

# Telecom Careers of the Future

## Navigating 5G, 6G and AI-Driven Opportunities

### Abhinav Srivastava

Historically, careers in the telecom sector focused largely on hardware installation, field maintenance and network troubleshooting. However, the industry is now moving towards software-led intelligent networks, driven by the adoption of 5G and 6G technologies, Artificial Intelligence (AI), and cloud-based network architecture. These advancements have expanded the telecom job market beyond traditional profiles, creating exciting new career pathways. According to industry insights, over 40% of telecom roles will require AI and automation literacy within the next three to five years.

### Industry Growth Prospects

- India is projected to become the second-largest 5G ecosystem globally by 2027.
- Leading operators are making multi-billion dollar investments in AI integration, cloud networks and 5G and 6G services.
- BSNL and C-DOT are advancing indigenous telecom R&D under Make in India, generating fresh job opportunities in home-grown innovation.
- Global technology giants have expanded AI research and telecom R&D centres in India, resulting in high demand for skilled telecom-AI professionals.

### New Wave of Careers

With 5G enabling ultra-low latency and high-speed connectivity, telecom players are expanding into next-generation digital services, creating new job functions:

- AR/VR-based digital learning and entertainment
- Smart factories and Industry 4.0 automation
- Autonomous drones and connected vehicles
- Telehealth, remote surgery and smart hospitals


This has increased demand for roles such as edge computing specialists, AI application developers, AR/VR engineers and digital platform architects. Moreover, with networks becoming cloud-native and globally interconnected, cyber threats are increasing. This has placed AI-powered cybersecurity at the core of telecom operations. Telecoms are hiring AI security analysts, telecom penetration testers, 5G security architects and threat intelligence specialists.

Hence, career opportunities in the telecom sector today are a blend of both traditional roles and newly emerging technology-driven positions.

Traditional Role	Description	Emerging Role	Description
Radio Frequency (RF) Planning Engineer	Designs and plans mobile network coverage and frequency usage to optimise signal strength.	Artificial Intelligence Network Optimisation Engineer	Uses artificial intelligence algorithms and machine learning models to predict network traffic, optimise performance and reduce network congestion.
Field Technician	Installs and maintains telecom hardware such as towers, routers and base transceiver stations.	Internet of Things (IoT) Network Deployment Specialist	Deploys smart sensors and IoT devices across telecom networks to support connected solutions for smart cities, healthcare, manufacturing and logistics.
Network Operations Centre (NOC) Support Engineer	Monitors network performance manually and resolves connectivity outages.	Cloud Network Operations Engineer	Manages cloud-hosted telecom infrastructure, automates network monitoring using artificial intelligence, and implements software-defined networking solutions.
Transmission Engineer	Manages fibre optic and microwave transmission systems for voice and data delivery.	Core Virtualisation Specialist	Works with virtualised Evolved Packet Core (EPC) and cloud-native 5G core networks on platforms like Kubernetes and Network Function Virtualisation (NFV).

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**The 6G Future – What's Coming Next?**

As India accelerates its digital transformation, the future of careers in the telecommunications sector will also be shaped by the country's ambitious entry into sixth-generation technology. Under the Bharat 6G Vision Document (2023), India aims to emerge as a global leader in sixth-generation telecom innovation by 2030 through indigenous research, intellectual property development and collaboration between industry, government and academia. Supported by the Bharat 6G Alliance, over 100 dedicated fifth-generation and advanced technology laboratories and national sixth-generation testbeds for Terahertz spectrum communication and advanced optical communication, the programme is enabling breakthrough research in Artificial Intelligence-powered networks, Integrated Sensing and Communication, Non-Terrestrial Networks (satellite-based connectivity), advanced Massive Multiple Input Multiple Output antenna systems and Terahertz communication. With more than ₹275 crore invested through the Telecom Technology Development Fund and strong alignment with the International Telecommunication Union's International Mobile Telecommunications 2030 framework, India is preparing for the next wave of connectivity while creating new employment opportunities in areas such as wireless research and development, Artificial Intelligence-led network engineering, secure communication systems and space-based wireless technologies. This long-term national roadmap ensures that the telecommunications sector will continue to power high-value, future-ready careers well beyond the 5G era.

**Preparing for the Future: Courses and Skills**

With the telecommunications industry rapidly evolving into a software-defined, Artificial Intelligence-enabled ecosystem, the next generation of professionals must equip themselves with future-ready skills. Students and young professionals who upskill now will be best positioned to enter high-demand career areas such as AI-driven network operations, cloud-based telecom architecture, cyber security engineering, satellite communications and sixth-generation research.

**Foundational Courses (For Undergraduates)**

These programmes help build a solid technical base before moving into advanced telecom technologies.

Skill Area	Recommended Courses/Subjects
Networking Fundamentals	Computer networks, IP networking, network protocols, Cisco Certified Network Associate
Electronics & Communication Basics	Communication systems, microwave engineering, digital signal processing
Programming Foundation	Python programming, C++ basics, data structures
Linux Essentials	Linux command-line, shell scripting for network automation
Mathematics for AI	Linear algebra, probability, statistics

**Emerging Technology Skills for Telecom 2.0**

Career Path	Courses to Pursue
AI for Telecom	Machine Learning with Python, AI algorithms for network optimisation, telecom analytics
Cloud & Virtualisation	Cloud fundamentals certification, cloud platform administration training, Kubernetes and containerisation courses
Network Automation	Software Defined Networking, Network Function Virtualisation, Ansible Automation
Cyber Security in Telecom	Ethical hacking, telecom security architecture, penetration testing, threat intelligence
Edge Computing	Edge AI, distributed computing, low-latency network programming
Internet of Things	IoT fundamentals, embedded systems, wireless sensor networks

**Advanced Studies and Research Pathways**


Students aiming for leadership roles or sixth-generation research can pursue:

Degree Pathway	Focus Areas
Master of Technology or Master of Science in Communication Engineering	Wireless systems, satellite communication
Master's in Artificial Intelligence or Data Science	Predictive network intelligence
Postgraduate Diploma in Telecom & Cloud	Network automation and orchestration
Doctor of Philosophy in Wireless Communication or 6G Research	Terahertz communication, quantum networks

**Recommended Learning Platforms and Institutions**

- Indian Institutes of Technology (IITs) and National Institutes of Technology (NITs):** Offer advanced programmes in wireless communication, 5G and 6G research, and emerging telecommunications technologies, providing both theoretical understanding and practical laboratory experience.
- Centre for Development of Telematics (C-DOT) and Bharat 6G Alliance Programmes:** Focus on indigenous telecommunications research, prototype development, and cutting-edge experimentation in Artificial Intelligence-powered networks, Terahertz communication, and next-generation connectivity solutions.
- Telecom Sector Skill Council (TSSC):** Provides industry-recognised certifications and structured skill development programmes for telecom technicians, engineers, and network professionals, ensuring alignment with current sector requirements.
- NASSCOM Future Skills and Skill India Digital:** Offer courses in Artificial Intelligence, cybersecurity, cloud computing, and emerging digital technologies, bridging the gap between traditional engineering and modern network demands.
- Online Learning Platforms:** Deliver flexible, self-paced courses in programming (Python), machine learning, network virtualisation, and cloud-native architecture, enabling learners to upskill alongside formal education.
- Networking Academies:** Provide specialised training in networking fundamentals, network automation, software-defined networking, and practical laboratory exercises to prepare students for real-world telecommunications operations.

(The author is a Senior IT Professional.)



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