# JTOWER

# **Company & Business** Information

February 8, 2023 JTOWER Inc. Infra-Sharing Services from Japan Lead the World

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## 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.

# **JTOWER**

# Outline

### 1. Pioneer of Infra-Sharing in Japan

- 2. Infra-Sharing market and business environment in Japan
- 3. Business model of Infra-Sharing
- 4. Strengthen related businesses
- 5. The Realization of a Sustainable Society
- 6. Appendix

Infra-Sharing Services from Japan Lead the World

#### **1** Pioneer of Infra-Sharing in Japan

## **JTOWER**



Since the foundation of our company in 2012, JTOWER has been a pioneer of Infra-Sharing in Japan by providing services to four mobile network operators.

For the future, Infra-Sharing is expected to play an increasingly important role in the Japanese society where the early development of new telecommunications infrastructures including 5G is required.

As the pioneer of Infra-Sharing in Japan, we will contribute to the development of a more efficient network leveraging our know-how developed through our proven track record and will actively engage in technological development and new businesses.

We will continue to lead activities that contribute to the advancement and promotion of Infra-Sharing.

### About Infra-Sharing

## **JTOWER**

#### What is Infra-Sharing?

- Sharing the mobile networks that historically had been separately developed by mobile network operators.
- The cost of equipment, operation, and maintenance can be reduced compared with when mobile network operators develop network separately, thereby realizing more efficient network development.
- Reduction of power consumption, materials, and number of construction works is possible, leading to reduction of environmental impact



Sharing of antenna, cable, repeater and other equipment necessary for the development of communications networks in buildings.

Site sharing of towers and poles for the installation of base stations.

### **1** Infra-Sharing Businesses

## **JTOWER**



✓ Serve demand by mobile carriers and real estate companies for Local 5G, SITE LOCATOR, cloud managed Wi-Fi solution and others

\*1: IBS: In-Building-Solution

\*2: As of December 31, 2022 (International IBS: As of September 30, 2022)

### **①** Our strengths in Infra-Sharing market

- **JTOWER**
- As a leading company of Infra-Sharing, JTOWER has established a solid position in the market with a high entry barrier.



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#### O Market development and room for expansion for JTOWER Infra-Sharing in Japan

- In Japan, JTOWER has been leading Infra-Sharing market as a pioneer.
- On the other hand, compared to the global market, Japanese Infra-Sharing market seems to be a market with considerable room for future expansion.



Source:

1: Based on Current Status and Future Forecast of the Mobile Phone Base Station Market and Peripheral Materials Market (2020 Version) by MCA

2: Based on TowerXchange

### **O** Growing demand for Infra-Sharing in Japan

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#### • Demand for Infra-Sharing has been increasing due to the launch of 5G.



#### Demand for Infra-Sharing increases as a solution in 5G/Beyond 5G age

#### Initiatives of MIC and others to promote Infra-Sharing

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	Formulation of Infra-Sharing Guideline
	At the time of 5G spectrum allocation, <b>required Infra-Sharing plan</b> as an item in 5G infrastructure deployment plan for MNO
Promoting the Development of 5G Base Stations through	If 5G base stations are installed by several companies in rural areas, it is decided that <b>the subsidy rate will be more favorable than that c a single company</b>
Infrastructure Sharing <sup>*1</sup>	Build 5G network <b>utilizing traffic signals</b>
	<ul> <li>Initiatives to utilize <b>public assets</b> (Ministry of Finance and local governments)</li> <li>Released lists and database of assets owned by the national government and the Tokyo Metropolitan Government to use as installation sites for 5G base stations</li> </ul>
Digital Garden City Nation Infrastructure Development Plan <sup>*2</sup>	Expansion of subsidy target areas to cover all rural areas Added Infra-Sharing providers to eligible subsidy recipients Raising the national treasury subsidy rate for joint development by multiple operators (Subsidy rate: $1/2 \rightarrow 2/3$ )

\*1: Partial excerpt from MIC's "Promoting the Development of 5G Base Stations through Infrastructure Sharing" announced in December, 2020. \*2: Partial excerpt from MIC's "Digital Garden City Nation Infrastructure Development Plan (Summary)" announced on March 29, 2022.

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#### **5G Base Stations Deployment Policy**



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

#### 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

#### . 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化・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

Source: Ministry of Internal Affairs and Communications



Master Plan on the development of 5G base stations

In order to promote the development of 5G network nationwide, including in rural areas, **Infra-Sharing in which multiple operators jointly develop network facilities such as base station facilities will be promoted** in accordance with Guidelines for the Application of the Telecommunications Business Act and Radio Act Concerning Infrastructure Sharing in the Mobile Communications Field (formulated in December 2018).

#### The public and private sectors, including local governments, will work together to promote;

- The support for joint development by multiple operators in the development of mobile network
- R&D on shared-use technologies for network facilities of 5G base stations
- The installation of base stations on traffic signals where is physical restrictions on the space
- Utilization of private Infra-Sharing service providers
- Utilization of public facilities and privately owned facilities for base station sites

Partial excerpt from MIC's "Master Plan 3.0" announced on December 25, 2020 (English translation by JTOWER)

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Infra-Sharing Services from Japan Lead the World

#### **Overview of Infra-Sharing contract structure**

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JTOWER
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 Contracts for Infra-Sharing services, such as master lease agreement with MNO, installation agreement with real estate developers, and lease agreement with landowners.



### Domestic IBS – Our Business Model of Infra-Sharing JTOWER



#### Domestic IBS – Installation image of 4G and 5G IBS



			New initiative	
		<b>4G IBS</b> (New installation)	4G IBS (Replacement)	5G IBS
Installation Image		Newly constructed 4G networks in buildings by using Infra-Sharing	Replacement of 4G networks built separately by each MNO with Infra-Sharing	4G&5GOnly 5GImage: Strain of the second sec
Main target		New building	Existing building	New Existing building building
Coverage area (The number of tenant required for installation decision)		Basically <b>whole building</b> (more than <b>2</b> tenants)	Basically <b>whole building</b> (more than <b>1</b> tenant)	Centered on <b>high traffic</b> <b>spots</b> (more than <b>1</b> tenant)
Potential	# of buildings	(Mainly new buildings)	(Existing buildings)	(New & Existing buildings)
	Coverage area	(Whole)	(Whole)	(Spot)
	Tenancy ratio	(more than 2)	(more than 1)	(more than 1)

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\* 1 : Company estimate based on large-scale projects with floor area of > 10,000m<sup>1</sup>. \*2 Large-scale projects with >330m<sup>1</sup> per floor (as of Sept. end 2018, office building criterion based on Sanko Estate). \*3: Large-scale projects with >1,500m<sup>1</sup> retail floor space and >10 tenants, developed by a developer. \*4: Based on the number of resort hotels, ity 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 KANTEL Co., Ltd. and the Ministry of Land, Infrastructure, Transport and Tourism (Annual Railway Statistics)

Infra-Sharing Services from Japan Lead the World

#### **Objection States (4G IBS new installation)-The number of installations JTOWER around the country and type of buildings** \*1, 2



\*2: The number of buildings where IBS installation was completed

#### Historical Number of Installations (Domestic IBS-4G·5G) JTOWER

- In 9 months, the number of completed installations of 4G IBS (new installation) increased by 38 and the total has increased to 329. 5G IBS has increased to 32 by adding installations in 22 buildings.
- 4G IBS (replacement) started service and installed in13 buildings in Q3. \* The graph does not include replacement
- The total number of installations (4G new installation +4G replacement +5G) expanded to 374.



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

\*2: Projects where we have reached an agreement with the property owner and mobile carriers, and radio waves emission and revenue recognition are expected in the next few years.

#### Infra-Sharing Services from Japan Lead the World

#### Historical Tenancy Ratio\*1 (Domestic IBS-4G IBS new installation) 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).

### **❸** International IBS − IBS business in Vietnam



- Entered the Vietnam market by acquiring a local IBS operator in 2017.
- In addition to increasing the number of installations, promote the growth strategy that includes M&A of local player and the purchase of existing operating assets in Vietnam.



- Entry : July 2017
- Local entity name : SOUTHERN STAR TELECOMMUNICATION EQUIPMENT JSC (SPN)
- Market leader in Vietnam
- Number of installations : 234\*1
- 100% consolidated subsidiary (Fiscal year-end is December 31)

<Examples of Installation in Vietnam>



\*1: As of September 30, 2022

### **③** <Reference> IBS Asset Purchase in Vietnam

**JTOWER** 

 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.



Purchase Price (Total) Approx. 240 million yen

Transfer of ownership expected to be completed FY2022 Q1 (plan) Number of Projects 63 projects

(Approx. 1.8 million m<sup>2</sup>)

#### 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

### **O** Tower Business

## **JTOWER**

- Accelerate outdoor Infra-Sharing to expand 5G coverage.
- Expanding 5G coverage in 3 areas contributing to regional digitization.
- Agreed the first large-scale carve-outs from a Japanese telecom operators (total of approx. 6,200 towers)



\*1: Digital pole is the name of Smart pole (a generic term for multi-functional poles), a product of JTOWER Inc. (trademark registration number 6642477) for the notation of Katakana in Japan.

#### **O** Tower – Tower carve-outs

 In FY2021, we concluded the master transaction agreements for tower carve-outs from NTT WEST, NTT EAST and NTT DOCOMO and we have started to transfer 6,209 towers. We aim to further expansion of tower carve-outs in the future.



\* The number is the total number agreed upon in the master transaction agreement.

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# O Tower – Image and significance of existing tower carve-outs



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#### **③** Tower – Promotion of rural tower sharing

- Approx. 150 rural towers have been decided to be constructed.
- The construction of approx. 100 towers are scheduled to be completed by the end of FY2022. (utilize subsidy)

(FY)	Progress of Tower sharing in rural areas	Initiatives of MIC and others to promote Infra-Sharing
2018	<ul> <li>Announced to enter into Tower Business in Japan</li> </ul>	<ul> <li>Formulation of Infra-Sharing Guideline</li> </ul>
2019	• Selection of candidate sites	At the time of 5G spectrum allocation, required Infra-Sharing plan as an item
2019	<ul> <li>Negotiations with landowners</li> </ul>	in 5G infrastructure deployment plan
2020	<ul> <li>Propose hundreds of new towers (parent stations) to 4 MNO</li> </ul>	<ul> <li>Promote Infra-Sharing in Master Plan on the development of 5G base stations</li> </ul>
2022	The construction of approx. <b>150 towers</b> was decided	Announced the vision for a Digital Garden City Nation
2022	Complete construction of approx. <b>100 towers</b>	<ul> <li>Addition of Infra-Sharing provider to subsidies for development of 5G networks in rural areas</li> </ul>
	(utilize subsidy)	Parent- station station
mid-to-	• Further expansion of parent-stations	
(Photo) New tower in Shizuoka prefecture	<ul> <li>Rollout of child-stations within meshes</li> </ul>	<b>B</b> ernard

### **O** Promotion of Smart City

## **JTOWER**

 In addition to the projects in Tokyo and Aichi, we have started taking part of Smart City project in Minato Mirai 21 area and Tokushima.



### **O** Promotion of Smart City – Digital Pole\*<sup>1</sup>

## **JTOWER**

- In Tokyo, Nishi-Shinjuku areas, 22 Digital Poles (of which 20 are new models with the image shown below) were built, and we made proposals to 4 MNO for installation of 5G base stations.
- Verification of each function.
- To measure effectiveness from the perspective of social welfare, the verification for emergency information distribution was conducted such as Local alert and the collection of foot traffic data.



\*1: Digital pole is the name of Smart pole (a generic term for multi-functional poles), a product of JTOWER Inc. (trademark registration number 6642477) for the notation of Katakana in Japan.

### Development of 5G mmWave Shared Radio Unit JTOWER

- In April 2022, we concluded the agreement with Foxconn Technology Group (Taiwan) to develop 5G mmWave shared radio unit.
- Started manufacture and verification of the prototype unit from FY2022.





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Infra-Sharing Services from Japan Lead the World

#### **O** Solution Business

• Provide related services as an up sell for Infra-Sharing.



Completed development of Local 5G sharing equipment in FY2021/ Promoting initiatives to launch commercial services Provides a database for matching the rooftop space leasing demands with the BTS installation demands

Provide Cloud-managed Wi-Fi Solution as am up sell for Infra-Sharing

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### **O** Solution - Promotion of Local 5G

## **JTOWER**

 In February 2022, we completed the development of sharing equipment compatible with Local 5G Sub6 bandwidth. In preparation for the introduction of this sharing equipment to the market, we will conduct connection tests with major Local 5G radio systems aiming to start commercial services in FY2022.



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Infra-Sharing Services from Japan Lead the World

### **G** The Realization of a Sustainable Society

- **JTOWER**
- JTOWER believes that Infra-Sharing in itself leads to the realization of Sustainable Society.
- While contributing to the resolution of social issues, such as the reduction of environmental impact and the realization of Connected Society, we aim to achieve sustainable growth and further increase corporate value together with society.

For information related to ESGs and SDGs, please refer to the Sustainability Section in our corporate website. URL: https://en.jtower.co.jp/sustainability



#### **O** The Realization of a Sustainable Society - Environment

• Infra-Sharing not only reduces costs, but also the material and construction work, as well as electricity consumption, which leads to a lower environmental impact.



- \*1: (Estimated electricity consumption/Building)×70% / 70% is our assumed calculation and does not indicate actual electricity consumption.
- \*2: As of March 31, 2022
- \*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 sspecification) as of December 31, 2020.

### **G** The Realization of a Sustainable Society - Social

## **JTOWER**

 We will strive to reduce risks in business by establishing a risk management system that includes not only JTOWER but also partner companies and suppliers in terms of safety in construction and procurement.

#### Safety activities



In order to prevent industrial accidents and other accidents, we will promote the creation of safe and comfortable workplaces through regular safety and health inspections.

#### **Safety and Health Patrols**

Efforts to identify risks and hazards at an early stage, eliminate them and take measures to reduce them, prevent equipment accidents and information accidents, and ensure thorough safety awareness among workers in construction work.

#### **Efforts for Safety and Health Patrols**

- ✓ Check whether there is any risk of disaster at a construction site.
- ✓ If confirmed, direct the correction on the spot.
- ✓ If "cannot be implemented immediately," the work will be discontinued and countermeasures will be considered as soon as possible.
- ✓ Check whether the instructed approaches are actually conducted at Safety and Health Meeting and morning meeting.
- ✓ Maintain an appropriate tension and focus in the implementation of on-site work.

#### Safety Conferences

Efforts to review accidents and complaints associated with construction work, prevent the occurrence of similar problems, share the same understanding of construction safety and aim for safe and high-quality construction.

#### Supply chain management



In developing and procuring equipment, we have established a sustainable management system not only for the company, but also for the entire supply chain.

#### **RoHS Compliant**

The components and products used comply with RoHS (Restriction of Hazardous Substances Directive), the European Union directive on Restrictions on the Use of Certain Hazardous Substances in Electronic and Electric Equipment.

#### ISO9001/ISO1400

We have introduced ISO90001 and ISO14001 acquisitions as terms for suppliers that we believe are relevant to environmental and employment issues, and we continually review their condition, including their subsequent renewals.

#### **Factory audits**

Periodic factory audits of suppliers are conducted to verify safety and health, the qualifications of workers, and the working environment.
## O The Realization of a Sustainable Society - Social

- Together with a sustainable office, we aim to create an environment in which employees can work in good physical and mental health.
- Utilize new facilities to promote communication that combines offline and online.

#### Office and work style



Regarding business expansion, we are planning to relocate our Tokyo head office in July 2022. In the new office, We will make use of sustainable materials and create a comfortable environment for employees.

**Utilization of Recycled Materials** Utilize recycle materials for interior design.

## Reduction of office furniture disposal

Use a subscription service for office furniture. Realized a system that does not dispose furniture while flexibly responding to changes in working styles.

#### **Promoting Wellness**

In addition to comfortable working spaces, we will provide office spaces that enable employees to work in good physical and mental health by making communication and refreshing spaces.







#### Communication



Implementation of various initiatives with the aim of sinking in the corporate vision and revitalizing communication across positions and departments.

#### **Company-wide meeting**

Regular company-wide meetings are held to promote understanding of the company and share information. At the same time, a social gathering is held aiming for further communication among employees.

#### **President Lunch**

President Lunch is held regularly to deepen communication between top management and employees and to share various opinions and thoughts.

#### **Corporate Vision Committee**

Established a committee to promote understanding of the corporate vision by young employees across departments.

#### Codes of Conduct Award

The award system for the employee who embodies Code of Conduct.







#### **O** The Realization of a Sustainable Society - Governance



• In order to be a company trusted by all stakeholders, we will work to enhance corporate governance as one of our important management issues.

#### Disclosure of corporate governance, compliance policies, initiatives and management systems



Corporate governance, compliance policies, initiatives and management systems are disclosed in the Governance section of the corporate website. https://en.jtower.co.jp/governance

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## **Our Approach for the SDGs**

#### • Infra-Sharing in itself leads to the realization of Sustainable Society



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Infra-Sharing Services from Japan Lead the World

## **O** Company Information

Company Name	JTOWER Inc.				
Founded	June 2012				
Representative Director	Atsushi Tanaka				
Head office	2-2-3, Minamiaoyama, Minato-ku, Tokyo, Japan				
Employees	196 <sup>*1</sup> (consolidated, as of December 31, 2022)				
Capital	JPY7,992 million (as of December 31, 2022)				
Business Description	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 34.

**6** History

Footsteps as a Pioneer of Telecom Infra-Sharing								
2012	2014	2017	2018	2019	2020	2021	2022	
June JTOWER Founded	September Launched Domestic IBS	<b>July</b> Launched International IBS in Vietnam	<b>October</b> Announced to enter into Tower Business in Japan	July Capital & Busine Alliance with NT (Holding Compa December Listed on the Tol Stock Exchange Mothers	ny) <b>October</b> Began offering indoor 5G Infra-Sharing solutions	May Capital & Business Alliance with KDDI Additional Allocation to NTT July Signed the master transaction agreeme for tower carve-outs from NTT West October Capital Alliance with Rakuten Mobile November Capital & Business Alliance with NTT DOCOMO	ent	

#### Infra-Sharing Services from Japan Lead the World

#### **O** Positioning of alliances with mobile network operators

By strengthening relationships through alliances with mobile network operators, we will strengthen our position as Infra-Sharing provider aiming for further growth and expansion.



#### 6 Management with Telecom Expertise - Board of Directors

	Representativ	Senior	Managing		Outside	Outside	Outside
	e Director	Managing Director	Director CFO	Outside Director	Director	Director	Director
	Atsushi Tanaka	Yusuke Kiriya	Ryosuke Nakamura	Naoki Ota	Yoshitaka Hiramoto	Yoshiaki Uchida	Mutsuko Oba
Years of Telecom Industry Experience	25	19	15	23	28	41	4
経歴	<b>Goldman</b> <b>Sachs</b> Equity analyst / Telecom sector	<b>M'sWorks</b> Senior engineer	<b>PwC Arata</b> Audit / Advisory <b>eAccess</b> Group head of business planning div.	Boston Consulting Group Senior partner / Managing director Ministry of Internal Affairs	Kansai GM / Network Construction Promotion dept. NTT(Holding Company) r GM / Technology		KPMG AZSA Audit / Advisory Statice CPA Office Founder and
	<b>eAccess</b> Head of corporate planning div.			and Communications Advisor to Minister			Representative : current position <b>TASUKI</b> Outside Director:
	eMobile CFO / Head of corporate planning div.			Tokyo Metropolitan Government Chief Digital Service Fellow : current position	Planning dept. <b>NTT DOCOMO</b> GM / Global Business Department : current position		PicoCELA Outside Director: Outside Director: current position

#### O Management with Telecom Expertise - Board of Directors

## **JTOWER**







Advisor Eiji Hagiwara

Years of Telecom Industry Experience

48

#### NTT DOCOMO (Director)

KDDI

54

Previous Experience (Managing executive officer / Full time auditor / Advisor) Panasonic Mobile Communications (Senior Managing Director)

SAMJI ELECTRONICS (Advisor : current position)

#### **O** Indicators to Improve Enterprise Value and Upside **JTOWER** Potentials



## **O** Potential Infrastructure Demand Driven by 5G

## **JTOWER**



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



\*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 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

## Omestic IBS - Strategy for 5G -Transition in Mobile Communications Traffic\*<sup>1</sup>



over the past 10 years Annual increase about 50% (approx. 37times)

## **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)

## **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

#### Disclaimer

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