

Hitachi IR Day 2016

June 1, 2016

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- **2. Business Overview**
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"Urban Solutions Business Unit" contributes to solving business issues and increasing the value of business operators in urban field.

# Established "Urban Solutions Business Unit"

- Aimed at Expanding service businesses that accelerate the Social Innovation Business in urban fields: real estate, stations & cities and life & social infrastructure.

Contributing to solving issues and increasing the values of business operators using digital technologies

- Using digital technologies including the urban service platform ("Lumada") to promote the service businesses that contribute to solving business issues and increasing the values of business operators in urban field through collaborating with partners.
- Developing into a total solution provider of the Hitachi Group's products and services
  - Starting as a service provider for operators in urban field, Urban Solutions Business Unit will integrate multiple solutions and provide them as a total solution, and develop into a business that increases the values of business operators.



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# 2. Business Overview

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Contributing to solving issues and increasing the values of the services provided to end users by business operators in urban field.



In April 2016, the "Urban Solutions Business Unit" was established under the "Social Innovation Business Division", which is in charge of developing businesses for accelerating social innovations through collaborative creation with customers.

O&M: Operation & Maintenance



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# **3-1. Market Environment:** New Trends in urban field

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Acceleration of urbanization in both developed and emerging countries Growth of market of IoT, which realizes safety, security, comfort, and low cost demanded by users.

### Forecast of the world IoT market (Hardware)



Graph created by Hitachi Ltd. based on Gartner research

Estimates of real estate related fields (US B\$)

eal fields 159

Expectations for IoT

are high due to:

Building owners' needs for cost reduction and increase of real estate values
End users' needs for high value-added services

IoT: Internet of Things

Disclaimer of graph numeric : The Gartner Report(s) described herein, (the "Gartner Report(s)") represent(s) research opinion or viewpoints published, as part of a syndicated subscription service, by Gartner, Inc. ("Gartner"), and are not representations of fact. Each Gartner Report speaks as of its original publication date (and not as of the date of this Prospectus) and the opinions expressed in the Gartner Report(s) © Hitachi, Ltd. 2016. All rights reserved. are subject to change without notice.

# **3-2. Market Environment: Situations of Business Operators in Urban-Related Fields**

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Business operators in urban-related fields are facing fierce competition and are therefore studying effective measures to cope with the situation with service improvement.

#### Situations of business operators



Source: IR information from each company

EBIT: Earnings Before Interest and Taxes

Needs and issues of operators of each business

#### Facility management business operators

- Improve the efficiency of asset management, etc.
- Avoid service outage caused by breakdown
- Reduce maintenance and management costs

#### Transport business operators

- Attract customers to in-station shopping areas and areas around the station
- Improve the convenience and safety of station users
- Reduce maintenance and management costs

#### Real estate business operators

- Improve the earning rate by improving real estate values
- Retain contracts with tenants who remain stable in the long term
- Reduce management costs



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# 4-1. Business Strategy



AI: Artificial Intelligence

# 4-2. Priority Strategy: Services to Provide in the Three Fields of Focus

Through collaborative creation with customers, we will provide our partners with digital solutions that will help to increase the value of each business operator in the fields of real estate, stations & cities, and life & social infrastructure.

#### Real estate field

Collaborative creation of services that realize safe, secure, comfortable offices



#### **Building districts**

- LCC optimization services
- Predictive failure diagnosis
- Repair plan optimization
- Equipment operation optimization
- New services for building owners
- Improvement of tenant productivity
- Providing the advanced Information services for building users

# Station and city field

Collaborative creation of services that respond to the needs of users of stations & cities

#### Areas around stations

- User-oriented services
  - Reducing congestion in crowded stations
  - Attracting customers to commercial facilities
  - Multimodal
- Services for optimizing stations' LCC
  - Energy optimization
  - Optimization of maintenance and management

# Life and social infrastructure field

Collaborative creation of services that optimize the operation of cities and improve the level of resident satisfaction



#### **Residential districts**

- Urban infrastructure O&M services
  - Area energy optimization
  - Optimization of infrastructure maintenance cost
- Urban enhancement services
  - Local payment
  - Hospitality improvement

#### Urban service platform (Use of Lumada)

# 4-3. Priority Strategy: Real Estate Field



# Thoroughly analyzing big data collected via IoT $\rightarrow$ Maximize the values of real estate



PAC: Package Air Conditioner UPS: Uninterruptible Power Supply

# 4-4. Priority Strategy: Station and City Field

#### Maximizing movement of people and visualizing & navigating the lean operation of city resources by means of IoT → Maximize the values of the area

# Needs and issues

- Reducing congestion
- •Revitalizing the in-station shopping area and the area around the station
- •Improving the convenience of station users
- •Enriching payment services



#### •Example of Solutions Reducing congestion Attracting customers in the station to commercial facilities Reducing congestion by Attracting customers to shops and stores by guiding checking the passenger athem based on passenger flow and guiding flow analysis and linking passengers based on between payment operation data analysis infrastructures, etc. Human behavior Operation analysis Urban service platform (Use of Lumada) (Railway and transport data + Human behavior data) x Big data analysis Transport Energy connection **Energy optimization Multimodal** Controlling and optimizing Creating flows of people energy commonly in the from the station to the station and station town by linking between building in accordance the station, public with conditions such as the movement of people transport, and the last mile 13 © Hitachi, Ltd. 2016. All rights reserved.

# **4-5. Priority Strategy:** Life and Social Infrastructure Field

Visualizing the improvement of the convenience of life and industrial revitalization by making use of IoT → Maximize the values of the local area

### Needs and issues

- Realizing an efficient, comfortable cities
- Benefiting from demand from inbound tourists

people

- Revitalizing local industries
- Cost reductions that support the local communities

............

Social infrastructure

# Example of Solutions



# **4-6.** Priority Strategy: "Total Solutions" in urban field



Developing into a total solution provider of the Hitachi Group's products and services for urban field.

#### Buildings

Control elevator operation based on crowd flow

Improvement of tenant productivity

- Record
  - Building/elevator management (Japan)
  - Human behavior analysis(Japan)
  - Energy-saving services (Asia)

#### Railway, Mobility

Flexible operation diagram in response to change in passengers

Minimize the impact of traffic congestion.

 Traffic control of railway (Japan) Record Traffic amount analysis (Vietnam) Crowd flow analysis (Japan)

#### City, Developers

Select store locations that Contribute to increased sales

Ensure the high-level security

- Record Store operation utilizing AI (Japan)
  - Video surveillance (U.S.)

 Area energy management (Japan)

#### Local governments, **Financial**

Area energy supply and disaster prevention

Settlement by digital network

- Smart grid (Hawaii) Record
  - Total disaster prevention system (Japan)
  - Settlement solution (India)

# 4-7. Priority Strategy: Target Markets



Expand the business by partnership with local partners in the markets of Japan, Asia, and North America & Europe.



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#### **5. Business Performance Trends**

# 5. Business Performance Trends: Sales orders goal

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# Developing into a total solution provider of the Hitachi Group's products and services.



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