



The buildup of the 5G digital ecosystem

5G as a service-oriented and innovation platform for the realization of industry vertical market use-cases

5G – Key enabler of digital transformation

The last few decades have witnessed several generations of wireless technologies (2G, 3G, 4G), each of them significantly transformed human lives and ushered in a new era of economic prosperity and innovation cycles. 5G is not just yet another evolution of cellular technology enhancing mobile broadband capability; it is expected to transform the world by providing connectivity as a service to anything, at any time and from anywhere. 5G provides ultra-low latency, massive connectivity, enhanced mobile broadband services, higher capacity and power efficiency. 5G network slicing features make the network service-oriented by allowing different use cases with varying network requirements to run flexibly and simultaneously on the same physical network. 5G is more than just a network, it is a platform for innovation. It will act as an accelerator for the digital transformation that is happening across industries.

Communication Service Providers' role in providing the 5G network as a digital platform

5G vision extends beyond mobile and enables the convergence of access technologies for ubiquitous and seamless user experience. Some new 5G connectivity opportunities for CSPs include:

- 5G private networks with seamless mobility to 5G public networks
- Edge clouds to deliver innovative low latency 3rd party applications
- Enhanced user experience by addressing last mile access challenges
- Boundaryless enterprise by extending enterprise network over 5G

In addition, 5G provides a great opportunity for CSPs to transform themselves into a true Digital Service Provider. 5G can be a key growth driver for the communications industry if CSPs are able to deliver network platforms & services that act as an accelerator for the digital transformation that is underway in most businesses and industries.





CSPs require a new ecosystem-led approach to address larger digital transformation. The need is to build new digital capabilities for service creation and service enablement with the flexibility and agility of internet players.

Need for new digital capabilities to address the 5G opportunity

The core competency of CSPs today is on network connectivity and hardware platforms. In order to truly transform themselves to a digital service provider, CSPs need to build new digital capabilities for service creation and service enablement with the flexibility and agility of internet players. Key imperatives include:

1. Platform-centric approach:

Hyper-scale internet players have created tremendous value by adopting a platform-based approach and building rich digital ecosystems. 5G gives the opportunity to CSPs to create B2B2C platform and enable new digital value chains. It is a great opportunity for CSPs to move from an infrastructure play to a more profitable platform play. The network needs to transform into a 'digital platform' and be delivered as a service to realize the digital market place.

2. Experience and design-led:

Digital transformation across industries has dramatically changed the expectations of customers. Customers of today expect that the best-in-class digital experience that they receive in one industry to be matched by providers in other industries. CSPs need to adopt an experience-led approach and harness

platform APIs for personalized and consistent user experience. In order to create experience-driven products and services, CSPs need to take a design thinking approach. Serviceability and usability are today important differentiators for any product and service. The IT-telco convergence will help CSPs in realizing products and services similar to web-scale players. A design-led approach to delivering continuous value streams to customers in a rapidly changing market is important to be successful in the new paradigm.

3. Domain-led:

Most of the implementations of 5G use cases will be brownfield implementations where the 5G solution needs to seamlessly integrate with existing business processes, IT systems, and operational technologies. Domain knowledge will be critical for implementing industry vertical specific use cases for 5G. Consulting and advisory capabilities to build a business case, enterprise change management for enterprise-wide adoption of 5G solutions, service integration for integration with existing tools and processes, and embedding security by design into the overall solution will be critical success factors.

CSPs require a new ecosystem-led approach to address larger digital transformation

CSPs will need to invest in building these new digital capabilities to be a trusted partner for 5G-enabled digital transformation. In addition to the transformation of their workforce to build these new digital capabilities, CSPs will need to adopt an eco-system and open innovation-based approach. Specifically building a trusted and strategic partnership with the following eco-system players is critical:

- Device manufacturers
- Compute, storage, network vendors
- Software platform, API and application providers
- Cloud providers
- Data, analytics and AI providers
- Security players
- Domain-specific system integrators with expertise on consulting & advisory services
- Other CSPs
- Open source communities
- Standard bodies
- Regulators

Healthcare – An example of an ecosystem approach for 5G-enabled remote patient monitoring

The Healthcare segment is undergoing a transformation and the industry is transitioning to a value-based care model as against a fee-for-service approach with a focus on patient experience and patient outcomes. Remote patient monitoring is a great transformation lever for affordable healthcare services to the unserved and underserved segments of society and also for life-saving emergency situations. The following figure depicts a 5G-enabled remote patient monitoring solution which seamlessly works across hospitals, homes and outdoor mobile locations like a medical ambulance. In order to implement such a solution, CSPs will need to build new value chains and initiate partnerships with physicians, hospitals, insurance providers, medical device manufacturers, cloud providers, security providers, application providers, ambulance service providers and regulators.

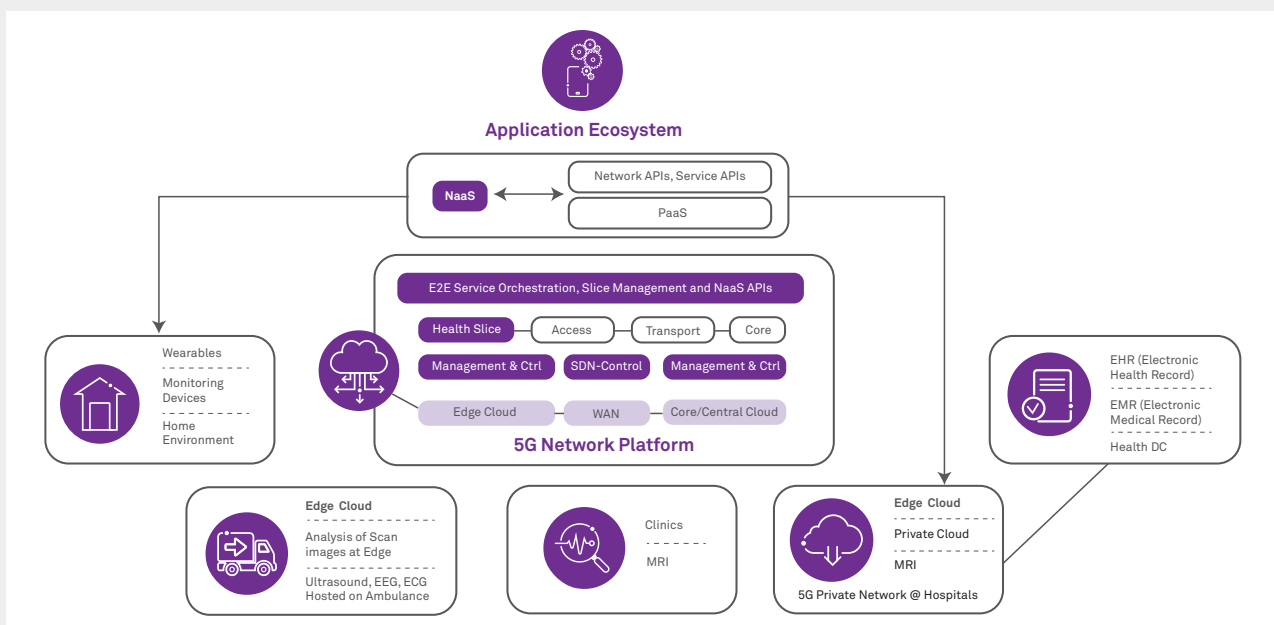


Figure 1: Health care use-cases

Conclusion:

There is no doubt that 5G will act as an accelerator for the digital transformation that is taking place across industry verticals. An ecosystem and open innovation based approach will be key to faster and mass-scale adoption of 5G industry use cases. CSPs can play a critical role in this new digital ecosystem and capture

significant value in the emerging 5G-enabled value chains. For this, CSPs will need to truly transform to a 5G Digital Platform Provider for service enablement and service creation of new and innovative services, matched with the flexibility and agility of hyper-scale internet players.

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