India is a rapidly growing market for internet services. The number of people with advanced smartphones, tablets and other Wi-Fi-enabled consumer electronics is growing. Everyone wanting to stay connected is facilitating a wider adoption of public Wi-Fi services and hotspots. It comes as no surprise that the government plans to offer free Wi-Fi in 2,500 cities and towns across the country. Currently, over 31,000 public Wi-Fi hotspots in the country are venue-based deployments, such as at airports and railway stations (0.5 per cent), hotels (41 per cent), and shopping malls, restaurants, coffee shops and retail outlets (58 per cent).

Also, the fact that Wi-Fi is typically deployed in unlicensed frequency bands and there are therefore no spectrum charges makes it comparatively more economical than long term evolution (LTE) or any other telecom technology at the same speed.

Wi-Fi access is often provided as a value-added service to attract customers to an unrelated service, such as a retail outlet, cafe or modes of transport. Therefore, much of the build-out of Wi-Fi services in the current models is driven by venues, or by aggregators focused on supporting access in a wide range of venues like airports, restaurants, hotels and malls. In addition, with the evolution of the concept of smart cities, government agencies, municipalities and city authorities are also becoming key contributors to investments in public hotspots.

In order to ensure that internet access is delivered through Wi-Fi hotspots in a consistent and reliable manner, it is important that the network should be able to sustain itself through appropriate monetisation techniques. Globally, there are a number of different models for the deployment and monetisation of Wi-Fi hotspots, where the cost of access may be borne by the end-users, owners of the site where the access point is deployed, advertisers, sponsors or the government.

Some of the popular implementation models being adopted by the industry are:

• Paid model: The end-user or the Wi-Fi hosting venue bears the cost for use of the Wi-Fi network. The venue may in turn provide the service for free to its customers or indirectly build the cost into the amount charged to the customer, for instance, by incorporating Wi-Fi charges in the price of the food and beverages served at a cafe.

• Freemium model: Access is provided for free up to a specified quota, after which the user is

charged for any additional access. The quota may be fixed in terms of usage time (e.g., first 30 minutes) and/or amount of data (e.g., first 500 MB). This model is commonly used at airports and other public places.

• Advertisement-based models: The service is provided for free to the user but the provider earns revenues through advertisers and sponsors. There could be several variations of this model – for instance, the user may be required to view advertisements from sponsors or connect with the advertiser on social media in order to gain access to the network. Further, personal data collected from the user at the time of sign-in could also be monetised to earn revenues.

• Aggregators: Wi-Fi aggregators like iPass and Boingo bring together the Wi-Fi networks of various operators by allowing customers to connect to the affiliated hotspots around the world. The user may be required to pay a fixed monthly fee for the service or may be charged on a pay-as-you-go basis.

Risks and challenges

Deploying a wide, ubiquitous network of public Wi-Fi hotspots is costly in a vast country like India. Companies complain about the lack of support from the government to aid public Wi-Fi hotspot roll-out and adequate optic fibre cable networks, which act as a dependable backhaul option. Apart from these, there exist other operational issues such as discontinued and discouraging consumer experience due to the Department of Telecommunications' (DoT) Wi-Fi user authentication regulations, difficulty in managing scale and demand in a public set-up, and seeking public body clearances. Although these are relevant requirements from a security point of view, they do hinder the progress in this direction.

Even though the capex for public Wi-Fi hotspot deployment is lower (primarily due to unlicensed spectrum), opex exceeds it by a factor of four. All these issues make public Wi-Fi hotspot deployment in the country a strict balancing case of economics and scale.

Another key issue with public Wi-Fi hotspots is that they can be easily hacked. Be it the evil twin deployment (fake hotspot set up by the hacker) or sniffing on the Wi-Fi network and collating user information, or man-in-the-middle or side jacking, there exist many types of potential hacks

on public Wi-Fi hotspots. Apart from cyber security threats and vulnerabilities, there exist potential internal and home security risks of wide-scale public Wi-Fi hotspot networks.

Government push

The public Wi-Fi model has come a long way since its launch. Considering the need for regulation and policy direction, the Telecom Regulatory Authority of India (TRAI), has recently floated a consultation paper on "Proliferation of Broadband through Public Wi-Fi Networks", with a focus on getting inputs on the regulatory facilitation that can further internet penetration. Though the industry considers it a bit delayed, it is nevertheless, a good move by the regulator, considering the immense opportunity that public Wi-Fi has opened up. The government can consider subsidising production of Wi-Fi equipment in India, setting lower tariffs for using public buildings to put up public Wi-Fi hotspots, etc.

We, at RailTel, have made a proposal to DoT for funding the fixed one-time cost of setting up public Wi-Fi hotspots at 400 rural railway stations. Such areas do not have 3G or 4G network coverage, and no fixed line internet is available. RailTel with the unique capability of its presence at rural railway stations in the country can economically provide Wi-Fi hotspots at these rural and remote stations. The easy availability and affordability of a variety of Wi-Fi-enabled hand-held devices, mobile phones, tablets and laptops can help provide and increase internet access to a significant population.

Global experience and key learnings

Worldwide public Wi-Fi hotspots have grown exponentially in the last few years. Wi-Fi is now recognised as a part of the ecosystem of technologies which will form the 5G technology. Globally, the past few years have seen public Wi-Fi platforms evolving from supporting affordable broadband coverage and capacity for best effort access, to becoming truly carrier grade. A carrier-grade Wi-Fi network has several key characteristics including high performance (more than 1 Gbps for 802.11ac); hand-off and seamless authentication across multiple Wi-Fi networks and to cellular networks; roaming capabilities; high levels of security and quality of service; and the ability to be managed by a carrier's operator/business support systems.

As per data published by iPass and Maravedis Rethink, India has 31,518

Wi-Fi hotspots currently. In comparison, top-ranking countries like France, the US and the UK have significantly higher number of hotspots at 13 million, 9.8 million and 5.6 million hotspots respectively. Globally, the increase in the number of Wi-Fi hotspots from 2013 to 2016 has been 568 per cent, whereas India has seen an increase of just 12 per cent. For our country to reach a goal of one hotspot for every 150 people, 800,000 additional hotspots will have to be installed.

The government, under its smart cities projects, is planning to cover public areas of all the major cities with Wi-Fi hotspots. Considering the comparatively lower per megabyte cost of data with Wi-Fi technology, the need for better proliferation of Wi-Fi networks cannot be ignored. Public Wi-Fi services are more affordable and a flexible alternative for scaling up internet access.

Outlook and opportunities

The public Wi-Fi segment in the country has just taken off. RailTel is one of the pioneers in this area, and we are providing public Wi-Fi under the "RailWire" brand at railway stations, as mentioned earlier. RailTel has also started covering tourist places managed by the ASI and metro stations in Delhi. Similarly, many other telecom companies have started their own plans, some of them offering data offloading services through public Wi-Fi hotspots at public places to their existing customers. Telecom operators are already reeling under significant spectrum acquisition and fibre backhaul costs, thereby operating under minimal margins. This is also contributing to their increasing focus on public Wi-Fi.

Some positive contribution has definitely come from the focus of the government on creating smart cities and under its Digital India programme, but more needs to be done. Content providers are coming up with innovative ways for generating local content, which is having a positive impact on the increasing number of internet users in the country. Local content will be the key for the proliferation of the internet among the masses and in unconnected areas.

By R.K. Bahuguna, Chairman and Managing Director, RailTel

About Us   We are Hiring   Contact Us

Subscribe   Privacy Policy   Advertise   Terms & Conditions