

## Welcome to BSNL Thanjavur Marketing cell

### BSNL introduces Prepaid Data STV 68

Telecom PSU BSNL has launched a new prepaid data STV for its customers across all circles. The price of the data STV is Rs 68 inclusive of taxes and it will offer 1 GB free data. The validity of the free data is 10 days and data charge after free data usage is 2p/10KB. Data STV 68 will be available from 1<sup>st</sup> April 2015 across all BSNL circles for a promotional period of 60 days.

Data STV in Rs. (Inclusive service Tax)	Total bundled free Usage	Validity of freebies (in days)	Data Charges after freebies*	Data Charges in Rs./MB (For APN bsnlstream)*
68	1 GB	10	2p/10KB	0.25

\*Data charges beyond free usage shall be deducted from the available balance in his main account.

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### Why 900 Mhz band is superior than 1800 Mhz band



Laws of physics state that the higher you go on the frequency band, the lower will be the wavelength. Simply put signals sent out using higher frequency bands will travel lesser distance than signals sent on a lower frequency band.

**NEW DELHI, OCT 18:**

The talk around re-farming spectrum has thrown up a question around why incumbent GSM operators are against giving up 900 Mhz band.

There are two reasons why 900 Mhz is superior to the 1800 Mhz band. The first is because laws of physics state that the higher you go on the frequency band, the lower will be the wavelength. Simply put signals sent out using higher frequency bands will travel lesser distance than signals sent on a lower frequency band.

This propagation characteristic also makes signals transmitted on 900 Mhz more potent when it comes to indoor coverage. It has been proven that 900 Mhz band has 30-40 per cent better coverage than 1800 Mhz band.

To make up for this, mobile companies on 1800 Mhz have to invest more in setting up larger number of base stations to achieve the same coverage as in the 900 Mhz band.

## Analysis Mason report

A report from research firm Analysis Mason said the operators using 900 Mhz spectrum will need to install 1,71,954 more base stations to match their existing coverage if they were to start using 1800 Mhz spectrum.

This investment required to do this shifting is putting off incumbent GSM operators including Airtel, Vodafone and Idea Cellular.

Other than laws of physics, availability of devices and network equipment at affordable price is one of the main reasons why a particular frequency band scores better than the other.

## Superior commercial ecosystem

The 900 Mhz band has a superior commercial ecosystem than 1800 Mhz. That's because 900 Mhz frequency band has been in use for mobile communications globally for over 20 years and as a result technology standards have been better developed compared with 1800 Mhz band, which has been in use only recently.

Therefore this band has become suitable not just for offering plain vanilla GSM-based voice calls but also fourth generation broadband services.

In India, the 900 Mhz band was first allocated in 1994 whereas the 1800 Mhz band started being used from 2001 when the fourth cellular licence was auctioned.

A significant part of this frequency band is being used by defence agencies, hence spectrum in this band is scarce for commercial mobile applications.

Currently all commercially available 900 Mhz spectrum is being used by incumbent Indian operators for offering GSM services. New players are hoping that once this band is taken away from the incumbents, then they may have a chance to buy this spectrum to offer 4G services.

Incumbent players on the other hand want to retain their rights over this piece of prime property and milk its inherent qualities to their own advantage.

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## ஏன் 900MHz ஸ்பெக்ட்ரத்தை நோக்கி நிறுவனங்கள் ஓடுகின்றன?

தற்போது நடந்து முடிந்த ஸ்பெக்ட்ரம் ஏலத்தில் 900MHz என்ற அலைக்கற்றை வரிசை எதிர்பார்த்த ஏல தொகையை விட 100% அதிக தொகையில் போனதாம்.

ஒரு ஆச்சர்யம் இருக்கலாம். ஏன் 900MHzக்கு மட்டும் அவ்வளவு போட்டி என்று.

காரணம் இல்லாமலும் இல்லை. நீங்கள் டெலிகாம் நிறுவனங்களில் முதலீடு செய்வதாக இருந்தால் கட்டாயம் தெரிந்து கொள்வது நன்றாக இருக்கும். இதனை கொஞ்சம் டெக்னிக்கலாக அணுகுவோம். டெக்னிக்கல் என்பதால் முடிந்த வரை போரடிக்காமல் பார்த்துக் கொள்கிறோம்.

ருவர் பேசும் போது அது மற்றவருக்கு கேட்கிறது என்றால் அதற்கு அடிப்படை காரணம் அதிர்வலைகள். நாம் பேசும் பேச்சு காற்றில் அலைகளாக மிதந்து மற்றவரை அடைகிறது. அதே போல் மொபைலில் நாம் பேசும் போது நமது பேச்சு அதிர்வலைகளாக மாற்றப்பட்டு ஒவ்வொரு டவர் வழியே சென்று கேட்பவரை அடைகிறது.

விரிவாக விளக்கம் வேண்டும் என்றால், தற்போது வந்துள்ள தமிழுக்கு எண் ஒன்றை அழுத்தவும் என்ற படத்தை பார்க்கவும். இது தொடர்பாக நிறைய சொல்லி இருப்பார்கள்.

ஒவ்வொரு டவரும் தமக்கு வரும் அலைகளை மட்டும் தெரிந்து கொள்ளும் வகையில் சில அதிர்வு வரிசைக்கு (Frequency) ட்யூன் செய்யப்பட்டிருக்கும்.

இந்த Frequencyயை இஷ்டத்திற்கு பயன்படுத்த முடியாது. அதற்கு மத்திய அரசிடமிருந்து லைசென்ஸ் பெற வேண்டும். அதற்கு தான் ஏலமும் நடக்கிறது.

இந்திய அரசு 800 MHz, 900 MHz, 1800 MHz, 2100 MHz போன்ற அலை வரிசைகளை மொபைல் தொழில் நுட்பத்திற்காக ஒதுக்கியுள்ளது.

இதில் தான் 900 MHz வரிசைக்கு மட்டும் அவ்வளவு டிமேண்ட்.

ஏன் என்று பார்த்தால்,

800 MHz ஏற்கனவே CDMA நிறுவனங்களுக்கு மட்டும் ஒதுக்கப்பட்டு விட்டது. அதில் மற்ற நிறுவனங்கள் போட்டி போட முடியாது. CDMA வாடிக்கையாளர்களும் பெரிய அளவில் இல்லாததால் இங்கு போட்டி குறைவு.

இதனால் வாடிக்கையாளர் அடிப்படையில் பார்த்தால் மற்ற மூன்று அலைவரிசைகளுக்கு அதிக நிறுவனங்கள் போட்டி போடும். அறிவியல் படி, அதிக அதிர்வு (Frequency) கொண்ட அலைகள் நீண்ட தூரம் செல்ல முடியாது. அதனால் 1800 MHz மற்றும் 2100 MHz கொண்ட அலைக்கற்றைகளை விட 900 MHz அலை அதிக தூரத்திற்கு செல்லும். குடித்துக் கொண்டு தள்ளாடி போகிறவன் நீண்ட தூரம் செல்ல முடியாது என்பதை இதற்கு உதாரணமாக எடுத்துக் கொள்ளலாம். இதனால் அதிக அதிர்வு கொண்ட 1800 MHz அலைவரிசையை பயன்படுத்தினால் ஒவ்வொரு குறுகிய தூரத்திற்கும் டவர் வைத்து சிக்னல்களை பூஸ்ட் செய்ய வேண்டும்.

அதே நேரத்தில் 900 MHz அலை தானாகவே அதிக தூரத்திற்கு செல்லும் வலிமை படைத்ததால் நீண்ட தூரத்திற்கு ஒரு முறை டவர் வைத்தால் போதுமானது. ஒரு கணக்கின் படி, இந்தியாவில் 900 MHz அலைக்கற்றையை விட 1800 MHz அலைவரிசையில் 1,50,000 டவர்கள் அதிகமாக தேவைப்படும். இதற்கான செலவு மிகவும் அதிகம் என்பதால் எல்லா நிறுவனங்களும் 900 MHz அலைக்கற்றையை நோக்கி ஓடுகின்றன.

இது தவிர 1800 MHz அலைக்கற்றைகள் சுவர்களை தாண்டி செல்லும் வலிமை படைத்தது இல்லை. இதனால் வீட்டுக்குள் பேசும் போது சிக்னல் தரமாக இருக்கும் வாய்ப்பு குறைவு.

இறுதியாக உலகம் முழுவதும் 900 MHz என்பது பொதுவானதாக உள்ளது. இதனால் அதற்கான உபகரணங்களும் மலிவாக கிடைக்கும். அதே நேரத்தில் மற்ற அலை வரிசைக்கு நிறுவனங்கள் அதிக செலவு வேண்டியிருக்கும்.

இப்படி பல காரணங்களால் தான் காற்றும் கணிசமான விலைக்கு விலை பேசப்படுகிறது.

இந்த மதிப்பில்லாத ஸ்பெக்ட்ரத்தை தான் ராஜா ரேஷன் கடை போல் முதலில் வந்தவங்களுக்கு கொடுத்தேன் என்று சொல்லி மாட்டிக் கொண்டார்.



## RADIO SPECTRUM

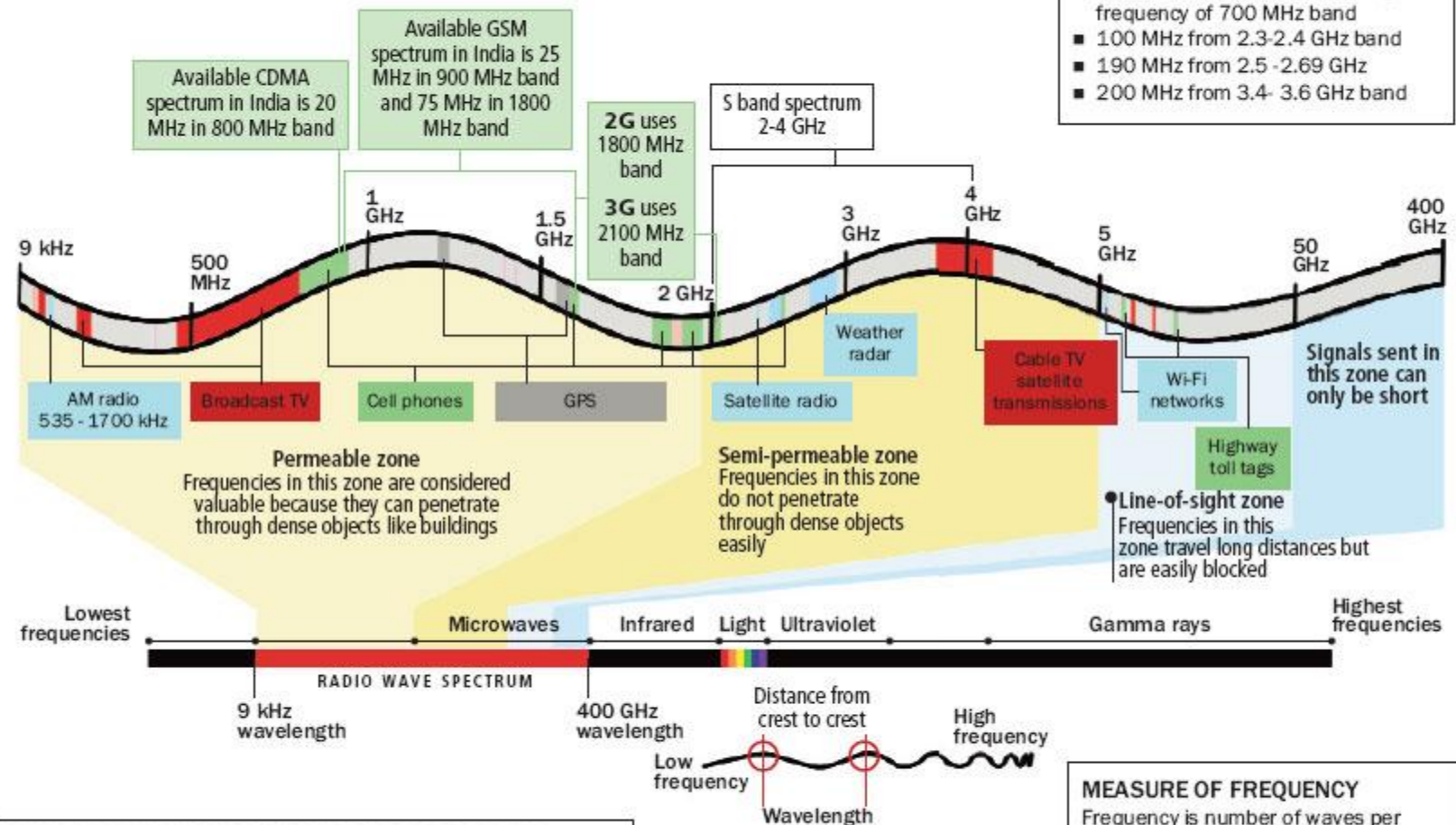
### WAYS TO FULFILL DEMAND

Telecom industry is looking towards new sources, including:

- 108 MHz from the broadcasting frequency of 700 MHz band
- 100 MHz from 2.3-2.4 GHz band
- 190 MHz from 2.5 -2.69 GHz
- 200 MHz from 3.4- 3.6 GHz band

### EVOLVING MOBILE TECHNOLOGY

- **1G:** Short for first generation wireless telephone technology. Mobile phone was first launched in the 1980s in this technology. Radio signals on 1G networks were analog, where information is transmitted by modulating a continuous signal, like sound waves. Used frequency band 824-894 MHz
- **2G:** Short for second generation wireless telephone technology. Mobile phone in India was launched based on this technology. Radio signals on 2G networks are digital. It allows data services for mobile phones, including text messages and downloading of ringtones. Uses 1800 MHz band
- **3G:** Short for third-generation wireless telephone technology. It supports services like mobile TV and high-resolution video. Uses 2.1 GHz band



**BANDS AVAILABLE FOR MOBILE PHONE SERVICES**  
 800 band = 824-844/869-889 MHz  
 900 band = 890-915 MHz/935-960 MHz  
 1800 band = 1710-1785/1805-1880 MHz  
 2100 band (2.1 GHz) = 1920-1980 MHz/2110-2170 MHz

### MEASURE OF FREQUENCY

Frequency is number of waves per second. It is measured in hertz.  
 1 hertz = waves per second  
 1 kilohertz (kHz) = 1000 hertz  
 1 megahertz (MHz) = 1000 kHz  
 1 gigahertz (GHz) = 1000 MHz

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<http://www.downtoearth.org.in/dte/userfiles/images/radio.jpg>

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**BSNL Movies On Demand and Games On Demand pm charges revised and offers Unlimited services**



State run Telecom Company BSNL in partner with M/s Hungama Entertainment Private Limited providing Movies on demand and Games on demand tariff revised which allows subscribers to experience unlimited movies streaming and playing games in revised nominal rates.

BSNL competing with private telecom operators rationalized Movies on demand services tariff will now be charged at Rs.170 per month for unlimited movies streaming (Bollywood/Hollywood,Regional movies). Subscribers can access to view more than 2000 movies across all genres (before 2 months old) in movie catalogue for Broadband customers.

BSNL customers already subscribed to Games on demand (GoD) per month charges hiked from Rs.49/- to Rs.70/- per month to play single/multi player total 550 games across all categories i.e action, adventure, etct in game catalogue.

MoD (Music and Video on demand) also revised BSNL from Rs.149/- to Rs.170 per month. Subscribers can access a bundle of music collection more than 2000000 songs and 5000 music videos under this pack. MoD allows users to stream unlimited premium short films and legendary serials from Hungama Entertainment.

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## **BSNL relaunches Unlimited 3G Data Plans for Rs 241**

The price war among telecom companies doesn't seem to negate anytime soon. All the companies are trying to beat their rivals with a new voice or data plan every now and then. The next big thing in today's time is unlimited data, and BSNL looks forward to drawing godsend with both hands.

As per the reports, the company has come out with two unlimited 3G data plans for prepaid customers in Haryana and Himachal Pradesh circles. It is a 90 day promotional offer, and if things fall in line at the end of this period, BSNL will think about launching these plans in other circles as well. Here are the details of these unlimited 3G data plans-

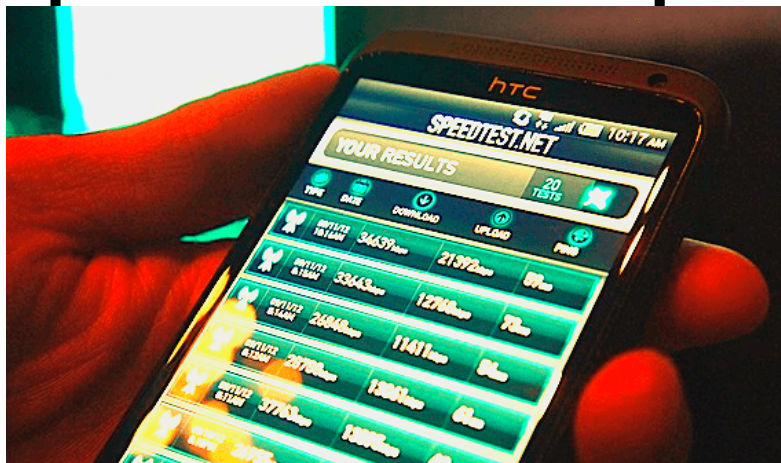
**Plan 1 (STV 241):** Users will get 1GB 3G internet with a validity of 28 days. After the 1 GB limit is over, users will continue enjoying unlimited internet at a speed of 80 Kbps.

**Plan 2 (STV 351):** By paying 351 rupees, users will get 2 GB 3G Internet with 28 days validity. After 2 GB data limit is over, users will get unlimited data at a speed of 80Kbps. The recharge value includes all the taxes.

The above-stated data packs will work with APN bsnlnet only. At a time, when high-speed Internet is becoming an indispensable need, both of these low-cost data plans can initiate a new price war among leading telecom service providing companies in India.

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## TRAI to set new recommendations to enhance internet speed from 512 Kbps to 2Mbps soon



The dream of Indians to get faster internet seems to be a step closer, with TRAI planning to frame recommendations to enhance broadband speed from minimum 512 kbps to up to 2 Mbps. The announcement came soon after TRAI made it mandatory for the wirelines to offer a minimum download speed of 512 Kbps as broadband.

For wireline services, TRAI has planned to improve the optical fibre cable penetration in the country. Towards the purpose, the regulator will lay guidelines to provide Right of Way (RoW) to telecom companies at cheaper cost. This will facilitate optical fibre cables at Fibre to the Home (FTTH) level to the interiors of the country, which is already far behind in optic fibre cable penetration when compared to its parallels, China and Brazil. The guideline will also ensure that the telecom companies are less interfered by the state government and the civic bodies in laying fibre optic cables. Connecting households with optic fibre cable will result in lesser dependence on deficient spectrum, largely used for mobile services.

For wireless services, the new TRAI recommendations will focus on methods to upgrade mobile towers through which the telecom services are delivered. Earlier, in National Telecom Policy 2012 (NTP 2012), the Government had promised “Broadband for all” at a minimum download speed of 2 Mbps from the current 512 kbps by 2015. TRAI even redefined broadband as a data connection with a minimum speed of 512Kbps. Government was also striving ahead with National Optical Fibre Network (NOFN) to provide 100Mbps speed to gram panchayats across villages by December 2016.

However, TRAI now feels that NOFN and an additional 10 lakh kilometre optic fibre cables will be insufficient for a massive country like India. The additional spectrum gained by the telecom operators from the recently held auction too will remain short to provide decent speed for broadband and mobile services. For the companies to improve their services, more BTS towers need to be installed. This will cost the telecom companies an additional of at least, Rs. 1,00,000, which the telecom companies do not want to spend.

Hence, TRAI feels that the best way to improve wireless services, is by reducing people's dependence on it. This is possible only by strengthening the fibre optic cable networks across the country.

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## **BSNL Festival offer only for one day on 14.04.2015**

<b>Top ups</b>	<b>Details of the offer</b>
50 to 210	Full usage Value equal to MRP on top up voucher/c top up/flexi top up
220 to 490	3% Extra usage value on MRP of top up voucher/c top up/flexi top up
500 to 1000, 1100, 1500, 2000,2200, 2500 &3000	5% Extra usage value on MRP of top up voucher/c top up/flexi top up

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## BSNL to Invest Rs. 7,000 Crores to Set Up 3G, 4G Wi-Fi Hotspots



State-run telecom operator BSNL will invest Rs. 7,000 crores in setting up Wi-Fi hotspots integrated with 3G, 4G networks across the country over the next two to three years, a top company official said.

"Wi-Fi is an obvious choice for BSNL going forward but it alone cannot be successful. It has to be integrated with 3G, 4G network so that customer can be seamlessly transferred to Wi-Fi. In two to three years, we will be investing Rs. 7,000 crores to set up integrated Wi-Fi across the country," Chairman and Managing Director of BSNL Anupam Shrivatava said while speaking at TeleAnalysis event here.

The company has already rolled out Wi-Fi service in Varanasi and will be extending it to more tourist spots by the end of this year.

**"By end of this financial year, we will have 2,500 Wi-Fi hotspots,"** Shrivatava said.

In addition to this, BSNL has also partnered with QuadGen Wireless for setting up Wi-Fi hotspots under a revenue share model.

**"BSNL is in best position to provide instant bandwidth."**



We will set up Wi-Fi hotspots and BSNL will provide bandwidth for it. We are committed to set up 1,000 Wi-Fi hotspots by June and another 5,000 by end of this year," QuadGen Wireless Founder and Chairman C S Rao said.

QuadGen will set up Wi-Fi hotspots in South and West zone under this partnership.

"Telecom operators have just committed huge amount in spectrum auction. They will need time to invest in networks.

With BSNL we have 18-months window of opportunity to expand Wi-Fi network," Rao said.

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BSNL to Slash 3G Data Rates by 50 Percent



Image: AP

Against the trend of rising mobile Internet tariff, state-run telecom company BSNL is likely to cut its 3G data rates by at least 50 percent **once the next phase of its network expansion is completed.**

"We estimate that 3G data rates can be reduced by at least 50 percent compared to prevailing rates under phase 8 of our network expansion," BSNL Chairman and Managing Director Anupam Shrivastav told PTI in an interview in Barcelona.

The company at present offers 3G mobile Internet at par with 2G rates of leading of telecom companies. It sells 1GB of 3G mobile Internet service for Rs. 175 and 2GB for Rs. 251.

"We have utilised over 90 percent of 3G capacity. If we reduce tariff right now, there can be sudden increase in traffic and network may not be able to bear the load. Once we expand this capacity to handle adequate traffic under phase 8, we will reduce rates," Shrivastav said.

The company is at present working on phase 7 network expansion plan which has an outlay of about Rs. 4,800 crores and is expected to be complete it by June this year.

The public sector firm has started working on phase 8 network expansion plan and expects to start issuing tender for this phase in the first quarter of financial year 2015-16.

The company was allocated 3G spectrum in 2009 but it has not been able to invest between 2009-13 in building network due to various procedural issues and mainly due to cash crunch that it faced after paying for two sets of airwaves - 3G and broadband wireless access spectrum in 2010.

Shrivastav said that to increase mobile Internet traffic capacity BSNL is tuning its network for next generation Internet ids known as IPv6 and adding more 3G capacity in its regional node centres.

Under phase 8, BSNL has plans to integrate Wi-Fi hotspots that it is rolling out in 2,500 cities and towns with 3G by end of next year to increase network capacity. "We are integrating our 3G network and these Wi-Fi hotspots for offloading traffic from 3G network. To connect with Wi-Fi, BSNL subscriber would not require any kind of permission. The 3G subscriber will automatically connect with wifi hotspot once he is within the range and free 3G network," Shrivastav said.



<p><b>***ENJOY ALWAYS BSNL 50MB FREE DATA OFFER WHILE YOU TOPUP Rs.100 &amp; Rs.200</b></p>	<p><b>ENJOY BSNLFESTIVAL OFFERS</b></p> <p><b>1) FULL TALK Rs.50 TO 210</b></p> <p><b>2) 3% EXTRA Rs.220 TO 490</b></p> <p><b>3) 5% EXTRA Rs.500 TO 1000 &amp; Rs.110,1500,2000,2500,3000</b></p> <p><b>THIS OFFER VALID ONLY FOR ONE DAY ON 14.04.2015</b></p>
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