

# **JTOWER**

## **Company & Business Information**

August 4, 2021

J T O W E R Inc.

**1**

## **Company & Business Information**

**2**

## **Appendix**

## JTOWER's Vision

# Infra-Sharing Services from Japan Lead the World

Japan is behind in the field of global telecommunications infrastructure sharing.

In 2012, when the term "Infra-Sharing" was not common in Japan, we launched our first business.

Our goal is not the same as other global tower companies; our goal is what they have never done.

Meeting the world's highest standard for network quality as required in the Japanese telecommunications industry, we will overcome challenges and improve services.

We will treat all stakeholders with respect and honesty, including mobile network operators, real-estate developers, and partner companies,

We will continue to innovate and challenge new ideas to expand business globally.

We will pursue the world's state-of-the-art technologies, services, and business models.

As a result of these efforts, we will make the Infra-Sharing services that we provide global standards and create our future through businesses expansion.

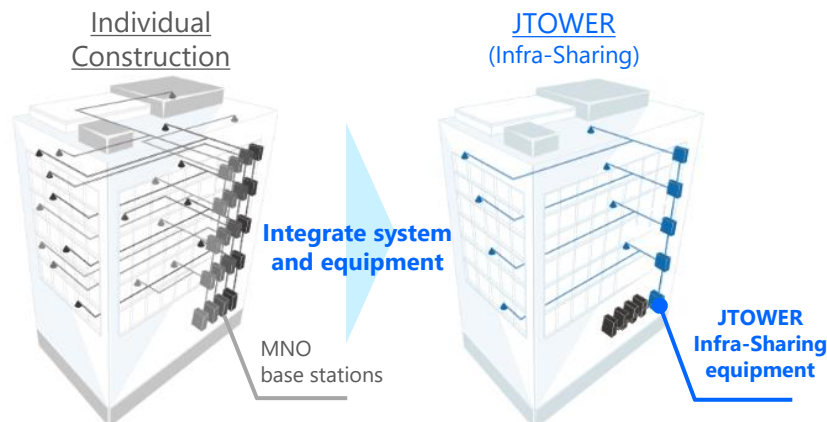
This is the vision of our company.

<b>Company Name</b>	J T O W E R I n c .
<b>Founded</b>	June 2012
<b>Representative Director</b>	Atsushi Tanaka
<b>Head office</b>	8-5-41 Akasaka, Minato-ku, Tokyo, Japan
<b>Employees</b>	148 <sup>*1</sup> (consolidated, as of June 30, 2021)
<b>Capital</b>	JPY7,981 million (as of June 30, 2021)
<b>Business Description</b>	Provision of telecom Infra-Sharing service and related services in Japan and overseas

\*1: Number of employees includes the average number of temporary workers (contract workers and workers from staffing agencies) in the past year, which is 21.

## IBS\*1 Business (Indoor Infra-Sharing)

- ✓ Integrate mobile network operators' in-building infrastructure as a shared system
- ✓ Beneficial for real-estate firms, mobile users and mobile network operators
- ✓ Steady growth with a stable revenue model



Japan

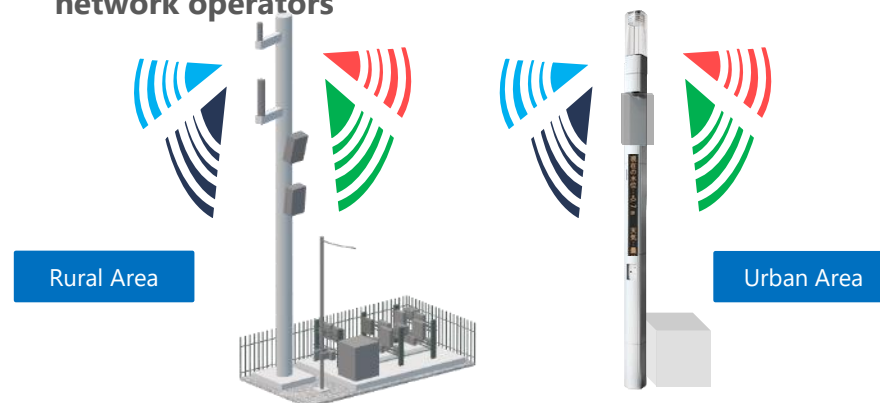
- ✓ Installation at 348 properties\*2 (including the number of installations to be completed)
- ✓ Recent 3-year growth (CAGR): +39%

Overseas

- ✓ Expansion in emerging markets
- ✓ Expand business in both organic and inorganic, mainly in Vietnam
  - Top player in Vietnam (Installation at 165 properties\*2)
  - Expanding in Malaysia

## Tower Business (Outdoor Tower Sharing)

- ✓ Full-scale entry in FY2020
- ✓ New market for outdoor Infra-Sharing service driven by the deployment of 5G
- ✓ Outdoor telecom infrastructure sharing among mobile network operators



## Solution Business

- ✓ Value-added services for Infra-Sharing business
- ✓ Serve demand by mobile carriers and real estate companies for rooftop base station installation through SITE LOCATOR, cloud-managed Wi-Fi solution and others

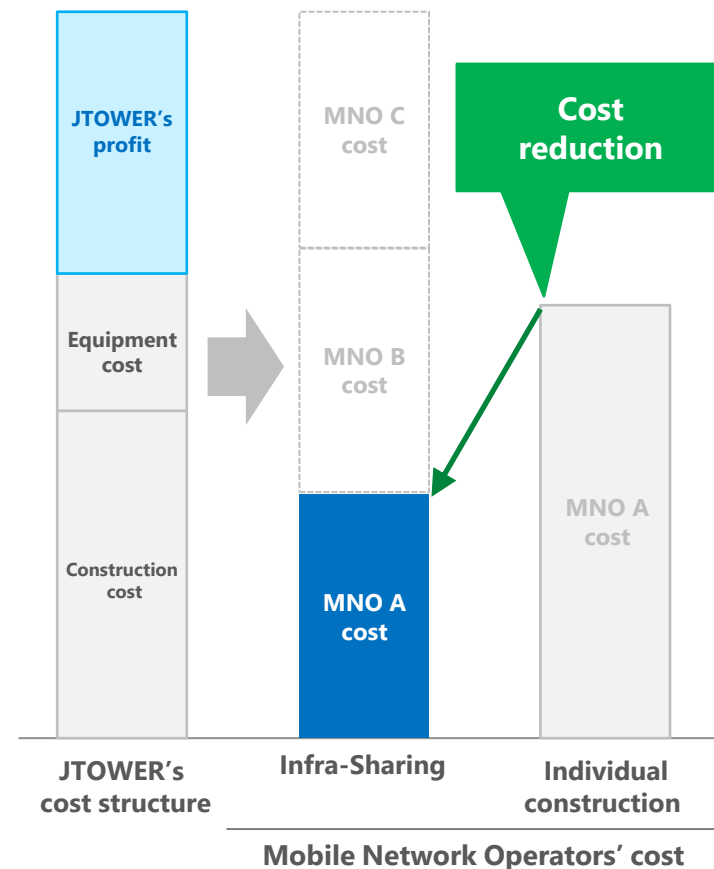
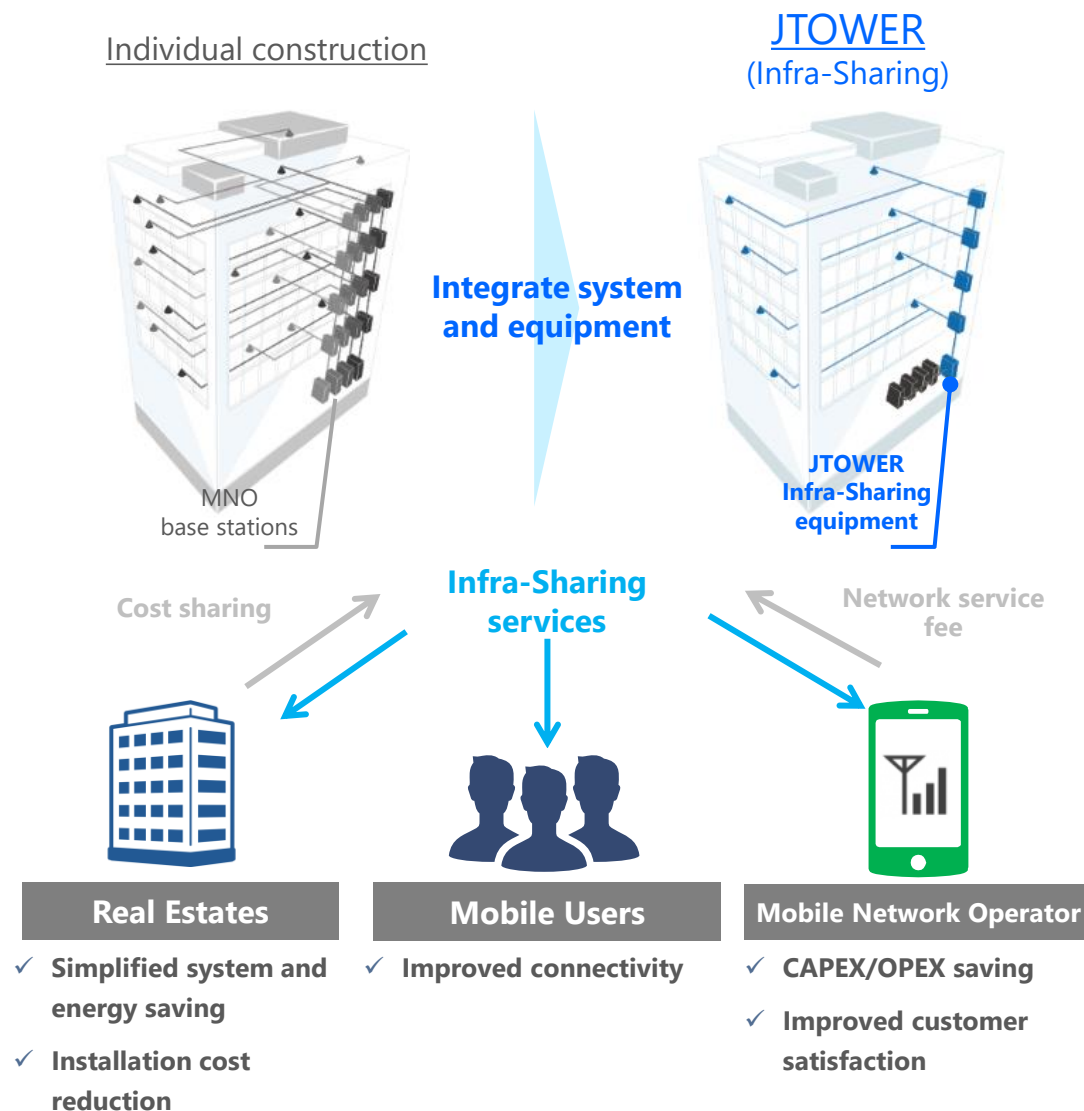


\*1: IBS: In-Building Solution

\*2: As of June 30, 2021

## Unique Business Model to Build Win-Win Relationships

## Cost-Benefits for Mobile Network Operator\*1



Note1:

For illustrative purposes only

## 4G IBS

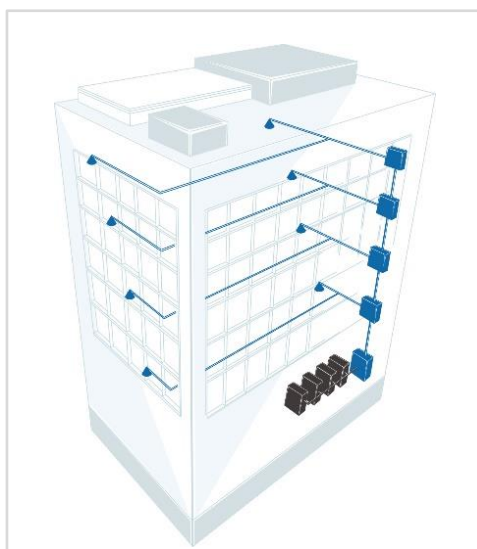
- Sustainable increase in new buildings.
- Respond to 4G replacement demand at existing buildings that have become apparent
- Increase the tenancy ratio with the entry of the fourth carrier.

## 5G IBS

- Completed development of the 5G infra-sharing equipment in FY2020
- Newly installations to both new and existing buildings
- Aiming for further expansion in existing buildings, which has significant potential, in the medium-to long-term

## Image of 5G Infra-Sharing (main target buildings)

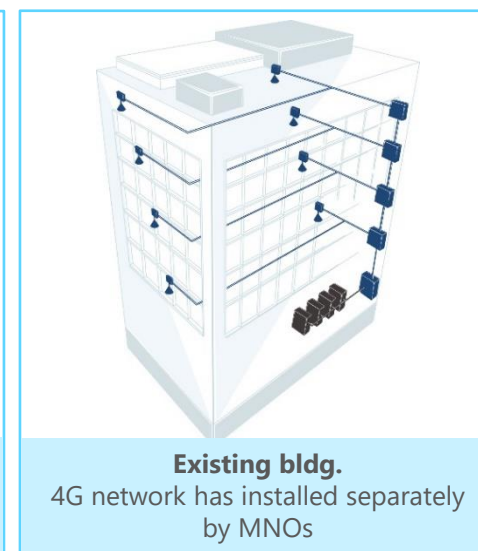
### 4G Only



### 4G & 5G



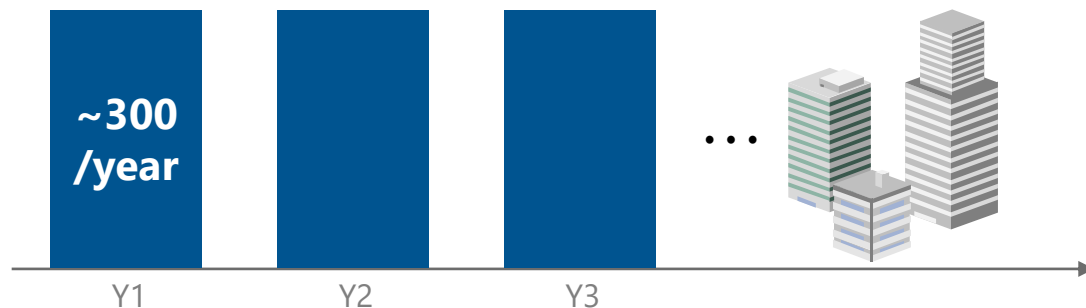
### 5G Only



# 1 Domestic IBS - Persistent Demand and Upside Potential

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## ① New buildings\*1



**4G**

New  
installation

**Main target**

**5G**

New  
installation

**Major  
Upside Factors**

## ② Existing buildings

(Offices\*2, commercial\*3, hotels\*4, hospitals\*5, high-rise residence\*6, etc.)

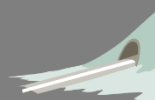


System  
upgrade

## ③ New category (Railway tunnels etc.)\*7



~5,000



New  
installation

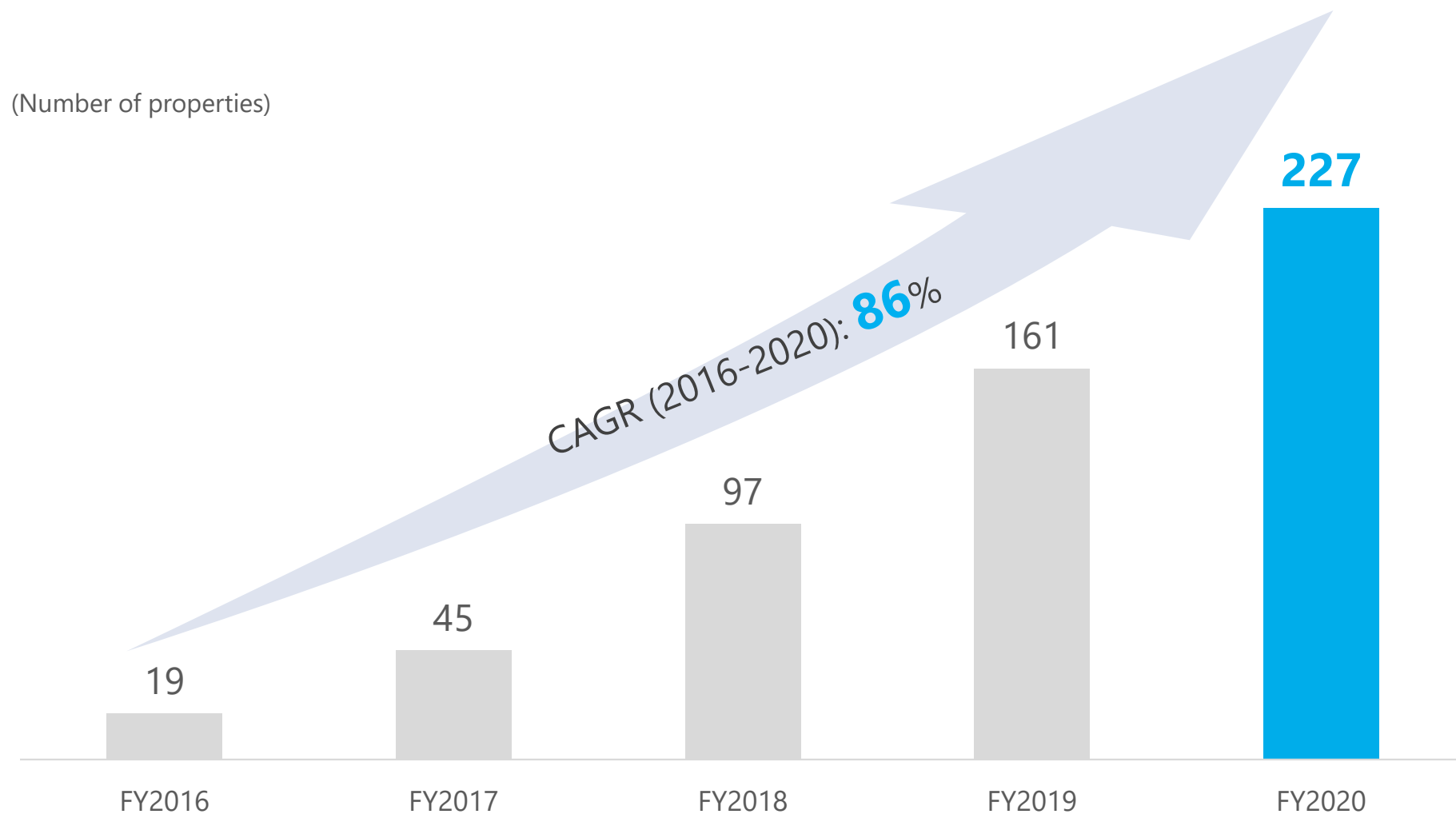
New  
installation

\* 1 : Company estimate based on large-scale projects with floor area of >10,000m<sup>2</sup>. \*2 Large-scale projects with >330m<sup>2</sup> per floor (as of Sept. end 2018, office building criterion based on Sanko Estate). \*3: Large-scale projects with >1,500m<sup>2</sup> retail floor space and >10 tenants, developed by a developer. \*4: Based on the number of resort hotels, city hotels and business hotels in Japan (as of Dec. 31, 2018). \*5: Large hospitals with >300 beds in Japan (excluding general clinics, as of Oct. 1, 2017). \*6: Condominium buildings with >20 floors in Japan (estimate for 2020 as of Oct. 31, 2018). \*7: Total number of tunnels used by private railway companies and Japan Railway Company based on the statistics provided by the Ministry of Land, Infrastructure, Transport and Tourism (as of 2016)  
Source: "OFFICE RENT DATA 2017" by Sanko Estate Co., Ltd., Japan Council of Shopping Centers Website, TOKYO KANTEI Co., Ltd. and the Ministry of Land, Infrastructure, Transport and Tourism (Annual Railway Statistics)



# 1 Domestic IBS - Historical Number of Installations\*<sup>1</sup> (4G) JTOWER

- Total number of IBS installations has increased to **227** as of March 31, 2021.

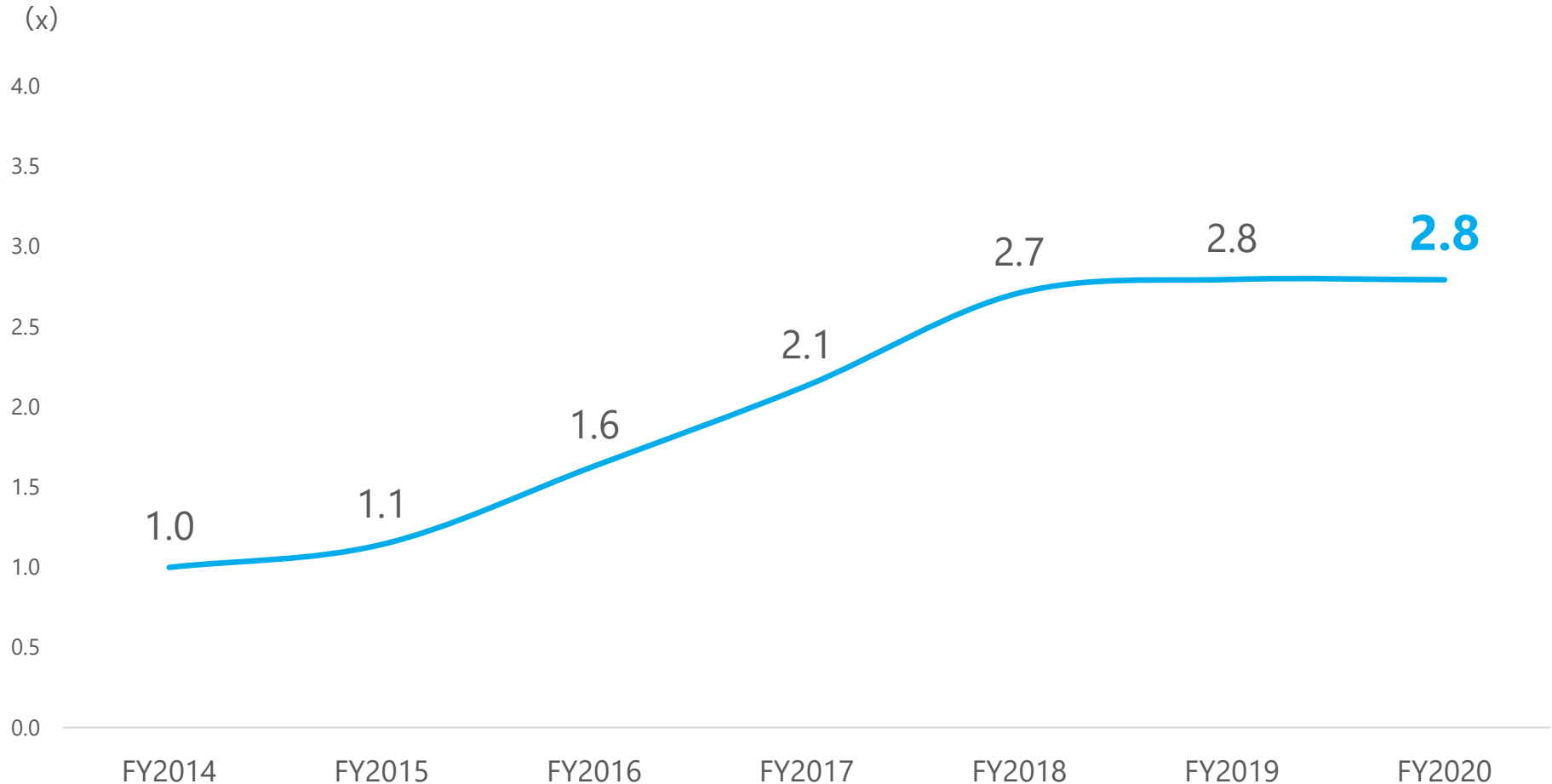


\*1: Projects where radio waves have been emitted and revenues are recognized.

## 1 Domestic IBS - Historical Tenancy Ratio\*<sup>1</sup> (4G)

JTOWER

- Tenancy Ratio (average number of participating mobile network operators per property) has been steady in **the higher 2 point range**.

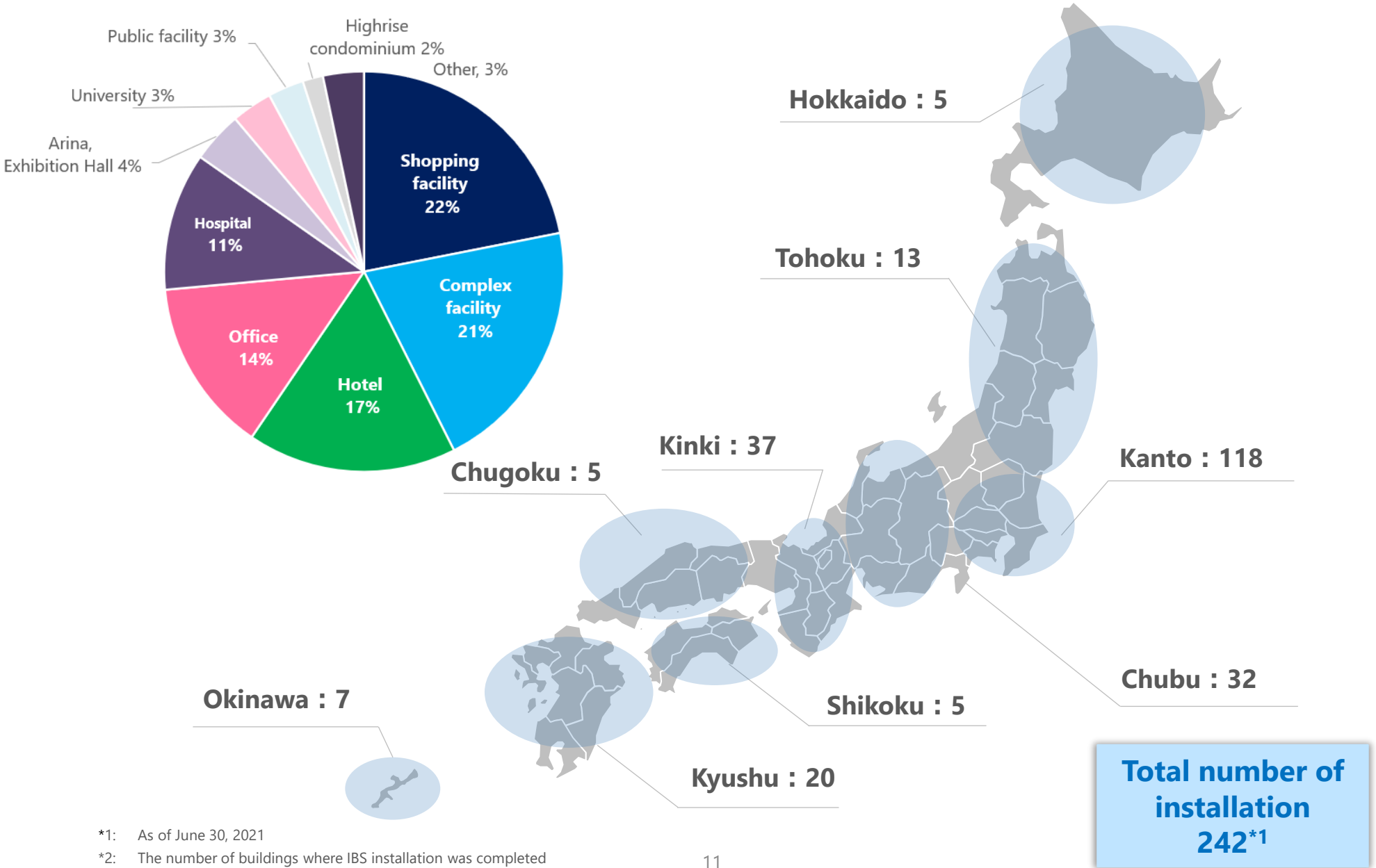


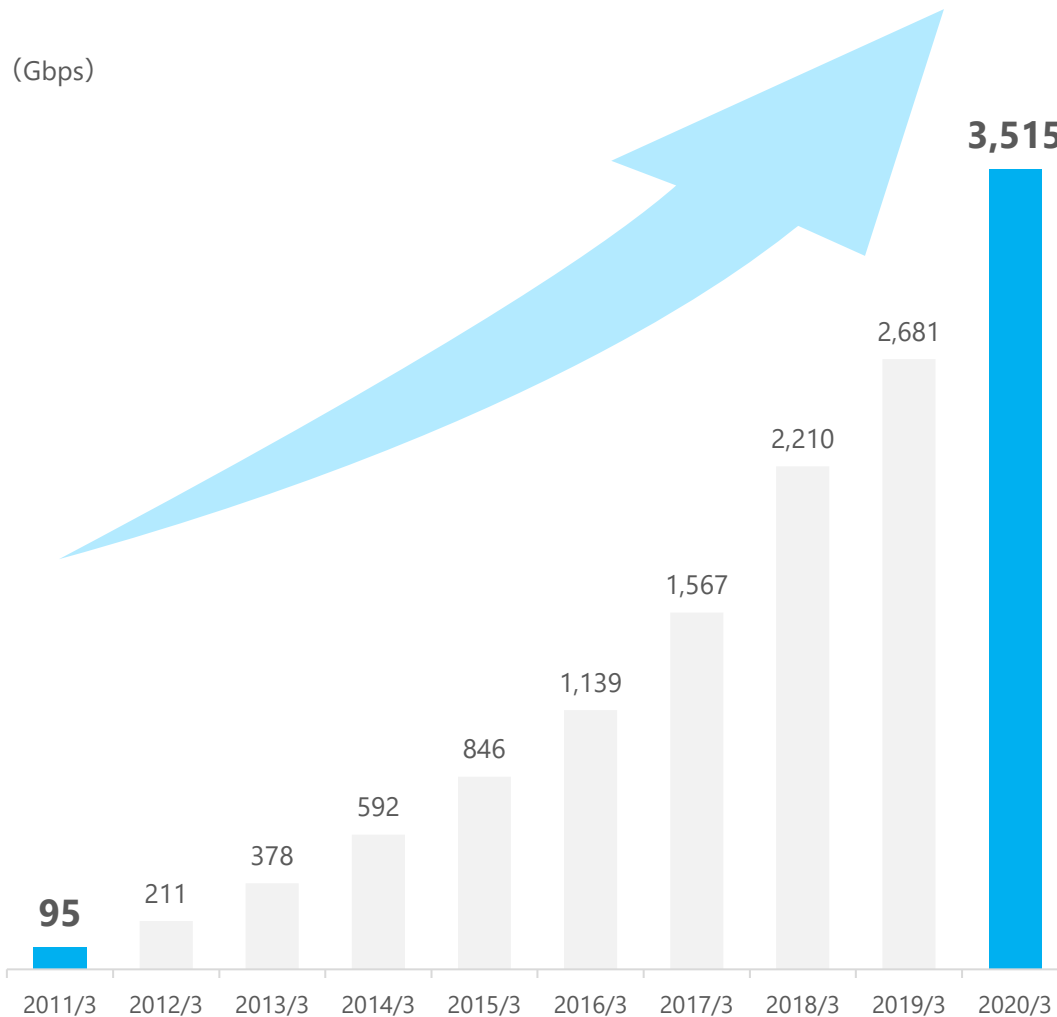
\*1: Average number of participating mobile carriers per property (at properties where IBS has been installed to date).

# Domestic IBS (4G)

1 -The number of installations around the country and type of buildings <sup>\*1, 2</sup>

**JTOWER**





over the past 10 years

Annual increase

about 50%

(approx. 37 times)

### Future Potential

- ✓ Accelerate further growth in traffic through 5G
- ✓ Further use of 5G frequency band

Source: Information and Communications Statistics Database of Ministry of Internal Affairs and Communications

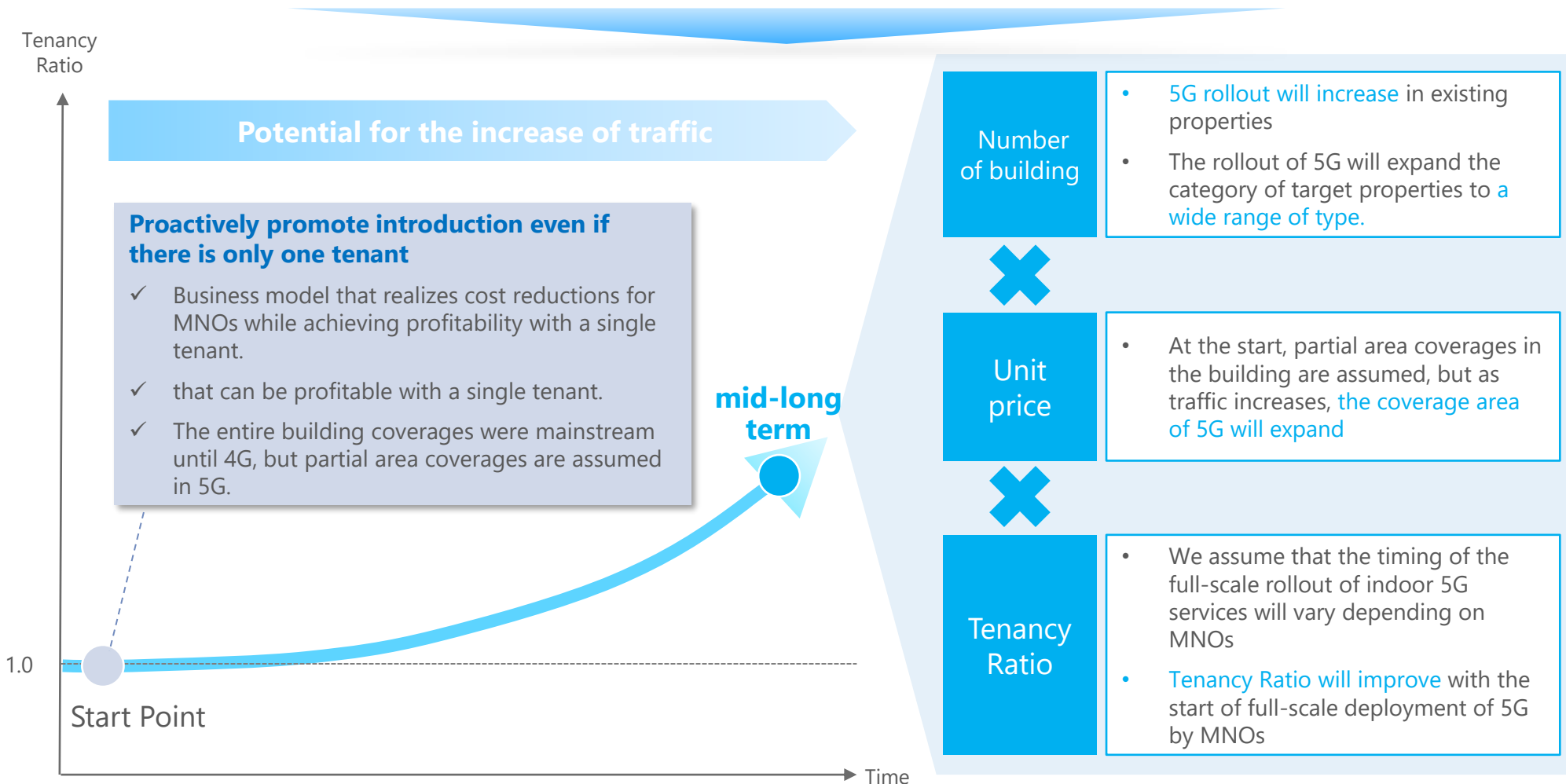
\*1: The average of monthly traffic (download)

# 1 Domestic IBS - Strategy for 5G

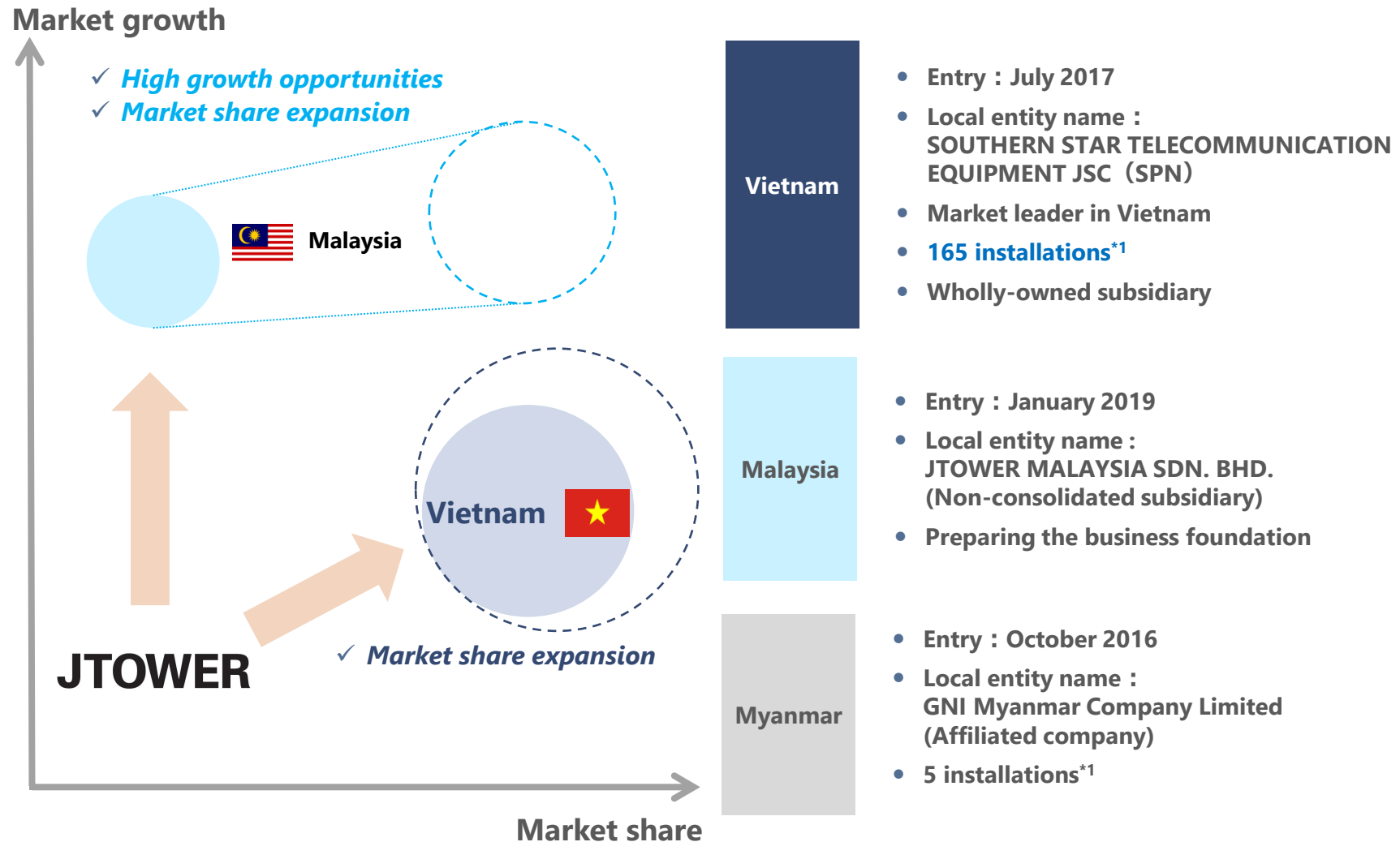
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## Domestic IBS - 5G target market

- New buildings are the main targets until 4G.
- Potential to expand target markets of 5G, not only for new buildings, but also for existing properties (including properties that we have not yet installed)



Expansion mainly in Southeast Asia by partnering with influential local players



\*1: As of June 30, 2021

- On November 17, 2020, the overseas subsidiary SPN engaged in the IBS business in Vietnam, has executed IBS Asset Purchase Agreement with Thien Viet Company Limited one of the IBS operators in Vietnam.



SPN executed IBS Asset Purchase Agreement with Thien Viet Company Limited one of the IBS operators in Vietnam.  
(Announced on November 17, 2020)

**Purchase Price (Total)**  
**Approx. 240 million yen**

**Number of Projects**  
**63 projects**  
(Approx. 1.8 million m<sup>2</sup>)

**Transfer of ownership expected to be completed**  
**at the end of December, 2021**

\* Transfer of ownership will be conducted on a property-by-property basis

**Revenue contribution**  
Approximately **150 million yen**

\* If this transaction contributes for the full fiscal year

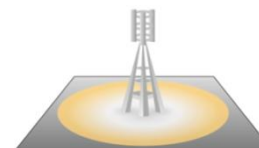
**Further promoting growth strategies in Vietnam, including M&A of local competitors and the purchase of existing operating assets**

## Challenges for 5G Network Roll-out

- ✓ Smaller cells and multiple cells
- ✓ Lack of installation locations + New entry of the fourth carrier
- ✓ Concerns about degrading landscape aesthetics

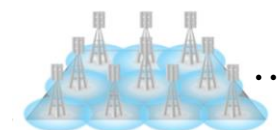
## Increase in Demands Driven by 5G

<Conventional>



A few base stations cover a wide area

<Future>



5G network must be covered more frequently by a larger number of base stations

## Full-scale 5G Infrastructure Investment

### Infra-Sharing Guideline by MIC

移動通信分野におけるインフラシェアリングに係る電気通信事業法及び電波法の適用関係に関するガイドライン

2018年12月

#### 1. ガイドラインの目的

携帯電話等の移動通信サービスの提供においては、広範な地域に相当多数の基地局を設置することが必要となる。

特に、第5世代移動通信システム（以下「5G」という。）の導入に当たっては、移動通信システムの高速度・大容量化や高周波数帯の利用のために基地局の小セル化や多セル化が必要となるが、空中線を設置するための鉄塔の設置場所やビル等の物理スペースは限られており、また、景観上の問題等で新たな鉄塔等の設置が制限される場合もあるため、ビルや地下街等の屋内のみならず、ビル屋上やルーラルエリア等の屋外において鉄塔等の設備を他人に使用させ、又は複数事業者間で共同で使用する「**インフラシェアリング**」がこれまで以上に重要となることが想定される

**Infra-Sharing will play an even more significant role**

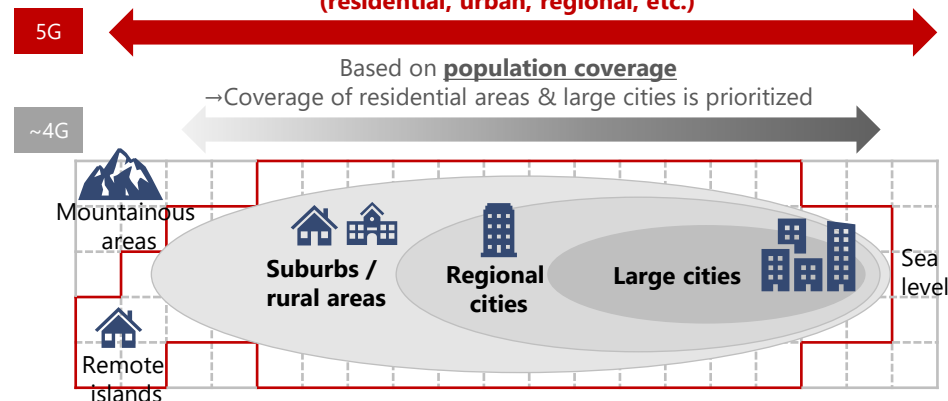
### 5G Base Stations Deployment Policy

Based on area coverage

→ **Development focus will be on business feasibility and not area type (residential, urban, regional, etc.)**

Based on population coverage

→ Coverage of residential areas & large cities is prioritized



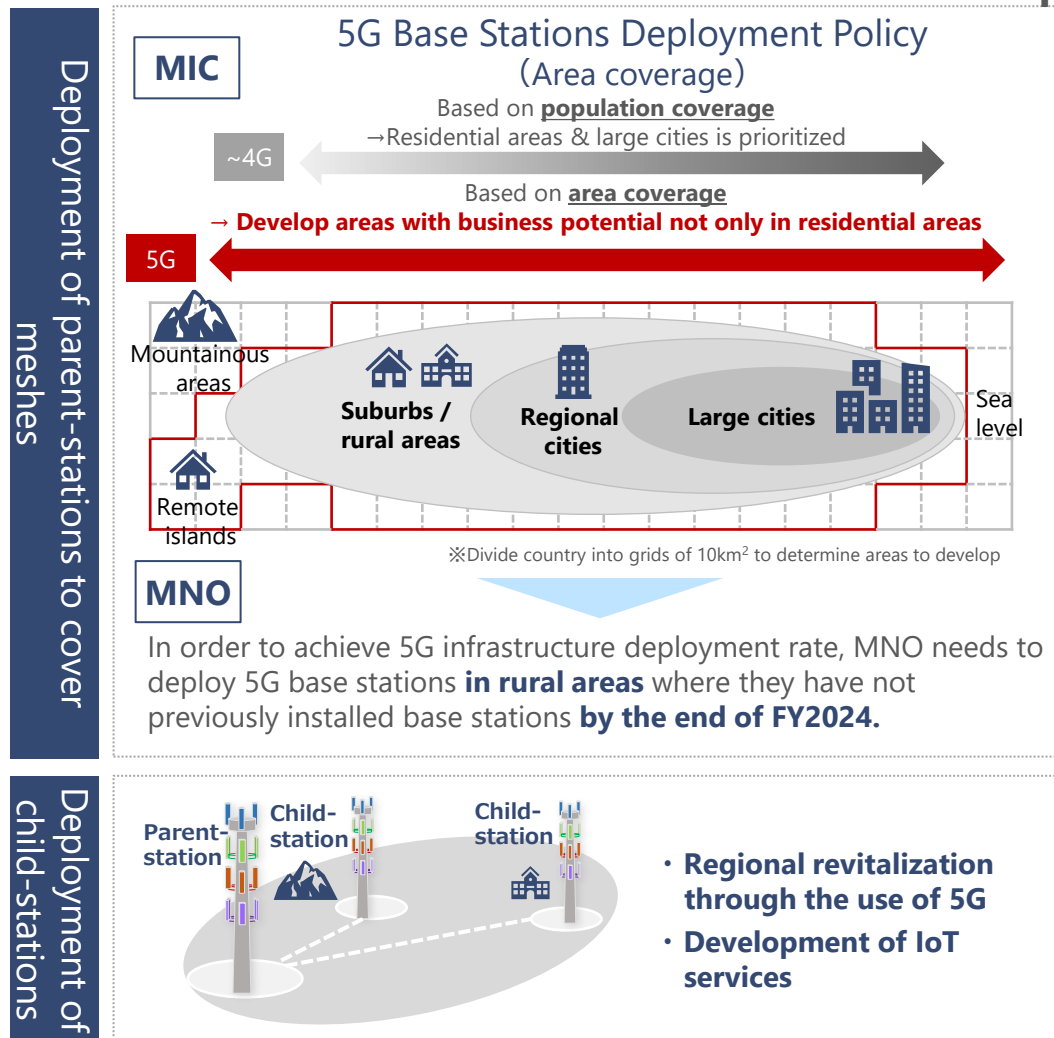
※Divide country into grids of 10km<sup>2</sup> to determine areas to develop



# 1 Tower – Rural areas

# JTOWER

- Began preparations for the construction of more than 60 towers in 2H FY2020. In FY2021, we will launch services in completed towers and promote sales activities to expand the number of orders for hundreds of towers under proposal.



## Progress of Tower sharing in rural areas

FY 2019

- ✓ Selection of candidate sites
- ✓ Negotiations with landowners

FY 2020

- ✓ Proposal for new tower sharing to 4 MNOs
- ✓ Receive some answers
- ✓ Began preparations for the construction of more than **60 towers**

FY 2021

- ✓ **Launch services** in completed towers
- ✓ Promote sales activities to expand the number of orders **for hundreds of towers** under proposal.

mid to long term

- ✓ Further expansion of **parent-stations**
- ✓ Rollout of **child-stations** within meshes

※ A 5G advanced specified base station (parent base station) which is deployed in each mesh is one that is connected to a high capacity line and can connect to multiple 5G specified base stations (child stations).

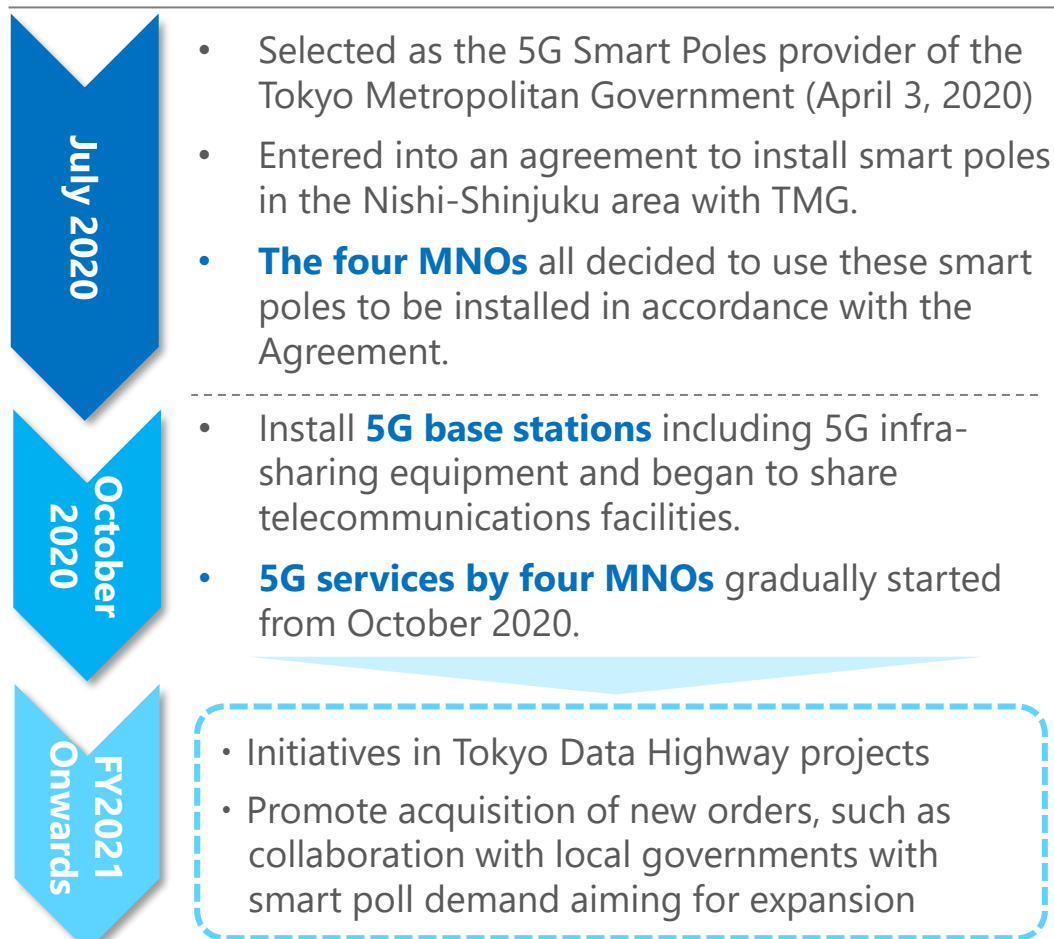
- As a 5G Smart Poles provider of TMG, we built two smart poles in the Nishi-Shinjuku area. From FY2021 onwards, we aim to expand the coverage in the areas with smart solution demands.

### Tower sharing in urban areas



- Street light
- 5G Sub-6 shared antenna
- 5G 28GHz antenna
- Wi-Fi6
- Digital Signage
- Charger (plug in)

### Roadmap for tower sharing in urban areas

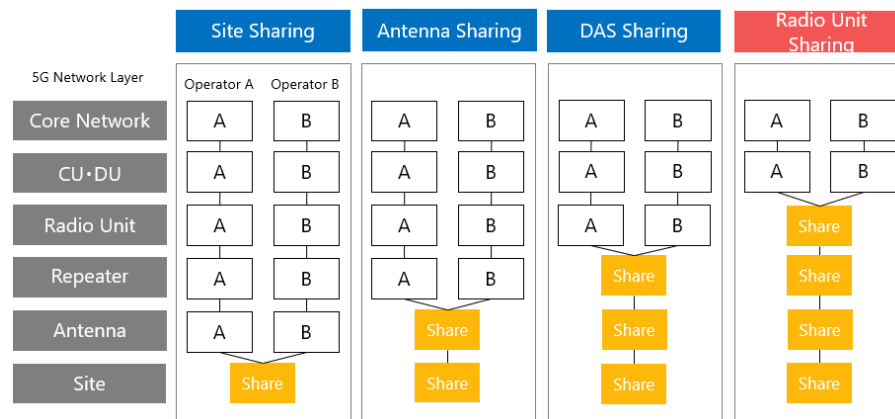


# 1 Tower - 5G mmWave Shared Radio Unit

## JTOWER

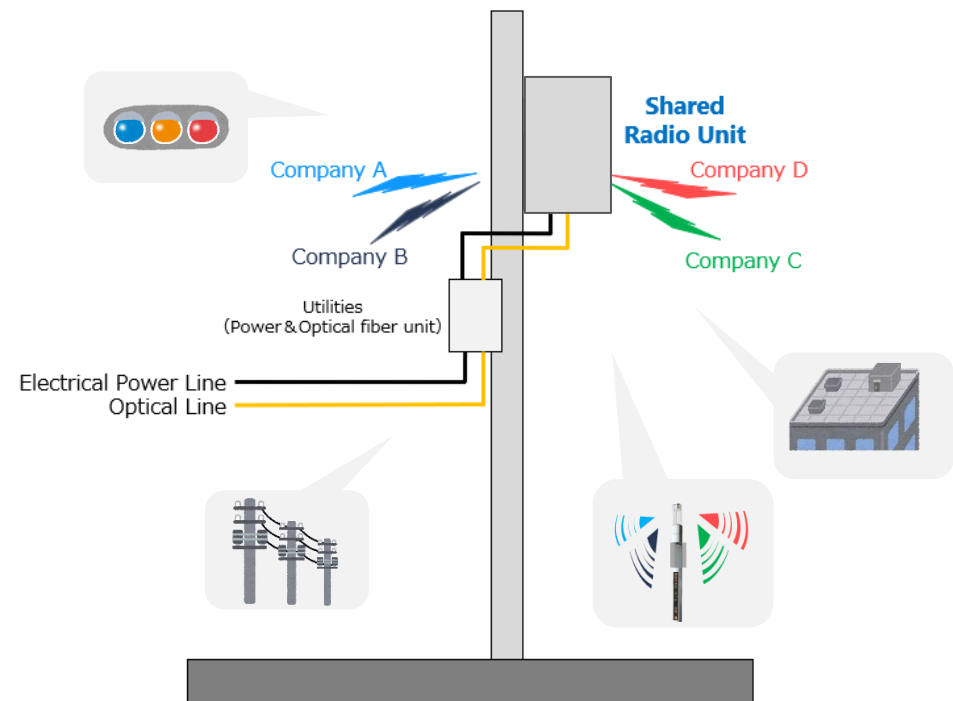
- In 5G mmWave spectrum, we have begun developing shared radio units (base stations), aiming for sharing in the high layer compare to previous sharing. Development is scheduled to be completed in FY2021 and plan to start commercial services in spring 2022.

### Realization of RU sharing in the high layer



- **Sharing of Radio Unit (base station) in the high layer** compared with previous sharing of DAS and antenna.
- Compatible with 5G mmWave (28GHz band) allocated to 4 MNOs.
- Complying with **O-RAN** and **compact and lightweight**.

### Image of installation



Anticipate installation in a wide range location both indoor and outdoor, including concrete poles, electric poles, signals, smart poles and inside of buildings

## 1 Tower - Carve-out

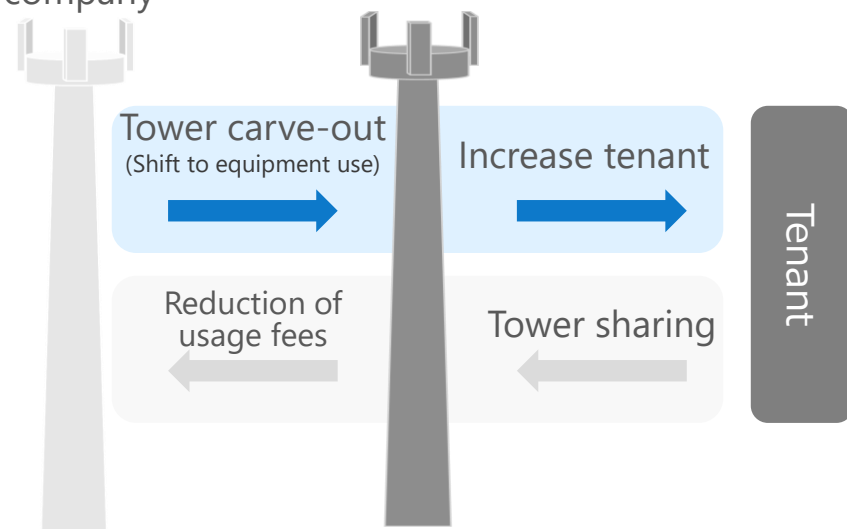
# JTOWER

- As a new initiative, we consider the carve-out of existing towers owned by telecommunication company (contracts for purchase and use).
- Aiming to realize part of this initiative from FY2021.

### Image of existing tower carve-outs

Tower assets owned by  
telecommunication  
company

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### Significance of existing tower carve-outs

#### Economic benefits (telecommunication company)

Reduction of  
OPEX by  
tower sharing

Improvement of  
financial base  
through disposal  
of assets

#### Social significance

Reduction of  
environmental  
impact

Effective use  
of social  
infrastructure

# 1 Solution - Up-selling for Infra-Sharing

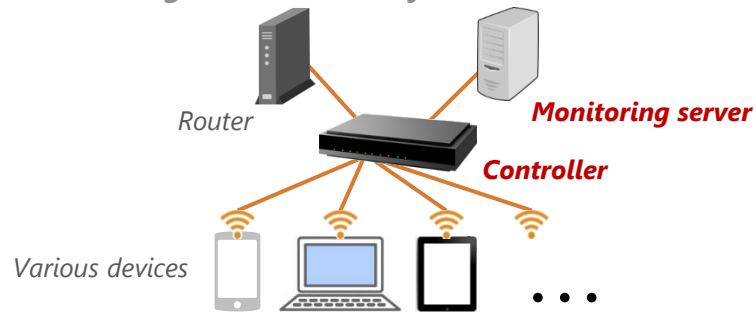
# JTOWER

Provide indoor Cloud-managed Wi-Fi solution and SITE LOCATOR service which match the needs for monetization of idle space of real estates and BTS installation of mobile network operator

## Cloud-managed Wi-Fi Solution

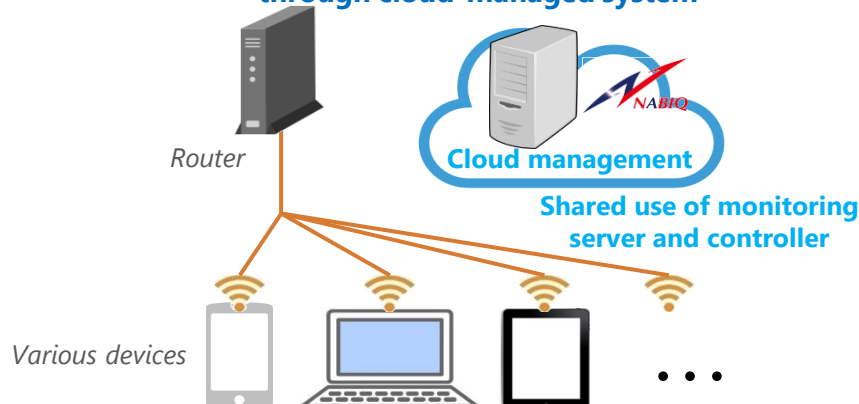
### Conventional Wi-Fi

Requires much equipment and long lead time for system construction

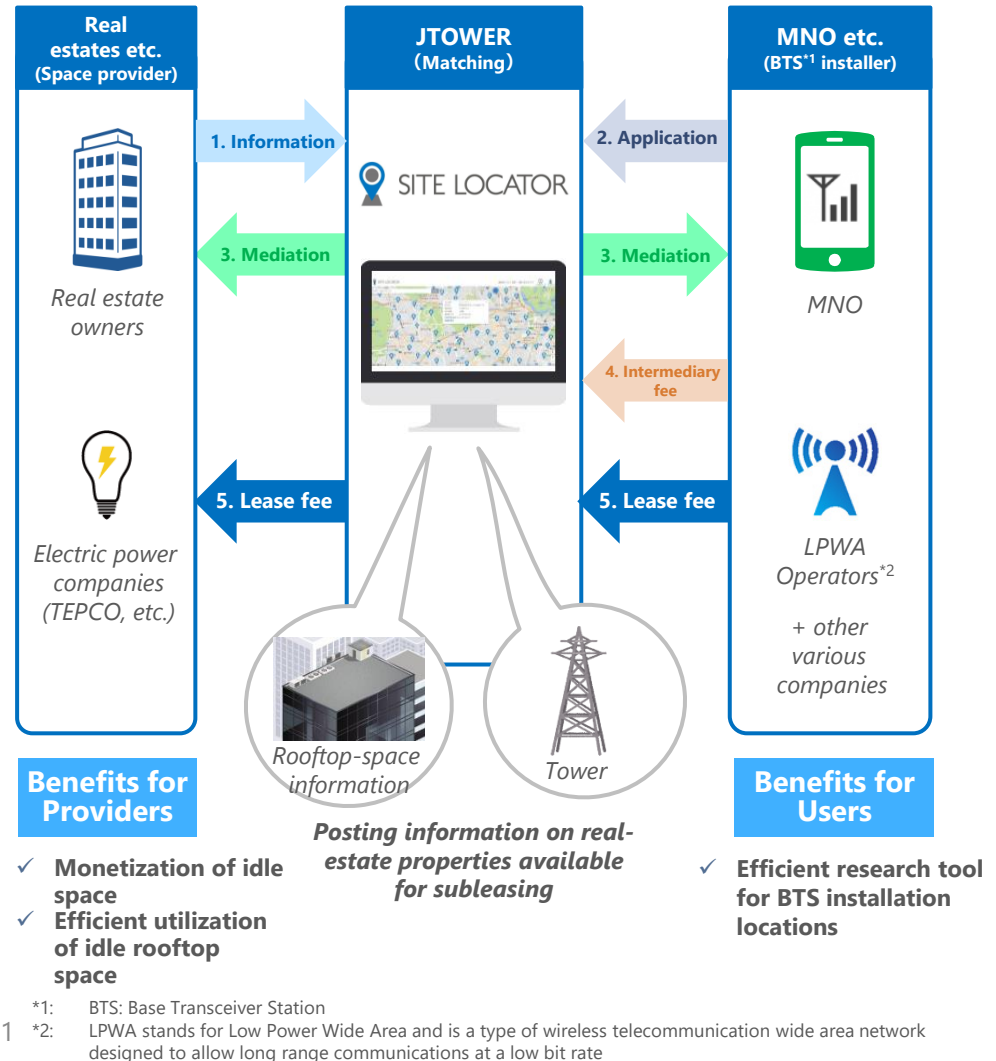


### JTOWER Wi-Fi

Enables low-cost, highly secure installation through cloud-managed system



## Overview of SITE LOCATOR Service



## 1 Solution - Commercialization of Local 5G

- Use the management resources we have accumulated in domestic IBS Business for development of services.
- Plan to make investments in the verification process and other start-up costs.

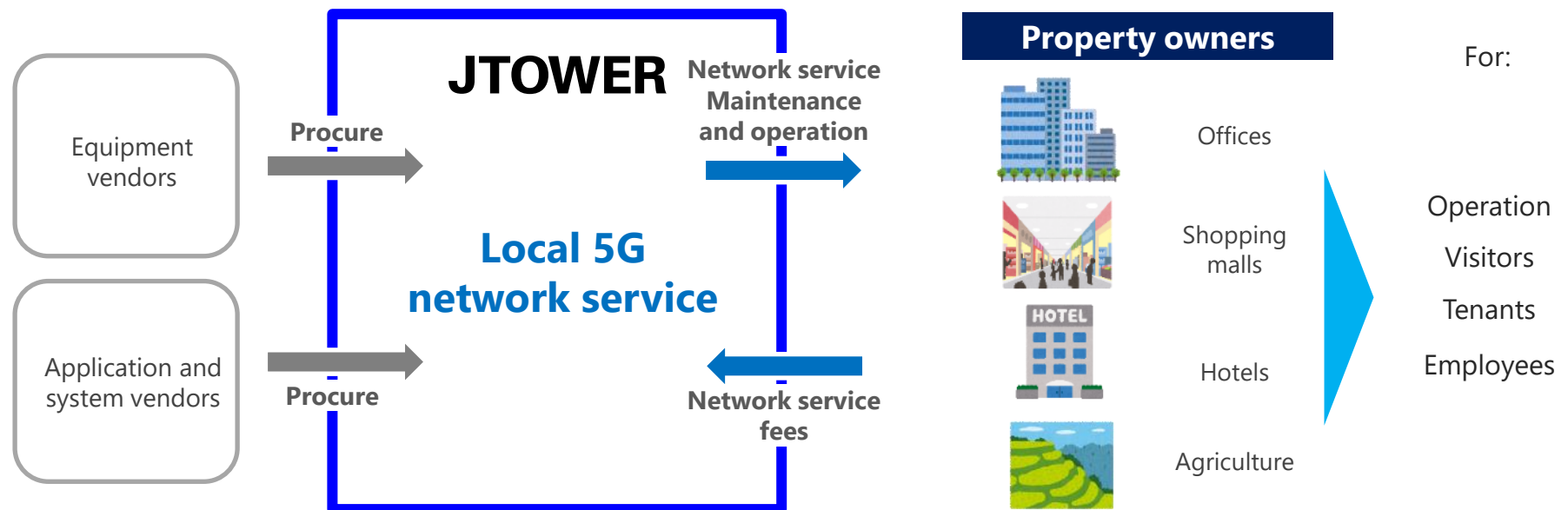
### Local 5G

Obtained license for testing  
(December 21,2020)

The verification of Local 5G started after obtaining a license from Kanto Bureau of Telecommunications for testing Standalone (SA) Local 5G using Sub6 frequency band.

### ✓ The Image of Our Local 5G Services

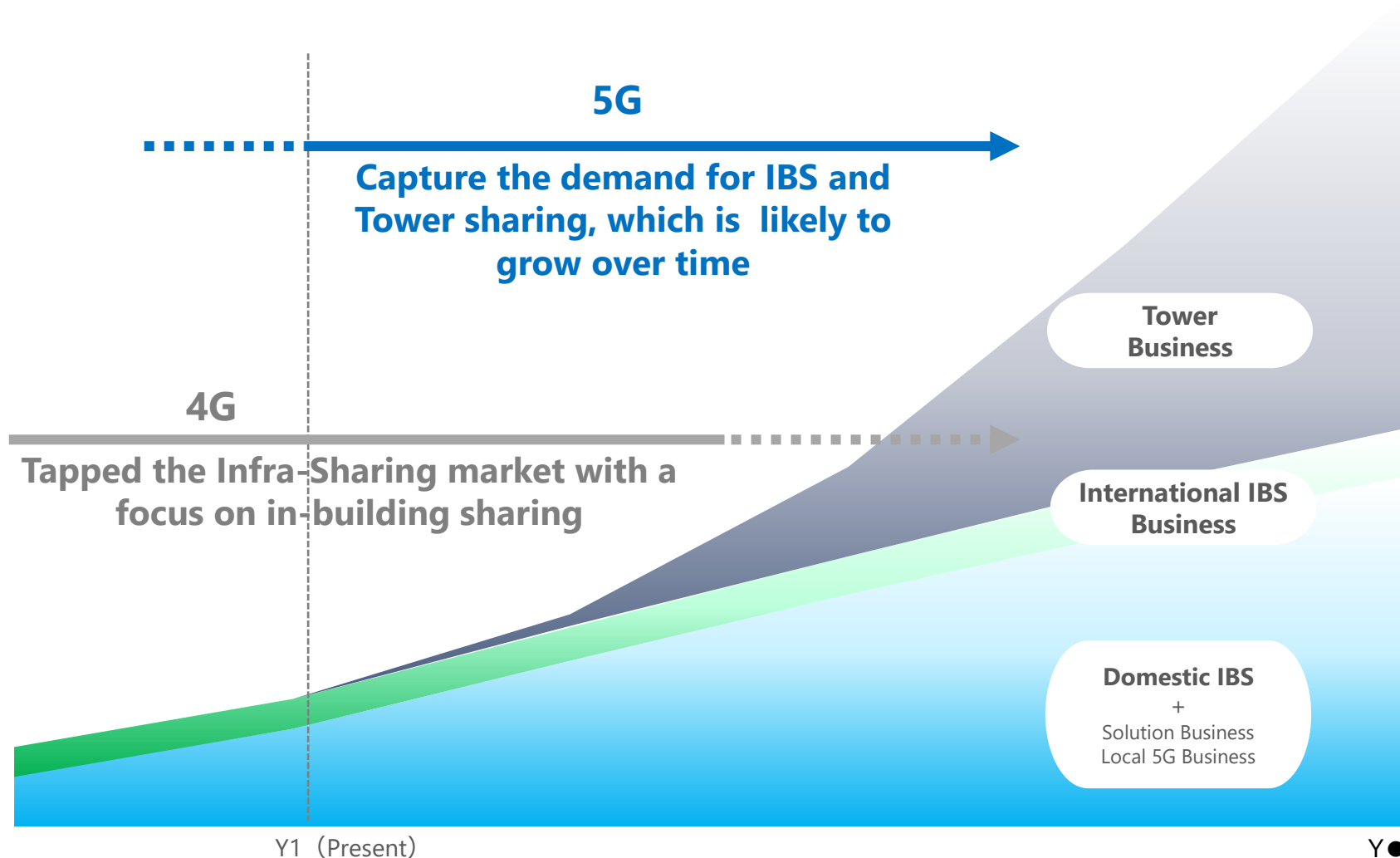
Expect to provide B2B2C and B2B2B services to property owners



# 1 Mid-to Long-Term Growth Strategy

**JTOWER**

Aiming to expand the Domestic IBS business and the Tower business supported by the increasing 5G demands for the efficient capital investments in telecom infrastructure area



Note: For illustrative purposes only

1

Company & Business Information

2

**Appendix**



## Board of Directors

Representative  
DirectorAtsushi  
TanakaSenior Managing  
DirectorYusuke  
KiriyaManaging  
Director  
CFORyosuke  
Nakamura

Outside Director

Naoki Ota



Outside Director

Yoshitaka  
Hiramoto

Outside Director

Yoshiaki  
Uchida

Outside Director

Mutsuko  
ObaYears of  
Telecom  
Industry  
Experience

24

18

14

22

27

40

3

Previous  
Experience**Goldman Sachs**  
(Equity analyst /  
Telecom sector)**eAccess**  
(Head of corporate  
planning div.)**eMobile**  
(CFO / Head of  
corporate planning  
div.)**M'sWorks**  
(Senior engineer)**PwC Arata**  
(Audit / Advisory)**eAccess**  
(Group head of  
business planning  
div.)**Boston  
Consulting Group**  
(Senior partner /  
Managing director)**Ministry of Internal  
Affairs and  
Communications**  
(Advisor to Minister)**DOCOMO CS  
Kansai**(GM / Network  
Construction  
Promotion dept. )**NTT(Holding  
Company)**  
(GM / Technology  
Planning dept.)**NTT DOCOMO**  
(GM / Radio Access  
Network Engineering  
dept.)**KDDI**  
(Executive Vice  
President,  
Representative  
Director, Executive  
Director of  
Technology  
Sector )**KDDI  
Engineering**  
(Chairman)**KPMG AZSA**  
(Audit / Advisory)**Mutsuko Oba  
CPA Office**  
(Founder and  
Representative)

## Advisors



Advisor  
Nobuo  
Nezu



Advisor  
Eiji  
Hagiwara

Years of  
Telecom  
Industry  
Experience

**53**

**47**

Previous  
Experience

**KDDI**

(Managing executive officer /  
Full time auditor / Advisor)

**NTT DOCOMO**

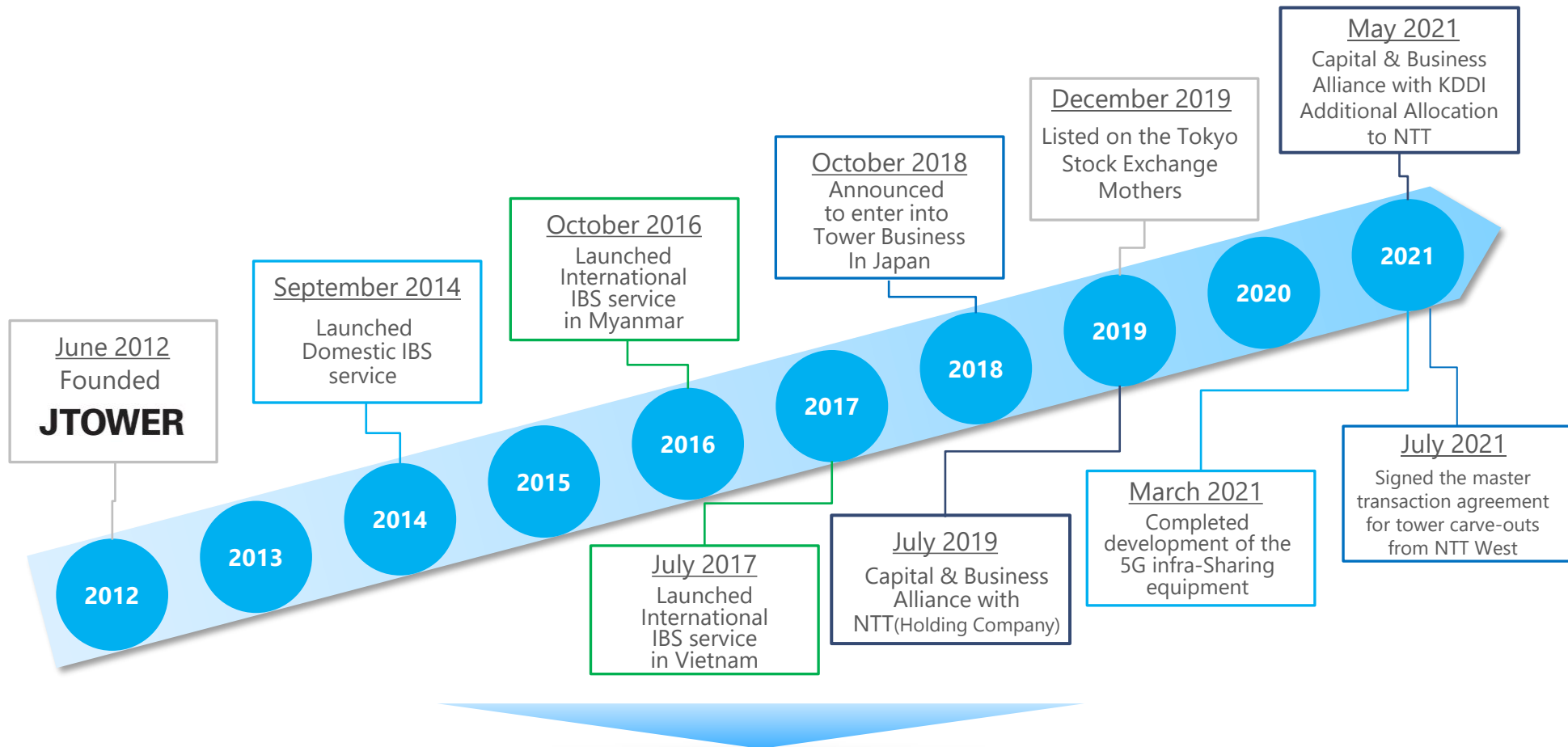
(Director)

**Panasonic Mobile  
Communications**

(Senior Managing Director)

**SAMJI  
ELECTRONICS**

(Advisor)



- ✓ **A solid position in the market with a high entry barrier** Certified from mobile network operators
- ✓ **First-mover advantage** Pioneer of the service with high switching cost and low churn rate
- ✓ **Strong relationships** Network with mobile network operators and major real estate developers

Announced Capital & Business Alliance with NTT(Holding Company)  
on July 4, 2019. (NTT acquired approx. 20% of stake.)

### Provision of Infra-Sharing Solutions Combining the Resource of Both Companies

#### JTOWER

Expertise in the field of Infra-Sharing,  
and related sales & technical capabilities.

#### NTT Group

Wealth of operational know-how  
and technical capabilities  
in telecommunications.

(Business Alliance example) Use of facilities owned by NTT Group and its store of know-how in areas such as construction, maintenance, and related management

Development of solutions

### Issues facing the entire communications industry in the 5G era

Huge capital investment

Assurance of installation sites  
for base stations

Targeting contribution to the efficiency in the early expansion of service areas and the contraction of quiet areas in the 5G era

## Position of both companies in capital and business alliance

### **JTOWER**

Expertise in the field of Infra-Sharing,  
and related sales & technical  
capabilities.



**Mitsubishi UFJ Lease & Finance**

Customer base of real estate companies  
and local governments, asset business  
insights and financial base.

**Utilization of the customer base of Mitsubishi UFJ Lease & Finance in  
sales activities to real estate companies and local governments.**

**Cooperation in the establishment of a finance scheme for capital  
investment in indoor and outdoor telecommunications infrastructure.**

**We will further expand growth and improve the speed of development in IBS and Tower businesses, aiming for efficient capital expenditures and early deployment particularly in 5G**

## JTOWER

Sharing of Infra-Sharing Deployment Plans  
Strengthen collaboration in new development



Sharing of information on installation sites  
Provision of useful technical requirements  
for new development

### IBS Business (Indoor Infra-Sharing)

- Further increase the number of installations and accelerate deployments both in 4G and 5G IBS.
- Increase the tenancy ratio.

### Tower Business (outdoor tower sharing)

- Further increase the number of new tower sharing and accelerate deployments both in rural and urban areas.
- Promote the discussion of carve-out for existing towers

### Development of shared facilities

- Early realization and promotion of the sharing equipment compatible with new frequency bands to be allocated in the future, as well as the shared radio unit for high-layer telecommunication network.

Through the capital transaction, we will strengthen the relationship with both NTT and KDDI, aiming to further grow and expand by strengthening our position as an Infra-Sharing provider

### Our capital structure

2019/7/4

Capital and Business Alliance

2021/5/14

Additional allocation

2021/5/14

Capital and Business Alliance



Ownership ratio  
before and after the  
Capital Transactions

20.2% → **21.7%**

0% → **2.5%**

Further strengthen  
existing partnership

Build a new  
alliance

**JTOWER**

### Significance for us

- Strengthening our position as a leading company of Infra-Sharing
- In Tower Business, where the relationship with mobile carriers is important, we aim to expand the business based on the strengthening of the relationship under this alliance.
- Going forward, we will continue to consider alliances that contribute to enhancing corporate value as an important measure.

### Presentation at the second TOKYO Data Highway Summit (November 18, 2020)



Participants of the second TOKYO Data Highway Summit  
\* Second from left: Atsushi Tanaka, Representative Director of JTOWER

### Our initiatives for Tokyo Data Highway in 2020

- Coordination of the installation of shared antennas in assets owned by TMG.
- Preliminary installation and deployment of smart poles in Nishi-Shinjuku area.
- The installation of Japan's first 5G indoor shared antennas in TMG headquarters building.

### Selected as a 5G infrastructure provider for Next Generation Shared Office (announced on February 5, 2021)

#### TMG\*<sup>1</sup>

Establish **Next Generation Shared Office** utilizing 5G in vacant government buildings to verify the usefulness of 5G and share related information with the aim to promote remote work as a new working style

#### JTOWER

As a provider of 5G related infrastructures such as 5G sharing equipment and antennas, we will strive to contribute to the development of efficient indoor 5G networks.

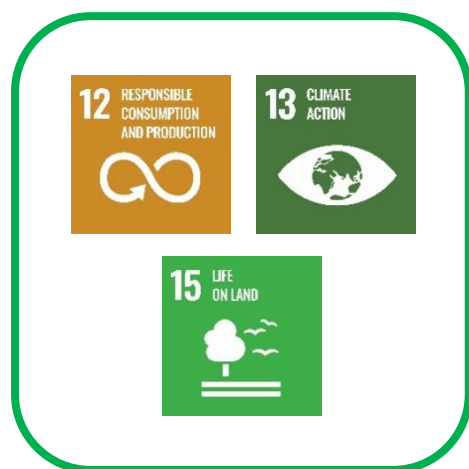




## 2 Our Approach to SDGs

- As a pioneer in Infra-Sharing in Japan, we believe that the widespread adoption of Infra-Sharing in itself will lead to the realization of a sustainable society.
- As an Infra-Sharing service provider, we will strive to improve our technological capabilities and services. Aiming to realize SHARING THE VALUE, we will continue to create business with social impact that brings value to all stakeholders .

### Environmental Considerations through Infra-Sharing



- Reduction of electricity consumption by indoor Infra-Sharing
- Manpower-saving and reduce accident risks by reducing redundant constructions
- Reducing the environmental impact of manufacturing, transportation, and disposal by reducing the use of equipment and materials
- Minimizing the impact on the natural environment and landscape by Tower Sharing



With our employees

## JTOWER



Improvement of technological capabilities and services as an Infra-Sharing service provider



Together with our customers and business partners

### Realization of Connected Society



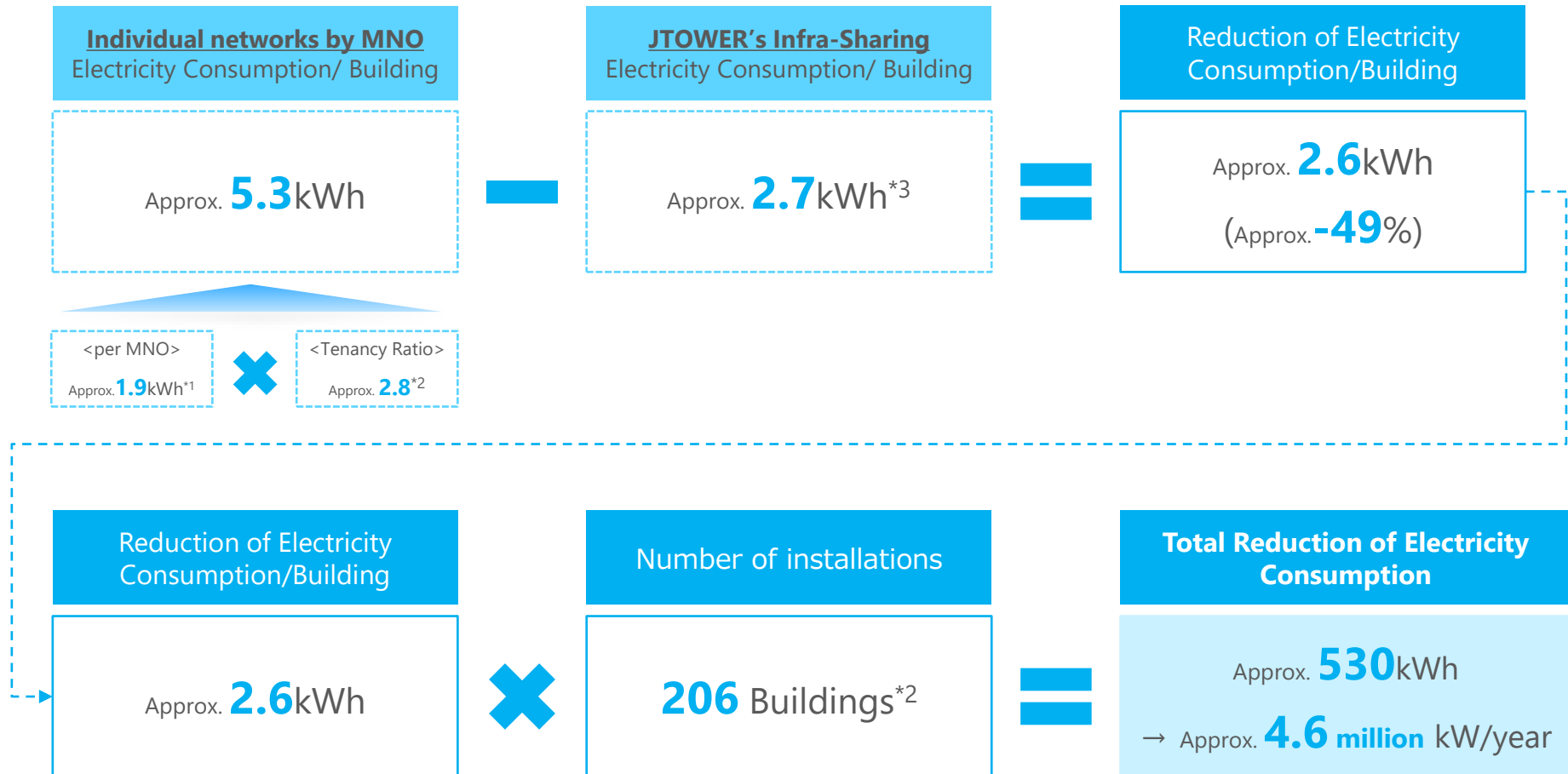
- The Improvement of the usability of mobile phones by improving the indoor and outdoor communication environment
- Promotion of Smart City
- Regional revitalization  
Elimination of the digital divide

# Our Approach to SDGs

## 2 - Reduction of Electricity Consumption (Domestic IBS)

**JTOWER**

- In Domestic IBS business, the installation of indoor Infra-Sharing contributes to reducing electricity consumption by **approximately 4.6 million kW/Year** (our calculation).

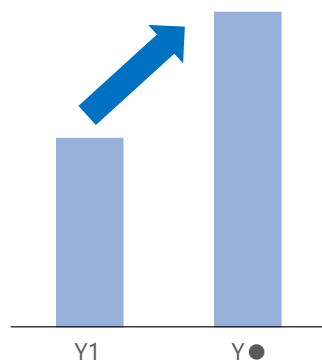


\*1: (Estimated electricity consumption/Building)×70%  
70% is our assumed calculation and does not indicate actual electricity consumption

\*2: As of December 31, 2020

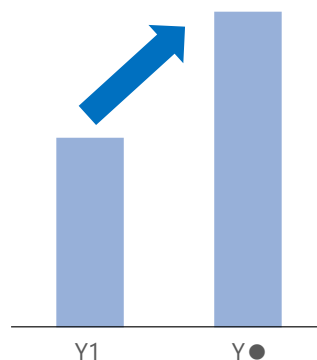
\*3: Estimated based on the calculation:  
(The average number of units used at IBS installed properties) × (The estimated electricity consumption of our Infra-Sharing equipment based on specification) as of December 31, 2020.

## Number of Properties Installed



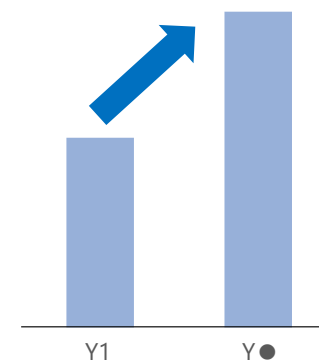
- ✓ Development demand for Tokyo Olympics and Osaka-Kansai Japan Expo etc.
- ✓ Strengthen the business foundation by Capital & Business Partnership with NTT (Holding Company)

## Tenancy Ratio



- ✓ Increase in the entry of mobile network operators such as further participation on existing properties

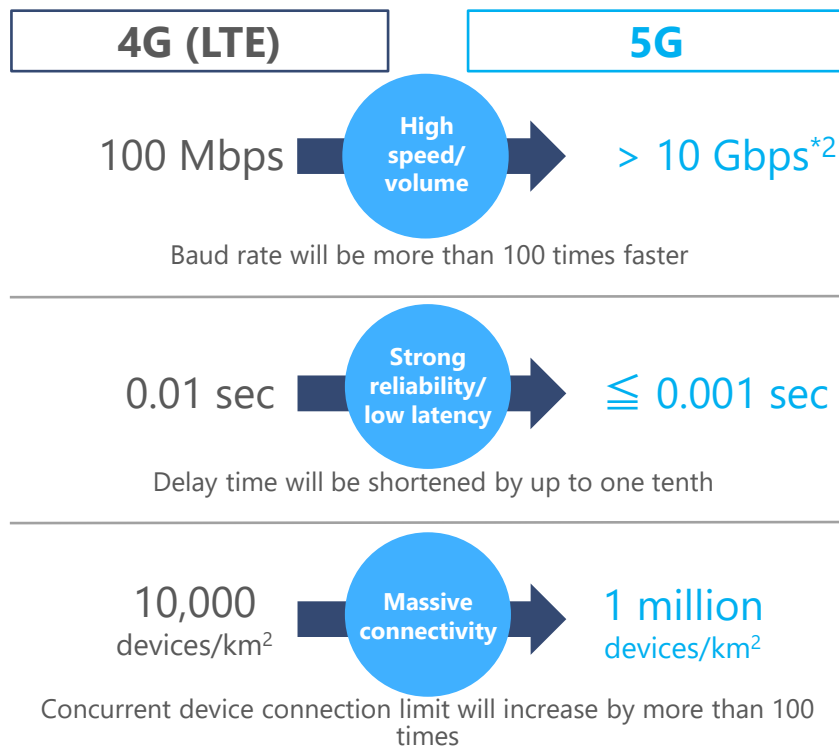
## Unit Price



- ✓ Introduction of shared equipment for 5G to the existing and new properties
- ✓ Additional value for IBS Business
  - Provide Wi-Fi solutions
- ✓ Provide local 5G-related solutions

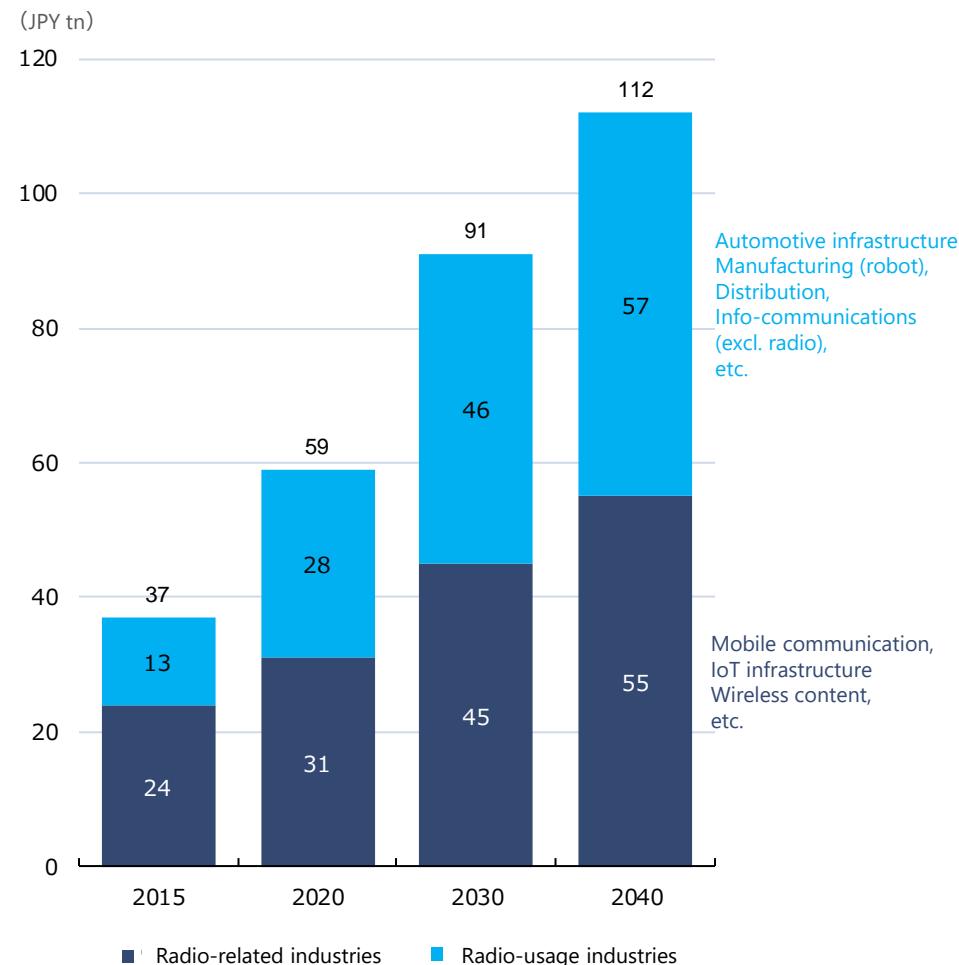
## 2 Potential Infrastructure Demand Driven by 5G

### Advancement to be Enabled by 5G



**Demand for infrastructure will increase due to the significant impact of 5G related services**

### Estimated Market Size of the Radio Industries in the 5G Era

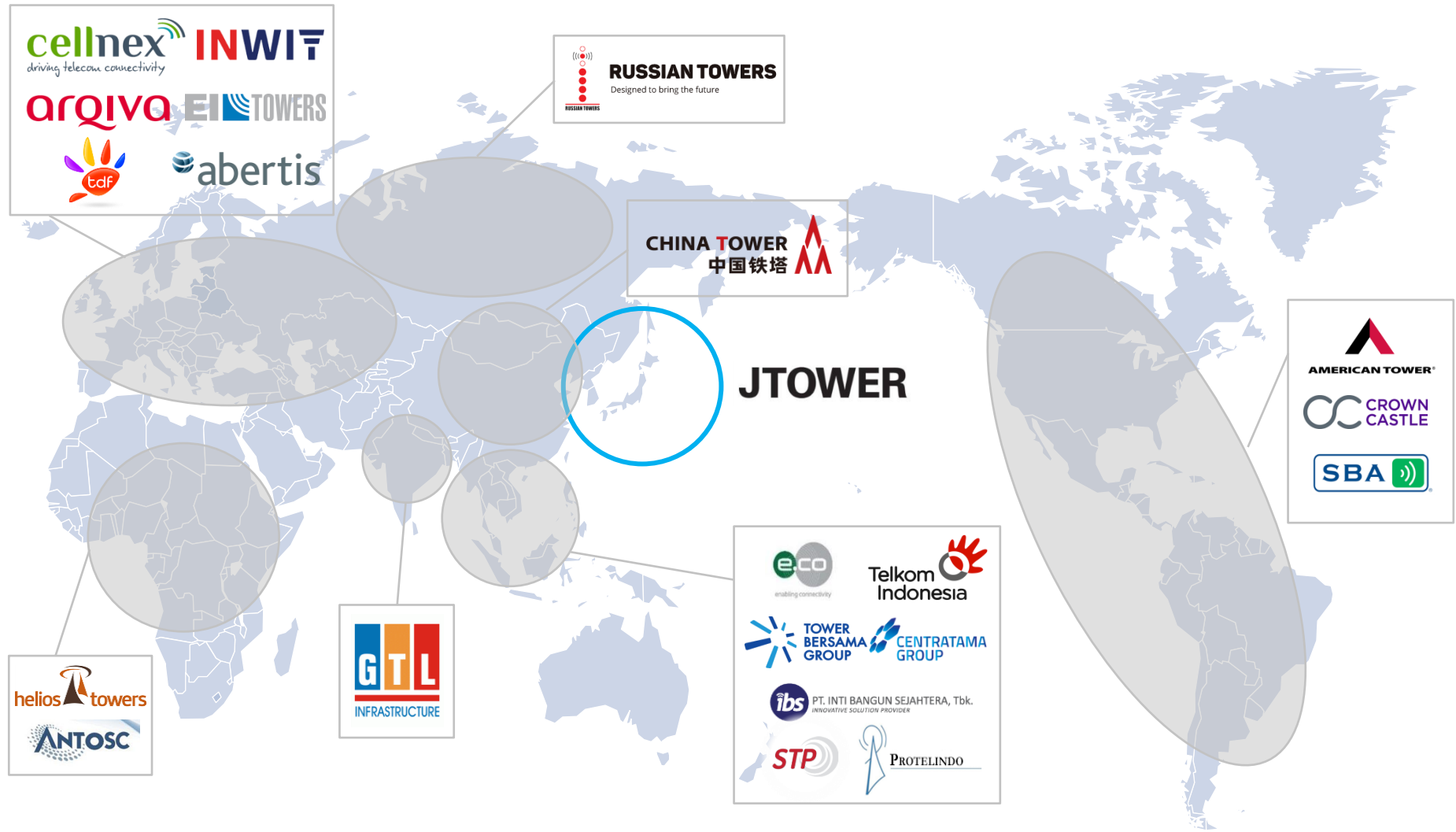


Note: "Radio-related industries" is defined as industries in which companies use radio in their main business  
"Radio-usage industries" is defined as industries in which companies use radio to enhance or streamline their services (excl. radio-related industries)  
Source: Mitsubishi Research Institute

\*1: As of September 30, 2018  
\*2: "Gbps" is defined as Gigabits per second. 1Gbps is equal to 1,000,000,000 bits per second  
Source: Ministry of Internal Affairs and Communications, Softbank

## 2 Operating Areas of Global Tower Companies

# JTOWER



Notes: Based on the announcement regarding main business operating area by each global tower company  
Source: Company Materials

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Infra-Sharing Services from Japan Lead the World

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