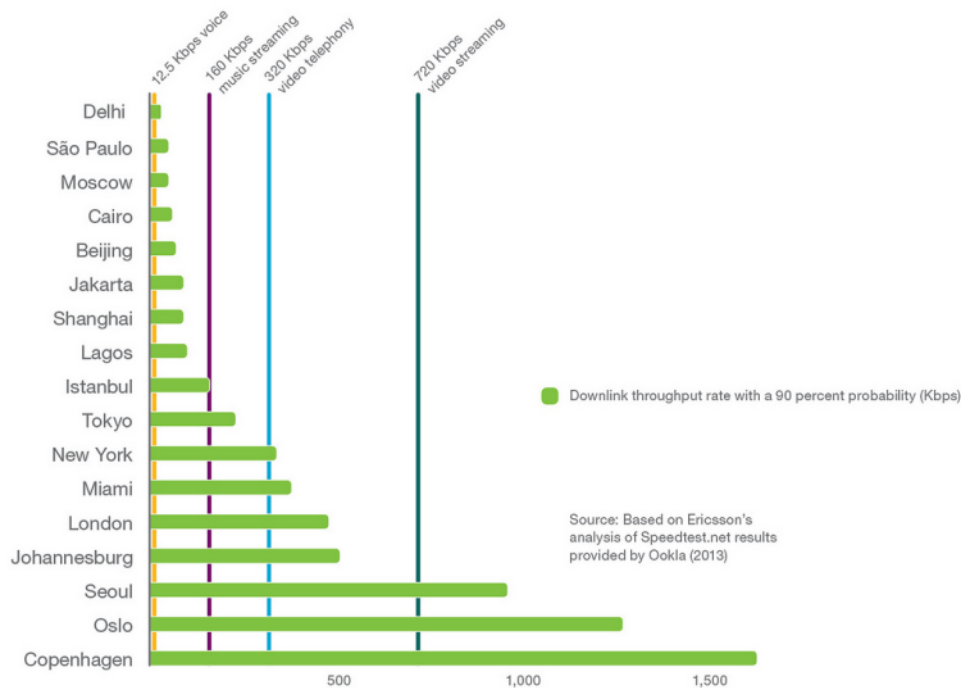


SMALL CELL AS A SERVICE INCREASES CAPACITY WHERE YOU NEED IT MOST

In the Networked Society, where connectivity is the starting point for new ways of innovating, collaborating and socializing, there are few things more important than network capacity. In environments such as stadiums, busy streets and multi-story office blocks, large numbers of people gather – and they expect to be able to use data-heavy, video-centric applications on their mobile devices. At present, many networks can't consistently deliver the downlink speeds required for streaming video.

Achieved downlink speed (90 percent probability), comparison of different cities.¹



¹Compilation of Speedtest.net measurements in each city during the period July–September 2013. Measured median speeds (50 percent probability) and top speeds (10 percent probability) are considerably higher in all cities.

Ericsson's normal approach to maximizing capacity is to create heterogeneous networks by improving existing macro cells, densifying the macro network by adding additional macro cells and introducing complementary small cells. In some environments – such as certain stadiums, busy streets and multi-story office blocks – this approach isn't feasible because of factors such as cost and lack of space for additional macro cells. In these cases, Ericsson's solution is Small Cell as a Service.

ADVANTAGES OF SMALL CELL AS A SERVICE

There are several advantages to this approach. First, structural efficiencies are obtained since only one network will be used to provide capacity for multiple operators instead of having multiple networks running in parallel. Second, quality and complexity are addressed through the integration of radio access networks (RAN) and carrier-grade Wi-Fi – something that only Ericsson can currently achieve. An enhanced end-user experience is enabled through traffic steering, which ensures that the end user always has the best possible connection when both RAN and Wi-Fi technologies are available by driving traffic to mobile broadband by default and off-loading to Wi-Fi when necessary. Finally, cost-efficiency is achieved thanks to Ericsson's scale in managed services (Ericsson provides managed services for networks that together serve more than 1 billion subscribers worldwide) and broadcast operations.

SCOPE OF SERVICE

Small Cell as a Service consists of a separate small cell access network that is integrated with the operators' transmission networks. Ericsson designs, plans, builds and optimizes the network, and then manages it on behalf of the operators via a network operations center. In addition, Ericsson provides field services such as oversight and repairs.

SERVICE DELIVERY

Ericsson may or may not assume ownership of the existing network infrastructure, which – depending on the type of environment – could be either a distributed antenna system (DAS), a Wi-Fi system or both. Next, Ericsson integrates the Wi-Fi network and the small-cell-based RAN to create a 3GPP Wi-Fi integrated network. This integration enables traffic steering functionality, which ensures that all end users always have the best possible connectivity – be it via Wi-Fi or RAN connections. In addition, a centrally located Ericsson content delivery platform can be used to distribute location-specific content to end users.

BENEFITS

- Meets a capacity need that the macro network cannot
- Improves end user experience
- Ericsson designs, plans, builds and manages the network
- Efficiency and cost savings as multiple operators share one network
- A future-proof and scalable technology solution
- Increases attractiveness of venue
- Ability to monetize customized content delivery
- Advertising opportunities

USE CASES

Small Cell as a Service will be tailored to meet the particular needs of three main types of environments: connected venues, connected streets and connected enterprises.

1. CONNECTED VENUES

Connected venues are large public structures such as airports, shopping malls and stadiums, which regularly attract thousands of visitors. When Small Cell as a Service is provided in a connected venue context, the extra capacity provided can be used to add to the experience before people even arrive. It can begin with messaging about the best route to take and where to park as people approach the venue, and then continue with feeds of unique content that is specific to the venue itself. This could include information about arrivals and departures in the case of an airport, special offers at a mall or team lineups in a stadium. In each case, the innovative services enabled by Small Cell as a Service will attract people to the venue by creating a unique, memorable experience.

2. CONNECTED STREETS

Network capacity is often stretched in busy streets in shopping, business, entertainment and financial districts. To solve this problem and meet ultra-high traffic and multi-Gbps data speed demands, Ericsson will offer Small Cell as a Service to operators and local municipalities. The service will combine licensed and unlicensed spectrum (carrier-grade 3GPP Wi-Fi) to meet video-centric capacity needs and a content delivery platform for location-specific content such as news about events, public transport schedules and special offers.

3. CONNECTED ENTERPRISES

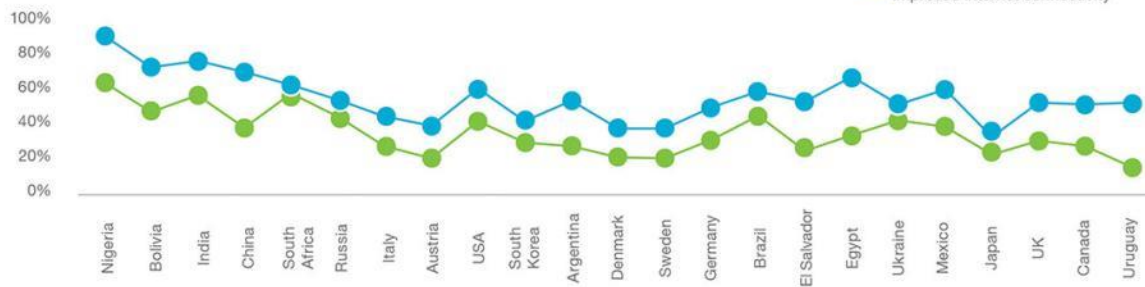
In large, multi-tenant office buildings, Small Cell as a Service provides the high bandwidth and availability, low latency and mobility required for business-critical voice, data and video communications – including video conferencing. In particular, enterprises typically require uninterrupted access to data centers that serve up massive amounts of data and possibly cloud-based applications.

INDOOR CONNECTIVITY

Although it can be implemented in outdoor environments such as connected streets, Small Cell as a Service is a particularly effective means of increasing indoor connectivity – thereby meeting a strong consumer need. Most of us spend the overwhelming majority of our time indoors, which explains why participants in a 23-country study were more willing to pay for improved internet connectivity indoors:

Indoors vs outdoors – willingness to pay for improved internet connectivity

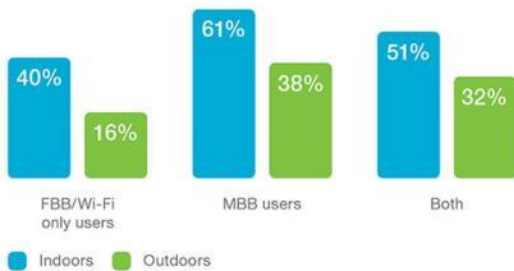
Per country



This is true regardless of the technology used – fixed broadband, Wi-Fi, mobile broadband, or a combination of these technologies – and the type of services being used:

Indoors vs outdoors – willingness to pay for improved internet connectivity

Total



Per service



Source: Ericsson ConsumerLab analytical platform 2014
Base: Internet users using smartphone, tablet or PC, 23 countries

CONTRACTS

Small Cell as a Service contracts have now been signed in India and Poland – both examples of the connected venue use case.

India

In 2014, Ozone Networks – India’s leading public neutral Wi-Fi provider – signed an agreement for Ericsson to provide a neutral, carrier-grade Wi-Fi network across India. In the first stage of the project, Ericsson will provide Ozone with 30,000 Wi-Fi access points and network management nodes and tools, as well as a variety of options for monetizing the Wi-Fi network. These include opportunities for offering telecommunications operators the chance to reduce the data burden on their network by utilizing the neutral Wi-Fi network to carry some of the traffic. Ozone’s Wi-Fi network serves restaurants, cafés, shops and malls.

For more information, read the [press release](#).

PRESS BACKGROUNDER

JUNE, 2016



In 2016, Reliance Communications reached an agreement to seamlessly combine its 3G/4G networks with the carrier-grade Wi-Fi network provided by Ericsson to Ozone Networks. As a result, Reliance Communications now has the option of offloading data services to Wi-Fi hotspots in 500 locations across India.

In the following video, Reliance Communications President & Chief Commercial Officer Suresh Rangachar talks about the benefits of his company's partnership with Ericsson and Ozone Networks.



For more information, read the [press release](#).

Poland

In 2015, Legia Warszawa became the first football club in Europe to sign a Small Cell as a Service contract with Ericsson. The six-year agreement ensures that visitors to the municipal stadium in Warszawa can enjoy carrier-grade Wi-Fi connectivity and value-added services accessible via a mobile app. Under the Small Cell as a Service business model launched at Mobile World Congress in 2014, Ericsson provides Legia Warszawa with a complete, managed solution. It includes technology such as carrier-grade Wi-Fi access points, IP routers and Ethernet switches, as well as planning, design, implementation, integration, optimization and maintenance services.

PRESS BACKGROUNDER
JUNE, 2016



Legia Warszawa Municipal Stadium now benefits from carrier-grade Wi-Fi connectivity (photo source: <http://legia.com/>)

PRESS BACKGROUNDER

JUNE, 2016



Rafał Wyszomierski, CFO and Vice President of Legia Warszawa; Oliver Kanzi, Head of Ericsson Poland; Anna Olesiejuk, HR Business Partner for Ericsson's Customer Unit Central Europe; and Jakub Szumielewicz, COO and Vice President of Legia Warszawa

Legia Warszawa has developed a mobile app that maximizes the value of the connectivity provided by Ericsson. Using the app, spectators will be able to access live video broadcasts and newsfeeds, order fast food and buy merchandise. Ericsson will also enable Legia Warszawa to further monetize the connectivity and mobile app through advertising.

For more information, read the [press release](#).

On November 24 and 25, 2015, Ericsson and Legia Warszawa participated in the [Connected Stadium Summit](#) at Wembley Stadium in London. In the video below, Martin Mellor, Ericsson's Head of Engagement Practices for Central Europe, talks to Wiktor Cegla, Legia Warszawa Chief Marketing Officer, about the benefits of Small Cell as a Service.



Martin Mellor, left, discusses Small Cell as a Service with Wiktor Cegla of Legia Warszawa

The network installed in Legia Warszawa's stadium is already being put to good use, supporting data throughput in excess of 1 terabyte. Approximately 7,500 devices connect to the network at any one time during home matches, uploading and downloading an average of 180 MB, at a peak average throughput of 60 Mbps.

The following revenue-generating services are being introduced for users of the Legia Warszawa mobile app:

- In-browsing advertising launched in February 2016
- The network SSID will be purchased by a sponsor for advertising purposes
- Man-of-the-match voting has been successful, with more than 800 fans participating in a recent vote
- Weather and traffic updates are planned for the near future
- Video replays and other video feeds are under consideration.

PRESS BACKGROUNDER
JUNE, 2016



RELATED MATERIALS

February 12, 2014

[Launch: Ericsson brings capacity with 'Small Cell as a Service'](#)

November 5, 2014

[Small Cell as a Service powers Wi-Fi networks across India](#)

February 24, 2015

[Small Cell as a Service connects football fans in Poland](#)

February 29, 2016

[Small Cell as a Service enables in-seat deliveries for Legia Warszawa football fans](#)

March 18, 2016

[Ericsson and Ozone to provide Small Cell as a Service to Reliance Communications in India](#)

PRESS BACKGROUNDER

JUNE, 2016



NOTES TO EDITORS

For media kits, backgrounders and high-resolution photos, please visit www.ericsson.com/press

Ericsson is the driving force behind the Networked Society – a world leader in communications technology and services. Our long-term relationships with every major telecom operator in the world allow people, business and society to fulfill their potential and create a more sustainable future.

Our services, software and infrastructure – especially in mobility, broadband and the cloud – are enabling the telecom industry and other sectors to do better business, increase efficiency, improve the user experience and capture new opportunities.

With approximately 115,000 professionals and customers in 180 countries, we combine global scale with technology and services leadership. We support networks that connect more than 2.5 billion subscribers. Forty percent of the world's mobile traffic is carried over Ericsson networks. And our investments in research and development ensure that our solutions – and our customers – stay in front.

Founded in 1876, Ericsson has its headquarters in Stockholm, Sweden. Net sales in 2015 were SEK 246.9 billion (USD 29.4 billion). Ericsson is listed on NASDAQ OMX stock exchange in Stockholm and the NASDAQ in New York.

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