opportunity for the Company to utilise its idle capacity, but also helped the Company to develop new technology through global support.

## Innovation in technology and focus on R&D is the need of the hour

Indian engineering companies have become increasingly focused on developing in-house design and product development ability. Unlike the past, development expenditure is now increasingly viewed as an essential item with few curtailments even during challenging economic times. This was borne out by several of our private sector respondents, and it augurs well for the country’s future technology and design capability. It could also mark a shift in the future from the economy’s R&D spending patterns, which is dominated to the extent of 75 – 80 percent by the public sector organizations in India.<sup>3</sup>

## Impact of slowdown on technology and R&D spend



Source: KPMG Engineering Survey 2010

While some companies exhibited caution, most went ahead with investments in R&D, believing that the future would bring in orders based on technologies and products in which the companies invested. One hopes that the day isn’t far when the Nano<sup>4</sup> of the engineering industry would be developed in India.

<sup>3</sup> Rediff Business- January 07, 2010

<sup>4</sup> The Nano from TATA Motors was built from scratch on a bottom up basis rather than adopting designs which were successful elsewhere in the west. This zero-base approach is believed to be one of the critical elements of its costing

“Working capital management has got embedded in our culture. All departments from production to administration have been given KRAs related to working capital management”

- Survey respondent, President of a large construction and material handling equipment manufacturing company

#### Case example:

One of the respondents to our survey had constituted a task force to ensure working capital levels of the company are brought down. Unfortunately many CFO's do not have the visibility they need into operations and processes to properly identify and then mitigate inventory as a liability. Hence, other than the CFO, the taskforce included various functional heads as well. This collective wisdom of various functional heads was used to achieve a leaner working capital structure and minimise the associated capital cost.

## Working capital management

Working capital management is an area of immediate focus during any slowdown and the experience of companies during the previous year was along expected lines.

With delayed payments from customers and banks holding back disbursements, there was a severe crunch in liquidity and credit availability across the engineering value chain. While companies which had conserved cash found it easier to tide over this, many smaller and medium enterprises found it more challenging. The problem was compounded in cases with significant raw material imports and finished goods exports. Several companies had to resort to making advance payments or collecting material on cash basis.

Most of the companies in our survey had initiated strict working capital controls to ensure that the situation didn't get out of control. Working capital pressure was applied through the value chain. Both ends of the value chain i.e., company's dealers and vendors were asked to renegotiate their payment terms and absorb some of the liquidity pressure.

Apart from managing business related current assets and liabilities more efficiently, the financing of working capital – making better use of short term investments in the form of securities, factoring or other means were also tapped to release some much needed cash into working capital.

Increased involvement of technology to get real time view of cash and stock positions, deploying real time forecasting tools to monitor actual orders and adjust stocks accordingly were also deployed in some cases, and helped companies to move away from relying on historical patterns which are no longer good predictors of short term scenarios.

“There was so much volatility in raw material prices, that no hedging worked for the Company, it had to resort to buying of small quantities just enough for immediate sales, which not only protected the Company from price volatility but also reduced the inventory holding cost”

- Survey respondent, Managing Director of a large industrial equipment manufacturing company

#### Case example:

One of our respondents achieved a significant cost reduction by restructuring its sourcing strategy and exploring new markets for its raw material. It started sourcing its raw material from lower cost sources like Congo and while the insurance and freight cost increased, it was completely outweighed by the overall reduction in raw material prices.

## Raw material and foreign exchange volatility

For most engineering companies with a product based business model, raw material costs could range from anywhere between 40-70 percent of their sales. So raw material costs are central to the profitability of such companies. For service companies (EPC contractors, system integrators), the significance of raw material is usually much less since they usually try to pass through material costs to customers, although it is not always possible. Some customers also prefer to purchase raw materials themselves with service providers as consignees. Decision making is even more complicated in case of imported raw material prices due to the impact of foreign exchange volatility.

Companies we spoke to, had adopted a host of strategies to manage volatility in raw material prices including the impact of foreign exchange volatility, during the global downturn:

- Some adopted the approach of buying in bulk when they believed prices were low. However this turned out to be highly speculative in most cases, and exposed companies to the multiple risks of inventory pile-up due to order cancellation/deferral, further declines in the commodity price, and locked-up vital cash in times of crisis. Volatility of raw material prices especially metals, cost several speculating companies quite heavily since they could not correctly anticipate the direction of price movements
- Some large companies had specialists on their rolls who had the skills to carry out active trade in a volatile commodity market. More prudent companies had formulated conservative hedging policies with advice from bankers and risk specialists - which limited their exposure to an extent, but extreme volatility in prices could not be hedged completely in many cases
- Most companies chose to employ more traditional methods of managing inventory more tightly, to limit their exposure regardless of the direction of prices. There was an increased focus on JIT inventory and in effect, companies across the value chain (metal fabricators, component manufacturers, OEMs) resorted to buying small quantities meant for immediate sale
- Some companies also altered their sourcing strategies to benefit from the cost advantage offered by lower cost vendors

In addition to raw materials and related foreign exchange variations, several companies have also tried to hedge against receivables in foreign currency with limited success. The high volatility in the foreign exchange movement and limited understanding of hedging-related risks resulted in huge hedging losses for some companies. Many Indian engineering companies faced a high risk of mark-to-market losses due to a volatile foreign exchange market.

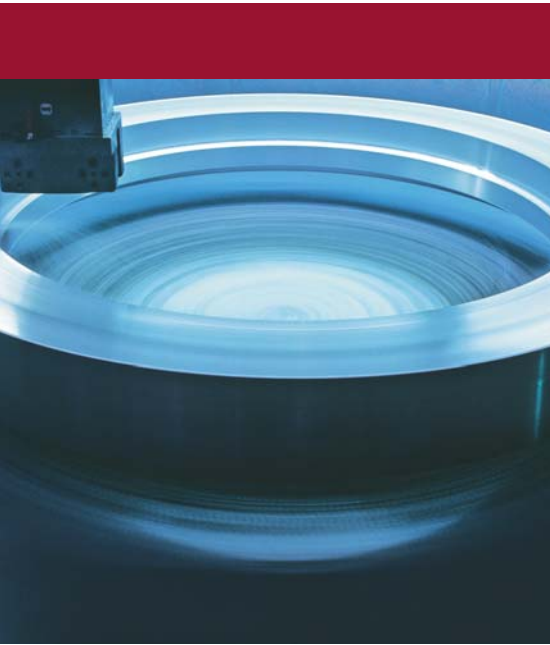
In one respect, the impact of the slowdown mitigated the problems of engineering companies – the cost of one major raw material – that of steel and ferrous materials plummeted from historical highs during the April – September 2008 period, to lows in the October 2008 - May 2009 period<sup>5</sup>. This certainly mitigated the impact of the demand slow down particularly for engineering companies which were struggling to pass on the increases in cost of steel during the period leading up to the slowdown.



<sup>5</sup> 'Crisil Research 29 January, 2010'

## 5

## Renewal - Robust business models core to future growth plans



The consensus amongst most market commentators has grown that worst of the crisis is behind us, however, market conditions remain tough and there is still much uncertainty about the timing and strength of the recovery. Our current view is that market conditions in 2010 are likely to continue to represent challenges for particularly the export-oriented segments of the engineering industry; however, we expect to see continuing improvement during the year.

We also believe that India has a shining future ahead. No longer a slumbering giant, Indian economy is better geared to handle the aftermath of the downturn as compared to its western counterparts.

Following are the key trends that are expected to emerge while India Inc fights its battle through the changing economic scenario:

### Growth is back on the CEO's agenda

India is finally emerging out of the woods and is looking ahead at growth. Today confidence has replaced pessimism and companies are exploring new avenues of growth, albeit with caution. One effect of the slowdown has been that the exuberance of the previous growth period has now been toned by a more cautious and rational approach to growth. Companies have realized that volatility is likely to remain an integral part of the business environment going forward. Hence, only companies who gear themselves up to face this volatility while planning for their growth are likely to be successful.

Learning the lessons from the downturn, the time may be ripe for rethinking and redesigning business models so that we make investments required to support the new realities of demand driven manufacturing. For effective management of the downturn and driving value generators of the business, it will be important for Indian companies to:

- Understand the relevant underlying critical success factors
- effective human resource management
- respect competitive limits
- focus on a smaller set of key strategies.

“Many firms do not fully understand the behaviour of their costs from a strategic perspective and fail to exploit opportunities to improve their relative cost position”

— An extract from **Competitive Advantage: Creating and Sustaining Superior Performance**, authored by Michael Porter

## Cost and quality leadership through automation

### Automation - an enabling tool

In the wake of increasing global competition, cost leadership is expected to be critical to expand the global footprint. With shrinking order books in their home markets, many international players are setting their sights on India. Similarly globally, with reduced spending capacity, competitive nations like China are giving India tough competition due to their cost advantages.

Hence, Indian companies are aiming at cost optimization along with value creation for the customer, while simultaneously striving for globally acceptable levels of quality. Increased use of software/ automation in the manufacturing process to make intelligent products is likely to help companies to differentiate from the competition. Automation results in increased productivity with limited resources which usually helps companies to improve variable cost structures.

Having said this, the decision to invest in manufacturing automation needs to be nuanced by a thorough understanding of the quantified benefits of such automation, at a process, plant or line level. Unlike in the West where high labor costs drive automation, in India it is the combination of labor productivity, process quality improvement, and need to scale quickly unconstrained by supply of semi-skilled manual labor, that drive automation decisions. India remains a low cost base for supply of engineering workers, however, automation is increasingly playing a role in manufacturing processes of the most successful engineering companies due to the above factors.

Finally, it is important that manufacturing automation system is integrated with other IT applications and management dashboards of the company, so that it can be used as a real time tool to enhance responsiveness and optimize costs across the value chain.

### Exploiting Flexibility for Cost Advantage

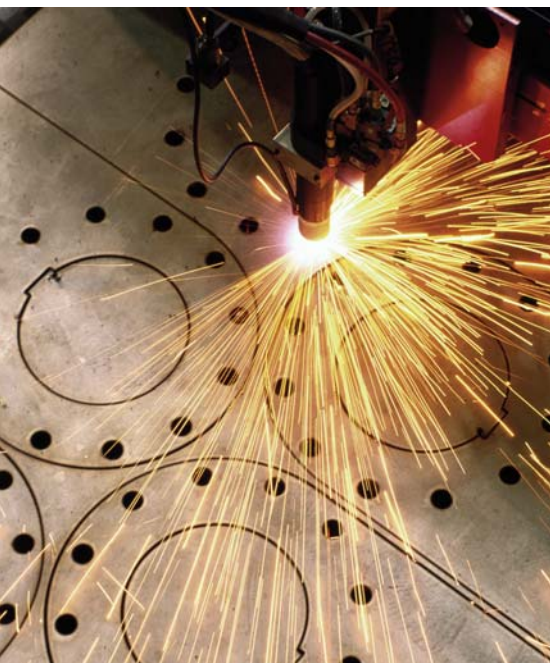
As Michael Porter puts it '*Many firms do not fully understand the behaviour of their costs from a strategic perspective and fail to exploit opportunities to improve their relative cost position*'<sup>6</sup>. - For example, while it is important to focus on reduction of stock levels, cutting processing time, improving on-time delivery and enhancing quality and capacity to achieve cost reduction, these might not result in sustained cost leadership as these models and actions are easily replicable by competitors.

<sup>6</sup> An extract from Competitive Advantage: Creating and Sustaining Superior Performance, authored by Michael Porter

It is critical to identify and build on the organisation's distinctive or core competence, in the search for sustainable cost advantages. For instance, the responsiveness and flexibility available to smaller organizations is one of the characteristics that need to be exploited by them to achieve cost leadership. This kind of flexibility may not be possible for larger companies without sacrificing some of the advantages of scale and scope on which they build cost leadership.

Organizational flexibility also dictates the speed and momentum of change that can be affected during downturns, to rapidly reduce costs. For e.g. – does your company regularly review and update its approved vendor lists based on vendor performance? If not, trying to find and switch over to new, lower cost vendors suddenly during a slowdown is likely to encounter severe organizational inertia. Or – has your organization developed the competence to work with, and obtain good performance from outsourced service or component vendors? If not, it will struggle to suddenly ramp up its outsourcing activity (for services earlier performed in-house) as the organization scrambles to change some of its fixed costs to variable costs to cope with the demand volatility that is engendered by a downturn.

Our analysis suggests that in the future the best engineering companies are likely to be those that continuously monitor their cost structures, strategic cost drivers, and the composition of fixed to variable costs. All this should be done in a way that facilitates long term decisions to move to lower costs and flexible structures. This would be irrespective of impending downturns and should not be lost in the quagmires of divergent internal interests and resistance to change.



### Focus on process improvement

A key constituent of robust business architecture is operational efficiency. Successful companies understand that financial strength is built on a cohesive and well managed operational platform backed by efficient business processes which embodies controls and customer responsiveness as well, besides operational efficiency.

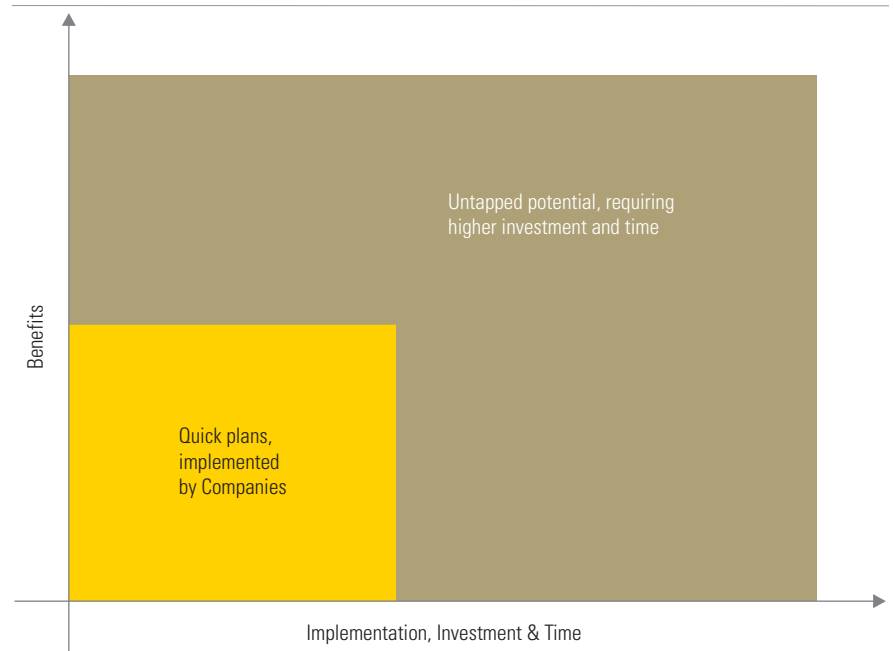
Many of the engineering companies, as well as other industrial markets companies we observed, used the downturn to drive improvements in operational efficiency. The ones who did so successfully are likely to emerge (or have already emerged) leaner and more competitive, capable of addressing the multiple growth opportunities that are currently opening up in the economy.



Companies which focused on 'quick fixes' to stay afloat during the downturn, now need to take a hard look at their operational platforms, cost drivers, and value engineering initiatives to help ensure they remain competitive in the long run.

While many companies have implemented some or the other kind of cost reduction/ optimization exercise, many of these exercises have been internal and easy to implement. Not too many companies have invested in identifying areas where there is potential but require time and investment.

### Disparity in process improvement and cost optimization plans implemented and benefits achieved



Source: KPMG analysis

When sales and profits fall, attention to costs is a necessary response. Yet conventional cost cutting is often a hasty reaction to business problems. The need of the hour is to take a strategic approach to costs which entails identifying specific areas within the business that are under-employed or diminish economic value, and redeploy these resources or eliminate them from the business altogether. As a more planned approach to managing and optimising costs, strategic cost management requires a better understanding of the fundamental cost drivers within the business. It is about building a better business for the future by rethinking the business model, not just by creating a cheaper one.

In the era of cautious spending, companies wanting to innovate will have to do more with less - and focus on getting more out of the Innovation ecosystem that it develops

## Developing an innovation ecosystem

### **Need to develop innovation capability**

Many Indian companies tend to neglect product and platform innovation, until evolving technology or better designed competitive products, or regulatory discontinuities threaten their market shares in core products. With maturing consumerism, changing technologies and increasing global competition, the key to sustainable growth is continuous product and process improvements.

Successful Indian engineering companies, particularly those who have succeeded on the global stage, have demonstrated how product and process innovation is key to their growth and performance. An example in this context is one of our respondents, which continued to invest in R&D as a core capability, and maintained its new product pipeline through the downturn. This kind of commitment can only be derived from a culture that fosters innovation, and a deep insight into the competitive drivers of the company, along with management conviction about the need to keep its products in the leading edge of the customer's price – value perception.

### **Need for measuring and enhancing innovation productivity**

While Indian companies are well versed with the need for product innovation capability, maintenance of the productivity and efficacy of innovation processes and people is not practiced on a wider scale. However, several leading companies have now started taking a close look at the metrics, processes and reward systems of its personnel who are engaged in product innovation – in R&D, in engineering and other new product development functions. Success rates of new products are in focus, as is the practice of carrying out more rigorous market research, features analysis, and cost projections for any new product that is introduced. The idea here is to prune unviable new product ideas as early as possible in the development cycle, and improve success rates and productivity of the scarce resources that companies employ in their innovation efforts. Hence, the 'business of innovation' is going to be as much under focus in the future, as will be the 'technologies of innovation'.

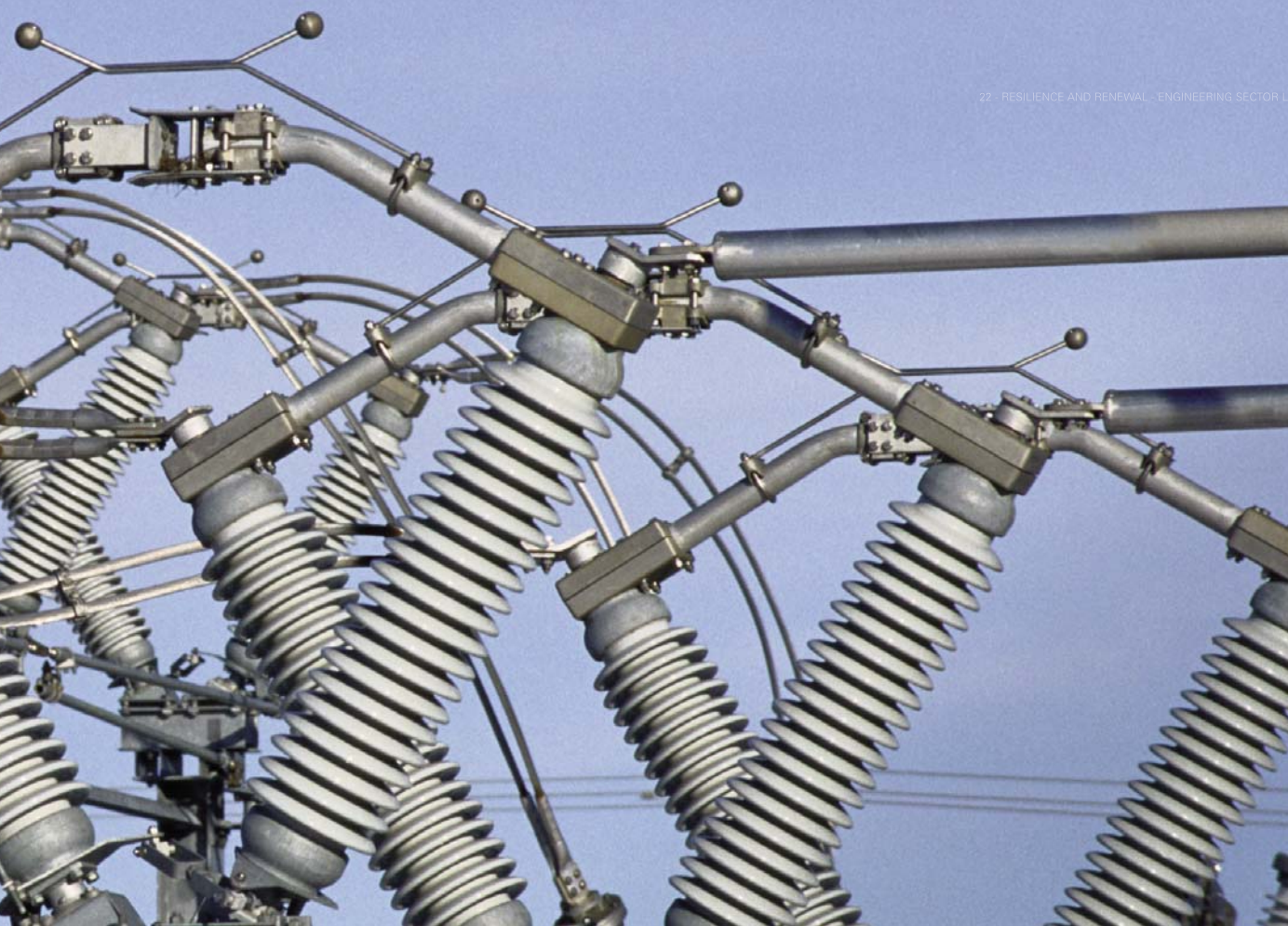


### **Developing the 'frugal engineering' market globally**

Considering that some successful Indian companies have demonstrated their capabilities in frugal engineering, it presents a great prospect for Indian companies to not only innovate in their own businesses but also become a supplier of frugal engineering solutions to the globe.

An emerging trend which supports the above idea is that the current turbulent R&D environment is also forcing many companies to relocate the innovation talent beyond their own boundaries. Increasingly, companies are discovering the advantages of collaborating with a range of external entities, from suppliers to universities to customers for novel ideas. In some instances, they rely upon these external entities to independently produce innovation and in others they actively collaborate with them. The benefits of externalizing innovation are obvious, ranging from cost sharing to leveraging potential economies of scale.

Indian made products like 'Nano' and the 'Chota Kool' are testimony to the capability of Indian businesses to innovate for the local market. However, to realise their full potential, there is a need to continuously foster an open ecosystem to cultivate innovation. India would benefit from increasing competition as part of efforts to improve the investment climate, supported by stronger skills, better information infrastructure and more finance – public and private. Government's support to boost the innovation initiatives taken by the private companies will go a long way in establishing India as a global supplier of frugal engineering.



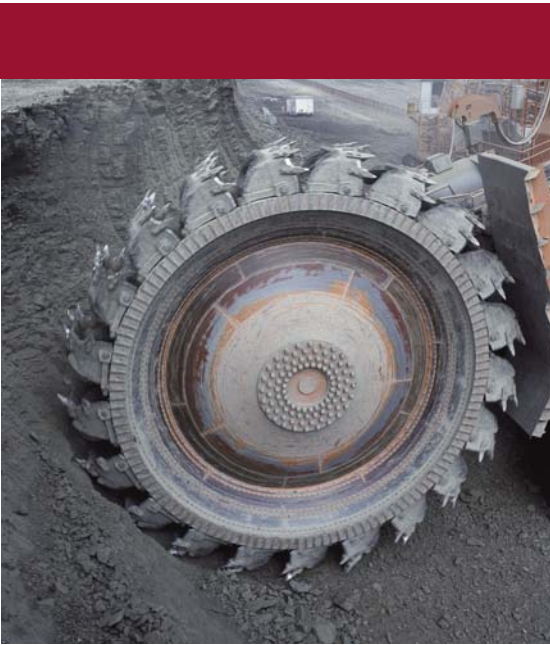
## Geographical expansion

The recent economic downturn has provided upsides to companies with robust balance sheet and an appetite to manage risk. The downturn has presented itself as a rare opportunity to grow globally through acquisitions, in terms of attractive valuations for some of the leading western companies in several sectors. Limited availability of capital is forcing many businesses in high wage economies to exit, resulting in excellent buyout opportunities to those who have been able to beat the downturn. Exploiting appropriate and 'strategic fit' acquisition opportunities now, will position Indian businesses to reap the maximum returns when recovery is in full bloom.

Alternatively, many companies are also increasingly looking at an organic geographical expansion. The objectives have been twofold, one to take advantage of weakening competition and acquiring customers/ market share of the competition and second to look at new geographies to derisk oneself from the risks associated with certain specific geographies. During the survey, many respondents have been able to manage the downturn, because the impact of the weakening US and European economies was offset by the opening up of new markets like Africa, South America and Middle East.

# 6

## Roadblocks - Key challenges



Upbeat with the renewed growth momentum, Indian economy is accelerating at an unexpectedly high pace. Though the aspirations are big, Indian companies would have to deal with quite a few challenges to maintain this momentum. Some of these challenges have been summarized below:

### Low R&D spend

As one of our respondents summarized, as compared to their global counterparts, Indian companies lack strong R&D project management skills and their R&D spending is low. Even the larger engineering companies have been predominantly followers rather than leaders when it comes to technological capabilities and innovation.

Historically, the aggregate domestic R&D spending has never exceeded 1 percent of GDP<sup>7</sup>. Even in 2010, as per the 2010 global R&D forecast, India's spend on R&D as a percentage of GDP will be 0.9 percent as against 2.85 percent for US and 3.41 percent for Japan<sup>8</sup>. As highlighted previously in the report, R&D is the key for Indian companies to differentiate themselves amidst the global competition. Accordingly, the need for continuing investment in R&D is paramount.

### Key actions to spur the R&D spend by both Corporate and Government



Source: KPMG analysis

<sup>7</sup> World Bank report: Unleashing India's innovation

<sup>8</sup> 2010 global R&D forecast created by Battelle and R&D Magazine

For India Inc to cast its character of its own which is different from being just a strong manufacturing base, it will be important for it to focus on product and process technology-oriented IP creation. Building scale without focus on new product development would be challenging for Indian companies. Hence, it is important for Indian companies to enhance their innovation capabilities and work together with the government to foster an innovation culture in the country.

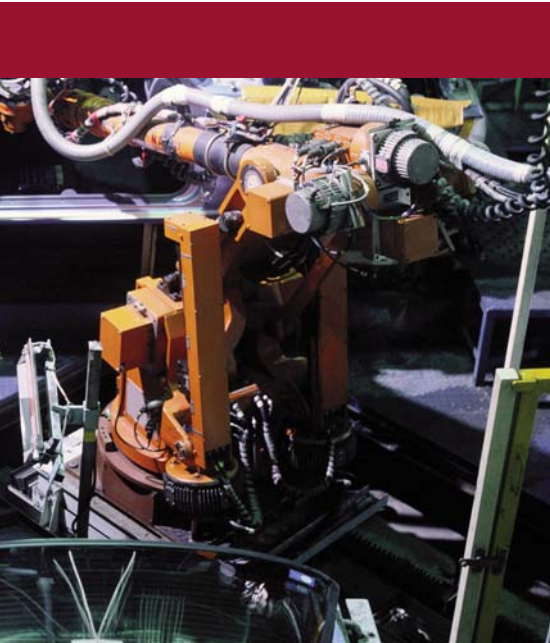
### Inadequate ecosystem to foster growth

Through its continued resilience during the downturn, India has re-emphasized its economic stability and its potential to become an economic super power. However, the existing ecosystem in terms of government support and infrastructure needs to come up to the pace to provide the required impetus for the future growth trajectory.

#### Some of the key issues relating to the ecosystem, as highlighted by our respondents

Infrastructure	<ul style="list-style-type: none"> <li>• Availability of efficient and reliable logistics and infrastructure services, including road network, railways, IT infrastructure, housing and logistics</li> </ul>
Finance	<ul style="list-style-type: none"> <li>• Availability and access to various sources of finance especially for seed funding</li> </ul>
Manpower	<ul style="list-style-type: none"> <li>• Availability of skilled manpower, cost of manpower</li> </ul>
Regulatory issues	<ul style="list-style-type: none"> <li>• Labor regulations, FDI, subsidized inputs, intellectual property rights</li> </ul>
Governance issues	<ul style="list-style-type: none"> <li>• Bureaucracy, corruption, fiscal policy, tax holidays</li> </ul>

Source: KPMG Engineering Survey 2010 and KPMG analysis



It is well accepted that the state of the industrial and logistics infrastructure in India is very weak compared to global standards. While big strides are being planned in many areas of infrastructure going forward, we expect at least 5 - 10 years of continuing shortage in availability and reliability of key infrastructure components needed by the engineering industry.

In fact, success today for entrepreneurs in several manufacturing sectors like engineering often depends upon finding alternate solutions to public infrastructure bottlenecks, like reliable power from captive sources, or use of higher cost modes of private road transport than reliance on public systems like railways. These infrastructure bottlenecks have also led to the erosion of India's relative advantage from low cost of skilled labor and we find that higher wage countries having better infrastructure like Malaysia, Taiwan or Brazil are better positioned to serve global supply chains than India, despite the abundance of low cost labour. Endemic bureaucracy, corruption, and unpredictable tax regimes also contribute to this erosion of our relative competitiveness.

Further, lack of funding at competitive rates is one of the biggest barriers for growth of engineering companies. Due to the nature of the end customers they serve, who are often project based companies, the working capital needs of engineering companies are high. Constraints to external availability of working capital result in entrepreneurs deploying the majority of their internal accruals towards this purpose, and this impacts their ability to invest in other tangible or intangible assets like machinery, new product, or new market development.

Accordingly, it will be important for the government, industry, academia and the regulators to get together and form policies that can lead to inclusive growth in the country. While the government needs to act more as an enabler than a controller and focus on providing better infrastructure, conducive atmosphere to attract investments and implementing growth oriented economic policies, India Inc should also take constructive steps and do its bit by increasingly participating in public private partnership to develop the ecosystem.

KPMG in its recent study, conducted along with TiE – Entrepreneurial India: Sculpting the Landscape, has evaluated the perspective of Indian states and their initiatives towards entrepreneurial development. Some of the leading practices adopted by the states to foster entrepreneurial growth in its respective territories that have been summarized in this study can be accessed at [http://www.in.kpmg.com/TL\\_Files/Pictures/KPMG\\_TiE\\_Report.pdf](http://www.in.kpmg.com/TL_Files/Pictures/KPMG_TiE_Report.pdf)

### Attracting and retaining the talent pool

Amongst other key growth challenges, the lack of adequate numbers of well trained technicians in many engineering disciplines have also begun to seriously affect the growth prospects of the industry. The technical vocational training infrastructure in India, in the form of Industrial training institutes and similar other



institutes, is grossly inadequate to meet its burgeoning needs. The quality of training provided is also far below the essential needs in terms of modern range of equipment and knowledge of advances in manufacturing processes that is lacking in these educational institutes.

Most large engineering companies therefore, invest in training their operators and technicians in-house, or with equipment or technology vendors. Smaller firms who can ill afford to do so due to lack of scale or competent in-house staff, are at a major disadvantage in this respect. Large companies in this sector should take steps to enhance the technological maturity of the smaller companies who are their suppliers – to enhance the overall competitiveness of India's engineering ecosystem.

At higher skill levels, there is also a gap between the requirement of well trained engineering graduates or diploma engineers compared to the number willing to enter and stay in the industry in India today. This is in part due to the more remunerative avenues available to our graduate engineering talent in the form of IT or professional management careers, and partly due to the mobility of the best trained resources to higher wage countries like US or the Middle East.

While the industry presently has limited options to completely change its wage structure, it can – and should – concentrate on offering greater degree of technological challenge and achievement to its highly trained engineers, as a route to attract and retain them. This may follow naturally as the industry moves away from merely indigenizing imported technology, instead focusing on innovation, collaborative product development, and commercialization of locally developed technologies. Indian engineering achievements (for example, development of the Nano small car, or the heavy equipment manufactured and exported by BHEL or L&T) need to be showcased, respected and rewarded more, if talented graduates are expected to make their careers in the engineering industry.

At a policy level, India's business leaders and policymakers should establish a formal partnership to identify needed workforce skills, match that talent with specific workforce opportunities and ultimately foster greater collaboration between industry and academia to develop joint training programs and engage students in industry-related projects.

## Conclusion

We have attempted through this paper to understand and highlight the learnings for the engineering sector from the events and business cycles seen in the past two years. We express our sincere thanks and gratitude to all the survey respondents – CEOs and business leaders who gave their valuable time and contribution for this paper. We hope the lessons learnt are understood, imbibed, and form the stepping stones for further progress of this dynamic industry in India. KPMG is proud to be associated with many of the leading companies in this sector, and based on the discussions with our study respondents, we look forward to the future of this industry with optimism and confidence.

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- Ranjeet Dalvi, Executive Vice President Corporate Planning, Siemens Limited
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# About Confederation of Indian Industry (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.

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With 64 offices in India, 9 overseas in Australia, Austria, China, France, Germany, Japan, Singapore, UK, and USA, and institutional partnerships with 213 counterpart organizations in 88 countries, CII serves as a reference point for Indian industry and the international business community.

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