Overview of Infrastructure and Construction Machinery Industry in India – Opportunities and Challenges

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INDIA
An Overview
“India to have the highest increase in working age population (16-64 years) globally (2010-20) at 119 million, and will be as source of Competitive Advantage”.

- Median age 25
- World’s largest democracy
- 29 States + 7 Union Territories
- 22 official languages, 200+ dialects
- Largest English speaking population
- Very large technical skills base
- Well developed financial & banking system
- Increasing number Indian owned global companies

<table>
<thead>
<tr>
<th>Land Area Million Km²</th>
<th>Population (Millions)</th>
<th>Density / Km²</th>
</tr>
</thead>
<tbody>
<tr>
<td>India</td>
<td>USA</td>
<td>Europe</td>
</tr>
<tr>
<td>3.3</td>
<td>9.8</td>
<td>10</td>
</tr>
<tr>
<td>3.3</td>
<td>1200</td>
<td>310</td>
</tr>
<tr>
<td>363</td>
<td>32</td>
<td>83</td>
</tr>
</tbody>
</table>
INDIA - Snapshot 1

Key Statistics

- Population: Over 1.2 bn
- Annual Population Growth: 1.28%
- 22 Official languages - Major languages: English, Hindi
- Unemployment rate: 8.5%
- Employment: 498 million
- India’s economy ranks as the 10th largest in the world
- 31% urban households in India
- India’s GDP is 3rd largest in the world in terms of Purchasing Power Parity (PPP)
- India’s GDP depends heavily on Agriculture
  -- 53% of country’s total working population was agriculture dependent
  -- Monsoon also plays major role due to India’s dependence on Agriculture
Currency: Rupee
Exchange Rate (20 May 2014)
-- 1 Euro = INR 80.31
-- US$ 1 = INR 58.66
GDP approx.: € 1344 billion
GDP growth – 4.9% (FY 2013-14)
GDP Forecast – 5.7% (FY 2014-15)
GDP splits:
  -- Services – 59.3%,
  -- Agriculture – 13.7%
  -- Industry – 27%
Per capita income – € 902 p.a. (approx.)
Industrial Growth – 1.1%
Industrial Growth splits:
  -- Manufacturing – 80%
  -- Mining – 10%
  -- Electricity – 10%
Foreign Institutional investors (FII) : € 13.5 billion (2013-14)
Foreign Direct Investments (FDI): € 15.17 billion (2013-14)
The performance of the Indian economy over the past two years especially the manufacturing output has been disappointing.

The recessionary pressure of 2012-13 have severely impacted the industrial activity within India.

The Index of industrial production has seen a negative growth predominantly due to the slowdown in the manufacturing sectors.

A large current account deficit, high domestic inflation and a fiscal stance that was widening compounded the problems facing the economy.

Low growth and weak business confidence feed into each other in a negative feedback loop.

However the economy is expected to recover and see a GDP growth of around 5.7% for the year FY 2015 (2014 - 2015)
India – the Opportunity

The Middle Bulge: Middle Class Individuals to Account for 62% of India’s Population (864 Million Individuals) in 2020

- 2010
  - 1,219 Million Individuals
  - Income Per Annum
    - > Rs.1,00,00,000 ($220,000): 0.1% (1)
    - Rs.100,00,000 ($220,000): 0.1% (1)
    - Rs.50,00,000 ($110,000): 0.4% (5)
    - Rs.20,00,000 ($44,000): 1% (12)
    - Rs. 10,00,000 ($22,000): 13% (157)
    - Rs. 3,40,000 ($7,500): 30% (359)
    - Rs. 1,50,000 ($3,200): 18% (228)
    - Rs. 52,000 ($1,000): 37% (456)
    - <Rs. 52,000 ($1,000): 37% (456)
  - Super Rich: 0.4% (5)
  - Rich: 1% (10)
  - Affluent: 3% (45)
  - Upper Middle Class: 7% (95)
  - Middle Class: 19% (269)
  - Lower Middle Class: 36% (500)
  - Poverty Line: 18% (228)
  - Poor: 6% (85)
  - Below Poverty Line: 28% (390)

- 2020
  - 1,399 Million Individuals
  - Income Per Annum
  - > Rs.1,00,00,000 ($220,000): 0.4% (5)
  - Rs.100,00,000 ($220,000): 1% (10)
  - Rs.50,00,000 ($110,000): 3% (45)
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  - Rs. 52,000 ($1,000): 28% (390)
  - <Rs. 52,000 ($1,000): 28% (390)
India is under-penetrated in terms of infrastructure availability compared to other nations.

- Presence of Multilane Roads (km of multilane roads as % of overall road length)
  - US: 8.2%
  - China: 3.5%
  - Mexico: 12.9%
  - India: 0.6%

- Area irrigated by canals (as a % of total arable land)
  - Indonesia: 34%
  - Pakistan: 20%
  - India: 12%

- Airport congestion (000’s of passengers per airport)
  - Mexico: 19
  - Brazil: 23
  - US: 55
  - India: 204
  - China: 628

- Access to improved water – piped on premises (% of total population)
  - US: 88%
  - China: 68%
  - Brazil: 92%
  - India: 23%
Infrastructure Sector
&
The 12th Five Year Plan
Infrastructure is one of the main spending areas in India’s 12th Five Year Plan with about $1 trillion earmarked for investment.
Infrastructure spending is expected to grow

Source: Knowledge report - EXCON
Estimated infrastructure investment by sector in the 12th plan

~ 60% of planned investment in power and transportation

Projected Infrastructure Investment (Rs Bn)

- Power: 12400
- Roads: 12000
- Railways: 7200
- Ports: 1800
- Airports: 700
- Telecom: 6500
- Irrigation: 4700
- Water Supply & Sanitation: 4600
- Others: 6900
- Total: 56800

~ 60% of planned investment in power and transportation
Growing Public Private Partnerships (PPP)

* According to the World Bank, India is second only to China in terms of the number of public private partnership (PPP) projects. Encouragingly, the government is set to continue promoting PPP models to help achieve its investment targets.

* During the 12th Five-Year Plan, the Planning Commission targets to achieve 47 per cent of total infrastructure investments through private funding, up from 25 per cent in the 10th Five-Year Plan.

* The Ministry of Roads and Highways of India has undertaken 68 projects for a total value of USD2.6 billion through PPPs, of which 34 have been completed.

* The Power sector accounts for nearly 18 per cent of total PPP value, with 56 projects accounting for a total value of USD12.6 billion.

Source: Planning Commission, Aranca Research
Yamuna Expressway is a 165-km, six-lane, controlled-access expressway stretching between Greater Noida and Agra.

It is India’s longest controlled-access expressway, developed by Jaypee Group under Public Private Partnership (BOT model) for a total value of USD2.3 billion.

The expressway became operational in August 2012.

**Silent features**

- Length - 165.5 kms
- Number of Lanes - Six lanes extendable to eight
- Design speed - 120 kms per hour
- Speed Limit - 100 kms per hour for cars, 60 kms per hour for heavy vehicles
- Main Toll Plazas - 4
- Minor Bridges - 41

*Source: Jaypee, Yamuna Expressway, Aranca Research*
India has a shortage of multilane highways

![Graph showing road density and length in India and other countries](image)

**Note:** PWD is the Public Works Department. Source: A.T. Kearney analysis
Investments in India’s road network are expected to jump

Spending (Rupees 000 crores)

Plan | Actual
--- | ---
412 | 453

11th Five Year Plan

<table>
<thead>
<tr>
<th>Central government</th>
<th>State</th>
<th>Private</th>
</tr>
</thead>
<tbody>
<tr>
<td>141 (34%)</td>
<td>166 (37%)</td>
<td>92 (20%)</td>
</tr>
<tr>
<td>132 (32%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>139 (34%)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

12th Five Year Plan

<table>
<thead>
<tr>
<th>Central government</th>
<th>State</th>
<th>Private</th>
</tr>
</thead>
<tbody>
<tr>
<td>195 (43%)</td>
<td>274 (30%)</td>
<td>304 (33%)</td>
</tr>
</tbody>
</table>

914 (US$ 157 billion approx.)

Source: Knowledge report - EXCON
Investment in rural roads expected to continue

![Graph showing spending on rural roads (Rs crores)]

- **Till 11th FYP**:
  - Plan: 127,786
  - Actual: 91,498

- **12th FYP**:
  - Plan: 126,491

*(US$ 21 billion approx.)*

Source: Knowledge report - EXCON
India plans to invest more in irrigation

Irrigation spending
(Rs ‘000 crores)

<table>
<thead>
<tr>
<th></th>
<th>10th FYP</th>
<th>11th FYP</th>
<th>12th FYP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plan</td>
<td>111</td>
<td>323</td>
<td>504</td>
</tr>
<tr>
<td>Actual</td>
<td>120</td>
<td>243</td>
<td></td>
</tr>
</tbody>
</table>

(US$ 84 billion approx.)

Note: FYP is Five Year Plan.
Source: A.T. Kearney analysis
India is pushing for universal access for water and sanitation

Spending in water supply and sanitation (Rupees 000 crores)

- 10th FYP Plan: 65 (67%)
- 10th FYP Actual: 60
- 11th FYP Plan: 121 (38%)
- 11th FYP Actual: 75 (62%)
- 12th FYP Plan: 255 (38%)

Note: FYP is Five Year Plan. Source: A.T. Kearney analysis

(US$ 42.5 billion approx.)
Status of Implementation of 12th Plan

HIGHWAYS
- 3,928 Kms of National Highways created
- 39,144 Kms of Rural Roads created
- 13 Projects for the total length of 1203.647 Kms have been awarded

RAILWAYS
- 3,343 Kms of New Railway track created

AIRPORTS
- 7 new Air ports are under construction
Status of Implementation of 12th Plan

PORTS
- 217.5 million tonnes of capacity per annum in our ports have been created
- The Cabinet has approved the proposal for establishment of two new Ports in Andhra Pradesh (Dugarajapatnam) and West Bengal (Sagar)
- The Detailed Project Report (DPR) of the Outer Harbour Project of V.O. Chidambaranar Port, Tuticorin has been completed

POWER
- 29,350 MW of power capacity created
- 19 Oil and Gas blocks were given out for exploration
Construction Equipment Market
The Indian construction equipment sector is made up of five main segments: earthmoving equipment, road construction equipment, concrete equipment, material handling equipment, and material processing equipment.

- Earthmoving equipment and road construction equipment account for close to 70 per cent of India's construction equipment market.
  - Backhoe loaders, which comprise tractors, front shovel/bucket backhoes and small backhoes, account for 65 per cent of the earthmoving equipment and road construction segment.

- Concrete equipment is the second largest segment with a market share of approximately 14 per cent. It comprises asphalt finishers, transit mixers, concrete pumps and batching plants.
  - Material handling equipment and material processing equipment account for 10 per cent and 6 per cent of the market respectively. Cranes are the largest category within the material handling equipment.
India: Construction Equipment Sales

After two disappointing years, slight recovery expected

Units of earthmoving and road equipment sales, *=forecast, source: CECE, VDMA calculations
Indian ECE market has the potential to grow at 20-25% to reach 330k-450k unit sales by 2020.

Source: Knowledge report - EXCON
Equipment segment projections 2020

Earthmoving equipment: Backhoe loaders, Excavators, Dozers, Rigid Haulers, Skid steer loaders
Road Construction equipment: Compaction equipment, Asphalt pavers, graders
Concreting equipment: Transit mixers, Concrete pumps, Batch-mix plants
Material handling equipment: Mobile cranes, RT forklifts
Material processing equipment: Crushing & Screening equipment

Source: Knowledge report - EXCON
Yet on the ground, the CE market contracted in 2013

<table>
<thead>
<tr>
<th>Equipment</th>
<th>2011 (units)</th>
<th>2013 (units)</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excavator</td>
<td>14500</td>
<td>11200</td>
<td>-22.76%</td>
</tr>
<tr>
<td>Backhoe</td>
<td>33500</td>
<td>28500</td>
<td>-14.93%</td>
</tr>
<tr>
<td>Loader</td>
<td>2300</td>
<td>1600</td>
<td>-30.43%</td>
</tr>
<tr>
<td>Compaction (Vibratory + Static)</td>
<td>2650</td>
<td>2600</td>
<td>-01.87%</td>
</tr>
<tr>
<td>Motor Grader</td>
<td>465</td>
<td>300</td>
<td>-35.48%</td>
</tr>
<tr>
<td>Bulldozer</td>
<td>650</td>
<td>350</td>
<td>-46.15%</td>
</tr>
<tr>
<td>Asphalt Pavers</td>
<td>800</td>
<td>675</td>
<td>-15.62%</td>
</tr>
<tr>
<td>Asphalt Batching Plant</td>
<td>85</td>
<td>65</td>
<td>-23.53%</td>
</tr>
<tr>
<td>Mobile Cranes</td>
<td>11500</td>
<td>6200</td>
<td>-46.09%</td>
</tr>
<tr>
<td>Tower Cranes</td>
<td>325</td>
<td>650</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: NBMCW
Exports of Construction Equipment to India

in million EUR, 2012 figures in percent, source: National Statistics Agencies
Opportunities & Challenges
Strengths of the Construction Equipment Market

- Robust economic development: India's 12th Five Year Plan is targeting 11 per cent growth for the construction sector up from 7.8 per cent in the previous plan.

- Infrastructure growth: Substantial infrastructure investment of USD 1 trillion under the 12th plan will drive higher demand for construction equipment.

- Growing OEM presence: India offers significant potential as an OEM hub due to its lower costs and the availability of skilled labour. At least 10 new equipment manufacturers are expected to establish bases in India in the next couple of years.

- Higher FDI in construction: Increased construction activities create favorable conditions for foreign direct investment in the construction sector.
## Opportunities in the Construction Equipment Market

<table>
<thead>
<tr>
<th>Renting and leasing of equipment</th>
<th>After-sales services</th>
<th>Exports</th>
</tr>
</thead>
<tbody>
<tr>
<td>The equipment rental and leasing business in India is smaller compared to Japan, USA and China</td>
<td>Revenues from after-sales service in India are 2–8 per cent, lower than the global average of 12–20 per cent</td>
<td>Export opportunities are abound – both in developed and emerging economies</td>
</tr>
<tr>
<td>Demand for rental equipment is set to witness strong growth in the medium term due to large investments in infrastructure</td>
<td>After-sales market is set to expand to USD0.5 billion by 2015; players can offer maintenance contracts with improved pricing and execution</td>
<td>Components and aggregates export is a USD1 billion opportunity; local suppliers can gain a decent share of this by exporting engineering-intensive and basic material based components</td>
</tr>
<tr>
<td>New players can also explore opportunities in the equipment finance business</td>
<td>While these services contribute only modestly to revenues, they are counter-cyclical and can also boost spare part sales</td>
<td>Opportunities in engineering and design off shoring and equipment exports may arise in the future</td>
</tr>
</tbody>
</table>
Construction equipment financing in India is expected to grow.

**Equipment financing in India (Rs ‘000 crores)**

- **2011**: 23
- **2014e**: 46, +22%
- **2016e**: 62

*Source: A.T. Kearney analysis*
Multiple challenges need to be addressed for the ECE industry to achieve ‘long term’ potential.
In addition challenges faced in the ECE ‘ecosystem’ will also need to be addressed.

Challenges in ECE ecosystem

- Deployment of unskilled labour the field by contractors; low demand for qualified manpower
- Lack of coordination among multiple stakeholders trying to enhance operator skills
- Lack of accreditation norms (safety, operations, training)

Skill Development (CE Operators, Mechanics)

Ecosystem challenges

- Variability in OEM demand
- Gaps in technology adoption vis-à-vis market demand
- Stiff margin pressure

Equipment Financing

- Lack of easy financing access
- Poor rental penetration
- Unfavourable taxes and regulations

Components and Aggregates
### Favourable policies are supporting sector growth

<table>
<thead>
<tr>
<th>Category</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delicensing</td>
<td>The material handling equipment industry is delicensed and Foreign Direct Investment (FDI) of up to 100 per cent under the automatic route as well as technology collaboration is allowed freely.</td>
</tr>
<tr>
<td>Policy initiatives related to infrastructure</td>
<td>Government of India’s focus on infrastructure development is the biggest driver for the construction equipment industry. Projected infrastructure spending in the 12th plan is USD1,011 billion.</td>
</tr>
<tr>
<td>Special Economic Zones (SEZs)</td>
<td>The government has granted sops, including a large number of SEZs, to the capital goods industry of which construction equipment is a part; especially with an impetus to increase exports.</td>
</tr>
<tr>
<td>Tariffs and custom duties</td>
<td>The government has removed tariff protection on capital goods. Custom duties on a range of goods that are used in the manufacturing process have also been lowered. Custom duty exemption on road construction equipments extended to projects awarded by MDA in the Union Budget of FY13.</td>
</tr>
</tbody>
</table>
Favourable policies are supporting sector growth

- Encouragement of Infrastructure Debt Funds (IDFs)
  - The Government of India set up the India Infrastructure Finance Company (IIFCL) to provide long-term funding for infrastructure projects
  - Interest payments on borrowings for infrastructure are subject to lower withholding tax rate of 5 per cent, down from a tax rate of 20 per cent
  - IDF’s income is exempt from tax

- Issue of tax-free infrastructure bonds
  - Infrastructure finance companies like India Infrastructure Finance Corporation (IIFCL), National Highways Authority of India (NHAI), Housing and Urban Development Corp (Hudco), Power Finance Corporation (PFC) and Indian Railway Finance Corporation (IRFC) are allowed to issue tax-free bonds
  - Due to this, companies raised about USD5.5 billion in FY12 and are estimated to have raised about USD4.6 billion during FY13
Conclusion
Conclusions

- In the years ahead, the construction industry in India has to overcome various challenges with respect to housing, environment, transportation, power or natural hazards.

- Technocrats associated with the Indian construction industry need to employ innovative technologies and skilled project handling strategies to overcome these challenges.

- The performance in the past will stand in good stead and give confidence to the Indian construction industry to bring about an overall development in the infrastructure of the nation.

- The 12th five year plan earmarking an investment of US$ 1 trillion in the Infrastructure sector by 2017 will translate to a good potential for the Construction Industry.
Important Agencies in India

- Ministry of Power - Government of India (www.powermin.nic.in)
- Ministry of Road Transport & Highways – Government of India (www.morth.nic.in)
- National Highways Authority of India (www.nhai.org)
- Indian Railways (www.indianrailways.gov.in)
- Airports Authority of India (www.aai.aero)
- Ministry of Civil Aviation (www.civilaviation.gov.in)
- Ministry of Shipping (www.shipping.gov.in)
The German Engineering Federation (VDMA)

VDMA India Services Pvt. Ltd.
The German Engineering Federation (VDMA)

- Largest Industrial Association in Europe
- 120 year old history
- More than 3100 members which stands for:
  - 984,000 Employees
  - €205 billion production
  - 70% export rate (aprx.)
- 39 specialized sectors
- Offices/Subsidiaries in:
  - India
  - China
  - Brazil
  - CIS
  - Japan
  - Bruessel
VDMA in India

- VDMA Office in Kolkata, Delhi & Mumbai promotes the Indo-German trade in mechanical engineering machinery.

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Getting the right in India

A

Almighty

B

Bollywood

C

Cricket
Thank you for Your Attention