

Gearing up for the 5G wave in financial services

Banking, Financial Services and Insurance



Abstract

For financial institutions, the need of the hour is delivering exceptional, uninterrupted, and instant digital services with utmost ease and convenience. To create a differentiated value proposition for their customers and fulfill their vision of high-end digital engagement and servicing, financial institutions are exploring new-age technologies. The high speed, low latency, and higher bandwidth that comes with fifth generation or 5G communication will not only enable them to provide superior digital services but also deliver exceptional, immersive experiences and build high-end user-centric digital engagement. This white paper covers the importance and impact of 5G across the banking services value chain, its combinatorial impact, and considerations and associated risks.

Preparing for the next revolution in financial services

With digital connectivity becoming inevitable at the turn of the 21st century, the banking and finance sector has shifted from the brick-and-mortar model to smartphones and latest technologies for reinventing the process altogether. As financial institutions continued to focus on improving customer service through efficient operations, legacy infrastructure along with security and privacy concerns were, for long, barriers to transformation; however, COVID-19 drove financial institutions to spurn their legacy applications and shift to a cloud-based operating model. Some decade-long transformations were closed within weeks. Amid major digital transformation initiatives and cloud adoptions, financial institutions must simultaneously prepare for the new age of connectivity that the fifth generation of communication will usher in.

5G brings a multitude of improvements, such as higher speed, more data bandwidth, lower latency, and enhanced 24X7 connectivity, creating a foundation for a truly connected financial services ecosystem. Financial institutions, as custodians of their customers' data, must leverage the power of data and insightful processing using 5G. This will help streamline complex multi-step information exchange processing and enable seamless, swift sharing of real-time data, redefining how financial institutions interact with different information repositories and customers.

5G: Phenomenal and unique in architecture.

With customers increasingly demanding access to financial services on smartphones and other mobile devices, the need of the hour is futuristic communication systems that rely on powerful and extremely flexible networks. 5G has broadened the possibilities by providing a broad range of wireless services delivered to the end user across multiple access platforms and multi-layer networks. The low latency, ultra-high throughput with lesser power consumption would enable infinitely large amounts of data to flow across the network continuously, in turn, aiding seamless adoption of the DevOps approach

to application development as well. Through this, financial institutions can reduce the time to market for innovative product offerings and leapfrog on customer intimacy. 5G implementation will engender performance benefits and diversify applications through extensive use of cloud-based resources and virtualization.

What makes 5G pathbreaking? 5G utilizes a more intelligent architecture, with radio access networks (RANs) no longer constrained by base station proximity or complex infrastructure. The network slicing capability provides customizable capabilities within the overall network. The technical characteristics include data speed, latency, reliability, security, and services which could be tailored based on the need and priority of certain type of applications and enterprise organizations. This will be highly beneficial to financial institutions as they can customize solutions and have flexible services based on cost and agreed SLAs with the network carrier provider, especially for their time-sensitive or critical services. This will help financial institutions enable secure and top notch communication services such as on-demand video connect with an advisor, virtual mortgage application, or onboarding for the benefit of end customers.

The 5G opportunity in the banking and financial services industry

As financial institutions look for opportunities to launch innovative products and services to make banking effortless for customers, going digital is a prerequisite for superior experience. The 5G cellular technology will act as a launchpad in for innovation and help realize the complete potential of emerging technologies, in turn, exponentially enhancing the end customer experience.

5G brings 10-100x faster speed than 4G and provides the capability to connect millions of devices per square kilometer with reduced energy usage and high availability. It has the potential to completely revamp the future of banking, by enabling better customer experience (see Table 1). Initial explorations to test ground realities have already begun. Through 5G, banking will be conversational and location agnostic, where virtual pop-up branches will provide an authentic and innovative banking experience. Physical branches will undergo a digital facelift and remote engagement will become more humane by way of video-based expert assistance at the customer’s convenience. Future branches are being reimagined with virtual reality (VR) and augmented reality (AR), powered by untethered 5G connectivity with high image quality to help visualize portfolios and business investments. Additionally, such high-quality video-based assistance will augment personalized financial services such as boundaryless advice, sales, and seamless onboarding.

Banking landscape	Opportunities	5G impact
ATMs and kiosks	<ul style="list-style-type: none"> • Contactless and superior experience • Rendering a multitude of services conveniently • Expand reach to remote locations • Multiple-language support 	<ul style="list-style-type: none"> • Instant biometric authentication • Passbook printing, assistance on recent transactions via instant video connect • Remote ATM setup and upgrade or hardware repair assistance in real-time using 5G’s reliable high-speed low-latency network
Virtual banking and micro-branches	<ul style="list-style-type: none"> • Flexible and remote banking services • Immersive experiences • On-demand need-based customer servicing • Remote reach with personalized experience 	<ul style="list-style-type: none"> • Immersive experiences using AR and VR • High-quality video-based assistance to provide advice beyond physical locations, enabling seamless onboarding, financial advisory, and wealth portfolio visualization
Next-gen mobile banking	<ul style="list-style-type: none"> • Rich and responsive • Secure and improved digital efficiency across apps • Upgrades and maintainability • Wider omnichannel spectrum providing ubiquitous digital experiences • Mobile edge cloud compute 	<ul style="list-style-type: none"> • Accelerated unified communication • True omnichannel experience across phygital channels by providing connectivity across millions of IoT, sensors, and devices without compromising on quality (voice, video, and M2M) • More contextual conversations and personalized offers due to fast data available across network and compute
Digital payments and apps of the future	<ul style="list-style-type: none"> • Support for invisible payments • Apps to stay on top of customer’s mind • Rich and personalized content • One-stop-shop solution • Fast and reliable 	<ul style="list-style-type: none"> • Faster and efficient maintainability of apps • Support for smart devices and sensor-based connectivity for contactless payment instruments • Enable real-time transaction processing for SMEs – a boon over managing cash registers • 24/7 hyper-personalization

Table 1: Opportunities and impact of 5G

Such enriched digital engagement will necessitate an interplay between customer services and back-office operations to support and enable seamless, convenient, and digitally fluent experiences. Robust and streamlined backend operations with faster data accessibility are imperative for banks and financial institutions to be able to create an omnichannel experience with highly personalized financial services. 5G's data transfer capabilities will enable real-time data streaming, such as data captured from edge devices of the customer, thus accelerating the end-to-end processing cycle time. Here, customers' 360-degree behavioral and financial data will be made available through connected devices, which banks can derive meaningful insights from, and thereby provide hyper-personalized loan offers and financial advice. Other aspects of financial institutions' 5G evolution include fraud prevention, high-frequency trading, and cryptocurrency transactions. 5G will also enhance security and authentication by aggregating biometric data from users' devices and enabling enhanced facial biometrics to provide multi-layered authentication.

The ripple effect across new-age technologies

The confluence of emerging technologies such as blockchain, artificial intelligence (AI), cloud, AR, VR, and extended reality (XR) with 5G will have a transformational effect on banking ecosystems (see Figure 1).

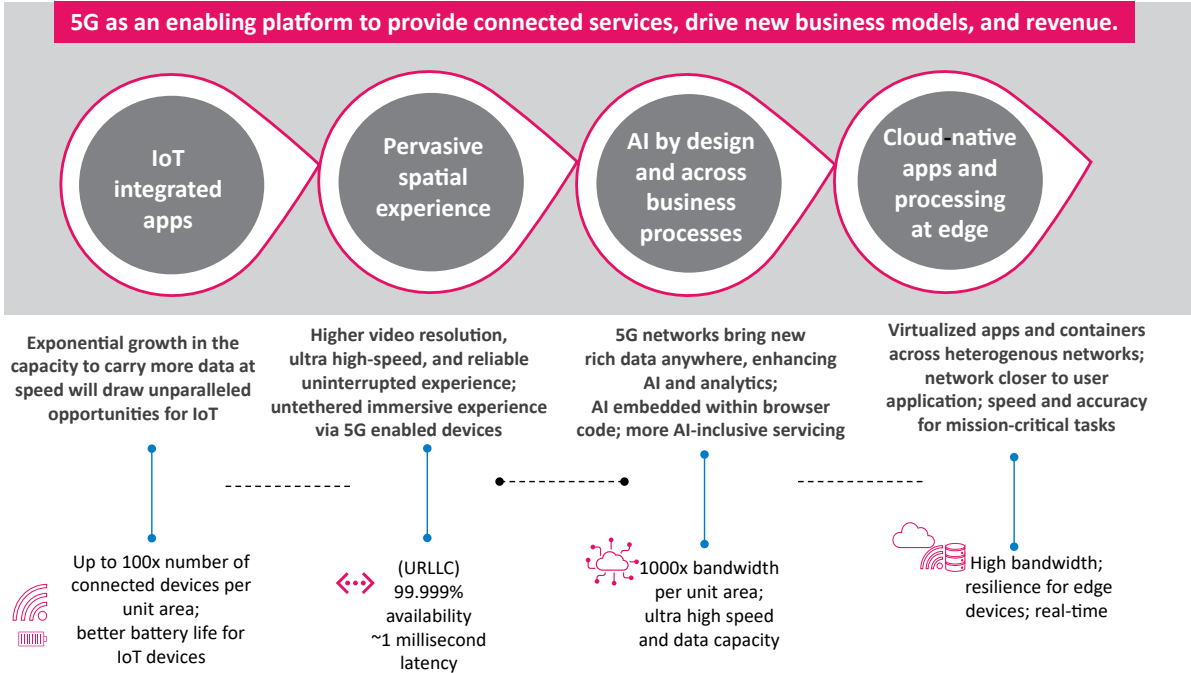


Figure 1: The combinatorial impact of technologies underpinned by 5G on banking and financial institutions

5G will fuel innovation in all forms, enhance back-end processes and customer experience, and actively drive fine-tuned interconnected ecosystems. We will see a variety of developments such as:

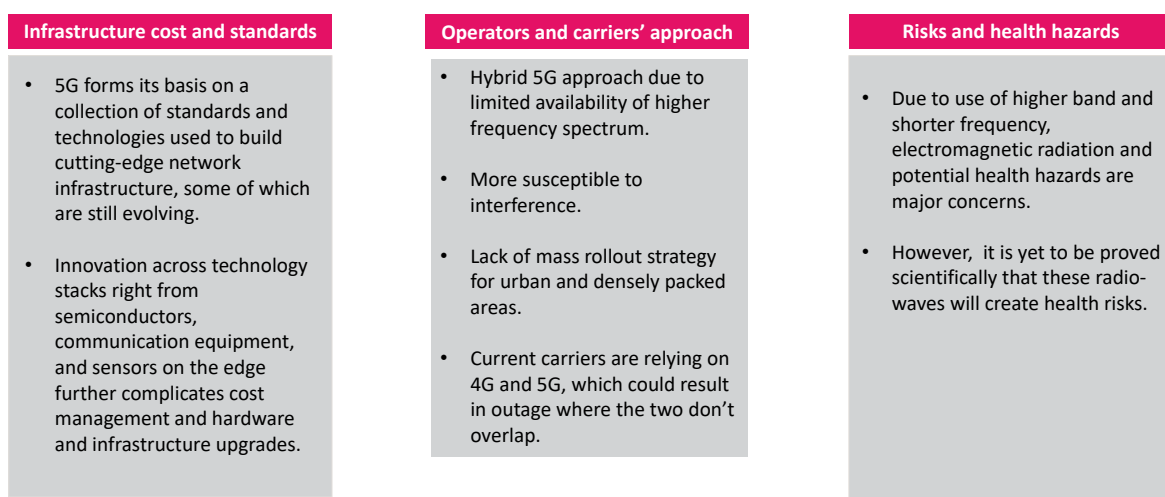
- Cloud-based products and services will potentially be more reliable, faster, and efficient.
- Blockchain coupled with 5G will further enhance functions like asset tracking, digital identity, and cross-border payments. 5G will enable faster processing speed, high data capacity, and reliable communications.
- 5G and edge computing will bring networks closer to user application. Due to efficiency, high-speed connectivity, and data capacity, more mission-critical tasks could be done through edge computing rather than sent to a data center that is part of the public cloud. It will reduce the

network infrastructure optimization, enhance user experience, and help deliver new innovative use cases. However, building out these edge servers will require significant capital expenses.

- 5G technology will make AI an inherent part of financial services bringing the required data on time for processing. AI or machine learning (ML)-based chatbots will be contextually conversational and not just transactional. They will have access to all required and relative information in real-time and respond quickly.
- Untethered AR and VR devices will get a boost with 5G, and we could see multiple use cases popping up in the financial services industry. These use cases will facilitate more immersive and experiential customer engagement.

Considerations and associated risks

5G's potential has raised the stakes, but banking and financial institutions must overcome some major challenges in adoption. 5G is already in its early rollout stage, but windfall and monetization will understandably take longer. Major carriers are still formulating business goals and defining the required infrastructure, such as the right way to install antennas, power supplies, switches, and cabling, to support mass coverage. Besides network setup and operationalization considerations, carriers must take stock of other risks and cost issues (see Figure 2).



The business potential is still in its infancy and magnitude of the impact is yet to be measured at scale, but initial testing and early pilots have exemplified the digital future vision as near and not far.

Figure 2: Challenges and risks associated with 5G

The path ahead

5G's promise to transform the new era of communications promises multiple benefits to banking and financial institutions, but the realization will take longer, given that the 5G network is comparatively new and its implementation is still restricted. If the actual potential of 5G is realized, it will provide an optimized highly-personalized and purpose-led communication, redefining the overall banking experience. Diversified geographical adoption patterns across urban and rural areas will also be a factor that global financial institutions must consider. Hence, network providers may need to consider hybrid strategies for rollout, where both 5G and existing networks are operational during the transition period. Financial institutions will have to support the new as well as upgraded services along with existing ones for a relatively longer duration in some geographies, given the lack of clarity in 5G rollout strategies and the cost of initial infrastructure setup. Having said that, banks should continue to track the customer's pulse and formulate strategies to revisit their apps and mobile banking services for the 5G era.

Financial institutions can unlock the capabilities of their entire ecosystem by rethinking the network relationships within, reimagining their digital strategies, and partnering with reliable technology players to adopt 5G technology. While fintech firms focus on leveraging emerging technologies, banks can focus on streamlining their operations and internal services to unlock truly differentiated services. Undoubtedly, 5G will provide the exponential speed, but speed is just the beginning. The underlying characteristics of customization provide flexibility in terms of network capacity usage and cost optimization. Most importantly, 5G will act as a launchpad for emerging technologies to unleash their true potential in creating next-gen futuristic banking experiences. We therefore recommend that financial institutions gain a head-start in IT infrastructure preparedness through virtualization, container servicing, and software-defined networking to support edge computing, and proactively prepare for the revolution that 5G will unleash in the financial services sector.

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Awards and accolades



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