CYIENT

ROADMAP TO 5G: DELIVERING ON OUR PROMISE OF DESIGNING TOMORROW TOGETHER

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Cyient has developed technology accelerators to help CSPs in deploying a customized 5G transition roadmap



THE EMERGENCE OF 5G WILL IMPACT NETWORKING AND APPLICATION DELIVERY INFRASTRUCTURE ACROSS MULTIPLE DIMENSIONS. BESIDES PROVIDING A FAST AND EFFICIENT NETWORK TO CONSUMERS, 5G WILL BRING SIGNIFICANT OPPORTUNITIES FOR AUTOMATION, AI, IOT APPLICATIONS, AND NETWORK VIRTUALIZATION. THE ROLLOUT OF 5G, HOWEVER, IS UNLIKELY TO BE A ONE-SIZE-FITS-ALL STORY.

Overview

To accelerate and monetize 5G deployment while following a bespoke rollout roadmap, communications service providers (CSPs) are increasingly partnering with network engineering services providers. The focus is on establishing innovative solutions that can be initially implemented on 4G networks and subsequently upgraded with enhanced 5G capabilities.

In parallel, wireless industry leaders have also started painting a profound picture of what can become the golden era of 5G. In line with this vision, they are defining disruptive innovations on Radio Access Networks and Application Infrastructure Delivery systems leading to scalable, softwaredefined and cloud-native design paradigms. There is a compelling economic justification for pursuing this path because of the optimization of the overall ownership efficiency, and new revenue incentives post the deployment of 5G services for CSPs.

Cyient's long-term experience in network planning and operations enables us to help CSPs plan, design, deploy, and manage the 5G rollout with a focus on improving user experience and maximizing ROI.

Our solutions for a streamlined 5G network rollout are spearheaded by:

Robust Network Migration Strategy

The most significant benefit of a 5G network is its rich vertical applications. However, it is difficult for traditional networks to offer agile innovation capabilities, making it critical for CSPs to adopt or upgrade to a more software-centric architecture based on SDN/NFV. For this, they need the support of network engineers to manage the transition from a legacy, appliance-focused environment, to the new software-centric NFV systems.

Cyient can manufacture off-the-shelf hardware and has proven its strength in integrating open-source, cloud-native SDN/NFV applications with the hardware. We can ensure full-service compatibility despite the decoupling of hardware and software in such deployments.

We also help CSPs to chalk out a phased strategy for network function migration wherein composable virtual network functions comprising micro-service elements are put together under automated management and orchestration. It enables CSPs to architect a layered approach for integration and deployment of virtualized instances from the core network elements on VoLTE to Virtual Messaging Platform and Virtual Evolved Packet Core.

Additionally, Cyient supports the transformation of OSS into the next-generation OSS platform that can manage the legacy and the new ICT infrastructure through one console, leveraging end-to-end intelligent network operations and maintenance.

The key differentiators of our network migration strategy are improved resource utilization, carriergrade performance, and a significantly low total cost of ownership.







Planning an Effective 5G Rollout

Small cell and Fixed Wireless Access (FWA) planning is critical to deploy network infrastructure that can support 5G. Small cells help in significantly improving network capacity, density, and coverage, particularly indoors.

Cyient not only offers mass manufacturing solutions for such network equipment, as per CSPs' preferred design specifications, but also facilitates accurate identification of the sites to support optimum coverage and cell-densification in different geographic environments.

Our LiDAR or drone-based mobile 3D survey capabilities help in efficient identification of areas for 5G networks. The captured images are used to create SAED designs and engineering packages for structured assessment, commissioning, and integration. This is further combined with GISbased coverage analysis to provide more inputs for optimal site planning. These turnkey services by Cyient deliver significant value for CSPs during the 5G planning phase.

Additionally, we offer CW testing services, drive test services, SMR services, and work closely with CSPs to maintain and enhance a database on record tools designed specifically for 5G. Such solutions lead to more efficient planning and deployment of 5G infrastructure.

Tools and Services to Build, Test, and Manage

To address high capacity and growing user data needs, 5G must adopt significantly high bandwidth modes. This is possible only at higher carrier frequencies. However, the frequency usage specification in different geographies is still getting finalized. There is a need to have flexible test and measurement solutions to generate and analyze wideband signals with carrier frequencies ranging from 2.6 GHz to more than 60 GHz.

Cyient offers such solutions in a portable and cloud-native form along with propagation modeling, self-consistent field theory, passive inter-module, and BB testing services. Such a comprehensive suite of solutions along with fiber planning and FCAPS management helps CSPs not just in faster deployments but in having more integrated control over operations as well.

WE OFFER HIGH-QUALITY, FLEXIBLE SOLUTIONS IN A PORTABLE AND CLOUD-NATIVE FORM

Use Cases Development

Cyient partners with CSPs to develop applications that benefit and enhance the end-customer experience. These include:



Immersive experience at home

Artificial intelligence-aided network planning around FWA, small cells, and fiber planning will enhance the network throughput and make AR/VR applications a reality. Cyient brings end-to-end services along with the capability to manufacture such components at scale to offer faster service rollouts for CSPs.

Corporate applications

Leveraging on SDN, NFV, and network slicing, Cyient's specialized services can be offered on top of 5G networks for specific business needs. We help CSPs in "slicing up" their 5G networks to help them meet the requirements of differentiated services as per capacity, latency, security, duration, reliability, and geographic coverage. We provide support for several use cases including the design of smart and shared offices, emergency response systems, and AR/VR-based factory automation systems in the underlying network.

Digital ecosystems

CSPs—specifically in the context of 5G—increasingly prefer a model wherein their technology collaborator can also build an ecosystem of experienced development partners. This helps to further largescale application of the technology across areas such as IoT, network infrastructure as service provisioning, and digital health solutions. Cyient's continually strengthening business relationships with global network OEMs, telecom service providers, and academia make it a conduit in such an ecosystem and also ease the operational overheads for CSPs in managing the ecosystem of partners for implementing advanced 5G applications.

The Cyient Advantage

Our rich experience in design, delivery, deployment, migration, and support of network infrastructures around the globe makes us an ideal partner for 5G rollouts. The depth of our technical skills and turnkey solutions drives efficiencies and builds high availability and flexibility to ensure efficient and future-ready networks for CSPs.

By leveraging our deep domain knowledge in managing network infrastructure, we help CSPs in their 5G journey by addressing the migration roadmap, planning network rollout, developing solutions and services for running post-deployment operations, and finally, defining the framework for developing various use cases and applications for monetization of the network.

We have an established culture of working across industry verticals as a trusted partner for digital transformation. With experience in SDN, NGN, and development of accelerators for future communications networks, we can help CSPs in addressing the 5G migration roadmap, planning the rollout of the 5G networks, and designing solutions to run post-deployment operations.



WE HELP CSPs ADDRESS THE 5G MIGRATION ROADMAP, PLANNING 5G NETWORK ROLLOUTS, AND DESIGNING SOLUTIONS TO RUN POST-DEPLOYMENT OPERATIONS.

About Cyient

Cyient (Estd: 1991, NSE: CYIENT) is a global engineering and technology solutions company. As a Design, Build, and Maintain partner, for leading organizations worldwide, we take solution ownership across the value chain to help clients focus on their core, innovate, and stay ahead of the curve. We leverage digital technologies, advanced analytics capabilities, and our domain knowledge and technical expertise, to solve complex business problems.

With over 15,000 employees in 20 countries, we partner with clients to operate as part of their extended team in ways that best suit their organization's culture and requirements. Our industry focus includes aerospace and defense, healthcare, telecommunications, rail transportation, semiconductor, geospatial, industrial, and energy.

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