Human Resource and Skill Requirements in the
Telecommunications
Sector
Executive Summary

With approximately 900 million subscribers, the gross revenue of the sector stands at about INR 57,400 crore as of September 2013

Key Growth Drivers

Rising incomes and growing rural market

- Nominal per capita income is estimated (IMF) to have recorded a CAGR of 11.2 percent over 2000–12 (INR 89,514)
- The emergence of an affluent middle-class is triggering demand for the mobile and internet segments

Subscriber base

- The mobile service penetration in the country is currently at 51 percent and is expected to grow to 72 percent by 2016

M&A policy

- The inter-ministerial panel telecommunications commission approved the guidelines that will allow telecommunications companies to acquire operators in a manner that the market share of the resultant entity does not exceed 50 percent

Mobile value-added services (MVAS)

- The Indian MVAS segment is estimated to grow to INR 64,800 crore by 2015, with semi-urban and rural areas expected to drive the next wave of growth in subscriptions

Handsets

- The handset market's revenues in India will grow to INR 46,800 crore in 2016, according to a TRAI report
- India is the second-largest mobile handset market in the world and is set to grow further with unit shipment of 208.4 million in 2016 at a CAGR of 11.8 percent from 2010 to 2016

Contribution of the telecommunications sector to India's GDP (FY13)
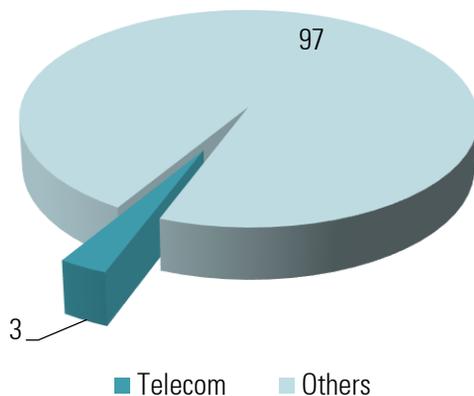
Key development in the telecommunications sector

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■ Telecom ■ Others

Relaxed FDI norms	Abolishment of roaming charges
Establish internet connections	Unified license
Financial support	Expansion to rural areas
Relaxing M&A norms	Reduction in license fees
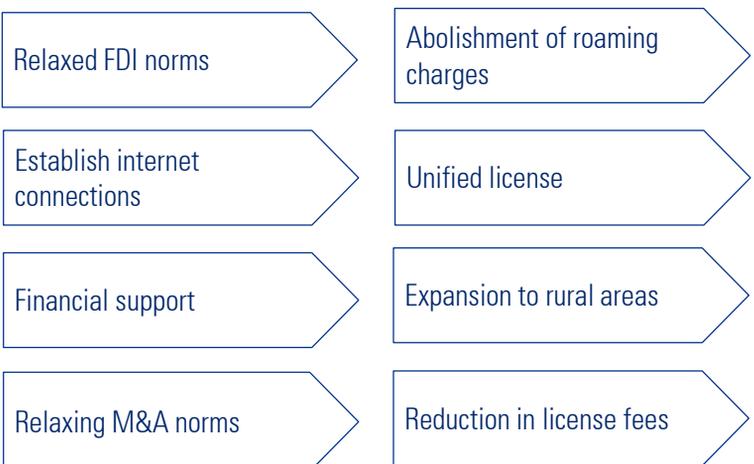
Source: Press releases, company website; KPMG in India analysis

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Demographic characteristics of workforce
Sector has significant indirect employment potential along with direct employment across sub-sectors

- Telecommunications providers are tapping the potential of services that are rendered on mobile and connected devices (like television and the internet). These companies require large CAPEX and skilled manpower for their expansion to host and provide these services.
- A host of jobs are related to the development and maintenance of devices, lines, systems and networks that facilitate communication. This offers a wide range of career prospects, and one can pursue a career in:
  - ✓ Application/product development
  - ✓ Application testing
  - ✓ ERP implementation/integration
  - ✓ ERP implementation/integration
  - ✓ Network planning
  - ✓ Data networking
  - ✓ Mobile application development and value-added services

General trends in employment

- Product companies largely seek engineering graduates (who have a background in computers, electronics or telecommunications) since the nature of the job is technical

- Application development and maintenance provides opportunities to application developers with strong programming skills in database and GUI development

- Engineers with a background in IT, computers and electronics have an edge over others due to their knowledge of computer architecture and systems design

- Skills like coding and software testing are essential in the development domain of the telecommunications sector

- Entry-level roles in telecommunications can vary from a management trainee to an executive of any vertical in the present-day telecommunications sector

Challenges faced by recruiters

- Candidates lack exposure, technical depth, analytical and logical reasoning

- There are less institutes imparting core telecommunication education and developing skill-set required in the telecommunications sector

- High attrition rate in entry-level roles poses a significant challenge for service providers and other sub-segments

- Candidates fail to develop a combination of skills, resourcefulness and entrepreneurial abilities

Source: KPMG in India analysis

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Current workforce of 2.08 million (2013) is expected to increase to ~4.16 million by 2022

Sector workforce in 2013–22
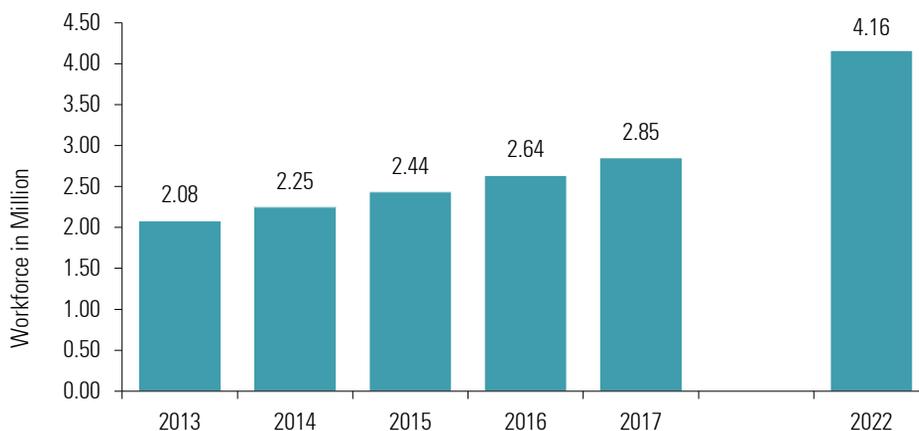
Source: Primary Interactions, NSSO 68th Round of EU Survey, KPMG Analysis

The sector currently employs over 2.08 million employees and is slated to employ more than 4.16 million employees by 2022. This implies additional creation of ~2.1 million jobs in the nine-year period.

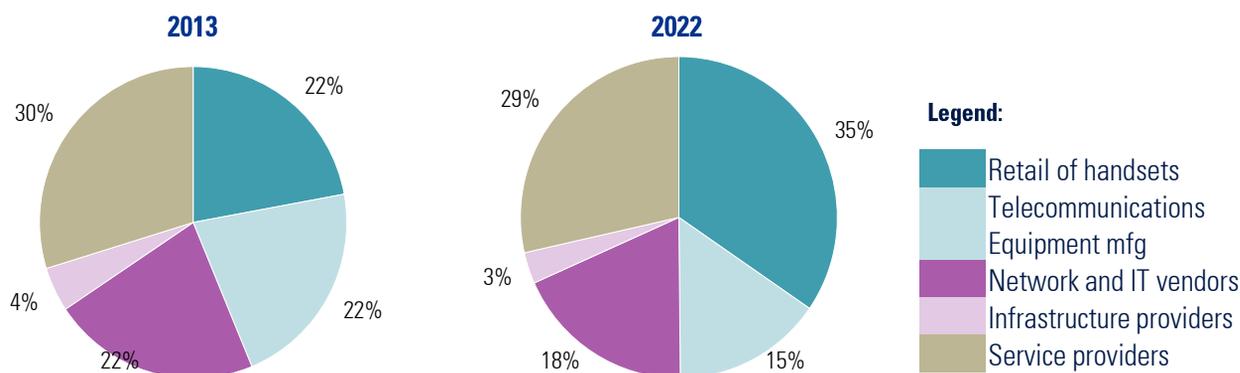The period 2013–17 will see a marginally higher growth in employment vis-a-vis 2017–22 due to expected changes in infrastructure integration and shared services along with increasing share of organised retail leading to higher productivity levels of workforce.

Sub-sector division of the workforce in 2013–22

2013

2022

Legend:

- Retail of handsets
- Telecommunications
- Equipment mfg
- Network and IT vendors
- Infrastructure providers
- Service providers

Source: Primary Interactions, KPMG Analysis

The analysis of the break-up of workforce by sub-sectors indicates that retail segment would show strong employment growth in absolute numbers increasing the share of overall sectoral employment from 22 percent in 2013 to 35 percent by 2022.

Corporates have either set up captive training centres or tied with academic institutes to develop talent for the sector

Ericsson — EMPOWER training programme

- Ericsson's EMPOWER is a telecommunications certification programme that combines practical knowledge with simulated training, to empower and make young telecommunications engineers industry ready. Ericsson launched its brand, 'Empower', in September 2009, and joined hands with 12 engineering institutions and currently has association with 75 universities/technical education institutes across India

ITTM - Institute of Telecom Technology and Management (MTNL)

- Setup by MTNL, Delhi, IITM has trained more than 900 students in various engineering colleges since 2011

ARTTC, Ranchi (BSNL)

- Advanced Regional Telecom Training Centre (ARTTC) is situated in the capital city Ranchi of Jharkhand. ARTTC is pioneer telecommunications training centre in India serving for the training needs on different fields of Telecommunication under rainbow umbrella of BSNL

NTTF and Indus Towers partnership to run certification programme

- Indus Towers runs a certification programme for two months to equip students in Cell Site Maintenance

> Telecommunications centre of excellence has been established with government/private player support at select academic institutions

Associate institute	Sponsor	Work assigned
IIT Kharagpur	Vodafone Essar & Texas Instruments	Next generation network (NGN) and network technology
IIT Delhi	Bharti Airtel	Telecommunications technology and management of infrastructure
IISC (Indian Institute of Science), Bangalore,	Aircel & Texas instrument	Information security and disaster management of infrastructure
IIT Kanpur	BSNL & Alphion	Technology integration, multimedia and computational mathematics
IIT Chennai	BSNL & Alphion	Telecommunications infrastructure and energy
IIT Mumbai	TTeleservices	Rural applications
IIM Ahmedabad	Idea Cellular	Policy, regulation, governance, customer care and marketing

Recommendation	Implications
Include telecommunications and related areas as super specialisations in engineering and MBA colleges	▪ Engineering/management colleges and training institutes will include telecommunications as a separate specialized course ▪ Additionally, there can be a super specialized course in telecommunications. For example, engineering institutes may offer a specialized course in operations management with a focus on passive infrastructure ▪ Colleges need to focus on clarifying basic concepts in the field of telecommunications and electrical engineering.
Increased focus on soft skills	▪ Training institutes and colleges would focus on imparting communication skills to improve efficiency and the overall success rate of jobs
Introduce funding schemes to train potential candidates	▪ Banks may consider providing special soft loans to students keen on pursuing a course in telecommunications. This will give a boost to the supply side where the fees are usually on the medium to high-side due to the technical nature of the job
Government to develop PPP models in training for infrastructure sharing	▪ Develop mechanisms for sharing existing training infrastructure at BSNL, MTNL and other government training infrastructure for delivery
Developing certified training programmes that help trainees 'earn while they learn'	▪ It is important to devise a structure for training programmes that includes an active practical learning component for trainees at a live working location. This should be supported with remuneration equivalent to that of an unskilled/ semi-skilled worker in the sector, besides providing financial assistance that helps the individual in investing in training
Providing incentives to employees working in remote tower sites and to: a central database for telecommunications employees	▪ To avoid attrition and motivate employees to work in remote tower sites, companies and the government can consider providing incentives ▪ A database on the vacancies in telecommunications firms would help employees locate jobs close to their hometown/preferred location, which, in turn, would reduce attrition
Government funding is required to create an ecosystem for engineering graduates	▪ The government needs to invest in areas like R&D to create an ecosystem for engineering graduates ▪ The government should take adequate steps to ensure dissemination of information/technical knowhow currently concentrated in the hands of vendors

This report is prepared by KPMG Advisory Services Pvt Ltd (KASPL).

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- Use of robust proprietary tools and methodologies assuring quality delivery to our clients

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