*Approaching Wi-Fi: Description over Prescription*

**Policy Brief**

India has the potential to become the largest Internet using country after China. However, it needs to address the issues related to spectrum in order to expedite the penetration of broadband using Wi-Fi technology. Internationally, unlicensed spectrum is seen as an effective catalyst for social and economic development. A high cost and slow mobile data networks are not what the TRAI is vouching for.

In addition, the challenge of providing seamless /frictionless access to Wi Fi hotspots across India also needs to be addressed. This issue is in connection with both domestic consumption as well as the foreign tourists accessing Wi-Fi in public places.

**SUMMARY OF FINDINGS/ RECOMMENDATIONS**

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| * Spectrum policies should motivate innovation, be flexible, and set out spectrum users’ rights. EU, UK,USA have similar approach to spectrum is flexible approach and less stringent towards allocation of spectrum to specific technologies or services. * In the USA, the survey indicated that many bands are highly underutilized in 30 MHz to 3 GHz range which can be unlicensed. Hence, similar survey can be done in India. * Existing unlicensed spectrum is insufficient and additional bands may be delicensed as per present international practice. * Login methods need to be simplified and restriction of single use per login may be removed |

**THE RESEARCH: A DISCUSSION**

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| --- | --- |
| Frequency Range MHz | Status |
| 2400-2483.5 | Can be used in indoors and Outdoors |
| 5150-5350 | Low power outdoor use permitted but not license exempt |
| 5725-5875 |
| 5825-5875 | Can be used in indoors and Outdoors |
|  |  |

**Table 1: Existing Unlicensed Frequency Range in India**

**Source:** TRAI Consultation Paper, 2016

1. As per the international standard the bands **5470-5825** , as followed in the USA and European Union is not been allocated in India under the license exempt and the consultation paper has no reference.
2. Existing 50 MHz exempt spectrum in 5 GHz has become choked up as many ISPs switch to providing Services in these frequencies 2.4 GHz is highly overloaded.
3. Most equipment in 5 GHz band is meant to use larger spectrum range as such ranges are unlicensed in majorities of the countries. If an Indian operator has to purchase these equipment’s, they would not be able to limit its operation to the 50 MHz of unlicensed bands available. So, this leads to limited choice of equipment and hence higher cost, poor quality of services and lack of further expansion.

**Table 2: BANDS REQUIRING DE-LICENSING IN INDIA**

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| --- | --- | --- | --- |
| **Frequency range (MHz)** | **Band (MHz)** | **Status in India** | **Comments** |
| **2400-2483.5** | **83.5** | **Unlicensed** |  |
| **5150-5350** | **200** | **Unlicensed for Low power equipment for indoor applications only. Outdoor not license-exempt** | **Should be delicensed for outdoor use as in USA and Europe** |
| **5350-5470** | **120** | **- Not in unlicensed list** | **In the pipeline in USA.** |
| **5470-5725** | **255** | **- Not in the unlicensed list** | **Should be delicensed as in USA and Europe** |
| **5725-5825** | **150** | **Unlicensed for Wireless access system including RLAN indoor only. Outdoor not license-exempt** | **Should be delicensed as in USA and Europe** |
| **5825- 5875** | **50** | **Unlicensed** |  |
| **5875-5925** | **50** | **Not in Unlicensed list** | **In the pipeline in USA** |

**Source:** FCC White Paper report

**Table 3: SUCCESS STORIES OF COMMUNITY WI-FI NETWORKS USING (Unlicensed frequencies)**

|  |  |
| --- | --- |
| INDIA | ABROAD |
| Socio Economic development through Wi-Fi   * The Digital Empowerment Foundation (DEF) * ‘Wireless for Communities’ was implemented in Chanderi, Madhya Pradesh * After the success of the pilot project similar networks were cerated in Tura (Meghalaya), Sonapur (Assam), Baran & Tilonia (Rajasthan). And Tehri (Uttarakhand)   AirJaldi (Dharamsala Community Wireless Network) in Dharamsala, Himachal Pradesh | **Village Telco** East Timor, Brazil, Nigeria, Cameroon, and others  operates on a Mesh Potato, which is a simple Wi-Fi device that connects to other such devices forming a network |

With regard to the Authentication for domestic and foreign tourists the use of mobile phone numbers or international and national ID numbers ranging from passport to driving license numbers as authentication IDs for Wi-Fi access can used. Users will be required to choose a document from a list and enter the corresponding identification number to gain access to Wi-Fi.

# ConclusionS

As per the report of Analsys Mason (2015), a 1% incerease in broadband penetation could lead to162 billionbeing added to countries GDP. Also releasing 5 MHz of 3G spectrum per licensee could lead to 3.3% rise in broadband penetration. This would contribute to .538 billion to the country’s GDP. Similarly, by removing the difficulties faced in login/ authentication methods, public Wi-Fi implementation will get a boost and broadband penetration will increase. These steps have the potential to generate economic value and social benefits for nation like India.

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##### SOURCES

1. http://Unlicensed Spectrum India CISI India
2. http://epaper.timesofindia.com
3. http://www.trai.gov.in/WriteReaddata/ConsultationPaper

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