Chapter 1
5G for IoT:
Between Reality and Friction

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ABSTRACT

The 5th Generation of wireless network technology (5G) is a rising set of cellular technologies, specifications and projected standards that promise to dramatically improve the speed and responsiveness of wireless networks. The arrival of 5G guarantees new architectures for connecting billions of IoT (Internet of Things) devices and introduces a bunch of development challenges for sensible applications. Enterprises measure are trying to find out the solutions for omnipresent property and near-real-time remote solutions and management capabilities for mission-critical IoT systems and 5G is here to answer that decision.

INTRODUCTION

Cellular mobile communications play a significant role in technological developments by creating the platform for mobile Internet, connecting billions of smart phones and laptop, the focus of mobile communication is now shifting towards pervasive computing for machines and devices and hence achieving Internet of Things (IoT). It is envisioned that cellular networks take at least ten years to get from one generation to another. 5G is not an exception to that, as, for global standardization, the whole cellular ecosystem needs to be agreed on all technological aspects which include antenna, modulation, security, mobility, authentication and so on. The 5th Generation of cellular communication (5G) guarantees sufficient latency and speed for connecting billions of IoT devices and introduce several recent development challenges for sensible applications. Just because the technology is there does not imply it fits your strategy. It is advisable to learn the execs and cons of cellular Internet of Things properly before recommending it as a research area for enterprise development.

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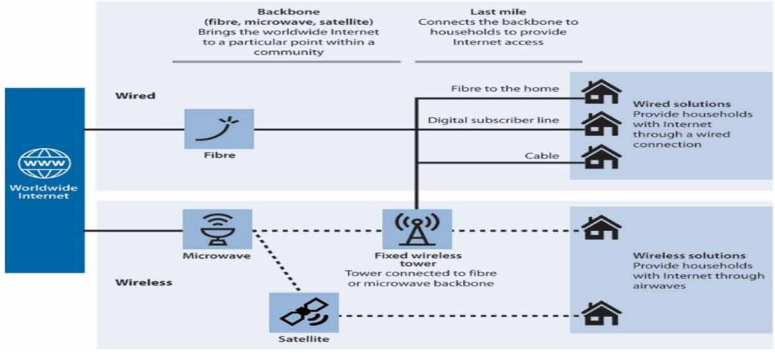
Figure 1. Fixed internet architectural design setup



The chapter covers the major developments in cellular communication networks namely fixed internet, mobile internet, things internet and the upcoming tactile internet. In this chapter, we present new trends and challenges in adopting 5th Generation of Cellular Communication (5G) for Internet of Things (IoT). We further provide an insight about the transformation from infrastructure-based internet to opportunities or service-based internet design.

FIXED INTERNET

Fixed wireless internet is not quite the same as progressively regular associations like DSL and fiber. Rather than utilizing a link, it brings the internet. When you decide on a fixed wireless internet, your supplier will introduce a collector to your home. It will speak with the closest remote base station and offer you access to the internet through a link conveying the broadband sign from the collector to the switch in your house (Brake, 2016). Signal to your home through radio waves transmitted by a base station.

Fixed wireless internet is primarily utilized in country territories were setting up the foundation for broadband administrations like DSL is restrictively costly. Transporting and covering links in the ground and getting the vital licenses can be costly. So, it doesn't bode well for specialist co-ops to go down this street in less populated territories, where they can't get enough endorsers on board to legitimize the all-out expenses.

UPSIDES AND DOWNSIDES OF FIXED WIRELESS INTERNET

As with everything throughout everyday life, fixed wireless internet has a lot of favorable circumstances and disservices. We should discuss the focal points first.

It's simpler to set up the hardware required for fixed wireless internet than it is for other broadband administrations since it doesn't require physical links or the issue they involve. The fixed internet is circulated to parts of India through laser beams.

Suppliers likewise don't normally set information tops, which is regular with cell internet providers. Furthermore, the innovation offers high download speeds that are similarly as quick if not quicker than those you get from other broadband administrations.