SEARCH NETWORK FUTURE GENERATION NETWORK FOR INFORMATION INTERCHANGE

G. S. Satisha
IMPACT College of Engineering & Applied Sciences, Banglore, India

ABSTRACT
With the turn of the century, these communication technologies started to evolve in ways that forever changed how users connect with the world. Broadband quickly replaced slower dial-up connections. In Wireless technology, Ten years later, users—from consumers to enterprises—see broadband and wireless technologies as integral to what they do every day. Consumers and workers expect an "always on" connection to their world, whether that's the ability to instantly share images with different network across the country or analyzing supply chain issues in near real-time from virtually anywhere around the world. Businesses and governments realize the value of networks to provide solutions to many of their greatest challenges, especially integrating systems. Fundamental to innovation in communications are networks. The past decade saw significant advancements; innovation in the next decade promises to be just as impactful.

I. INTRODUCTION

Over the next decade, communication between networks will pay close attention to consumer Communication and network technology trends as this shape the workplace .Users will expect the same experience wherever they are, with whatever they are doing. This expectation will drive the need for new solutions, creating new opportunities for organizations that respond. Broadband, wireless, and global IP technologies will be at the heart of global economic growth to meet future needs, today's networks are already undergoing major changes. Advancements in the way technology components relate, including moving toward a more service-oriented architecture, provide increased bandwidth flexibility, more rapid provisioning of network services, and put much more control in the hands of the enterprise. These network changes, along with user demand, produce trends that reduce the challenges of today and introduce new solutions for tomorrow.

To enable major, new communication capabilities, intelligence will be embedded in networks. Embedded intelligence will make network control more automated, dynamic, and flexible. In the coming decade, communication between network components won't be tightly tied to specific hardware, but will instead reside in an interoperable standards-based control layer so that newly-added network components, like switches and multiplexers, can signal themselves to the other network components, allowing dynamic configuration. Networks are moving towards being more effectively application aware. This means they will provide different service levels, depending on the application. Application-aware search network enable organizations to achieve

Prioritized levels of performance for Private IP network applications such as VoIP, enterprise resource planning (ERP), and video. The proper network assessment, reporting, dynamic bandwidth, and packet-marking tools let organizations closely monitor performance, make adjustments, and achieve cost efficiencies. This paper gives information on the future network expectation and how the Search tree network can incorporate the demand for the future traffic and for the future needs.

The paper is organized into pervasive bandwidth pervasive IP connectivity, Purpose built solution. Amd future work.

II. PERVASIVE BANDWIDTH

In the years ahead, multimedia applications will continue to increase. The surge includes 3-D video, video sharing, Biometric analysis, conferencing, and streaming—all in higher definition than is possible today. As an example of the trend, a 2010 volcanic eruption in Iceland caused a sharp rise in video conferencing. Globally, mobile data traffic will double every year through 2014, and will grow to 3.6 Exabyte's per month.[2] The increased volume will cause data traffic to skyrocket and require capacity not currently available. In the past, bandwidth available to a user at a given site was available only in coarse increments, selected at the time of provisioning. Enterprises upgrading to higher capacity faced costly projects that could take months to plan and implement. Increasingly, network technologies such as bandwidth deployment over fiber optic cables and via Ethernet access networks will allow rapid upgrades often without the need for long projects, costly site visits, and physical construction projects. On-demand bandwidth capability is available today, though not yet widely used. Over the next decade, use will increase dramatically. Organizations will still need to be conscious of bandwidth needs when designing networks, but will find that the flexibility after the initial deployment is far greater. Greater flexibility allows easy adjustments that more readily meet changing business needs.

The growth of bandwidth-intensive applications will make dynamic and on-demand bandwidth capabilities routine. In many cases, businesses will be able to upgrade bandwidth almost instantly, without human intervention, triggered by consumption patterns and parameters set in advance. Organizations may pay for underlying capacity and then peak bandwidth and data transfer utilization, in a model similar to today's commercial electricity suppliers. Wireless will realize the most impactful bandwidth milestone. Fourth-generation (4G) search networks will bring broadband capacity to mobile devices at rates approaching, and potentially surpassing, 10 times the current capacity. The first commercial 4G wireless network was deployed in Scandinavia in late 2009 using Long Term Evolution (LTE) technology, and large scale deployments began in the U.S. in 2010. LTE not only provides customers with true broadband speeds, it will also embed wireless connections in cars, buildings, machines, and appliances enabling what some people call the "Internet of things." Verizon Wireless was among the first carriers in the U.S. to launch LTE[9]. Trials in Boston and Seattle demonstrate the network is capable of peak download speeds of 40 to 50 mega bits per second (Mbps) and peak upload speeds of 20 to 25 Mbps, though average, real-world rates are expected to be 5 to 12 Mbps on the downlink and 2 to 5 Mbps on the uplink. Based on internal estimates, aggregate growth in wireless data carried by Verizon will skyrocket after LTE is deployed, with an increase of more than 2,000 percent between now and the end of 2017.Search network allows user to transmit and receive information via various evolutions like 3G, 4G, 5G.

III. PERVASIVE IP CONNECTIVITY

As technology platforms continue to evolve, the barriers between wireless and wired networks and devices around the world will eventually disappear. Consumers and businesses will expect their applications to move seamlessly between platforms, no matter which network they're connected to at the moment. And they'll demand access to all of their content—regardless of where it's stored—anytime, anywhere, and on any device. This trend is already underway with fixed mobile convergence (FMC), where mobile phones transparently switch a voice call in progress between the cellular network and VoIP. The goal of Search network is to provide a seamless transition of voice, data, and even video communications between different types of networks, no matter the location or what device is used, providing the user with an optimized, always available experience. Soon it will be commonplace to continually watch a television show or video presentation while moving between devices.

The move toward 4G technology is pushing networks closer toward FMC. In the near term, LTE will enable billions, perhaps trillions, of devices to connect. Wireless sensors will then integrate everyday items, such as household appliances and medical monitoring equipment and businesses will widely deploy Machine to Machine (M2M) wireless communications solutions to track assets, remotely monitor inventory, and ensure that distant equipment is operating properly. These types of sensors

will provide data that suggest the need for proactive maintenance, or instantly report service interruptions. LTE will also enable a new generation of broadband to wireless applications.

IV. PURPOSE-BUILT SOLUTIONS

A trend in the next decade will be purpose-built networks that solve particular business requirements. By separating the network functions or services from the technology, businesses can specify a custom network to suit particular business needs. In the past, a physical network would have been built to accomplish this. Virtualization of these services will make it possible to create a logical network without building a physical network.

The industry is moving away from the slow and awkward methods of adding point-to-point links that result in a tangle of lines and excess equipment. Many are choosing VPNs that run over the public Internet or private clouds based on Multi-Protocol Label Switching (MPLS) network technologies. VPNs and private clouds let organizations customize their network solution by specifying the type and level of security required to meet the business and regulatory needs, the bandwidth required, and the data storage features.

Through 2022, the VPN and private cloud trends will continue. While lingering concerns about availability and security will encourage many enterprises to participate in private cloud-based interconnections for key relationships, the flexibility of Internet-based connections have enormous and growing appeal. However, even in industries like financial services, where the largest players tend to be late adopters of many technologies, a marked shift away from physical private networks and toward MPLS-based private cloud networks exists.

It's not too difficult to imagine different types of virtual industry markets and exchanges developing as a result of the expected changes.[9] On the energy horizon is smart grid. By providing two-way communication between the user and the utility company, and between utility companies, an energy market is taking shape that allows more fluid pricing, encouraging high value conservation at times of peak demand, and will let users sell electricity to other users. In the healthcare field, health information exchanges are forming as a way to securely share patient information across different medical facilities. These exchanges help doctors avoid repeat patient tests, reduce

Missing patient data, and increase the quality of care. Early in 2009, network selected to move to an open connectivity model for its Nordic markets by replacing its proprietary participant network with the Verizon financial Network (VFN). The VFN is a dedicated and purpose-built business infrastructure specifically designed to share market data and execute timely trades. VFN offers financial services customers a fully end-to-end managed and supported, highly scalable and low latency interface to the financial services ecosystem

V. THE FUTURE WORK

By the year 2022, communications networks will be an even more integral part of everyday life than they are today, both at home and in the workplace. Network-driven technology will be a key enabler of daily activities, yet it will become more transparent to the user. No longer will the user care about how it works just that it works. The network of tomorrow[8] will produce a hyper-connected environment. Intelligence will be built into the fabric of everything imaginable and some things not yet imagined—all enabled by pervasive communications technologies. While many of the advancements that will be commonplace in 2022 are already taking shape, a few advancements seem to be straight out of a science fiction novel. These innovations will impact everyone and everything.

For example

Apparel.

Various wearable devices such as glasses or visors with built-in cameras and video displays will both record and transmit information. Inconspicuous displays will send streaming information to the user, such as a restaurant menu as a diner walks by a restaurant or tech support through a virtual reality demonstration. Gaming vests will provide forced feedback as part of an augmented reality experience.

Home**.**

The fiber-enabled smart home will be a platform for managing every function of the digital ecosystem, from home security and energy management to medical monitoring, telework and distance learning. Refrigerators will have a touch surface that displays grocery lists and coupons, and the ability o track contents for real time "inventory" control. Even carpets will be smarter, tracking the health of the elderly by sensing erratic movements that may predict a fall.

Energy.

Household appliances can already be remotely controlled to run at off-peak times. San Diego Gas and Electric found that if 80 percent of its customers used their washers and dryers at off-peak times, it could eliminate two power plants. Energy pricing will become dynamic, changing in real-time, motivating users to be more energy efficient.

Healthcare.

A patient's wireless device will receive reminders about medication and therapy, in-home devices will provide daily monitoring of vital statistics for preventative care, and patients will consult with out-of-town doctors and specialists over high-definition 3-D video connections. Many people will have body sensors, tiny wireless devices intended to track their vital signs

Government.

City-centric applications will report traffic and parking conditions using GPS-enabled sensors that provide real-time notifications for public transit, and even monitor the city's air and water quality Crime detection will be aided with context-aware video surveillance that reports unusual activity. Civil services will be tailored to the individual, supported by the full integration of government systems.

Enterprise**.**

Using the cloud model, traditional businesses will sell their internal capabilities as services that are separate and distinct from their regular business offering, just as Amazon does today with their Web-store infrastructure. RFID tags will become multifunctional sensors that not only provide item location but also item health, which is useful for tracking food shipment. The percentage of tele workers with no fixed regular work location will grow significantly, with the ability to work and video conference on one device that can connect anywhere. The combination of increasingly powerful and intelligent networks and innovative applications and devices will create a whole new way to run a home, an enterprise, a community, or an economy

VI. CONCLUSION

Users already have high expectations of their communication technology. This will continue to the point of dependence. Users will come to expect always-on access to the Internet that supports their lifestyles in every way. None of this would be possible without the foundation of solid and advanced communication networks. In the future, network providers will continue to drive open, IP-based technical standards that allow new technologies to work together.. To drive the solutions and services of 2022, network providers will form alliances with other providers and partnerships with application developers and device makers.. Unprecedented access to real-time data, combined with communication platforms that are available anywhere and anytime, will not only increase the rate of change for existing models, but will substantially increase the pressures of global competition.

Having identified potential opportunities, the team should then conduct forward-looking pilot projects. While some opportunities may not prove fruitful, the ones that do will create a new competitive advantage. Broadband, wireless, and global IP technologies will be the heart of coming economic growth. The evolution of the network over the next decade will not only enable new products and services, It's also so important because of the vital role broadband must play in advancing key societal goals in areas like education, health care, energy, public safety, democracy, and small-business opportunity. Future search tree network should be able to large traffic and can transmit and receive data of images from any mobile network and it should be compatible with the high speed traffic data. It should take care of traffic from different generation and should pass data from different network layers.

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AUTHORS BIOGRAPHY

The Author is currently working in the Electronics and Communication Engineering Department as a HOD and Professor.