

McGill University

5G Workshop Q&A



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What is 5G?

5G, as in “fifth generation”, represents the next iteration of the evolution of mobile technology. These generations seem to be following approximately 10-year cycles and we really are at the beginning of this new cycle today. Whereas the first 4 generations (1G to 4G) largely focused on basic mobile connectivity and improved connection speeds, 5G opens the door to a radically different network view, enabling high performance connections between people, machines, and objects on a massive scale. New capabilities include ultra low latency and availability, extreme network capacity and associated gigabit per second user experience rates, significantly improved power efficiency, and more uniform user experiences. These improvements will drive a wide spectrum of new opportunities (impacting both consumers and businesses) fundamentally altering how we live, move, work, play, and even innovate!

What is the 5G roll-out, when and where is it happening?

Early 5G deployments in the USA, Europe and parts of Asia began in 2019. Canadian deployments followed in early 2020 and are accelerating into 2021. A 2020 GSMA report suggests that the contribution of mobile to the overall North American economy will approach approximately 5% of GDP by 2025 with 5G representing about 50% of connections and driving hundreds of billions of dollars of GDP and millions of new jobs to be created. Also, a recent Accenture reports suggest that 5G technology 1) could add around \$40 Billion in annual GDP and 250,000 permanent new jobs to the Canadian economy by 2026 and 2) will drive US Communication Service Provider (CSP) investments of approximately \$275B in network infrastructure over the next few years, potentially creating up to 3M jobs and boost annual GDP by \$500B.

What sectors will 5G impact?

5G is expected to impact a wide spectrum of industry verticals. Some of the short- to mid-term 5G use cases fall under the following sectors:

- Manufacturing
- Retail
- Healthcare
- Automotive/Transport
- Energy
- Entertainment
- Financial Services
- Agriculture
- Insurance
- Supply Chain Management

What does this workshop cover?

The fundamental goal of this workshop is to present the market dynamics of 5G and explore emerging commercial opportunities, key players, technologies, benefits and challenges. Although we will touch on some of the engineering and architectural components, the focus will be on the business side of 5G, including opportunities, use cases and innovations that this technology will enable. Learnings will be enhanced and reinforced by practical exercises so you leave with new knowledge that you can begin to apply to your work or business immediately in preparing for 5G.

During this workshop, we will explore the following themes and topics:

- 5G Fundamentals & Building Blocks
- Target 5G Use Cases and Benefits (e.g., Smart Cities, Autonomous Transport, Smart Factory, Gaming)
- 5G Industry Dynamics and Ecosystem Challenges

- How does **COVID-19** change the 5G game?
- Taming the “elephants in the room” – Potential 5G health risks and environmental impacts
- Techno-Convergence and 5G Innovation – AI, Cloud, Blockchain, Quantum Computing
- Market positioning of key global platform/infrastructure players including Amazon, Google, Microsoft, Apple, Facebook, Salesforce, IBM, Oracle, and SAP
- North American Commercial Status - USA & CANADA. Will have some highlights on what is happening in Europe and Asia as well depending on the student mix.
- How can businesses best prepare for this 5G tsunami?

What knowledge will workshop participants be equipped with once complete?

- Understand the global 5G ecosystem – equipment suppliers, SW players, impacted verticals and related geopolitics (i.e., Huawei).
- Describe key 5G technologies and architectures.
- Distinguish between short vs longer term use cases and related benefits and challenges.
- Become knowledgeable of NA status of 5G technology – USA and Canada as well as appreciate the latest from Europe and Asia as well.

Who is this workshop designed for?

This workshop is aimed at three broad groups of professionals:

- Business and technology leaders focused on emerging technologies and innovation.
- Managers, SMEs, and business professionals from diverse verticals including comms, media, technology/SW platforms, government, banking/finance, transportation, aviation, retail, supply chain, healthcare, agriculture, energy, manufacturing, defense, and CPG.
- Investors/entrepreneurs who need to better understand 5G high value opportunities.

This workshop is open to anyone who wants to learn and become exposed to one of the most dramatic developments in the tech industry today.

Who is the presenter?

This workshop will be led by John Nikolopoulos. John has completed Bachelor's and Master's degrees in Electrical Engineering alongside an MBA in Finance at McGill University. John also completed the graduate level Network Engineering Program at the University of Toronto.

John has over 25 years of experience in the global tech sector (mobile, cloud, telecom, AR/VR, blockchain, IT) in senior leadership roles in Sales, BD/GTM, Product/P&L Management, and Solution/Systems Architecture teams driving global channels, partnerships & enterprise deployments with \$billions of global sales across diverse industry verticals within both regulated and non-regulated environments. His experiences range from F500/Large Cap enterprises including Accenture, Nortel, and Sagemcom to high profile start-ups such as Corvis Corp. (now part of CenturyLink), where he was part of the senior GTM/execution team leading to one of the largest exits in tech industry history with a 1.1 billion\$ IPO.

John is a regular invited subject matter expert and lecturer within McGill's graduate level continuing education program focused on Data Science, Big Data and AI teaching to over 300+ students of diverse backgrounds and experiences.

Why should I attend this workshop?

With both Apple and Google now targeting to launch their new 5G phone in the fall (Samsung has already entered the market alongside a few other players), the timing is optimal to better understand how this new 5G tsunami will affect business and consumers. This workshop will attempt to sort through what is hype, real, and fake. It will help the student navigate through very complex market issues including the role of Huawei in the accelerating geopolitics, challenging environmental, health, and ethical concerns (often overlooked by a market obsessed with technical specs), and unpack the most compelling short- and longer-term use cases.

This workshop will not be a standard one-way delivery of info to the student. There will be a number of engaging exercises (single or group depending on context and student mix) to solidify understanding of some of the key concepts. In the end, the student will hopefully walk away feeling empowered, excited, and indeed much more relevant regarding the dynamic, complex, and opportunity rich 5G world.

When and where is the workshop going to take place?

Upcoming workshop dates and additional information can be found at <https://continuingstudies.mcgill.ca/search/publicCourseSearchDetails.do?method=load&courseId=10697335&selectedProgramAreaId=17721&selectedProgramStreamId=>