Note for readers of this English translation

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Business Briefing on IIJ's Corporate Mobile Strategy

IIJ
Internet Initiative Japan

January 20, 2020
Internet Initiative Japan Inc. (TSE1 3774)
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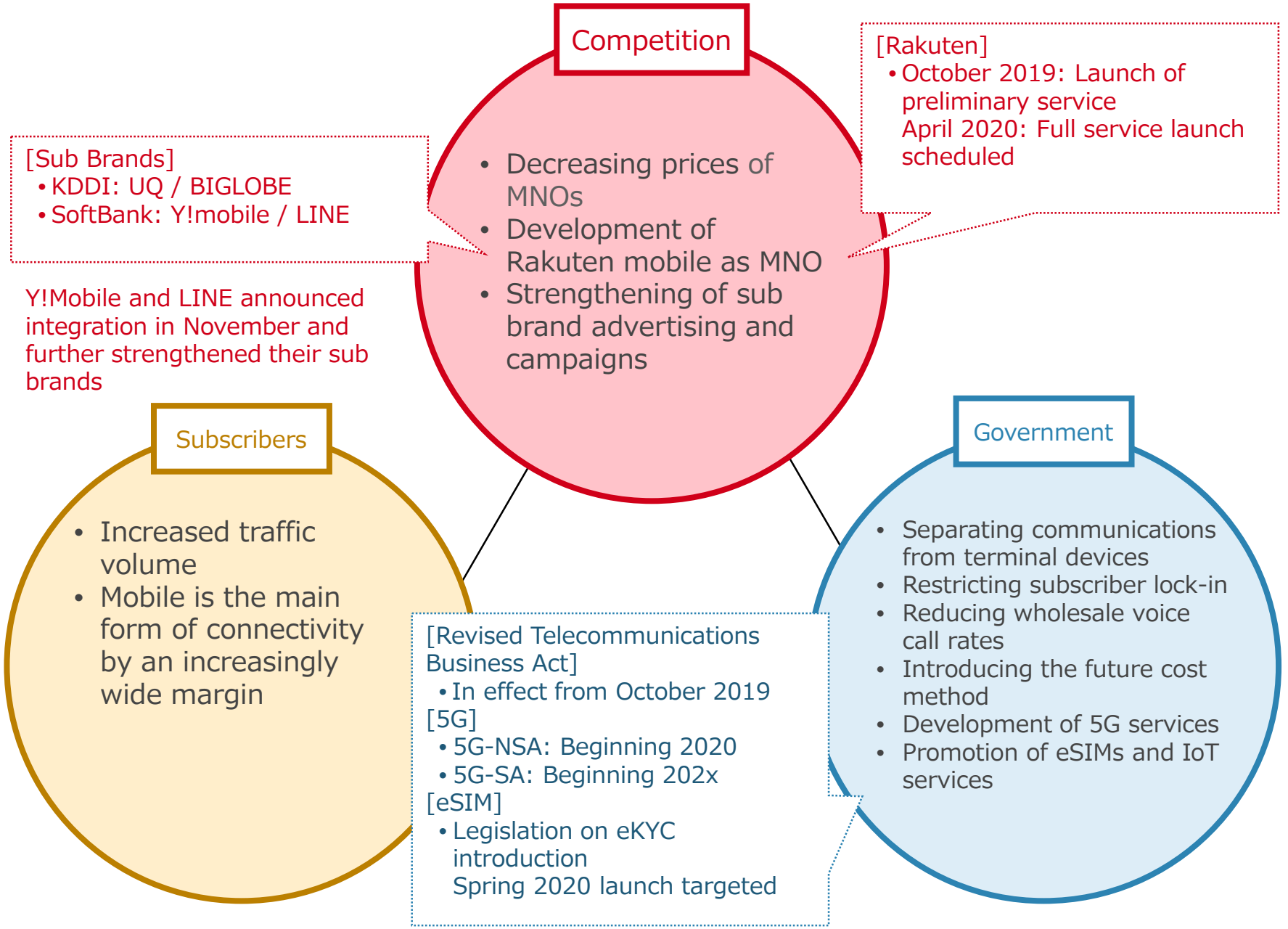
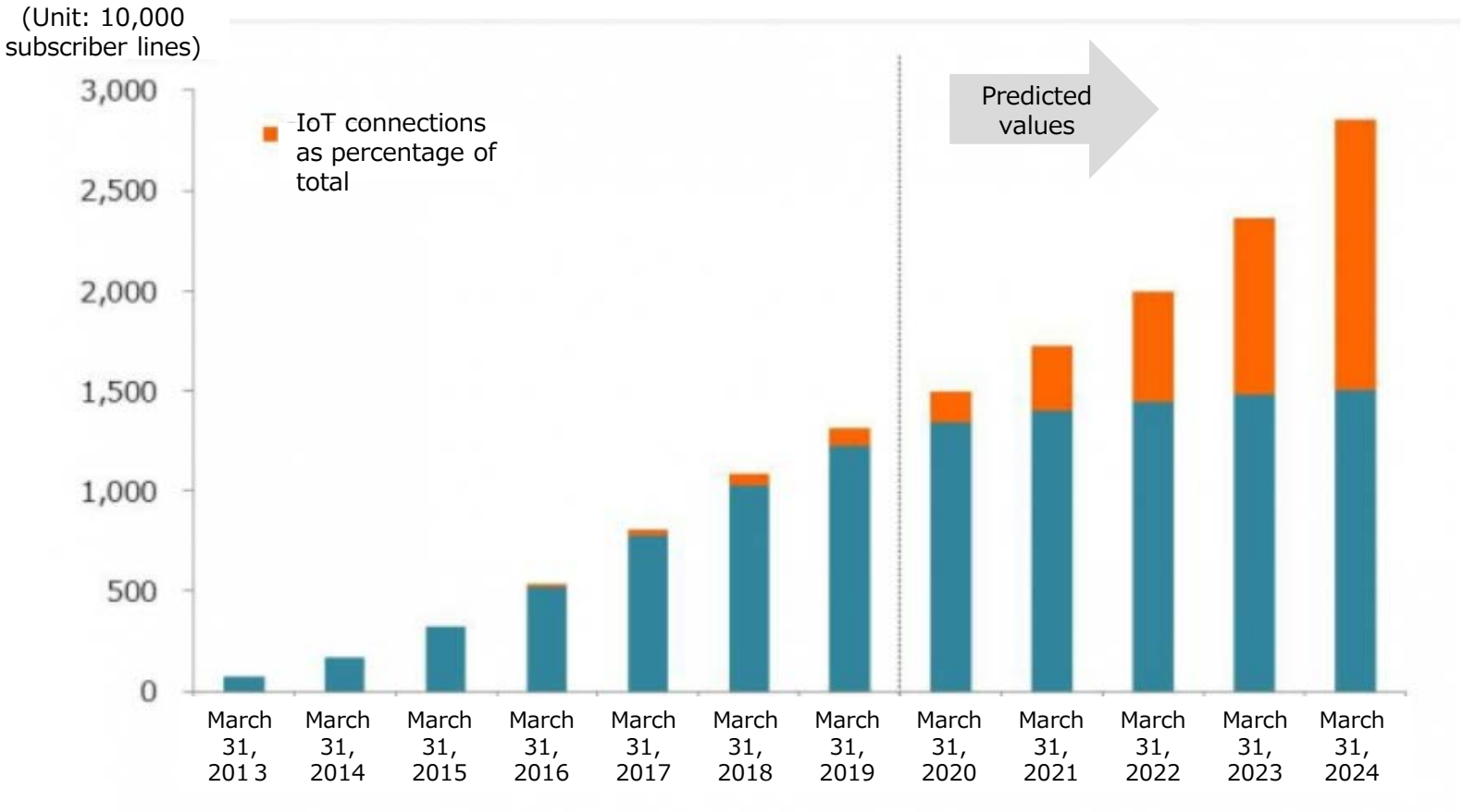
Agenda

1. The MVNO Market and an Overview of IIJ's Mobile Business
2. Progress of Full MVNO Business Activities
3. 5G Business Initiatives
4. Q&A Session

The MVNO Business Environment



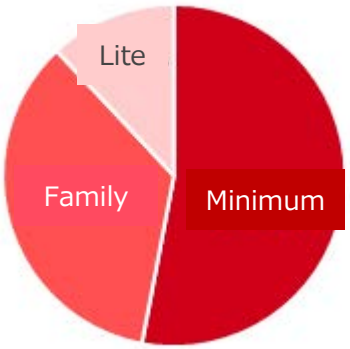
MVNO Market Growth Prediction



Actual and Predicted Size of Market for Original SIM Services (number of subscriber lines)
Source: MM Research Institute, Ltd. (published December 2019)
https://www.m2ri.jp/news/detail.html?id=381

Overview of IIJ's Mobile Business

◆ Ratio of Subscribers by Plan (December 31, 2019)

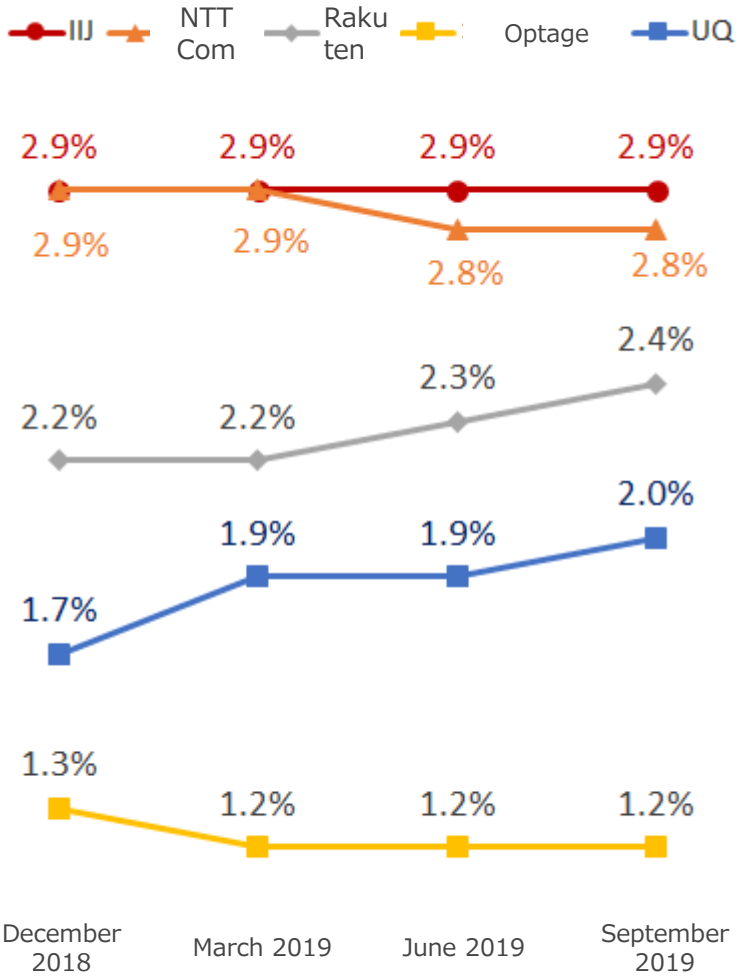


Minimum	3GB, 900 yen per month, up to 2 SIMs
Family	12GB, 2,560 yen per month, up to 10 SIMs * 1,560 yen under current campaign
Lite	6GB, 1,520 yen per month, up to 2 SIMs

◆ Percentage of subscriptions including voice calls

- Around 60%
- Since the start of MNP (April 2014), demand for adopting smartphones as consumers' main mobile phone devices has increased

◆ Market Share of Major Operators



(Source: MMRI)
* For IIJ and NTT Com, this includes connections as MVNEs and number of connections for M2M
* n = total number of connections excluding those for other operators

History of IIJ's Mobile Business - List of Major Releases

January 2008	Launched Japan's first 3G compatible MVNO service ("IIJ Mobile" for enterprise)
February 2012	Launched the "IIJmio" mobile service for individuals and started MVNE business
2016	Added support for au connections (corporate / individuals)
March 2018	Launched Japan's first full MVNO service (data communications) Launched "Japan Travel SIM (JTS)" prepaid travel SIM cards for foreign visitors to Japan
June 2018	Awarded Grand Prize in the Smart Solutions Division, MVNO Field at the 2018 MM Research Institute Awards
July 2018	Began offering international roaming option and started verifying the operation of devices equipped with eSIM
August 2018	Launched "IoT support pack" low volume plan for IoT and M2M
September 2018	Adopted for forklift safety and remote monitoring solution operated by Mitsui Bussan Electronics
January 2019	Launched chip SIMs, expanded packet sharing functions for DOCOMO / au connections
February 2019	Adopted for high capacity battery charging stations operated by US-based OmniCharge
April 2019	Added SMS push feature
May 2019	Launched soft SIMs, adopted for vehicle driving status remote monitoring service operated by WABCO Japan
June 2019	Demonstration testing of integration and coordination between private LTE and public LTE (Demonstration testing in conjunction with the University of Tokyo)
July 2019	Launched Japan's first eSIM service (data communication) Adopted for broadband wireless service operated by Motorola Solutions
October 2019	Began business alliance with Links Field Networks to expand usage of SoftSIM

Track Record Providing Corporate Mobile Solutions

Network Cameras	Office IT	B-to-C
Store marketing cameras	iPads and tablets	Karaoke communications
Security cameras for apartment complexes, etc.	Remote work (teleconferencing)	Child monitoring devices
Surveillance cameras for material storage sites, etc.	Business / IP transceivers	Networking between devices at game arcades
Security cameras	Store visitor management systems	Currency exchange machines for foreign visitors to Japan
River water level remote monitoring	Built-in SIMs for PCs	Cashless payment terminals

Transportation	Corporate Activities / Other	
Dashcams	Structural health monitoring terminals	Rice paddy water management
Taxi dispatching	Plant equipment management	Shrimp cultivation
Bus locational information	Natural disaster observational data collection	Mobile sales offices
Remote key locking and unlocking	Vending machines	Digital signage

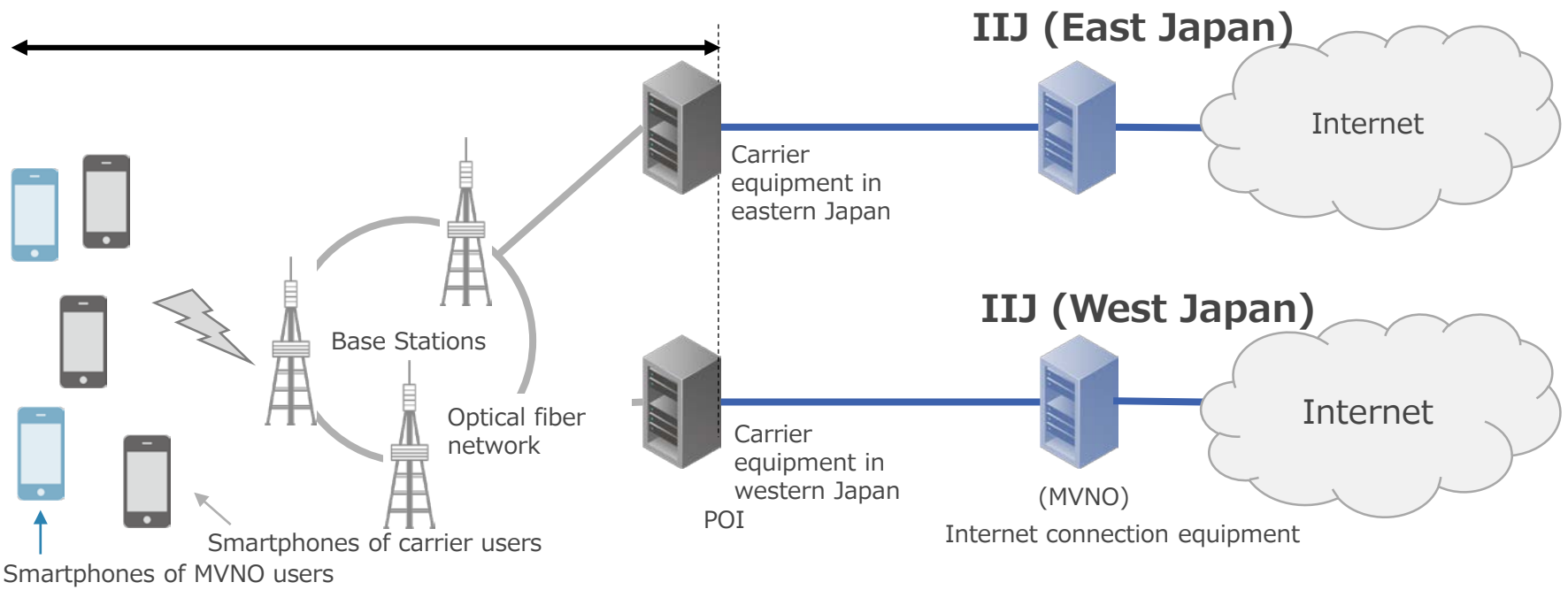
..... and many other solutions

IIJ's Strengths in Mobile (1): Stable Communications Quality

Connections with carriers in eastern and western Japan

Various servers and service operators have been established at both sites

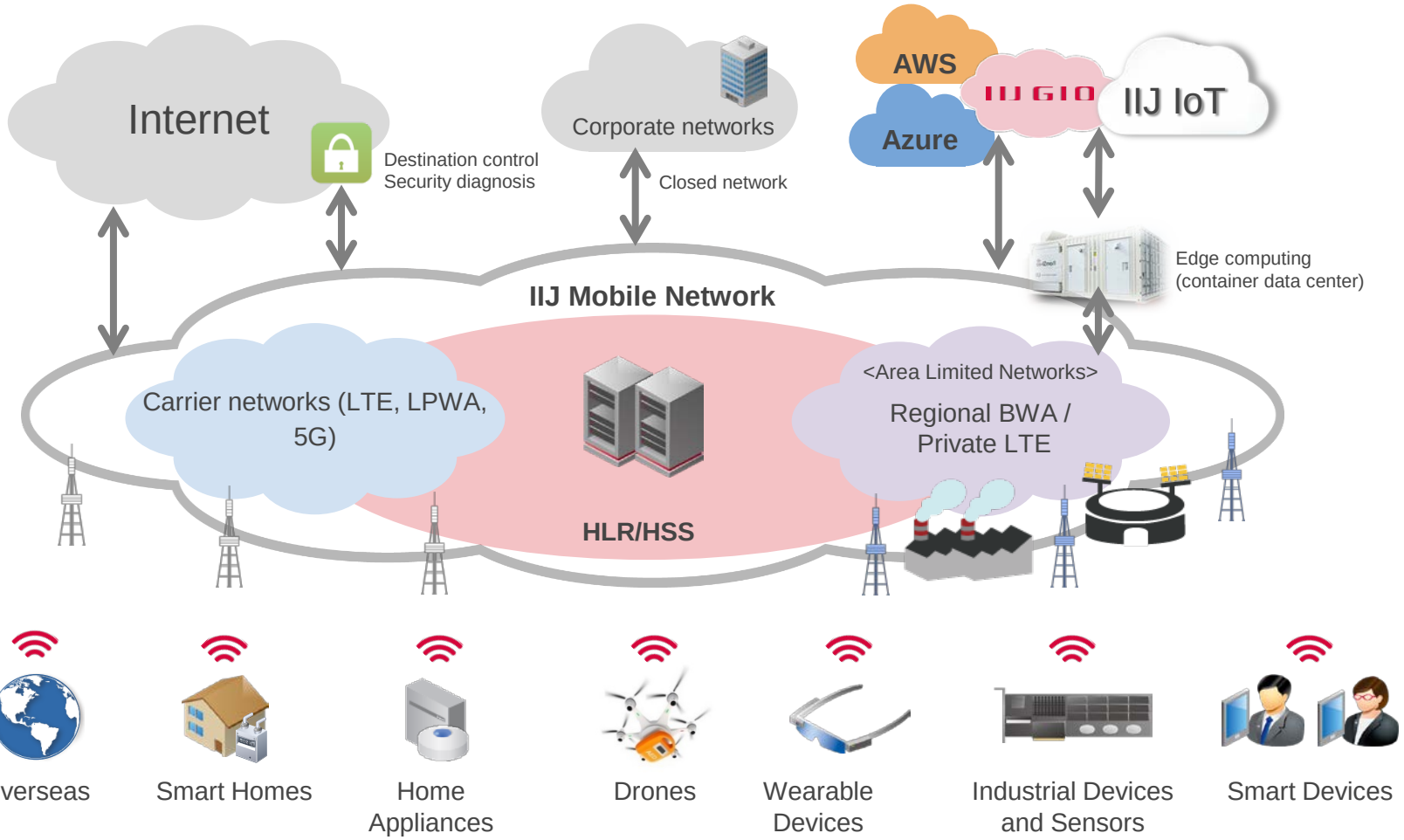
Equipment MVNOs lease from carriers
Communications that take place across this segment are treated without distinguishing between carriers and MVNOs



IIJ's Strengths in Mobile (2):

Combined Offering of Services Including Cloud, Security and WAN

Connecting increasingly sophisticated, diverse and complex mobile networks in simple ways



Full MVNO Technology

Full MVNO

MVNO operate part of an MNO's core network with their own facilities (the opposite of Light MVNO)

Currently all of the MVNOs in Japan are light MVNOs (with the exception of IIJ)

Borrow SIMs from MNOs and provide them to customers

SIMs loaned from MNOs
Differently shaped SIMs cannot be selected, and they cannot be modified

Communication profiles cannot be handled freely

As long as the MNVO lacks internal HLR/HSS, they cannot freely choose the provided format

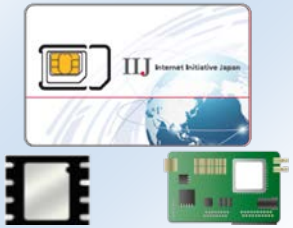
Service provided within the pricing scheme of the MNO

Lack of freedom, such as billing commencing from the moment of SIM activation

Usage occurs inside the network provided by the MNO

Usage is only allowed in the countries or regional networks specified by the MNO

Manufacture own SIM cards



Develop an extensive lineup of SIMs

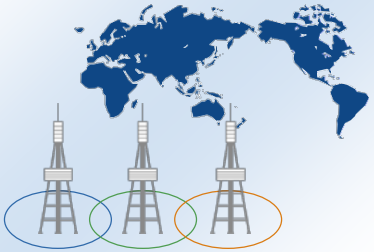
Control communication profiles

Can provide eSIMs or embed communication profiles at the manufacturing stage

Develop subscriber management features

Improved freedom in SIM activation and plan setting

Connect to a wide range of networks



Connections overseas or with various wireless networks such as closed-area wireless networks

Activities through MVNO Industry Groups

Telecom Services Association

An industry group of mainly ICT-related companies such as telecommunications companies and information & communication-related companies. Some of Japan's leading operators are members. (Membership as of December 12, 2019: 303)

Telecom Services Association
Current chairperson

Koichi Suzuki
(Representative Director, Chairman and CEO of IIJ)

MVNO Committee

The committee was established as an organization within the Telecom Services Association in 2014. It promotes competition in the mobile market and encourages the diversification of services and lowering of prices through activities such as encouraging MVNO operators to interact, exchange information and work with the government and other organizations to share and resolve common issues. (As of July 18, 2019: 54 member companies)

MVNO Committee
Current Chairperson

Junichi Shimagami
(IIJ director and CTO)

At various mobile-related meetings organized by the Ministry of Internal Affairs and Communications (the MIC), **IIJ has actively made statements and raised issues necessary for market development both as an individual company and through the MVNO Committee (Telecom Services Association)**, establishing its position as a leader of the industry.

Issues raised with the MIC (excerpt)

Connection Fees

Connection fees are one of the charges paid to use MNO communications networks such as those of NTT DOCOMO and KDDI. These fees are for the communications bandwidth reserved based on the communications traffic utilized by users.

Review of the "actual cost method" for calculating connection fees

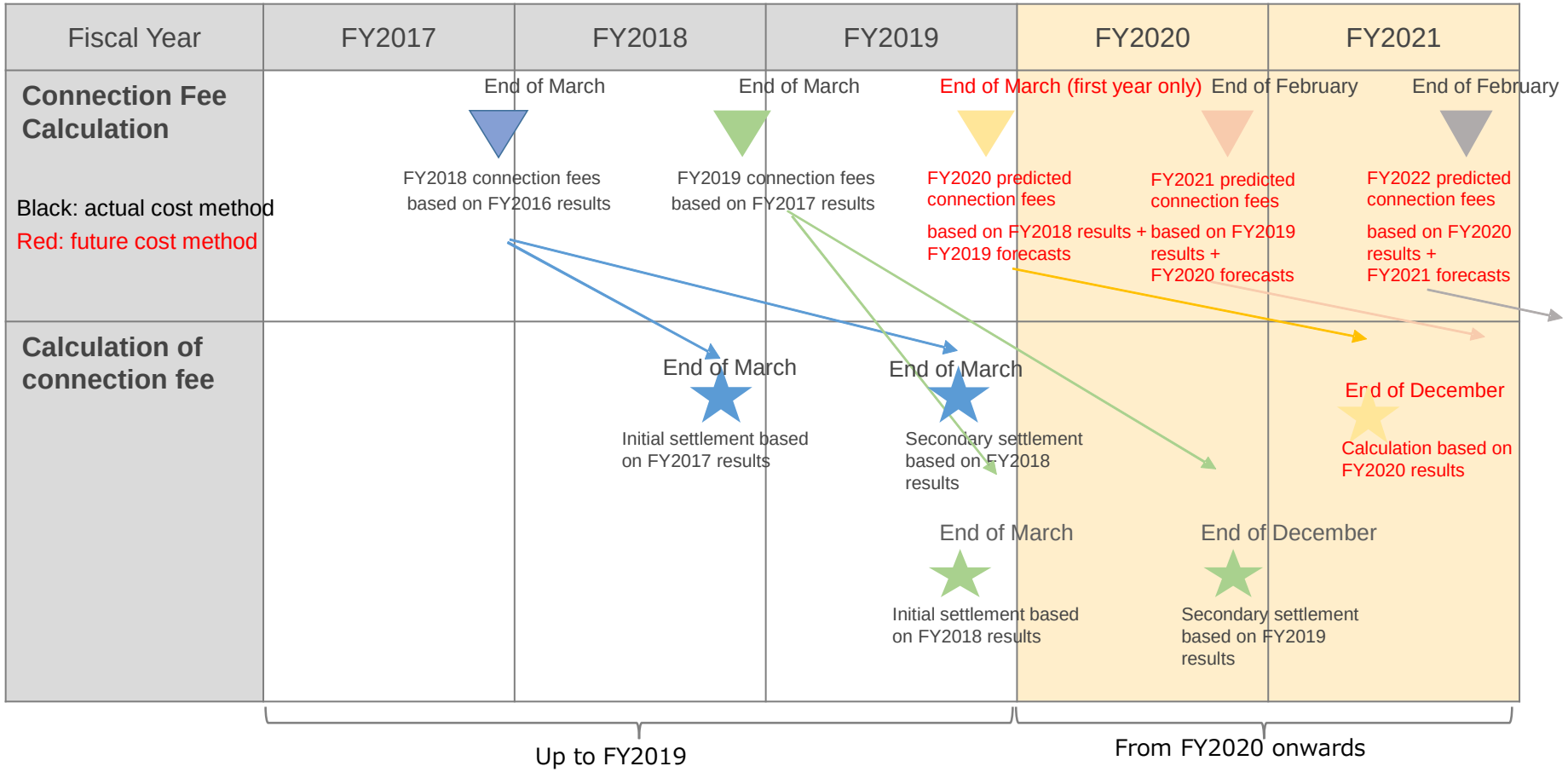
- Connection fees are an important factor that impacts MVNO pricing. Connection fees work based on the "actual cost method" where the amount for a provisional payment is determined in advance, and then after a year the correct amount is calculated and any difference is refunded or paid. IIJ recommended a review of this system as it is a factor that makes it difficult for MVNOs to predict business costs.

Switch from the actual cost method to future cost method (from April 2020) * Expected

- As connection fees are calculated based on rational future predications made by the MNO, it improves the predictability of connection fees in the current fiscal year for MVNOs. As the calculation is made based on three fiscal years of connection fees including the current fiscal year, this is expected to improve the predictability of costs including for the following fiscal year and beyond.
- As this eliminates the payment of connection fees based on past results, connection fees reflective of current market trends will be paid.

Switch to the future cost method for connection fees

* Expected (from April 2020)



- Provisional payment of connection fees based on results from two years prior
- Payments are made for fluctuating user demand and costs according to **connection fees calculated using past results**.
- As the connection fees are based on past results, they are not linked with current demand trends and other factors.

- As the fees are current connection fees based on predictions made by the MNO, **it is expected that connection fee calculations will be tied to factors such as user demand at the time the calculations are made.**
- As FY2020 is the first year of the switchover between systems, **connection fees will include the amount of change over two years.**

Participation in ITU-T (SG3)

ITU-T is a sector of the International Telecommunication Union (ITU).
It is officially known as the ITU Telecommunication Standardization Sector and is responsible for the formulation of standards for the telecommunications sector.

ITU-T has been responsible for the formulation of standards including H.264, the international standard for MPEG4 video compression, and the V.22bis and V.34 communications standards for analog modems.

Strengthening the Presence of IIJ

IIJ is a member of Study Group 3 (SG3) of ITU-T. IIJ joined SG3 because the group is expected to be involved with forming recommendations concerning the internal telecommunications standardization process (mainly government policy and the standardization of pricing) and MVNOs.

IIJ joined the working group to promote the growth of MVNO businesses by **grasping the policy issues facing MVNOs** and actively participating in discussions. IIJ also did so with a view to **coordinating with MVNOs in other countries.**

Participation in the ITU was originally at the government level. However, as the ICT sector is not always entirely lead by governments, membership was opened up to telecom carriers, vendors, and to private sector standardization groups and academic institutions on the basis of expertise.

Type	Role
Member States	Governments and regulatory bodies
Sector Members	Companies, groups, regional and international organizations
Associate Members	**Companies and groups only participating in one study group**
Academia	Universities and research organizations, etc.

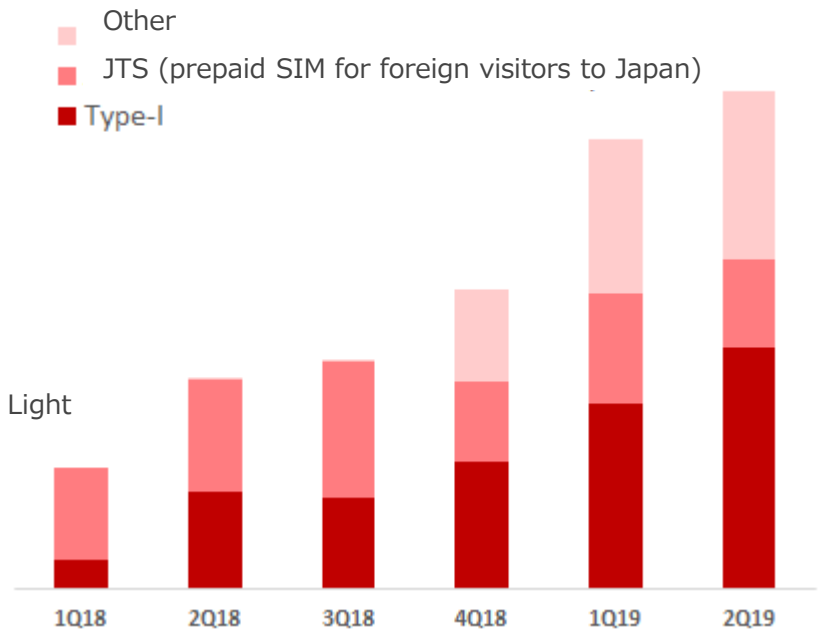
IIJ: Associate Member

Progress of Full MVNO Business Activities

Full MVNO Service Business: State of Progress

Change in Full MVNO Sales

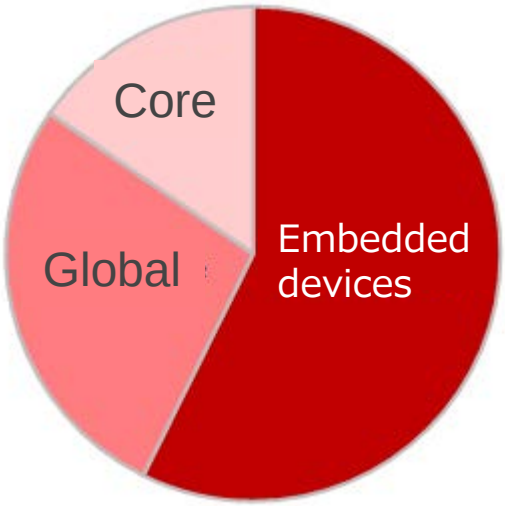
- Continued Increase in Stock Sales Ratio -



- IMSI sales, IIJmio IoT sales, etc. are recorded under "Other"

Full MVNO-related Business Talks

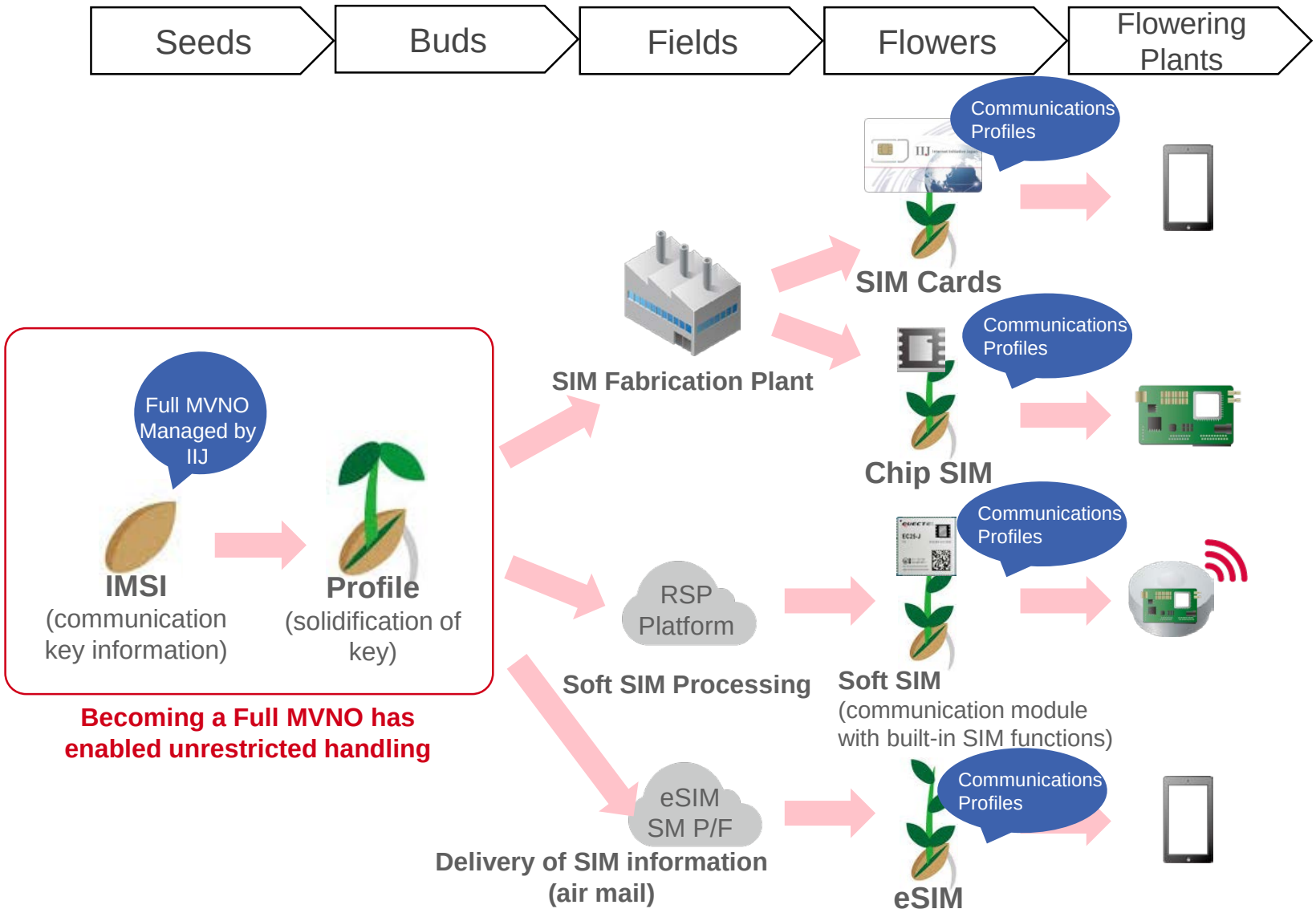
- Vigorous Demand for Embedded Solutions -



Embedded Devices	Devices embedded in products or installed in vehicles, IoT collaboration, etc.
Global	IMSI, JTS, etc.
Core	Private LTE, Local 5G, etc.

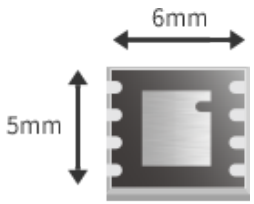
New Forms of SIM

Gaining access to IMSI as the "seed" with a full MVNO has allowed various SIM "flowers" to bloom.



New Forms of SIM (Chip SIM / Soft SIM)

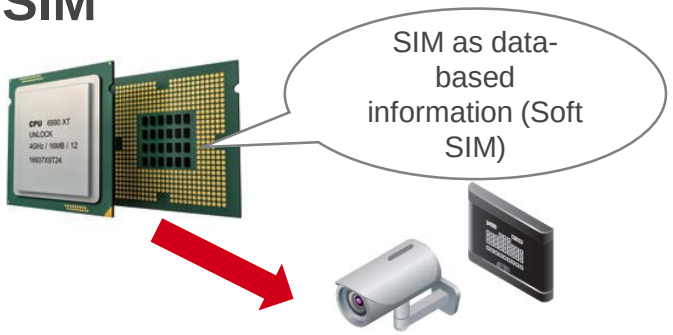
Chip SIM



Chip SIM

Embedded Chip-type SIM (M2M UICC)
Compared with SIM cards, this type handles a wide range of temperature environments and is resistant to vibrations and corrosion.

Soft SIM

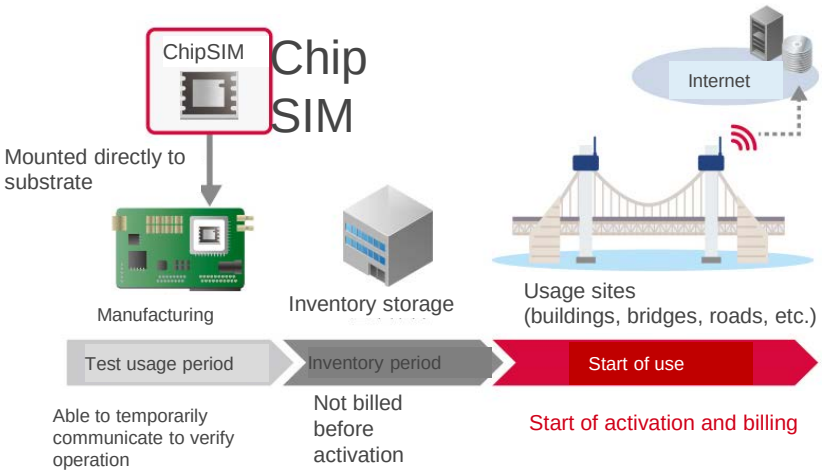


A communication module given SIM functions where the information required for mobile communications is logically written in internal memory

mtes Neural Networks

Actual use of IoT in the field

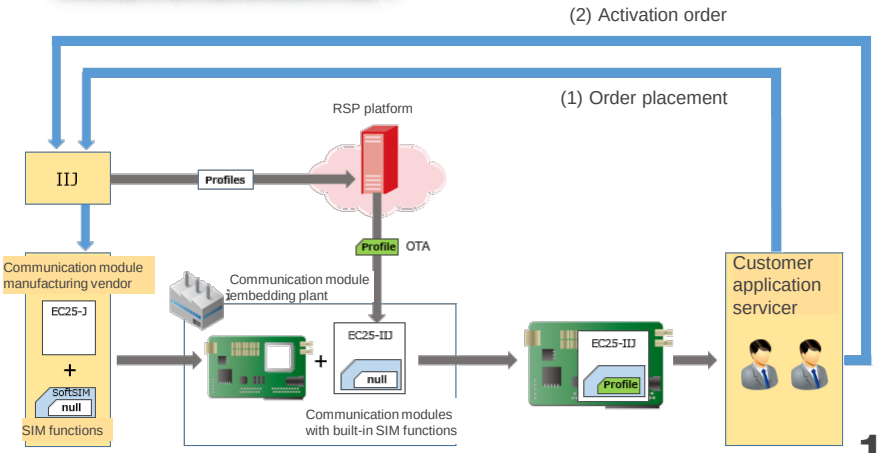
■ System Schematic Diagram



- UICC：Universal Integrated Circuit Card

WABCO Japan

Collecting information about how braking is applied and what cargo is being carried



New Forms of SIM (eSIM)

Providing our own eSIM service as a full MVNO

Subscriber Management Features

IIJ Internet Initiative Japan

Maintaining our own subscriber management features allows us to provide an eSIM service

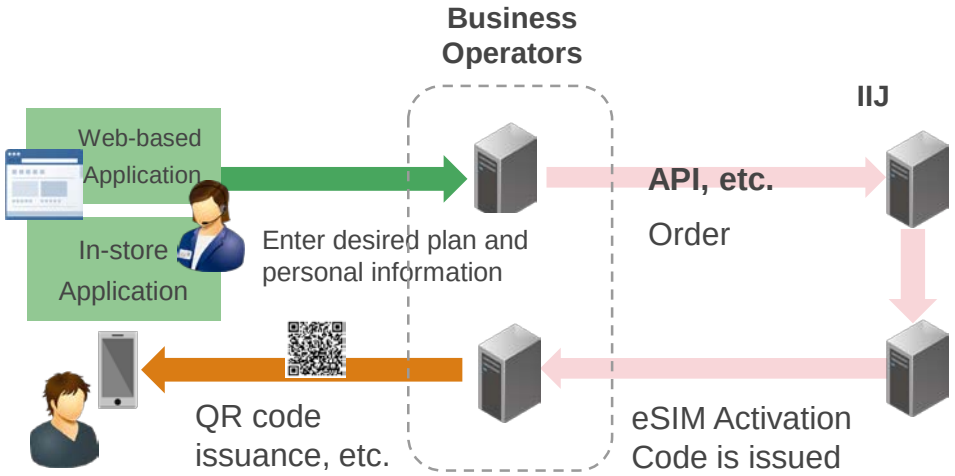
Japan's First MVNO-based eSIM Service

In July 2019, IIJ began offering the service as a beta version plan for consumers.

The Ad says “Data-only SIM
The beta version eSIM plan is here! You no longer need a physical SIM. Save money with two connection lines. 6GB for 1,520 yen (excluding consumption tax) per month"

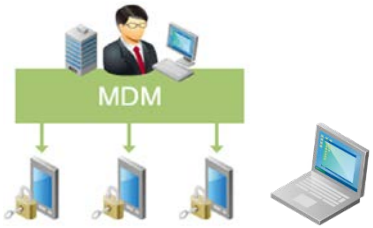
Service expansion and development as a full-release service are planned

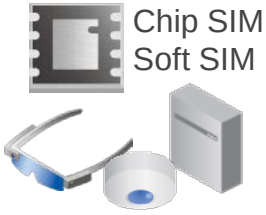
Expansion as a MVNE



Expansion to Corporate Customers (Consideration Phase)

- **Consideration for corporate mobile: Closed area eSIM**
- **Being considered as one factor in the Full MVNO business expansion with M2M applications such as Soft SIM and Chip SIM**



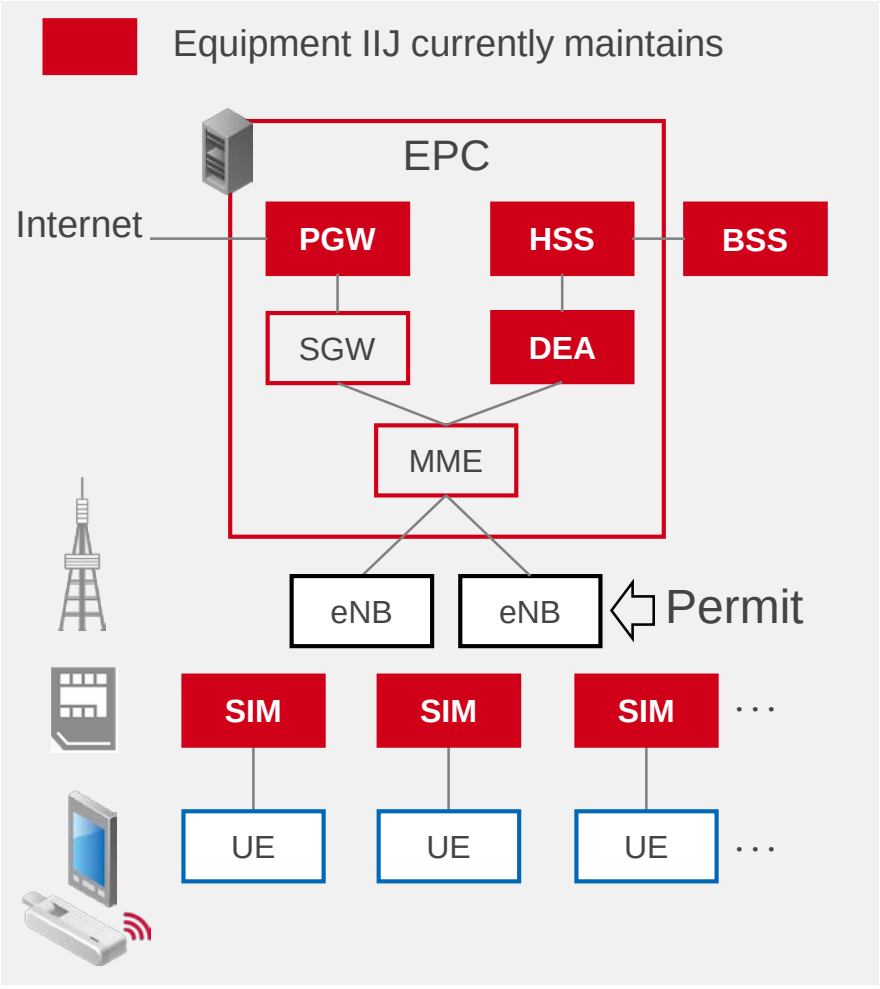


5G Business Initiatives

IIJ and 5G

As a full MVNO, IIJ has been able to obtain SIM equipment and some EPC equipment.
*** IIJ possessed some EPC equipment from when it was a light MVNO.**

- **UE** (User Equipment)：
  The variety of equipment has grown from smartphones to IoT devices.
- **SIM** (Subscriber Identity Module)：
  IIJ was the fourth telecommunications operator in Japan to start handling SIM equipment.
- **eNB** (Evolved Node B)：
  The system promoted the local use of base stations.
- **EPC** (Evolved Packet Core)：
  IIJ took possession of most of this equipment as a full MVNO.



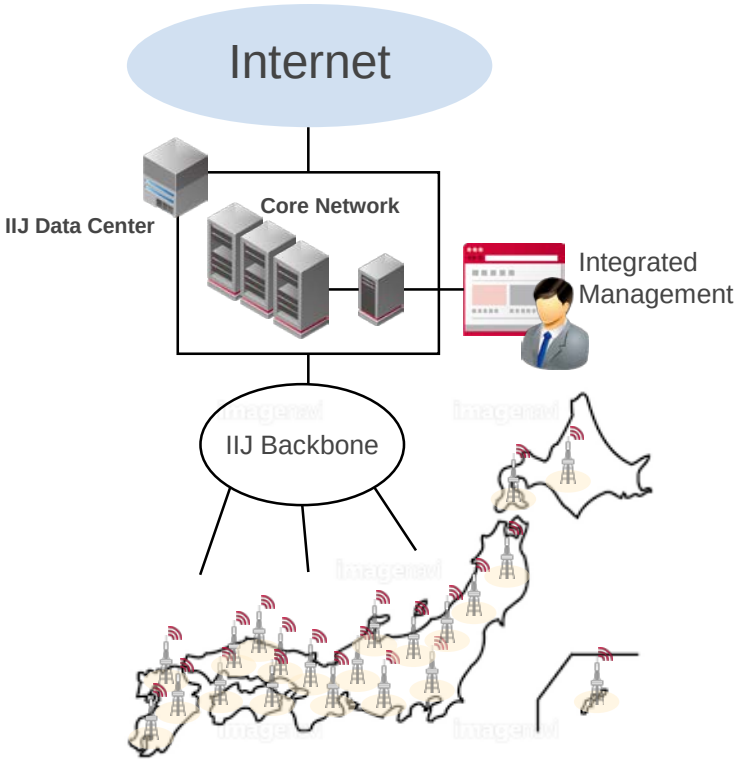
- EPC (Evolved Packet Core) refers to the IP-based core network specified for access technologies such as LTE.
- PGW（PDN gateway），SGW (Serving Gateway)，MME（Mobility Management Entity），DEA（Diameter Edge Agent），HSS（Home Subscriber Server），BSS（Business Support Systems)

Local 5G Initiatives

Utilizing many years of expertise building and operating mobile infrastructure and equipment such as HSS gained by becoming a full MVNO, IIJ has seized upon further revenue opportunities and created new business opportunities.

Local 5G is a useful approach when expanding coverage to various locations nationwide.
It is believed that main customers will be telecommunications operators who will use it as a way to improve the added value of their own services.

Main Projects	**Cable industry core** (rolling out the same services at each cable TV station)
IIJ Services	**Connection services such as leased lines**
IIJ's Selling Points	**Providing large-scale mobile equipment (HSS, BSS, etc.) with IIJ services**
Launch Timing (Target)	**L5G (NSA): April 2020 onwards**



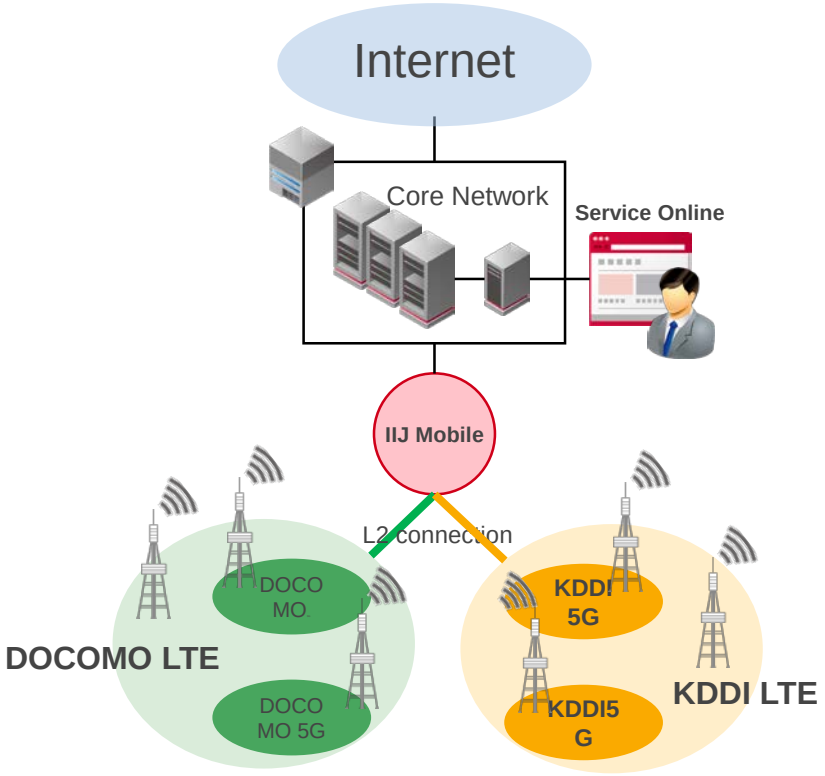
- The main application of local 5G is fixed wireless access (FWA).
- Connections with each region are expected to be made over WARP or VPN.
- IIJ has users maintain some of the core network equipment it does not possess on the user side. In doing so, the provision of HSS is envisaged.
- L5G (Local 5G), NSA (Non-standalone).

Support for Light MVNO 5G

Type D (DOCOMO connections) and Type K (KDDI connections) of light MVNOs (IIJ mobile, IIJmio, MVNE) support 5G.

Discussions regarding a 5G-supported version for full MVNO will be held going forward.
At this time, since the 5G implementations of DOCOMO and KDDI are non-standalone access (NSA,) there is an impression that faster SIMs will come out.

Main Projects	**Businesses as an extension of current ones**
IIJ Services	**IIJ Mobile / IIJmio / MVNE**
IIJ's Selling Points	**Services can be started with relatively minor equipment modifications**
Launch Timing (Target)	**2020**



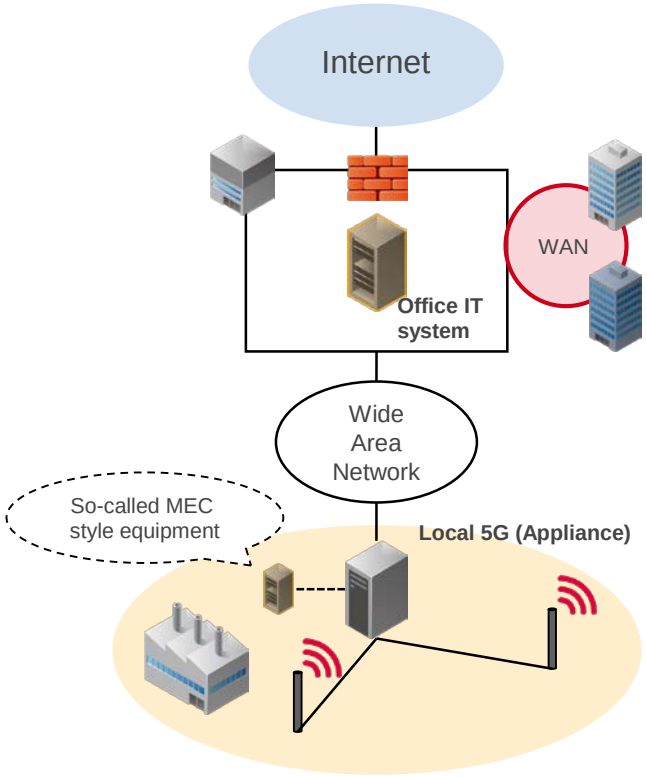
- Connections with DOCOMO are expected to piggyback on existing L2 connections.
- NSA (Non-standalone) refers to a mechanism that requires a 4G system in addition to a 5G system.

System Integration with Local 5G at the Core

For customers who want to use local 5G features for their own business, such as for automated operation within plant premises.

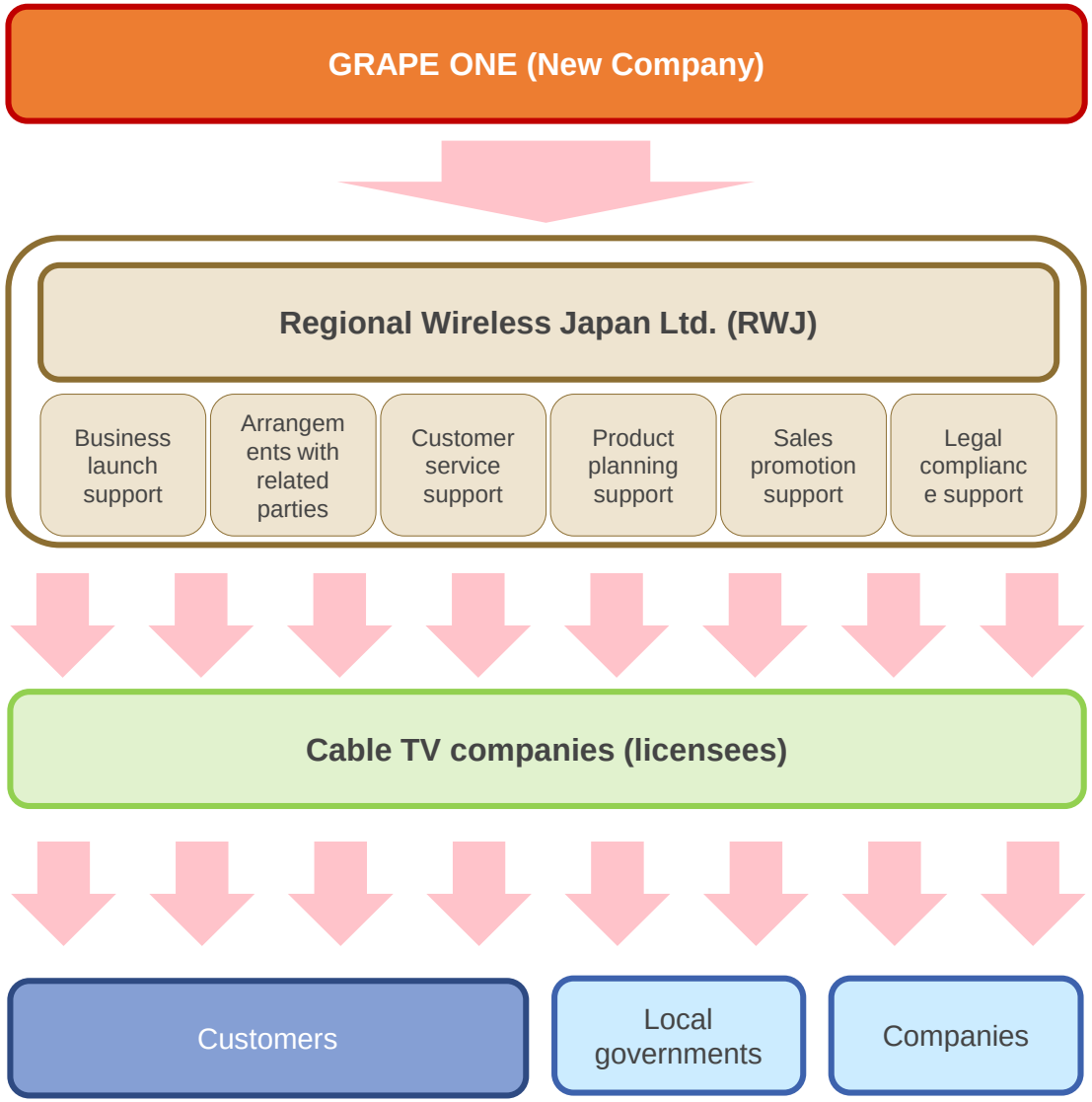
Main applications are expected to be IoT with low latency and many simultaneous connections, and IoT for high-definition surveillance cameras.

Main Projects	**Plants and Universities** (using local 5G only)
IIJ Services	**System Integration IIJ WAN Service**
IIJ's Selling Points	**Can piggyback on existing wide area networks and other networks**
Launch Timing (Target)	**2020**



- Connections with the local 5G area are expected to be made by wide area networks or Omnibus.
- It is expected that the exit to the Internet will come from the customer information system, and that it will not be brought all the way, and instead used within the local 5G area.

Local 5G EPC Example: GRAPE ONE (announced December 2019)



* Core: Base system for regional BWA and local 5G communication platforms

[GRAPE ONE]

- Ownership, operation and management of core equipment
- Provision of core service (SIM)
- Base station procurement, maintenance and monitoring
- Client device procurement
- Comprehensive service quality management

[RWJ]

- Contact services for cable TV companies
- Wholesale provision of core services
- Base stations, client devices, sales coordination

[Cable TV companies]

- Radio license acquisition
- Ownership and installation of base station equipment
- Provision of FWA services to customers
- Gaining subscribers and providing initial customer support

IIJ has received many similar business inquiries...

Thank you for your attention.

Internet Initiative Japan

The internet started in Japan in 1992, along with IIJ. Since that time, the IIJ Group has been building the infrastructure for a networked society, and with our technical expertise, we have continued to support its development. We have also continued to evolve our vision for the future and innovate to make it a reality. As an internet pioneer, IIJ has blazed the trail so that others could realize the full potential of a networked society, and that will never change. The middle "I" in "IIJ" stands for "initiative," and IIJ alway starts with the future.

Disclaimer

Statements made in this presentation regarding IIJ's or managements' intentions, beliefs, expectations, or predictions for the future are forward-looking statements that are based on IIJ's and managements' current expectations, assumptions, estimates and projections about its business and the industry. These forward-looking statements, such as statements regarding revenues, operating and net profitability are subject to various risks, uncertainties and other factors that could cause IIJ's actual results to differ materially from those contained in any forward-looking statement.