

## **IT Solution Market for Social Infrastructure: Key Research Findings 2017**

### ◆ Research Outline

**Yano Research Institute has conducted a study on the domestic IT solution market for social infrastructure with the following conditions:**

1. Research period: From May to September, 2017
2. Research targets: Public offices (MLIT, METI, MIAC and etc.,) local governments, public institutions (AIST, PWRI, NILIM, other industrial organizations,) providers of IT solutions/SIers, telecommunication carriers, construction businesses, heavy electric machinery manufacturers, construction consultants, etc.
3. Research methodologies: Special literature research by the experts, face-to-face interviews, surveys via telephone, and general literature research

#### **What is the IT Solution Market for Social Infrastructure?**

IT solution market for social infrastructure in this research indicates the IT business needed to be introduced to the social infrastructure related to the following: Transportation (streets/traffic control, railways, ports, and airports), Water (water & sewage, purification plants, and effluent treatment), Rivers/dams (river management, control of soil erosion) and Disaster prevention/firefighting/police. The market size includes hardware, software, engineering works (electric installation, communication equipment), SI, consulting, network usage fees, service support, maintenance support, and dispatching of personnel, which are calculated based on the price ordered by the infrastructure operators (i.e., the government, local governments, highway businesses, railway businesses, etc.)

### ◆ Key Findings

#### ■ **IT Solution Market for Social Infrastructure in FY2016 Ended Up With 598.6 Billion Yen, Down by 3.2% on Y-o-Y Basis**

The domestic IT solution market for social infrastructure in FY2016 has decreased by 3.2% on year-over-year basis to reach 598.6 billion yen, based on the prices ordered by the infrastructure operators. While IT solutions have been increasingly adopted in such categories as railways and airports, introduction in roads/streets, disaster prevention, and police-related infrastructure has dropped significantly. This has brought about stagnancy to some extent in the market as a whole.

#### ■ **Domestic IT Solution Market for Social Infrastructure Projected to Decrease, Reaching 572.0 Billion Yen by FY2022**

Development of IT solutions for social infrastructure has been making progress to achieve the next-generation IT for social infrastructure that utilizes IoT, sensor systems, cloud, or/and AI. Such next-generation IT for social infrastructure is likely to be widely accepted to replace the conventional social infrastructure IT technologies. In that case, the higher cost effect by the next-generation IT for social infrastructure is regarded to suppress IT investment cost. In this regard, the market is expected to be on the decline to reach 572.0 billion yen by FY2022 based on the prices ordered by the infrastructure operators.

■ **Next-Generation IT Solutions for Social Infrastructure Utilizing IoT, Sensor Systems, Cloud, and AI Projected to be Introduced More in Future**

In the future market of IT solutions for social infrastructure, next-generation IT for social infrastructure is projected to be introduced more in the future to attain smart social infrastructure. Such IT solutions that are noteworthy include those for IT monitoring, diagnostic support system to discern aging, and preventive maintenance/failure prediction, each of which are either in the study phase or validation phase.

◆ **Report Format:**

Published Report: “ICT Market for Social Infrastructure 2017”

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Language: Japanese

Format: 234 pages in A4 format

Price: 180,000 yen (The consumption tax shall additionally be charged for the sales in Japan.)

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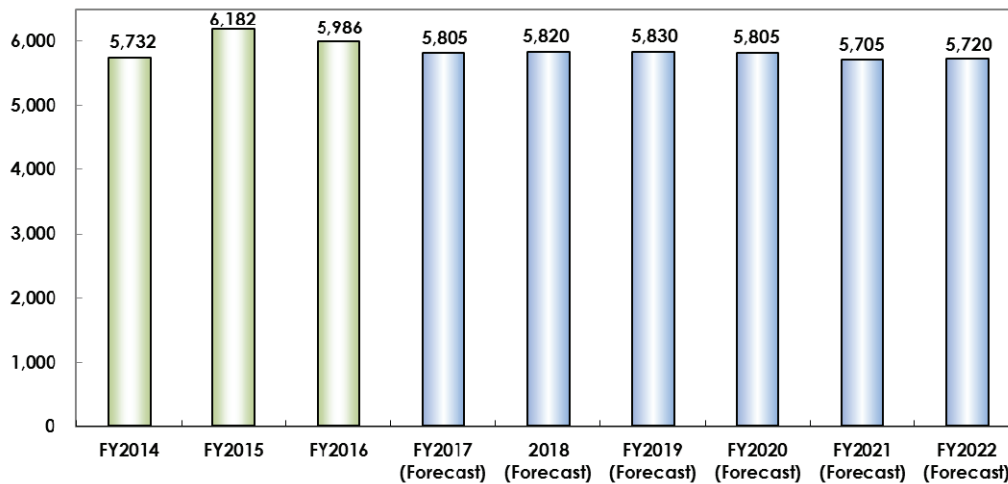
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■ **Figure & Table 1: Transition and Forecast of Market Size of Domestic IT Solution for Social Infrastructure**

(Hundred Million Yen)



(Unit: Hundred Million Yen)

Fiscal Year	FY2014	FY2015	FY2016	FY2017 (Forecast)	2018 (Forecast)	FY2019 (Forecast)	FY2020 (Forecast)	FY2021 (Forecast)	FY2022 (Forecast)
Market Size	5,732	6,182	5,986	5,805	5,820	5,830	5,805	5,705	5,720
Y-o-Y Comparison	-	107.9%	96.8%	97.0%	100.3%	100.2%	99.6%	98.3%	100.3%

Estimated by Yano Research Institute

Notes:

1. The market size is based on the prices ordered at the infrastructure operators.
2. The figures for 2017 and beyond are forecast figures.
3. The market size includes hardware, software, engineering works (electric installation, communication equipment), SI, consulting, network usage fees, service support, maintenance support, and dispatching of personnel.

**■ Table 2: Case Study of Adoption of Next-Generation IT Solutions for Social Infrastructure**

Noteworthy Topics	Social Infrastructure Where IT Solutions being Introduced	Overview
IT Monitoring	Bridges/Tunnels	NEXCO Group has pressed ahead with SMH (Smart Maintenance Highway) Project, which aims to reduce cost and simplify the processes, and is currently in a validation phase.
	Disaster Prevention/Reduction	In order to monitor slopes, underpasses, and other locations in danger of collapse, some local governments have introduced IoT-based IT monitoring. Some of such monitoring have already put into use, practically.
	Water-supply related	The system monitors infrastructure such as water pipes to discern and diagnose the level of aging. This helps to save manpower and increase efficiency. Currently in a validation phase.
Diagnostic Support System to Discern Aging (Analysis/AI)	General Structure of Infrastructure	The system aims to diagnose aged infrastructure and to increase efficiency in screening by using image analysis technologies (AI). Currently in a validation phase.
Preventive Maintenance/Failure Prediction (Big Data, Analysis/AI)	General Structure of Infrastructure	The system that repairs where needed in advance by always monitoring infrastructural facilities using IT monitoring and data analysis/AI in order to protect the users from disasters, accidents, aging, and other risks. Currently in a study phase.
	Railways	By installing sensors/IT monitoring in passenger cars, the system detects failure of devices and parts at an early stage. Currently in a study phase.
		The system measures power that stresses at wheels aiming to detect and foresee failure of train bogies or line abnormality of railways. Currently in a study phase.

Created by Yano Research Institute

References:

- Failure Prediction in Japan: Key Research Findings 2017, released on August 30, 2017
- M2M Market in Japan: Key Research Findings 2017, released on April 10, 2017
- Potential of Next Generation Monitoring in Japan: Key Research Findings 2016, released on December 12, 2016