Japan
Business Mobile Network Experience Report

Opensignal's Business Mobile Network Experience Reports are the definitive independent view of the true mobile network experience in business locations

November 2021

OPENSIGNAL

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Introduction

Connectivity has become the life-blood of business — its absence can lead to lost customers, higher costs and reduced productivity. For businesses to fully embrace cloud-based applications and generate efficiencies through digitizing their processes, their employees need access to good mobile connectivity, especially when visiting clients' premises or attending events.

However, it can be difficult for companies to evaluate the competing claims of mobile operators when trying to select the best network for their requirements. That's why Opensignal has, in this report, analyzed the mobile experience of our users in the locations that matter to businesses, on each of the mobile networks in Japan, across five categories.

When using this report to determine which operator is right for your business, it is important to carefully consider the connectivity needs of your company's employees — as the way in which they use their mobile devices may vary widely between departments while managers may have very different requirements to those reporting to them. Courier companies that spend a great deal of time visiting residential areas or transport logistics companies will find our normal mobile experience reports to be useful, but the results of this report are still relevant to understand the business experience at those companies' depots, warehouses and offices.

To understand business mobile experience we have used a classification for business and commercial buildings to calculate smartphone users' mobile experience when users spent time in and around business locations such as offices, factories, warehouses and other commercial premises. These locations will be the most important places for business users because they are the ones where employees spend most of their working day — at least in businesses that are not based on remote working. Our results include measurements on 5G networks in addition to those taken while our users were connected to older generations of technology.

Key Findings

Our users in business locations saw the fastest download speeds on NTT DoCoMo's network

NTT DoCoMo is the outright winner of the Download Speed Business Experience award with a score of 46.3 Mbps. The operator commanded a lead of 3.5 Mbps over second-placed au, as our users in business locations on the latter's network reported average speeds of 42.7 Mbps, SoftBank and Rakuten were further behind with scores of 38.4 Mbps and 20.2 Mbps, respectively. Download Speed Business Experience matters most to companies with employees that frequently need to download large files quickly and while on the move.

Rakuten is the outright winner of the Upload Speed Business Experience award

Opensignal's users in business locations observed their fastest average upload speeds when using Rakuten's network. The operator clocked up an impressive 12.2 Mbps, 3.1 Mbps faster than second-placed SoftBank's score of 9.1 Mbps. NTT DoCoMo and au followed behind, with scores of 8.3 Mbps and 7.3 Mbps, respectively. Upload speeds are particularly important to businesses with employees that spend a lot of time in the field and need to regularly transfer large images and videos to the cloud.

Users in business locations on au's network spent the most time connected to 4G or 5G

The winner of the Availability Business Experience award is au, thanks to its score of 99.7%. This means that our users in business locations on its network spent 99.7% of their time connected to either 4G or 5G. Rakuten is in second place with a score of 99.3%, followed by NTT DoCoMo with 98.9% and SoftBank with 97.8%. Given the superior connectivity typically enjoyed by users on 4G and 5G connections compared to those seen using legacy network technologies, Availability Business Experience is an important measure.

SoftBank users in business locations had the best experience when using OTT voice applications

SoftBank is the outright winner of the Voice App Business Experience award with a score of 82.8 points on a 100 point scale. However, all four operators placed in the Good (80-87) category. This means that many users in business locations were satisfied but some experienced minor quality impairments, such as clicking sounds or distortion. Opensignal's Voice App Business Experience measures the quality of experience for over-the-top (OTT) voice services — examples of these include LINE, Skype, Facebook Messenger, FaceTime and Viber — as observed by users in business locations.

NTT DoCoMo and SoftBank come top for group video calling

Due to a two-way statistical tie, NTT DoCoMo and SoftBank are joint winners of the Group Video Calling Business Experience award. In third place is au with a score of 80 points, while Rakuten followed some way behind with a score of 59 points. Group video calls have become more important to businesses due in part to the COVID-19 pandemic and the resulting shift to remote working. Opensignal's methodology takes into account the fact that the quality of users in business locations' experience is heavily influenced by that of the user with the worst experience.

Executive Summary

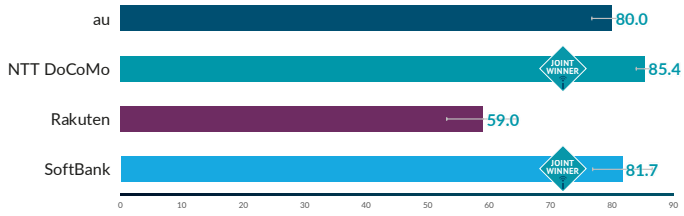
Japan Business Mobile Network Experience Awards

Opensignal, November 2021, Japan Business Mobile Network Experience Report	au	NTT DoCoMo	Rakuten	SoftBank
Group Video Calling Business Experience		JOINT WINNER		JOINT WINNER
Voice App Business Experience				WINNER
Download Speed Business Experience		WINNER		
Upload Speed Business Experience			WINNER	
Availability Business Experience	WINNER			

None of the operators dominates our awards table — both NTT DoCoMo and SoftBank each win one award outright and are joint winners of the Group Video Calling Business Experience award. NTT DoCoMo is the winner of the Download Speed Business Experience award with a lead of 3.5 Mbps (8.3%) over second-placed au, while SoftBank wins the Voice App Business Experience award with a score of 82.8 on a 100 point scale.

Meanwhile, au is the sole winner of the Availability Business Experience award and Rakuten is the outright winner of the Upload Speed Business Experience award, commanding an impressive lead of 3.1 Mbps over second-placed Softbank. However, Rakuten is significantly behind its rivals in terms of Download Speed Business Experience, given its score of 20.2 Mbps. The fact that no single operator was able to win the majority of our awards outright means that it is especially important for businesses to determine which measures of the mobile experience matter most to their employees.

Group Video Calling Business Experience
in 0-100 points



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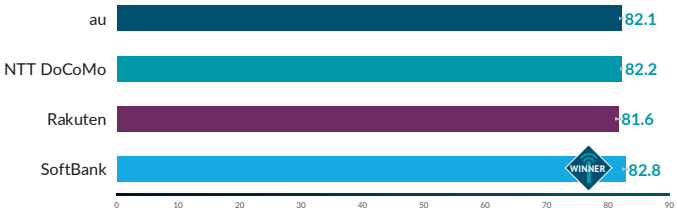
Voice App Business Experience
in 0-100 points



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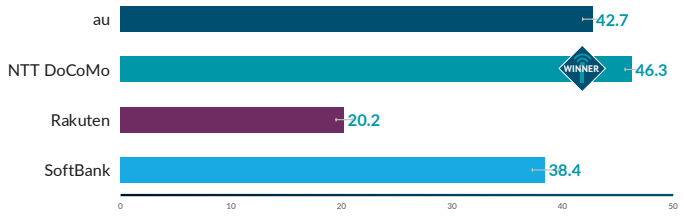
Download Speed Business Experience
in Mbps



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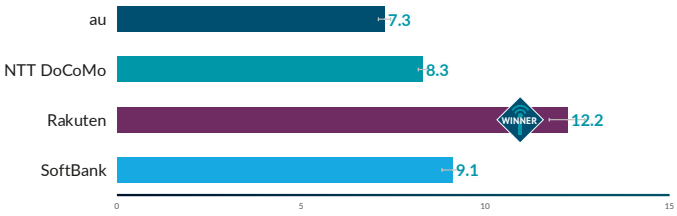
Upload Speed Business Experience
in Mbps



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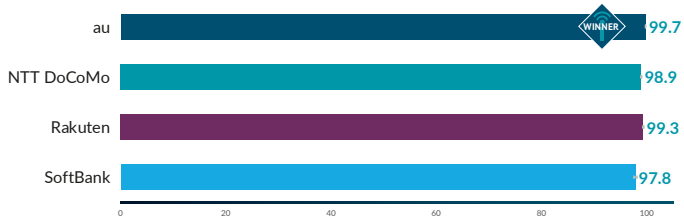
Availability Business Experience
in % of time



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Analysis

Group Video Calling Business Experience

While the use of group video calling applications such as Zoom, Microsoft Teams, LINE WORKS or Cisco Webex are closely associated with remote working, partly due to the COVID-19 pandemic, they have long been used by businesses to enable experts to remotely aid engineers and on-site personnel. Bad connections during group video calls can result in significant frustration and wasted time and as many senior managers may be participating at the same time, it is important for mobile users to use the best operator available.

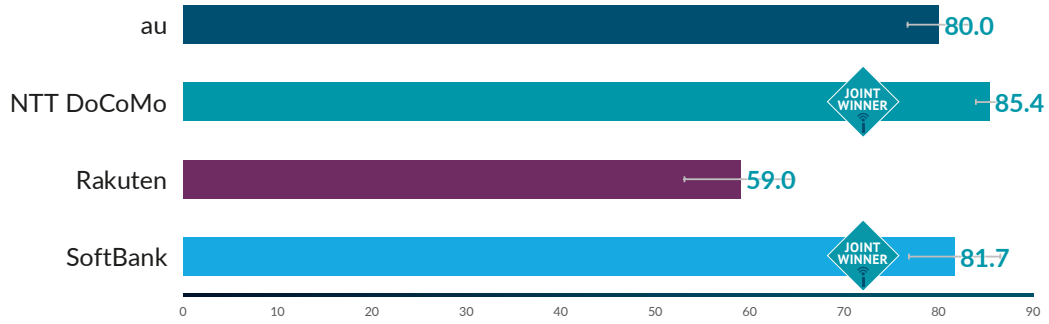
Due to a two-way statistical tie, NTT DoCoMo and SoftBank are joint winners of the Group Video Calling Business Experience award, with scores around 83.5 points on a 100 point scale. In third place is au with a score of 80 points, while Rakuten followed some way behind with a score of 59 points.

Opensignal's Group Video Calling Business Experience measures the proportion of video calls where all users had at least an adequate or better video conference experience in business locations. In simple terms, Group Video Calling Business Experience measures whether all users in a group video call – not just a small number of users – had both sufficient (or better) video and audio quality. It therefore takes into account that a poor experience for one or more users will impact all users on a conference call so having a consistent experience across all users on a group video call is important.

To calculate Group Video Calling Business Experience, we consider a range of scenarios that reflect typical numbers of call participants displayed during a smartphone video call – two, four and eight participants – to represent the real-world mobile video conference experience. Group Video Calling Business Experience for each operator is measured on a scale from 0 to 100.

Group Video Calling Business Experience

in 0-100 points



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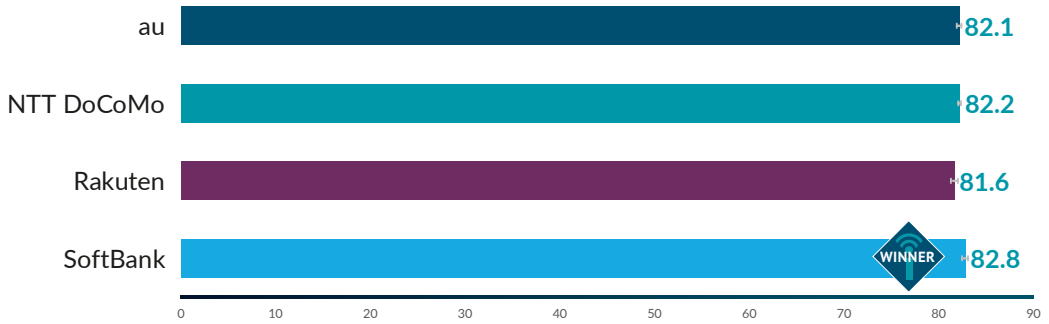
Voice App Business Experience

SoftBank is the outright winner of the Voice App Business Experience award with a score of 82.8 points on a 100 point scale. However, all four operators placed in the Good (80-87) category. This means that many users in business locations were satisfied. However, some users experienced minor quality impairments. Sometimes the background was not quite clear, it could have been either hazy or not loud enough. Clicking sounds or distortion were very rarely present.

Opensignal's Voice App Business Experience measures the quality of experience for over-the-top (OTT) voice apps — examples of these types of services include LINE, Skype, Facebook Messenger, FaceTime and Viber as observed by users in business locations. Real-time voice over IP (VoIP) communication has also become a common part of other business collaboration tools such as Slack and Microsoft Teams.

Voice App Business Experience

in 0-100 points



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Our Methodoogy | Our Metrics

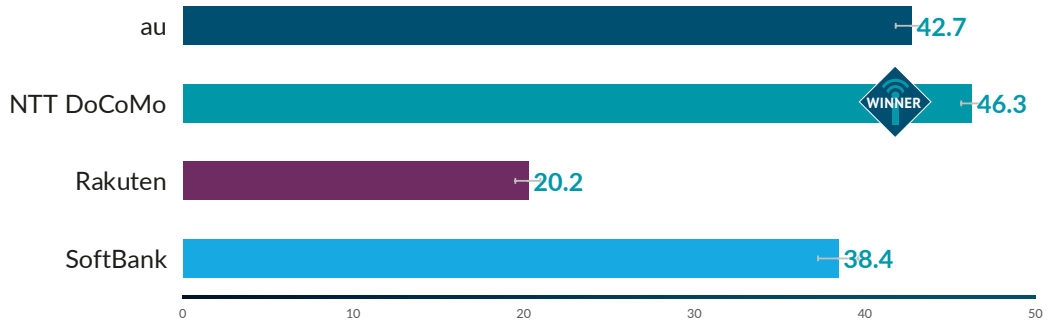
Download Speed Business Experience

Time is money — every minute an employee is waiting for an app or security update to download comes at a cost. Download speeds therefore matter a great deal in a business context. The outright winner of the Download Speed Business Experience award is NTT DoCoMo with a score of 46.3 Mbps. This means that businesses whose employees regularly need to download large documents or images from the cloud over cellular connections will spend less time doing so when using NTT DoCoMo as their mobile operator. NTT DoCoMo beat second-placed au's score of 42.7 Mbps by 3.5 Mbps (8.3%). Our SoftBank users in business locations reported a score of 38.4 Mbps, while our users on Rakuten's network observed average speeds of 20.2 Mbps.

Fast download speeds help business users to access information and files stored in cloud services such as Microsoft OneDrive — part of Office 365 — or Box, iCloud or the Google Drive part of G Suite. Additionally, fast speeds will ensure that synchronization for services like Evernote completes in advance of when it's needed so that information is already present and ready to use on an employee's smartphone.

Download Speed Business Experience

in Mbps



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Upload Speed Business Experience

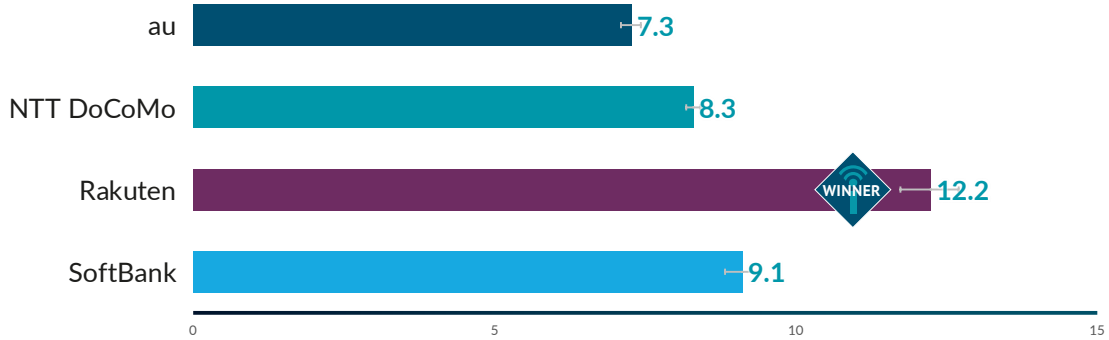
Opensignal's users in business locations observed their fastest average upload speeds when using Rakuten's network. The operator clocked up an impressive 12.2 Mbps, 3.1 Mbps (34.3%) faster than second-placed SoftBank's score of 9.1 Mbps. NTT DoCoMo and au followed behind, with scores of 8.3 Mbps and 7.3 Mbps, respectively.

Upload Speed Business Experience is particularly important for B2B companies whose employees regularly need to upload large files when visiting their clients' premises. It also matters a great deal to photojournalists and surveyors, as using the operator with the highest score will mean that they can more quickly upload their files to Microsoft OneDrive, PrimeDrive or iCloud or synchronize notes with Evernote, OneNote or G Suite or to email attachments to clients. High upload speeds also mean that companies that need to share photos of client locations, site surveys or video recorded on location can do so with a minimum of delay.

Finally, this metric alongside Download Speed Business Experience is important for companies with lots of salespeople and managers who use cloud-based applications such as Salesforce when working on the move and employees who regularly need to synchronise their files with those on applications like Dropbox and Microsoft Sharepoint.

Upload Speed Business Experience

in Mbps



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Availability Business Experience

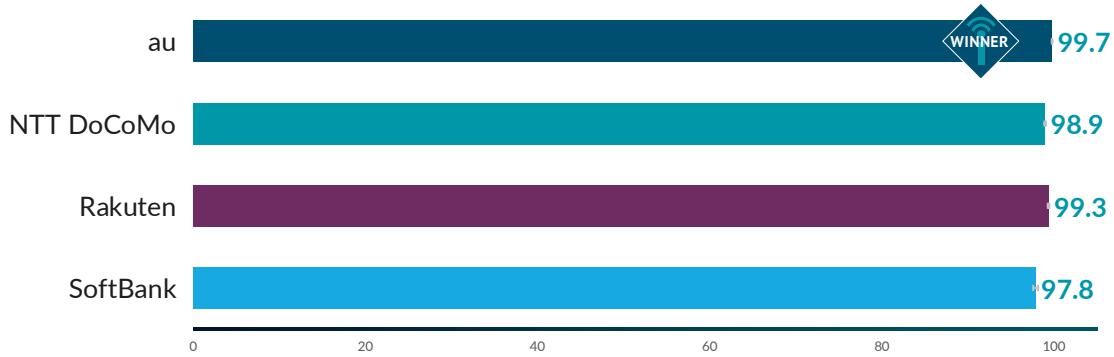
The winner of the Availability Business Experience award is au, thanks to its nearly perfect score of 99.7%. This means that our users in business locations on its network spent 99.7% of their time connected to either 4G or 5G. Rakuten is in second place with a score of 99.3%, followed by NTT DoCoMo with 98.9% and SoftBank with 97.8%.

As our users typically have a much better mobile experience when connected to the latest generations of mobile technology (5G and 4G), the proportion of time that users in business locations spend connected to them rather than legacy technologies can make a huge difference to a business's digitization efforts.

As our other metrics analyze the overall experience of our users in business locations across all generations of network technology, weighted by the proportion of time that they spend on each of them, operators with high Availability Business Experience scores will typically find it easier to score highly in other categories than their rivals. Please note that Availability Business Experience is not a measure of coverage or the geographic extent of a network.

Availability Business Experience

in % of time



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Our Methodoogy | Our Metrics

Our Methodology

Opensignal measures the real-world experience of consumers on mobile networks as they go about their daily lives

We collect billions of individual measurements every day from many millions of devices worldwide. We collect data every day of the week, at all hours and in all the places people live, work and travel: no simulations, no predictions, no idealized testing conditions. Our data comes from actual smartphone users and we report users' actual network experience, whether they are indoors or out, bustling in a busy city or trekking in the countryside.

We collect the vast majority of our data via automated tests that run in the background, enabling us to report on users' real-world mobile experience at the largest scale and frequency in the industry. These automated tests are run at random points in time and therefore represent the typical experience available to a user at any given moment.

We used a classification for business and commercial buildings to calculate smartphone users' mobile experience when they were in the proximity of buildings such as offices, factories, warehouses and other commercial premises. In other words, we've adjusted our methodology to focus on the locations that businesses care the most about.

Confidence Intervals

For every metric we calculate statistical confidence intervals indicated on our graphs. When confidence intervals overlap, our measured results are too close to declare a winner. In those cases, we show a statistical draw. For this reason, some metrics have multiple operator winners. In our bar graphs we represent confidence intervals as boundaries on either sides of graph bars.

Our Metrics

Opensignal's Business Mobile Network Experience Reports are a recognized independent view of mobile network experience in business locations. The reports are designed to measure users' experiences of using the real services that enable businesses to function. Our business metrics are based on our globally recognized experience metrics but whereas these usually measure the experience of all types of users and use cases, the metrics in this report measure users' experience in and around business and commercial buildings, i.e. the locations that businesses care most about where connectivity is critical to business success.

Group Video Calling Business Experience

Opensignal's Group Video Calling Business Experience measures the proportion of video calls on mobile connections in business locations where all users on a call had at least an adequate or better video conference experience. In simple terms, Group Video Calling Business Experience measures whether all users in a group video call – not just a small number of users – had both sufficient (or better) video and audio quality. It therefore takes into account that a poor experience for one or more users will impact all users on a conference call so having a consistent experience across all users on a group video call is important.

The Group Video Calling Business Experience metric uses measurements from our real-world video tests and our voice app calling tests. To calculate Group Video Calling Business Experience, we consider a range of scenarios that reflect typical numbers of call participants displayed during a smartphone video call – 2, 4 and 8 participants – to represent the real-world mobile video conference experience. Group Video Calling Business Experience for each operator is measured on a scale from 0 to 100.

Voice App Business Experience

Measures the quality of experience in business locations for over-the-top (OTT) voice services — mobile voice apps such as WhatsApp, Skype and Facebook Messenger — using a model derived from the International Telecommunication Union (ITU) approach for quantifying overall voice call quality and a series of calibrated technical parameters. This model characterizes the exact relationship between the technical measurements and perceived call quality. Voice App Business Experience for each operator is calculated on a scale from 0 to 100.

Download Speed Business Experience

Measures the average download speeds experienced by Opensignal users in business locations across an operator's 3G, 4G and 5G networks. It doesn't just factor in 3G, 4G and 5G speeds, but also the availability of each network technology. Operators with lower Availability Business Experience tend to have a lower Download Speed Business Experience because their customers spend more time connected to slower generation networks.

Upload Speed Business Experience

Measures the average upload speeds experienced by Opensignal users in business locations across an operator's 3G, 4G and 5G networks. Upload Speed Business Experience doesn't just factor in 3G, 4G and 5G speeds, but also the availability of each network technology. Operators with lower Availability Business Experience tend to have a lower Upload Speed Business Experience because their customers spend more time connected to slower 3G networks.

Availability Business Experience

Measures the average proportion of time Opensignal users spend with a 4G or better connection in business locations on each operator's network.

Any questions?

For further information, please visit www.opensignal.com

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