The Japanese Market and KDDI

Characteristics of the Japanese Market

Mobile

As of March 31, 2018, cumulative mobile communications subscriptions in Japan totaled 170.09 million\(^1\), up 4.1% year on year.

The mobile market continues to grow, driven by the spread of smartphones and further advances in the trend of single users owning multiple devices.

There has also been significant growth in the number of service contracts for MVNO\(^2\), up 16.0% from a year earlier to 18.40 million. The MVNO share of the mobile telecommunications market has reached 10.6% (7.4% if limited to SIM card contracts)\(^3\), a ratio that is expected to expand further going forward. The entry of a fourth telecommunications operator is also expected in fall 2019, and Japan’s mobile communications market is approaching a new stage.

Further, in the IoT field for connecting a wide variety of things with the internet, low power wide area (LPWA) specifications have been established to enable wide-area communications with low power consumption using LTE networks, and the use of IoT is ramping up across a variety of product and service fields.

Note that the scale of the overall market created by the advance of IoT is predicted to expand from ¥930 billion in 2017 to ¥4.04 trillion in 2023\(^4\), and expected to become the driving force in mobile communications market expansion going forward.

*1 Source: Official Announcement of Quarterly Data on the Number of Telecommunications Service Subscriptions and Market Shares (FY2017 Q4 (End of March 2018)), Ministry of Internal Affairs and Communications

*2 MVNO: Mobile Virtual Network Operator

*3 Share of MVNO service contracts = Number of MVNO service contracts / number of mobile telecommunications contracts

*4 Source: Prepared by KDDI based on Outlook for ICT and Media Market Scale and Trends through 2023 from Nomura Research Institute, Ltd.

Fixed-Line Broadband

The nationwide FTTH household coverage ratio is more than 90%\(^5\) and “homes passed”\(^6\) is more than 70%\(^7\), indicating that high-speed broadband environments are essentially in place nationwide.

As of March 31, 2018, fixed-line broadband service subscriptions numbered 39.35 million\(^1\), up 1.9% from the previous fiscal year-end.

Although fixed-line broadband service penetration has reached around 70%, the market continues to expand gradually, driven by sales of discount bundled mobile and fixed-line services and the opening of new markets by new operators using the wholesaling fiber access service of NTT East and NTT West.

*5 Source: Information NTT East Japan: Overall Management (2016): Telecommunications Facilities: Access Going Optical. As of March 31, 2017, Nippon Telegraph and Telephone East Corporation (NTT East)’s FTTH household coverage ratio was 95% and Nippon Telegraph and Telephone West Corporation (NTT West)’s was 93% (estimated).

*6 In regions where the installation of CATV facilities is permitted, households in areas where installation of transit routes is complete

Non-Telecommunications Fields

As the domestic telecommunications business begins to shift toward a stage of stable growth, mobile telecommunications companies are working to secure new sources of revenue, utilizing their domestic telecommunications customer bases to more actively engage in a variety of initiatives aimed at expanding revenue in non-telecommunications fields such as commerce.

In addition to carrier billing, which has become a widespread means of online payment supporting that expansion, telecommunications companies are offering their own credit cards as a method of paying for offline services, creating a system for capturing both online and offline revenue. The move to cashless systems is also accelerating with advances in efforts to offer payments using QR codes.

Increase in Mobile Traffic and Frequency Allocated to Each Telecommunications Company

Due to the proliferation of smartphones and tablets, and the increased performance of such devices, along with increasingly diverse mobile content services and evolution of telecommunications technologies, mobile traffic in Japan continues to grow, with both average monthly traffic and peak traffic rising by about 40% in the most recent year.

This has become an important issue for mobile telecommunications companies as they work to efficiently absorb this ongoing increase in mobile traffic and maintain stable network operations.

<table>
<thead>
<tr>
<th>Frequency Band</th>
<th>au</th>
<th>UQ WIMAX</th>
<th>NTT DOCOMO</th>
<th>SoftBank Group</th>
<th>Rakuten</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.5GHz (Band 41)</td>
<td>TD-LTE</td>
<td>40MHz</td>
<td>NEW 80MHz&lt;sup&gt;2&lt;/sup&gt;</td>
<td>NEW 80MHz&lt;sup&gt;2&lt;/sup&gt;</td>
<td>Wireless Capabilities</td>
</tr>
<tr>
<td>2.6GHz (Band 1)</td>
<td>BWA (Advanced WiMAX)</td>
<td>50MHz&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Wireless Capabilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.1GHz (Band 11)</td>
<td>FD-LTE</td>
<td>20MHz&lt;sup&gt;2&lt;/sup&gt;</td>
<td>15MHz&lt;sup&gt;2&lt;/sup&gt;</td>
<td>Wireless Capabilities</td>
<td></td>
</tr>
<tr>
<td>1.5GHz (Band 11/21)</td>
<td>FD-LTE</td>
<td>10MHz</td>
<td>15MHz</td>
<td>Wireless Capabilities</td>
<td></td>
</tr>
<tr>
<td>900MHz (Band 8)</td>
<td>FD-LTE</td>
<td>15MHz&lt;sup&gt;2&lt;/sup&gt;</td>
<td>15MHz&lt;sup&gt;2&lt;/sup&gt;</td>
<td>Wireless Capabilities</td>
<td></td>
</tr>
<tr>
<td>800MHz (Band 18/19/26)</td>
<td>FD-LTE</td>
<td>15MHz&lt;sup&gt;2&lt;/sup&gt;</td>
<td>15MHz&lt;sup&gt;2&lt;/sup&gt;</td>
<td>Wireless Capabilities</td>
<td></td>
</tr>
<tr>
<td>700MHz (Band 28)</td>
<td>FD-LTE</td>
<td>10MHz</td>
<td>10MHz&lt;sup&gt;2&lt;/sup&gt;</td>
<td>Wireless Capabilities</td>
<td></td>
</tr>
</tbody>
</table>

Total Bandwidth:
- 240MHz (au)
- 240MHz (UQ WIMAX)
- 250MHz (NTT DOCOMO)
- 40MHz (SoftBank Group)
- 40MHz (Rakuten)

<sup>1</sup> Currently, a 40MHz section is used for WIMAX 2+ (TD-LTE) and a 10MHz section is used for WIMAX.
<sup>2</sup> Newly allocated by the Ministry of Internal Affairs and Communications on April 9, 2018
<sup>3</sup> Of this 80MHz, 40MHz was newly allocated by the Ministry of Internal Affairs and Communications on April 9, 2018
<sup>4</sup> Only in Tokyo, Nagoya, and Osaka
<sup>5</sup> Partly including 3G
The Japanese Market and KDDI

KDDI’s Domestic Status

Integration of Telecommunications and Life Design

KDDI CORPORATION was established in October 2000 through the merger of DDI, KDD and IDO, and has continued to expand its base as a comprehensive telecommunications company with both mobile and fixed-line operations. While the business has continued to grow with the expansion of the domestic mobile communications market and widespread popularity of smartphones, growth in the domestic telecommunications business, once a key driver, has slowed, and KDDI is working to establish new sources of growth.

Specifically, we are advancing efforts to propose new experience value to customers through the “integration of telecommunications and life design,” building concentric rings of life design services such as commerce, finance, energy, entertainment, and education around the core of our telecommunications business and customer base.

In our global business, we are working toward sustainable growth both inside and outside Japan, through our consumer business in Myanmar and Mongolia, and through expansion of our data center business under the TELEHOUSE brand.

KDDI’s Goal for the “Integration of Telecommunications and Life Design”

<table>
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<tr>
<th>October 2000 Started through the merger of three companies</th>
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<td>Mobile + Fixed-line communications</td>
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- **Share of Mobile Communications Subscriptions** *(As of March 31, 2018)*
  - SoftBank: 23.6%
  - NTT DOCOMO: 45.3%
  - KDDI (au): 31.0%

- **Share of FTTH Subscriptions** *(As of March 31, 2018)*
  - Other: 10.4%
  - Electric power utilities: 8.9%
  - KDDI*: 12.0%
  - NTT EAST: 37.9%
  - 30 million

- **Share of Pay Multi-Channel CATV Subscriptions** *(As of March 31, 2018)*
  - Other: 39.2%
  - J-COM: 51.7%
  - TOKAI: 3.0%
  - CNCI: 6.1%
  - 7.30 million

Source: Prepared by KDDI based on Telecommunications Carriers Association’s data
1 Share among NTT DOCOMO, INC. (NTT DOCOMO), SoftBank Corp. (SoftBank), and KDDI + Okinawa Cellular Telephone Company (au)
2 Source: Prepared by KDDI based on Ministry of Internal Affairs and Communication’s data
2 KDDI + ctc + Okinawa Cellular Telephone Company + BIGLOBE

Source: Prepared by KDDI based on Hoso Journal (July 2018 issue)
Principal Businesses of the KDDI Group

● Mobile
As of March 31, 2018, au mobile subscriptions numbered 52.28 million, up 7.7% year on year and accounting for a 31.0% (+1.2 percentage point) share of the mobile market coverage by Japan's three major carriers.

Of this figure, in the Personal Services segment, which provides services for individual customers, au smartphone penetration*3 has risen to 66.0%.

In addition, new price plans offered beginning in July 2017 contributed to reducing churn, and as of March 31, 2018, au mobile subscriptions*4 numbered 24.69 million. Meanwhile, the number of contracts to the MVNO provided by a consolidated subsidiary has increased by 910,000 over the previous year to 1.77 million contracts, increasing the number of “mobile IDs” (the total of au account and MVNO subscriptions) by 1.8% year on year to 26.46 million.

● Fixed-Line Broadband
As of March 31, 2018, the cumulative number of FTTH subscriptions stood at 4.38 million, up 5.8% year on year and accounting for a market share of 12.9%. In CATV services, the number of RGU households as of March 31, 2018 increased steadily to 5.38 million, up 1.8% year on year.

By cross-selling FTTH and CATV services to the au customer base, we expect the KDDI Group customer base to continue growing stronger and expanding.

● Non-Telecommunications Field
KDDI is aiming to establish a new source of growth in the non-telecommunications field by maximizing the “au Economic Zone.”

The “au Economic Zone” comprises commerce, finance, energy, entertainment and education and other services.

The amount of these services used, along with the total payments made through means provided by KDDI (“au Carrier Billing” and “au WALLET”) together amount to total transaction volumes in the “au Economic Zone.”

Approximately 30% of that total is recorded as “au Economic Zone” sales.