Toshiba's Smart Community Initiatives and Strategies for Growth

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President and CEO

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TOSHIBA CORPORATION

Notes

- This presentation contains forward looking statements concerning future plans, strategies and the performance of Toshiba.

- These statements are based on Toshiba's assumptions and beliefs in light of information currently available.

- Furthermore, they are subject to a number of risks and uncertainties (including but not limited to changes in economic trends, intensive competition in the electronics industry, market demand, exchange rate fluctuations, taxation systems and other factors). Toshiba therefore wishes to caution readers that actual results might differ materially from our expectations.

- **Mega-trends Forming the Near-future and the Smart Community Business**

- **Toshiba's Total Solutions for Realizing Smart Communities**

- **Toshiba's Approach to the Smart Community Business**

- **Global Business Structure**

- **Towards Town Planning for the Future**

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Mega-trends Forming the Near-future and the Smart Community Business

Toshiba's Total Solutions for Realizing Smart Communities

Toshiba's Approach to the Smart Community Business
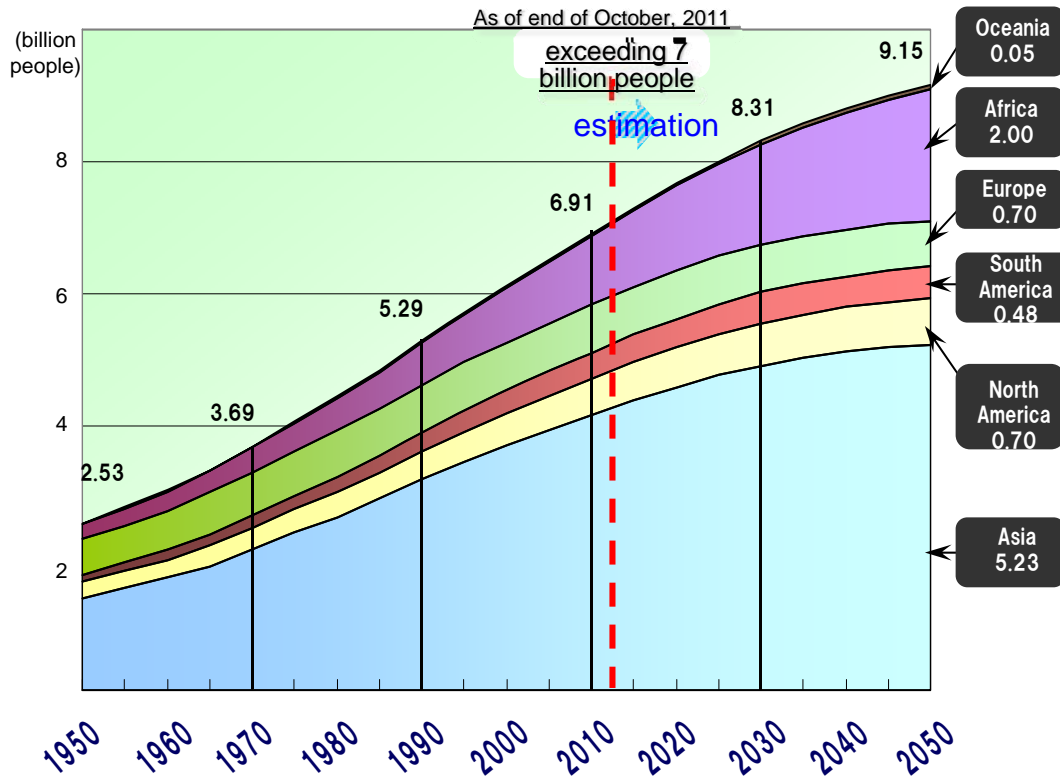
Global Business Structure

Towards Town Planning for the Future

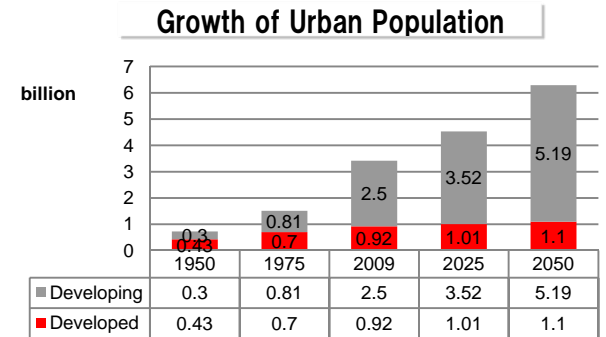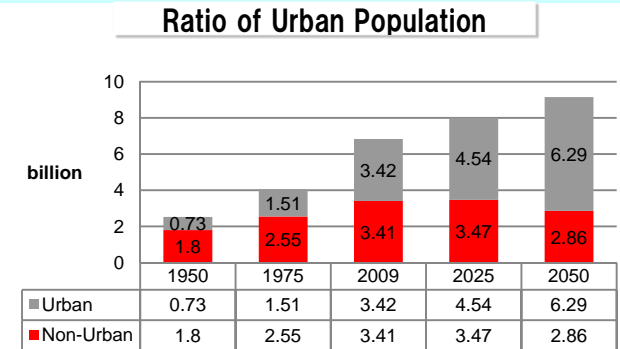# Mega-trends Change Business Conditions: Population Problems

An escalating problem of urban concentration due to rapid increases
in the world's population, centering on emerging economies

The global population is expected to grow about
1.5 times by 2050, with most growth in the newly
emerging economies of Africa and Asia.

- Emerging economies: energy and
  environmental problems from rapid population
  influx us to urban areas
- Developed Countries: Aging population, need
  for enhanced welfare, Stuck at high levels of
  per capita energy consumption

(billion people)

As of end of October, 2011

exceeding 7 billion people

estimation

9.15

8.31

6.91

5.29

3.69

2.53

Region	billion
Oceania	0.05
Africa	2.00
Europe	0.70
South America	0.48
North America	0.70
Asia	5.23

1950 1960 1970 1980 1990 2000 2010 2020 2030 2040 2050

Source: UN, World Population ProspectsThe 2008 Revision.

Ratio of Urban Population

billion

	1950	1975	2009	2025	2050
Urban	0.73	1.51	3.42	4.54	6.29
Non-Urban	1.8	2.55	3.41	3.47	2.86

Growth of Urban Population

billion

	1950	1975	2009	2025	2050
Developing	0.3	0.81	2.5	3.52	5.19
Developed	0.43	0.7	0.92	1.01	1.1

Source: UN and World Urbanization Prospects The 2009 Revision.

Mega-trends Change Business Conditions: Energy Problems

Increasing energy demand → resource shortages and price rises

19   20
欧州(OECD)   ロシア他(非OECD)
5.2 11.1
中東   41   73   28   32   北米
6.1 8.6
アジア   8.6
アフリカ   中南米

億トン(石油換算)
世界全体
117 → 170   1.5倍
200
150
100
50
0
2006   2030

国際エネルギー機関（IEA）レファレンスケース
出典：OECD/IEA World Energy Outlook 2008

Increasing carbon-dioxide emissions → global warming

（二酸化炭素　百万トン）
40,000
30,000
20,000
10,000
0
Carbon-dioxide millions t
10%
47%
43%
17%
15%
69%
71   00   10   20   30 (年)   year
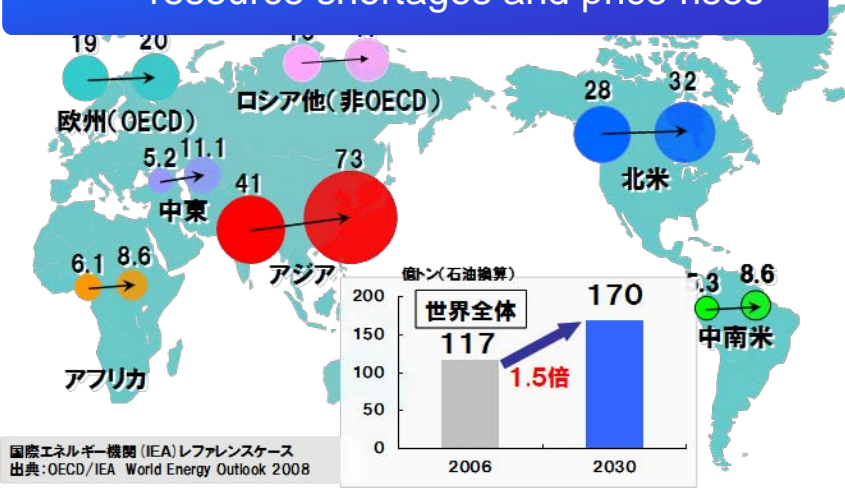
Rise of resource nationalism, generating the issue of a gap between resource-rich and resource-poor countries
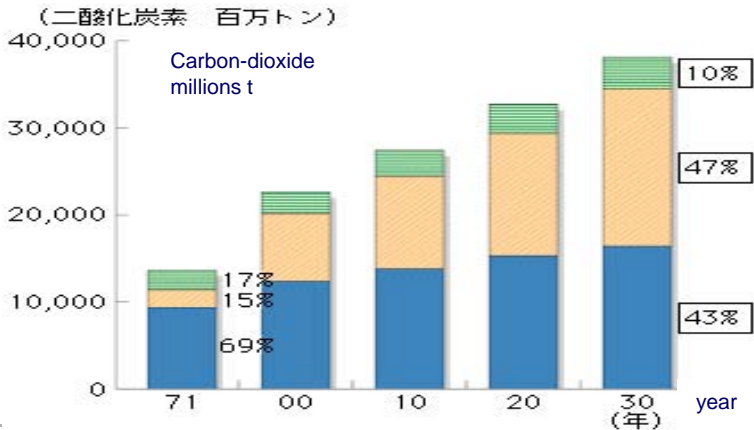
Huge influence on the world economy and corporate activity

Strengthening of regulations against global warming; more frequent unseasonable weather and natural disasters

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Mega-Trends Changing the World
- Global Issues and Solutions -

Economic Globalization	Emerging Economies	Developed Countries

Instant Communication

Mega Competition

Upsurge in Population
Urbanization
Traffic Jams

Life-quality Improvement

Aging Society with Low Birthrate

Expansion of Internet Community

Expansion of Commodity Markets

Industrial Growth
Changes in Diet

Water Shortages

Price rise In Medical Care

Shortages of Resources
Jumps in Resource Prices

Food Scarcity

Digital Convergence

Increase of Cyberterrorism

Increased Energy Demand

Medical Care For Aging

Global warming

Build Secure Information Infrastructure

Use of sustainable energy/resources

Vital needs support & healthcare *1

"Smart Community" provides solutions

*1 Vital Needs Support & Healthcare: Services to support vital elements such as water, air, food, and enhanced care for aged population and contribution to betterment of health

Global Smart Community Mega-Market and Business Scale

Global market in 2015 estimate: approx. 163 trillion yen*

Europe: 41 trillion yen — 55, 59

China: 57 trillion yen — 52, 36, 64

Middle East: 7 trillion yen — 3

Japan: 5 trillion yen — 1, 15, 20

North America: 35 trillion yen — 4, 37, 75

Central and South America: 4 trillion yen — 3, 2

Africa: 3 trillion yen — 1, 2

India: 4 trillion yen — 5, 8, 7

Asia Oceania: 7 trillion yen — 8, 1, 15

- Smart grid (incl. renewable) 217 projects
- Smart community (redeveloped) 195 projects
- Smart community (new) 73 projects

- Circle size: market scale
- Number: project count

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FY2015 Sales Target: 900 billion yen

**Target market share in 2015:
8 trillion yen*
(5% of 163 trillion yen)**

⬇

**Sales Target (FY2015)
900 billion yen**

⬆

	Market (400 projects)	Toshiba (20 projects)
Commercial level	40 projects (10%)	8 projects (20%*)
FS and Experimental	260 projects (65%)	8 projects (3%*)
Investigation stage	100 projects (25%)	4 projects (4%*)

Sales targets by market

Japan: 37%	Outside of Japan: 63%	
	Developed countries: 34%	Emerging Economies: 29%

*Developed: North America 16; Europe 18
*Emerging: China 12; Asia 12 ;
            Middle East and Africa 2; others (3)

Sales Target by solutions

ICT and cloud: 12%

Smart grid Landis+Gyr: 33%

Smart facilities: 52%
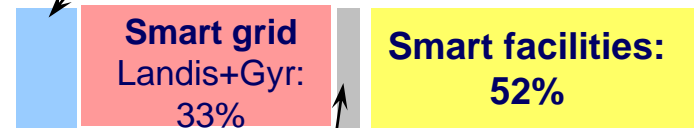
Smart transportation: 2%

Extensive experience and high market share in commercial level feasibility studies and experimental projects → moving steadily towards achieving target for FY2015

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Toshiba's Smart Community Concept

Achieve a balance between the Comfort of the "individual" and a sustainable "community"

- Heating Solutions
- Electric Solutions
- Factory Solutions
- Building Solutions
- Water Solutions
- Home Solutions
- Transport Solutions
- Store Solutions
- Contents Solutions
- Medical Solutions

Map labels: Rapid t between, Station, Sewer plant, Resource recycling plant, Desalination plant, Commercial area, Digital Signage, High-speed vehicle lane, Residential district, Substation, Co-gen, Electric power storage center, Mega solar, Photovoltaics, Eco-truck, Transmission network, Factory district, Physical distribution terminal, Commercial district, Waterworks, Residential district, ITS system, EV charge stand, Apartments, Hospital, City office, University, Hotel, Business district, Demand-activated bus i

BEMS, CEMS, HEMS, FEMS

Social Infrastructure Cloud Services

Fusion of social infrastructure technologies and
ICT to process huge volume of data

Toshiba social
infrastructure cloud

analysis engine, optimization engine

ICT

Application

Electricity   Water   Transport   Medical   Buildings and residences

Large size
Distribution
Real time DB
(Hundreds PB(s) -
some EB)

Extensive
Distributed
Data
Processing
(Several Gbps)

Security

Integration service bus

Control technology

BEMS

Energy-saving air-conditioning control

HEMS

EV charge and discharge

Water and Sewage

Optimal operation

Transport

ATO

Medical   **Retail**

Sensing technology

Sensor to detect people

Smart meter

MP radar rain gauge

DSRC, ITS

CT, MRI

Cart POS

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Cloud Services for Energy

Regional energy management in cooperation with main grid

Nuclear power

Thermal power

Hydro power

Wind power

Mega-solar

EMS

Central power supply control center

Large capacity storage battery

CEMS

CEMS

CEMS Regional energy management

PV and storage batteries support regional flexibility

FEMS

BEMS

BEMS

BEMS

HEMS
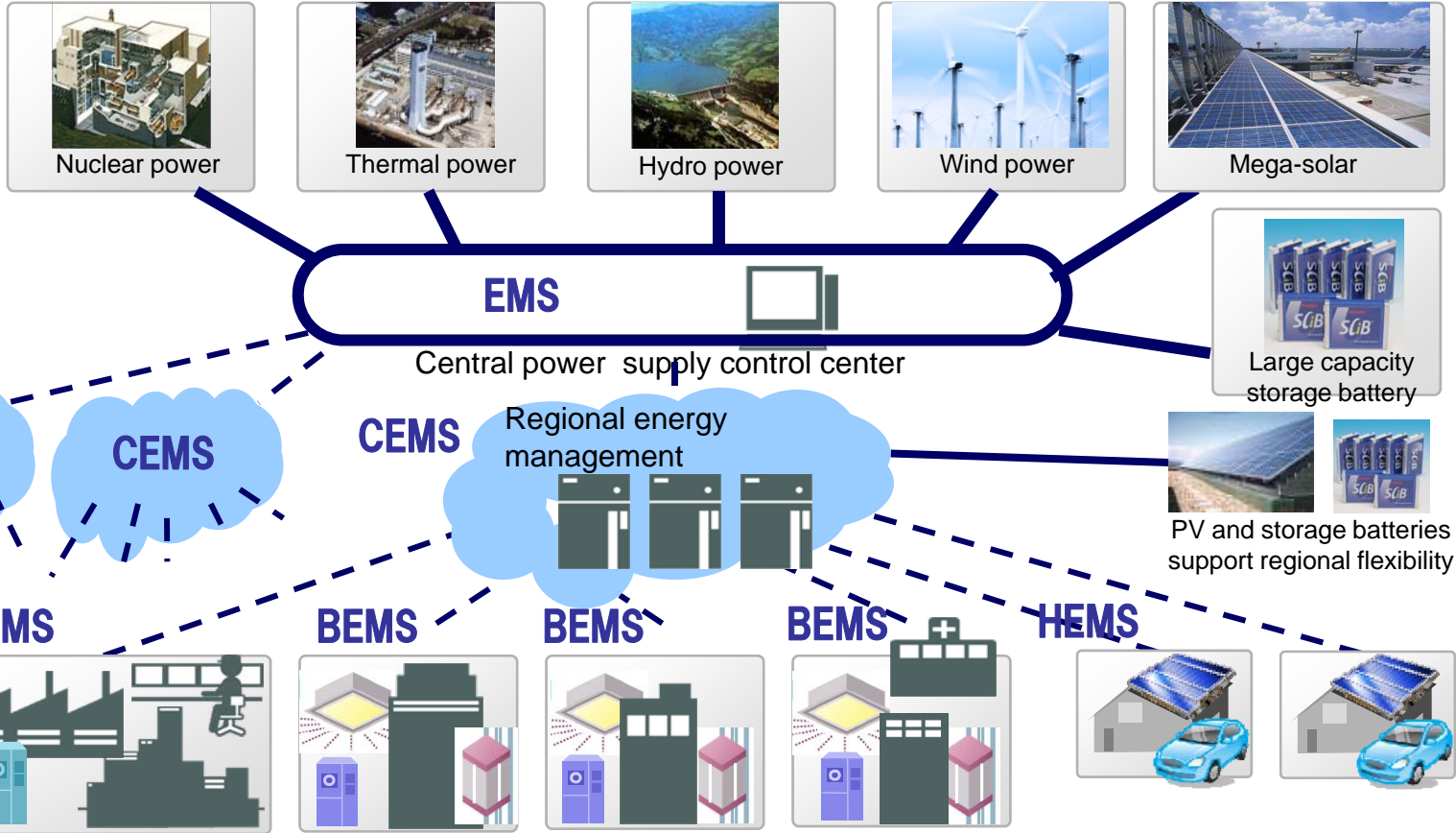
- Stabilization of renewable energy supply lowers power cost
- Response to demand system saves energy and boosts regional efficiency

Disaster-prevention cloud services at regional level

High level disaster-prevention solution by collaborative regional information

Regional disaster-prevention cloud

Traffic control, guidance

Damage forecast by high definition GPS

MP radar hyetometer

Disaster prevention Office

Laser shoot

Class B river

Weather Bureau

River office

CCTV camera

Flood alarm

Rain guage

Local broadcasting stations

Person involved

Pumping station

Community medical collaboration

Pumping station

Inflow forecast

Evacuation guidance for citizens

Class A river

Water height projection

Hospital

Prefectural Government

Sewage plant

Person involved

Real time situation assessment and cooperation in the region contributes to reduce damage

Medical Cloud Services
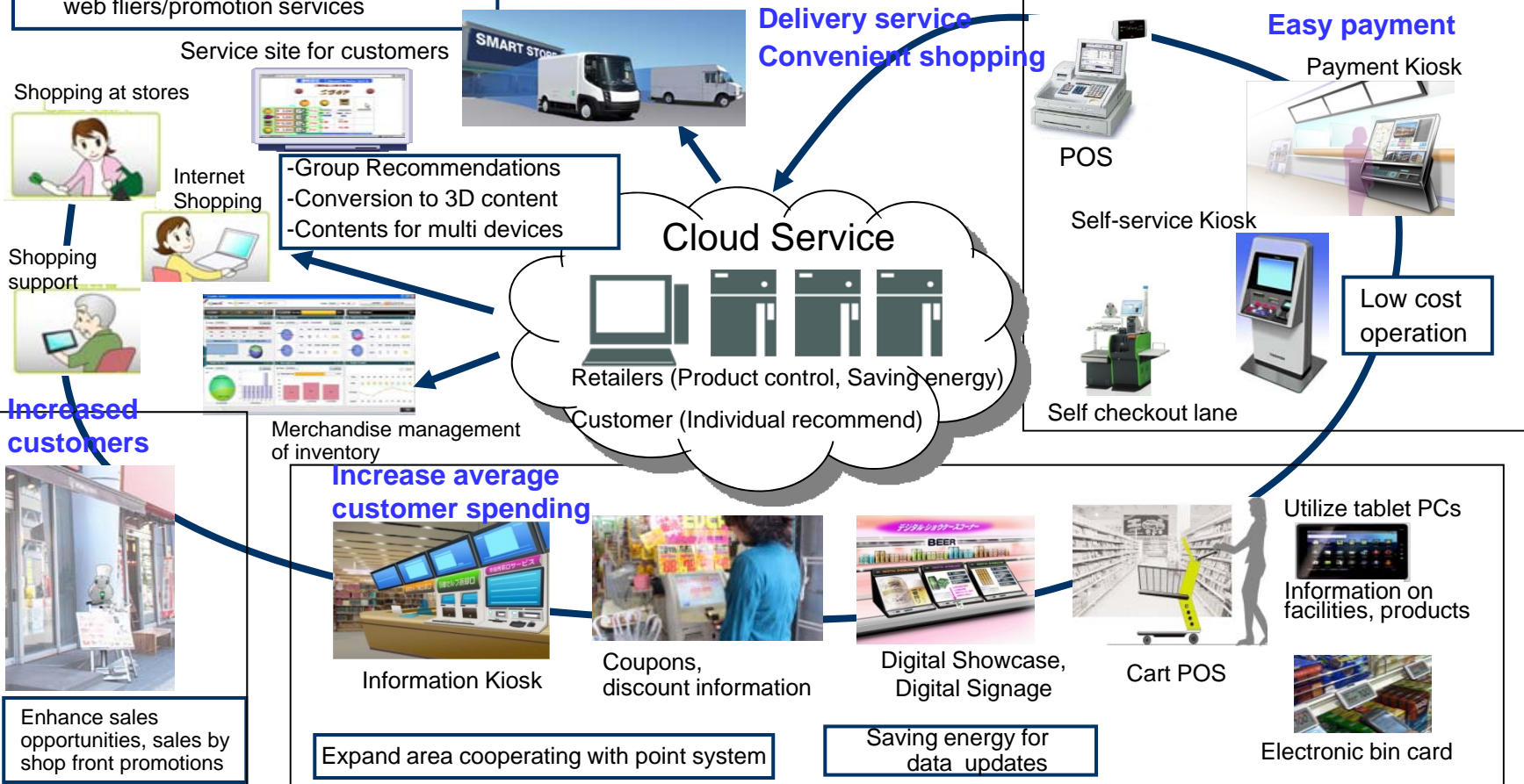
Community medical care network for an aging society

Hospital

Healthcare accounting POS

Electronic bin card system

421

421

Diagnostic equipment

Community medicine Network

Cloud service

Specialist hospital

Hospital

Heavy ion radiotherapy center

Code 6

Code 1

Pathology report analysis, accounts analysis

Residence

ECHONET

-Data sharing and central storage
-Patient data management and preventive medicine
- Early treatment at clinic

Code 5

Code 4

Pharmacy

Label Printer

Code 2

Local clinic

Health care accounting POS

Code 3

-Medical examination center
-Healthcare administration center

Direct coding for Cloud that requires no decoding (re-encoding technology)

Health care accounting POS

Strengthening local clinic functions improves medical care for the overall community

Cloud Services for Retailers: In-store purchases

Cloud solutions for retailers that realize smart shopping

Internet storage, payment service
personal data, transaction data on cloud,
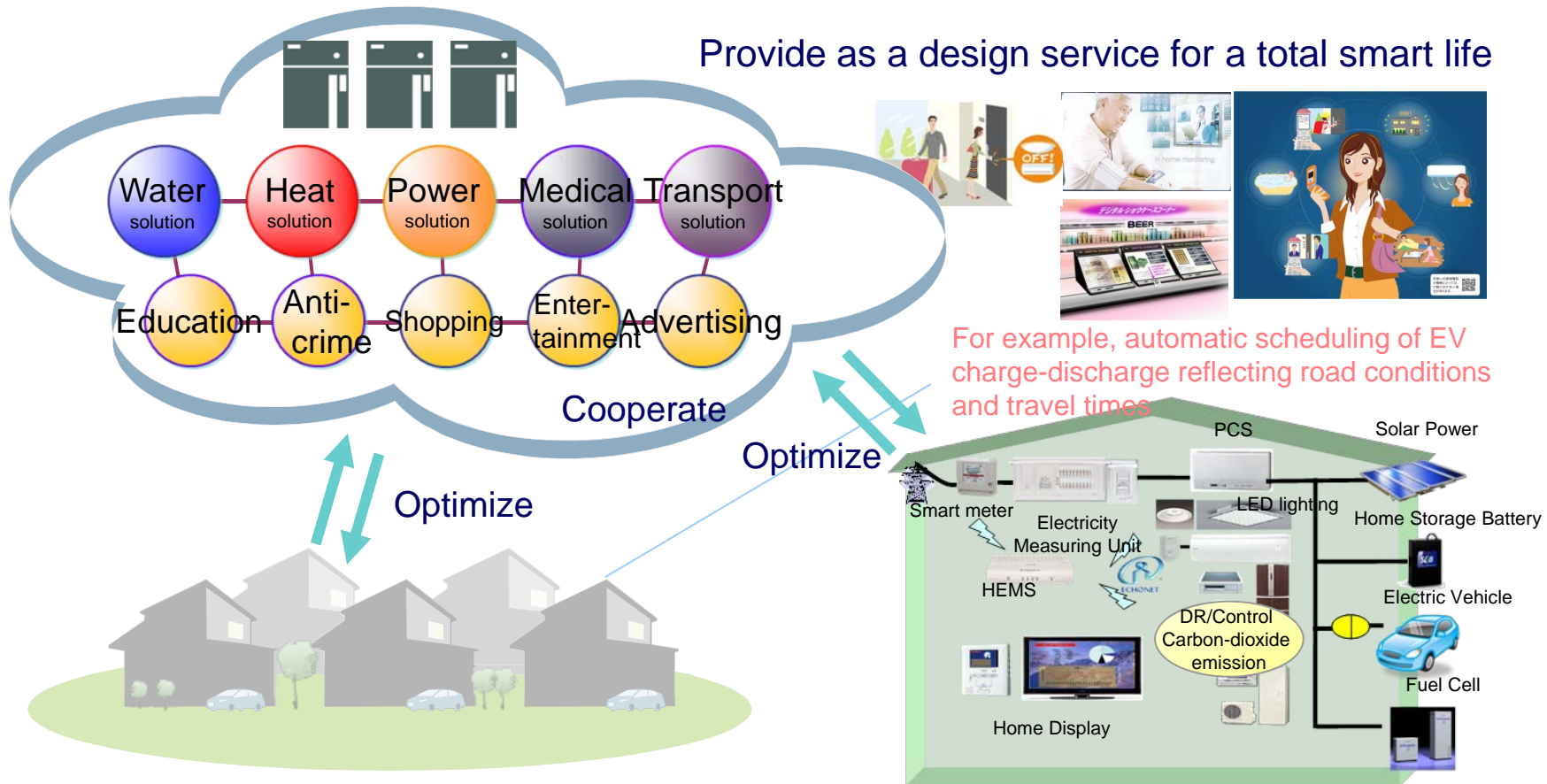web fliers/promotion services

Solutions services centered on Kiosks and digital signage

Service site for customers

Delivery service
Convenient shopping

Easy payment

Payment Kiosk

Shopping at stores

POS

Internet
Shopping

-Group Recommendations
-Conversion to 3D content
-Contents for multi devices

Self-service Kiosk

Shopping
support

Cloud Service

Low cost
operation

Increased
customers

Retailers (Product control, Saving energy)

Self checkout lane

Customer (Individual recommend)

Merchandise management
of inventory

Increase average
customer spending

Utilize tablet PCs

Information on
facilities, products

Enhance sales
opportunities, sales by
shop front promotions

Information Kiosk

Coupons,
discount information

Digital Showcase,
Digital Signage

Cart POS

Electronic bin card

Expand area cooperating with point system

Saving energy for
data updates

Promote comfortable living with various devices and professional system integration

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Cloud Services for the Home

Provide users with multiple optimized services

Provide as a design service for a total smart life

Water solution · Heat solution · Power solution · Medical solution · Transport solution

Education · Anti-crime · Shopping · Enter-tainment · Advertising

Cooperate

Optimize

Optimize

Optimize

For example, automatic scheduling of EV charge-discharge reflecting road conditions and travel times

PCS · Solar Power · Smart meter · Electricity Measuring Unit · LED lighting · Home Storage Battery · HEMS · Electric Vehicle · DR/Control Carbon-dioxide emission · Fuel Cell · Home Display

Realize Home + EV total management:
Visualize (power saving10%), DR(peak-shift 5-10%), charge and discharge of EV

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Experimental and Commercial Smart Community

Over 20 projects worldwide, expanding smart community by each region's problems

England
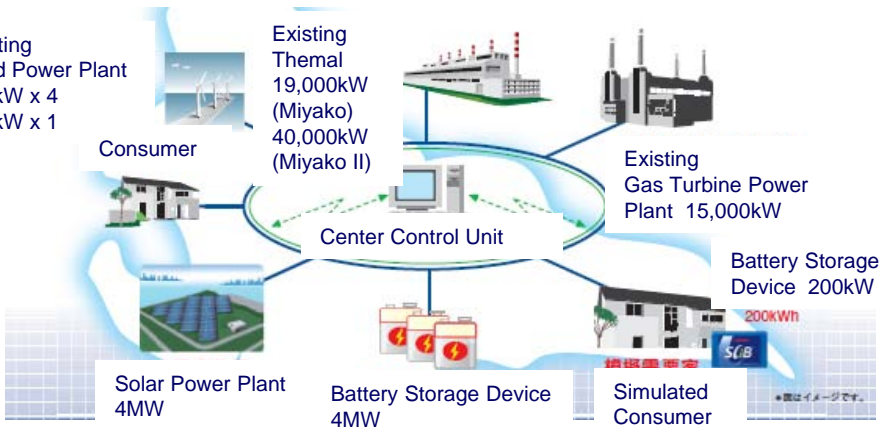○ Smart home for Bristol city EU_PJ
①PJ for Isle of Wight

Central-Eastern Europe(Bulgaria)
①Smart community business study PJ

Tianjin, China
③Tenshin Eco city PJ ★

Shaanxi , China
②Smart community technical demonstration project

[Project status]
★ :Commercial 4
None: FS, Experiment 12
:Investigate stage 4

Indiana, USA
①Energy Systems Network PJ ★

Lyon, France
②Smart community demonstration project

Earthquake disaster reconstruction PJ

Kawasaki
②Open collaborative research of environment technology by industry, academic, government
②Kawasaki station area PJ

New Mexico , USA
①Japan-US Smartgrid demonstration project

Italy
②Genova , Smart city Promotion plan
① Win smart grid for ACEA Distribuzione S.p.A, Rome *

Yokohama
②Yokohama smart city PJ (YSCP)

Ibaraki
③Ibaraki city smart community PJ

Haryana state, India
Delhi-Mumbai Industrial Corridor
②Manesar PJ ②Haryana PJ

Malaysia
②Green township concept

Miyakojima
①New Energy System on Miyakojima PJ
①Miyakojima whole island EMS
①Miyakojima Kurimajima PJ
★

① : Smart grid type (incl. renewable energy) : 8

② : Smart Community (Re-development): 9

③ : Smart Community (New Development) : 2

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* Acceptance of order by Ansaldo Trasmissione & Distribuzione S.p.A

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Example 1
Installation of New Energy System on Miyakojima, a Remote Island

> Realize balance between installing large-scale renewable energy sources and stabilizing power supply
> (PV 4MW, Wind 4.2MW; approx. 15% of maximum demand)

Existing Wind Power Plant
900kW x 4
600kW x 1

Consumer

Existing Thermal
19,000kW (Miyako)
40,000kW (Miyako II)

Existing Gas Turbine Power Plant 15,000kW

Center Control Unit

Battery Storage Device 200kW
200kWh

Solar Power Plant 4MW

Battery Storage Device 4MW

Simulated Consumer

Renewable energy

Current power generating system is expensive due to fuel costs

Peak cut, peak shift frequency control

Cut fuel costs by reducing or stopping thermal generation

Potential application in industrial park, as it reduces private power generation → Extended to India

Example 2
Yokohama Smart City Project (YSCP)

Construct a society aiming to cut CO_2 emissions by 30% (*1)

Wide area energy management and demand response (DR)

Scale

Population: about 420,000 people
(about 170,000 households)
Space: about 60 km2
Area: Minato Mirai area,
Kohoku new town,
Kanazawa Green Valley

Business Potential Evaluation

Investment Recovery
HEMS = 3 years
BEMS = 5 years

HEMS (4,000 houses)

- -10% CO_2 reduction by visualization, 10% CO_2 reduction by DR, total of 20% CO_2 reduction (*2)
- First DR for mansions at "Park Homes Okurayama"

BEMS(160,000,000sqm)

- 15% CO_2 reduction by smart BEMS (*2)
- 5% improvement by building management (integrated BEMS) (*2)

EV (2,000 sets)

- 30% CO_2 reduction per set (*4)

☆ *Smart city expo 2011 Urban City Award*
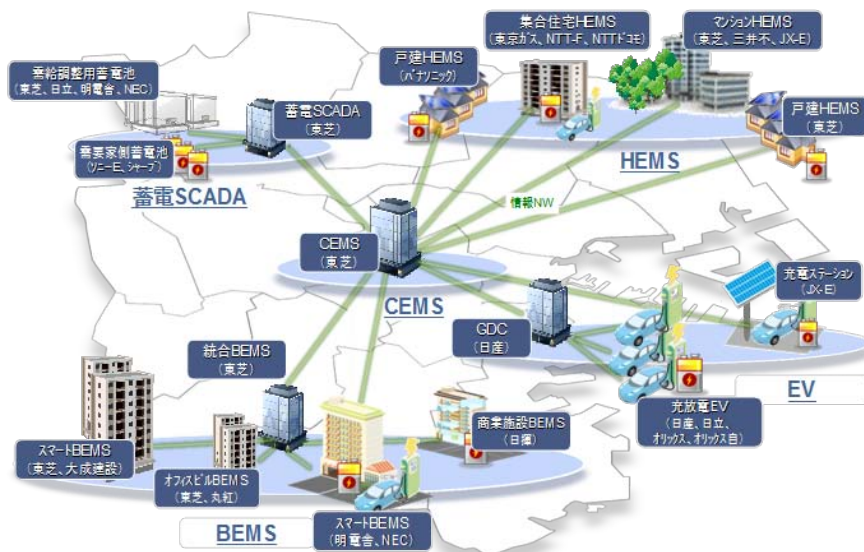
*1 Reduction target compared to Yokohama city action guideline FY2004
*2 Cut target before and after installing system
*3 Mitsui Fudosan Residential Co.,Ltd.
*4 Estimation reflecting life cycle

CEMS：Community Energy Management System
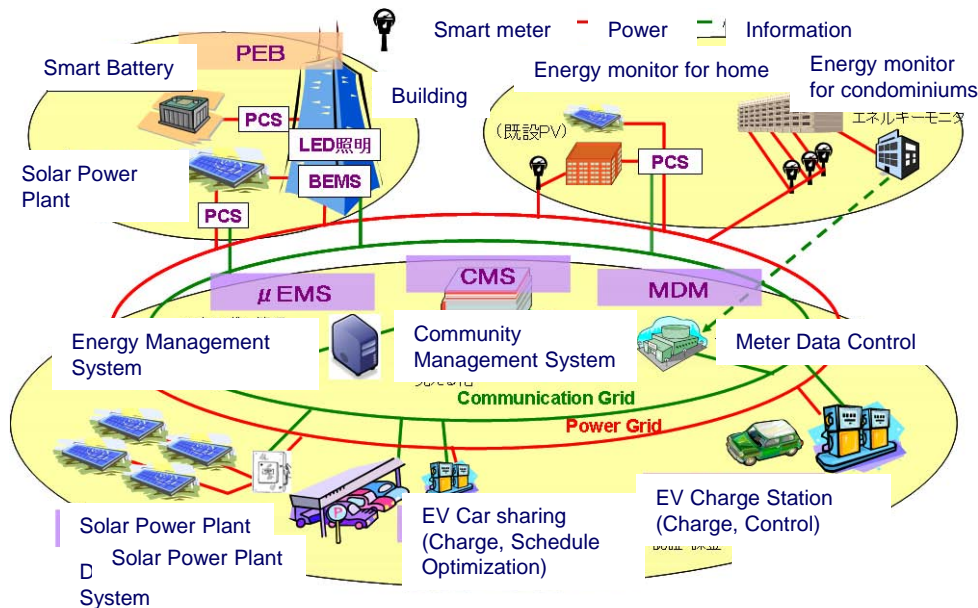BEMS：Building Energy Management System
HEMS：Home Energy Management System
SCADA：Supervisory Control And Data Acquisition

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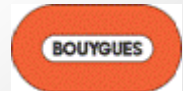# Example 3
Lyon Project, France

Optimize solar power generation to bring EV into the community

Area: Lyon Confluence redevelopment area

Start demonstration
Project from January, 2012

Collaboration

BOUYGUES

VEOLIA TRANSPORT

- Save energy 25% + Generate energy (Solar: 15%, Cogeneration: 83%)
  → Generate more energy than is consumed
- Zero-emissions by use of renewable energy and sharing EV
- Visualize use in project area: homes, buildings and traffic

Achieve targets 5 years ahead of the EU's 20-20-20 Plan*

* A target agreed among EU countries to reduce greenhouse gases by 20%, improve energy efficiency by 20% , and achieve renewable energy use of 20% by 2020, against 1990.

Example 4
Actions to Revive Towns 1

"Industrial development and job creation" "Environmental harmony / cyclical form"
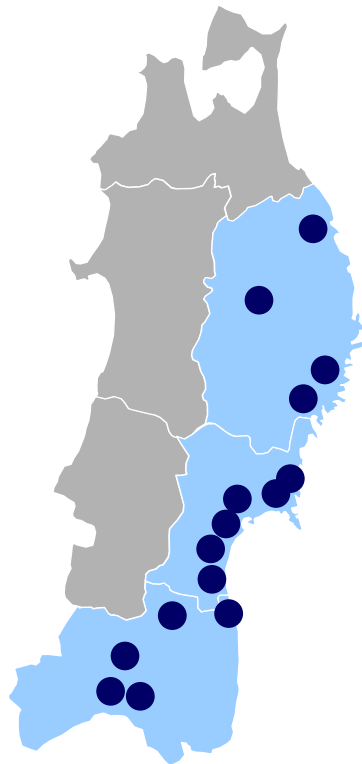
Iwate Prefecture
- Create hometown Iwate Sanriku which protects life and coexists with the sea and the land
- Secure safety, rebuild livelihoods, restore employment
  → Symbiosis with the environment through harnessing resources such as biomass

Miyagi Prefecture
- Plan a disaster-resistant and safe town
- Reconstruct, not get stuck in "restoration"
- Construct advanced community that solves the problem of modern society → an optimistic town with state-of-the-art technology

Fukushima Prefecture
- Develop disaster resistance and cultivate future towns
- Produce a new society by early promotion of renewable energy → create a smart living environment by housing relocation
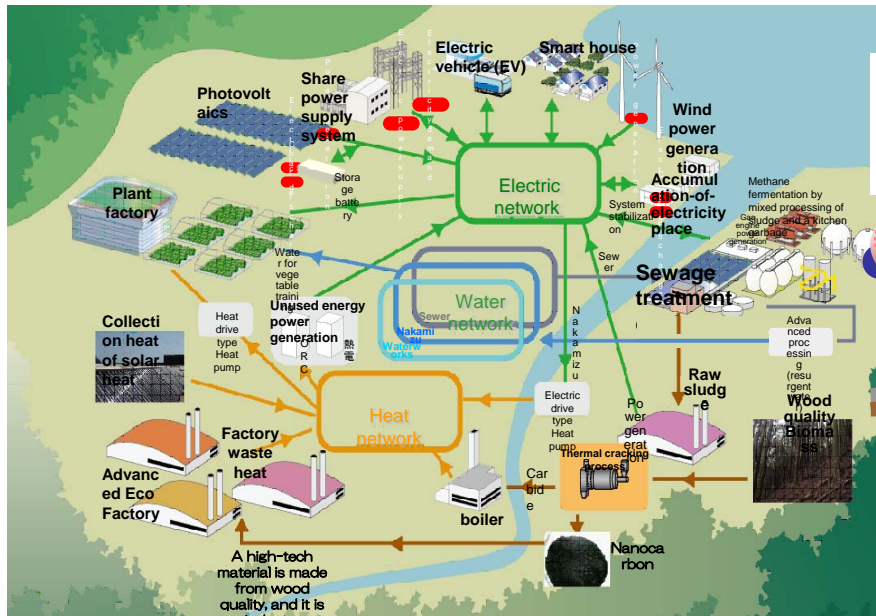
Optimal smart communities blended with local characteristic are proposed.

Example 5
Actions to Revive Towns 2

Optimal Smart Community Proposal with Local Characteristics

A town in symbiosis with the environment through use of biomass resources (Iwate prefecture)

A town built with hope that incorporates state-of-the-art technology (Miyagi prefecture)

Ratio of renewable energy use in the project area
2010: 25% → 2015: 45%
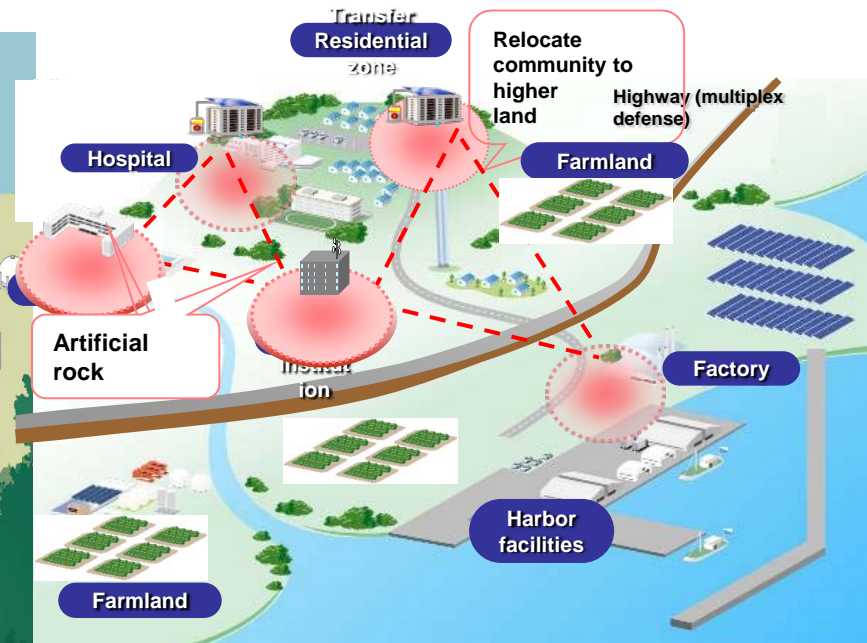
To Reconstruct a community with improved lifelines, where people can sustain life for 3 days in the designated area after a disaster

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Examples of Business Models 1
Energy Management

North America Energy Systems Network (ESN) Project

EV maker

effective use of vehicle batteries

Re-use market

Power generation trend

Large-scale wind power generation

ESN® ENERGY SYSTEMS NETWORK

Charge at night, sell in the daytime → increase profit

Charge

Inexpensive rechargeable battery

Power sales trend

Increase Sales

Discharge

Maximize Profit

Energy for Sales

+

−

Operating cost

Capital Investment

←**Sell renewable energy during daytime**

← **Charge with cheap wind energy at night**

← **Reduce capital investment by reusing EV battery**

Time to recoup initial investment

Storage battery price ($/kWh)

20
16
12
8
4
0

2000
1500
1000
500

25   20   15   10   5

Margin on power selling price (cents)

Realize new business by using difference of power selling price and clean energy sources
- Investment recovery within 10 years with a 15 cent margin on power selling price
and a storage battery price of $500 per kWh -

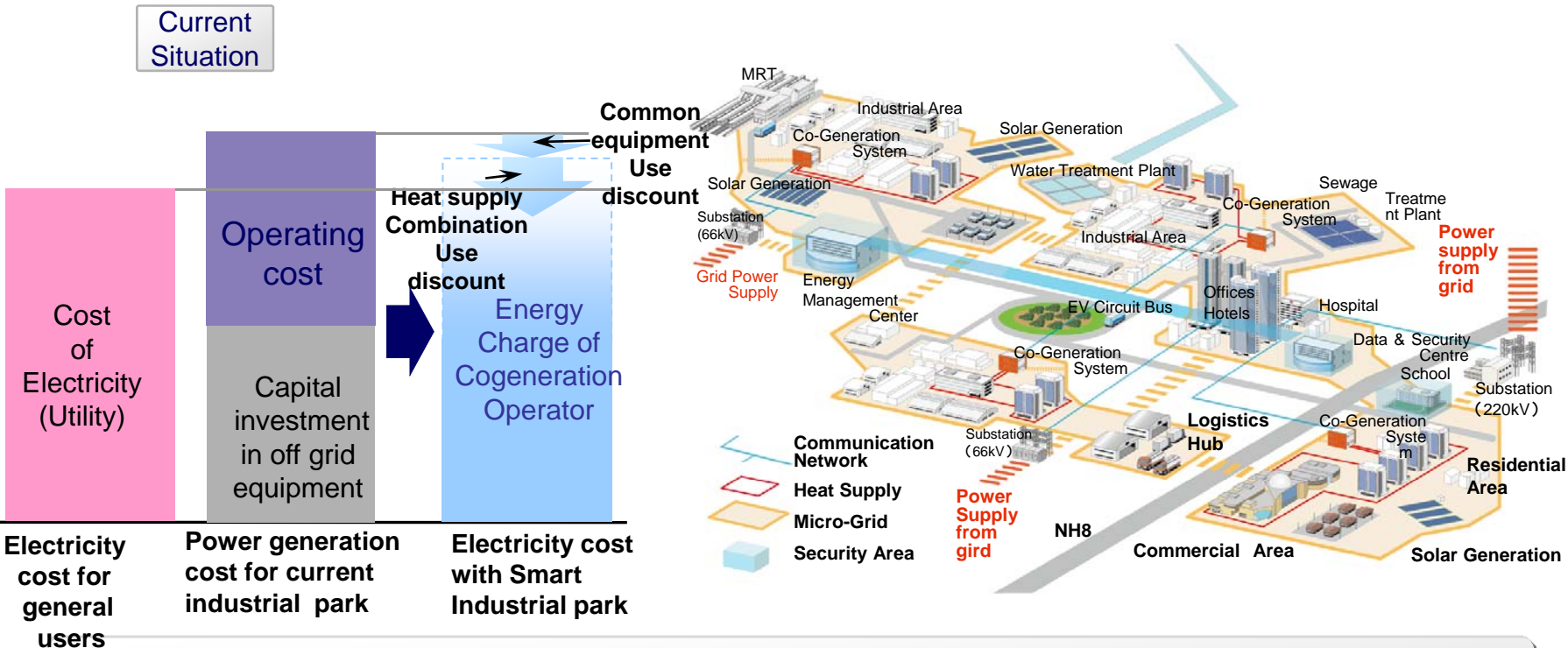# Examples of Business Models 2
Build Smart Communities Through Redevelopment

India: Delhi-Mumbai Industrial Corridor, Manesar Project
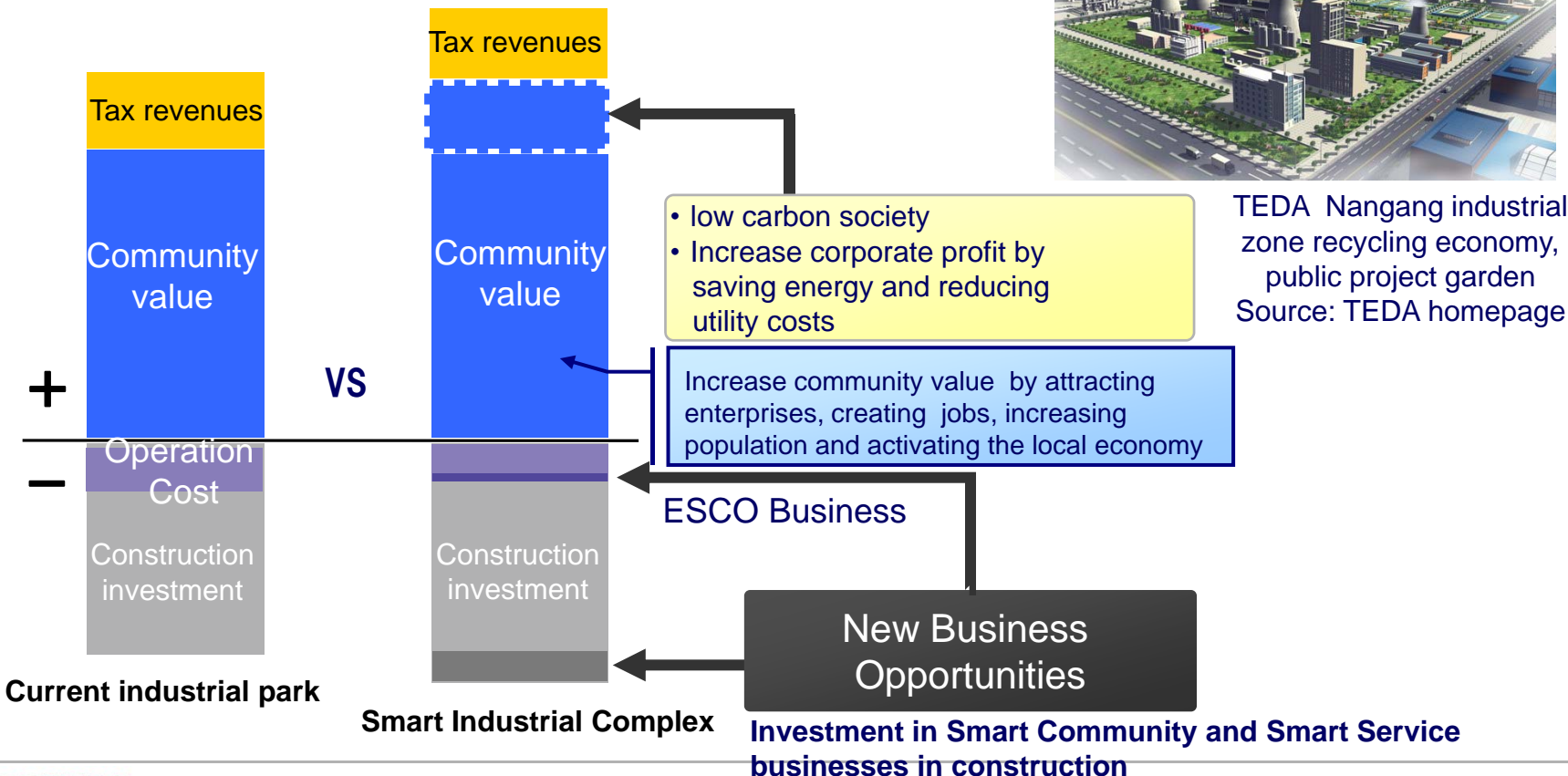**Cogeneration realizes a low carbon industrial complex with reliable power supply**

Current Situation

Common equipment Use discount

Heat supply Combination Use discount

Operating cost

Cost of Electricity (Utility)

Capital investment in off grid equipment

Energy Charge of Cogeneration Operator

Electricity cost for general users

Power generation cost for current industrial park

Electricity cost with Smart Industrial park

MRT

Industrial Area

Co-Generation System

Solar Generation

Water Treatment Plant

Sewage

Treatment Plant

Solar Generation

Substation (66kV)

Co-Generation System

Power supply from grid

Grid Power Supply

Industrial Area

Energy Management Center

EV Circuit Bus

Offices Hotels

Hospital

Data & Security Centre School

Co-Generation System

Substation (220kV)

Co-Generation System

Logistics Hub

Power Supply from gird

Substation (66kV)

Co-Generation System

Residential Area

Communication Network

Heat Supply

Micro-Grid

Security Area

Power Supply from gird

NH8

Commercial Area

Solar Generation

Create smart community covering all of Manesar
30% reduction in cost of off grid power; 60% reduction in CO_2 by eliminating boiler and using cogeneration; 60% reduction in water demand by reuse of water

※EMS = Energy Management System

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Examples of Business Models 3
Build Smart Communities Through New Developments

Tianjin TEDA1x1 project
Implement growth model in cooperation with business developer

Tax revenues

Tax revenues

Community value

Community value

+

VS

−

Operation Cost

Construction investment

Construction investment

Current industrial park

Smart Industrial Complex

- low carbon society
- Increase corporate profit by saving energy and reducing utility costs

Increase community value by attracting enterprises, creating jobs, increasing population and activating the local economy

ESCO Business

TEDA Nangang industrial zone recycling economy, public project garden
Source: TEDA homepage

New Business Opportunities

Investment in Smart Community and Smart Service businesses in construction

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* TEDA: Tianjin Economic-Technological Development Area
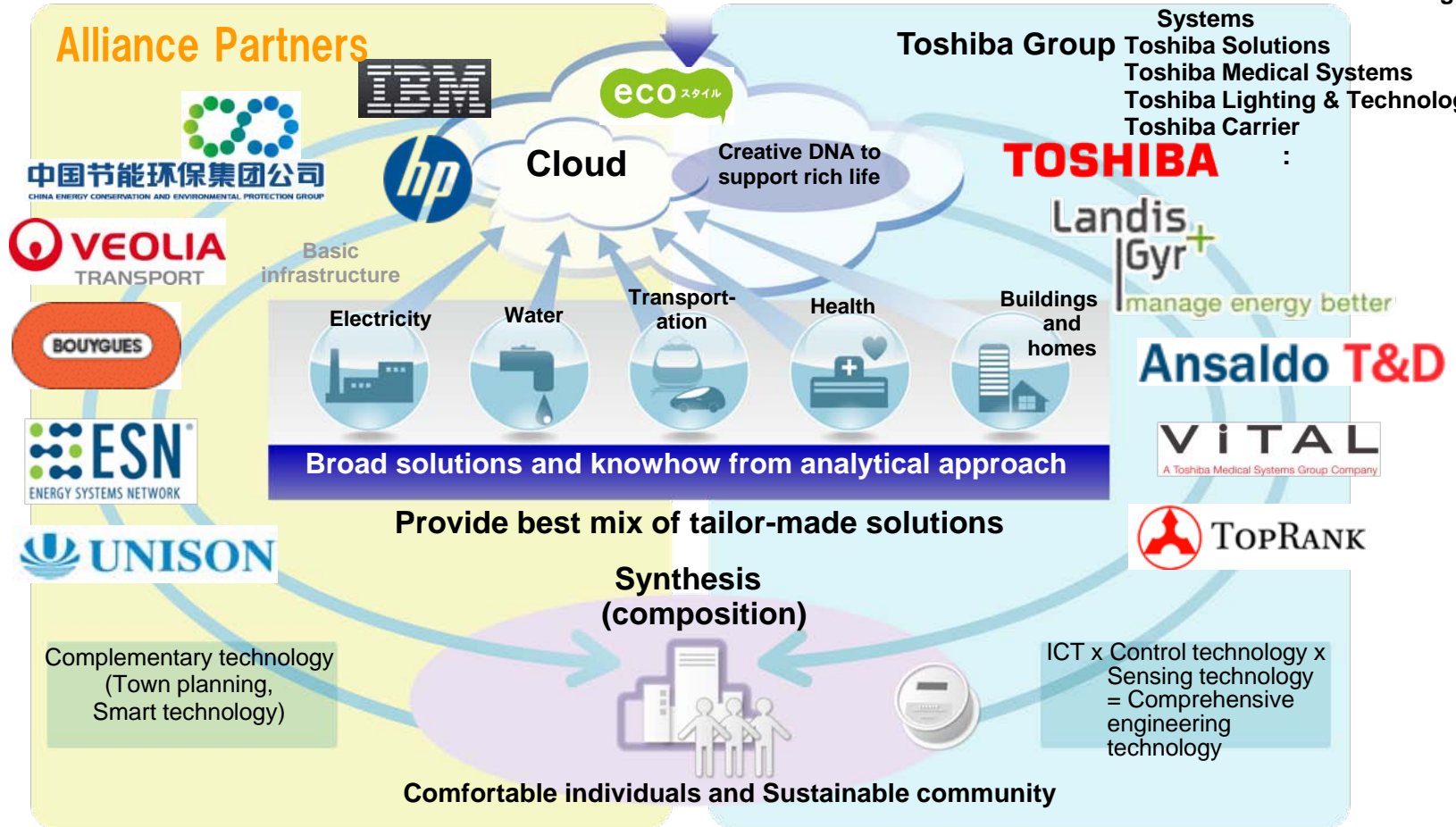
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Collaboration for Constructing a Total Solutions Structure

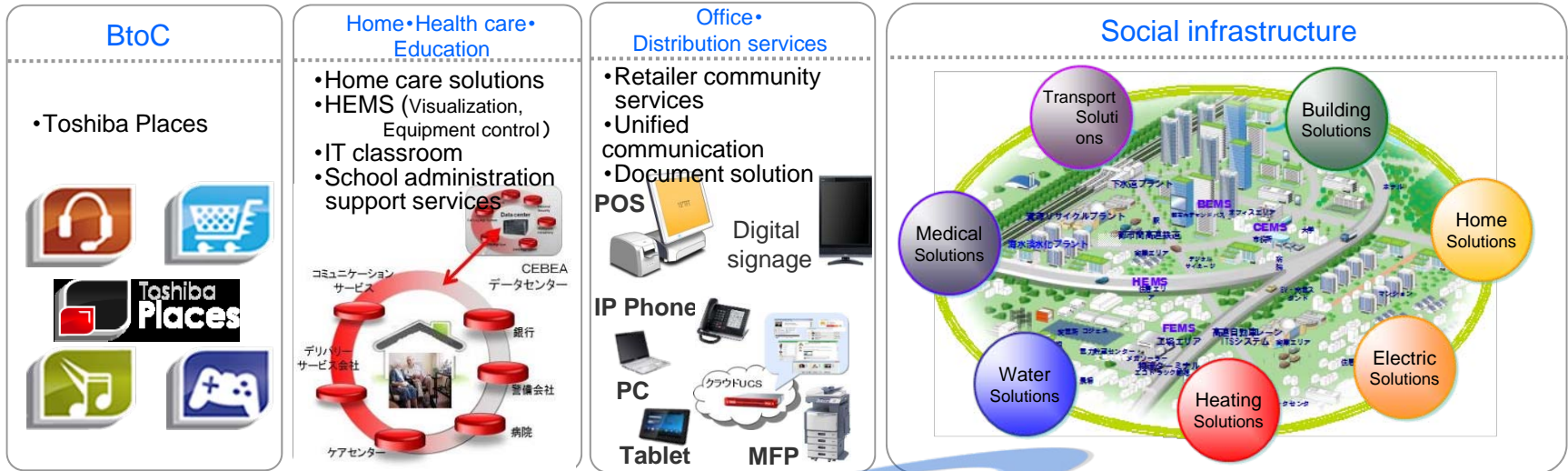## Transform the Business Structure from Analysis to Synthesis

Develop new solutions to meet mega-trends

Toshiba TEC
Toshiba Elevators & Building Systems
Toshiba Group Toshiba Solutions
Toshiba Medical Systems
Toshiba Lighting & Technology
Toshiba Carrier :

Alliance Partners

IBM
hp
ecoスタイル
Cloud
Creative DNA to support rich life

中国节能环保集团公司
CHINA ENERGY CONSERVATION AND ENVIRONMENTAL PROTECTION GROUP

VEOLIA TRANSPORT

BOUYGUES

Basic infrastructure

Electricity   Water   Transport-ation   Health   Buildings and homes

Broad solutions and knowhow from analytical approach

ESN ENERGY SYSTEMS NETWORK

Provide best mix of tailor-made solutions

UNISON

Synthesis (composition)

Complementary technology (Town planning, Smart technology)

Comfortable individuals and Sustainable community

TOSHIBA

Landis Gyr+
manage energy better

Ansaldo T&D

ViTAL
A Toshiba Medical Systems Group Company

TOPRANK

ICT x Control technology x Sensing technology = Comprehensive engineering technology

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Further Enhancement of Cloud Business Platform

Formulation of global cloud services contribute to further development of smart community

BtoC

- Toshiba Places

Home・Health care・Education

- Home care solutions
- HEMS (Visualization, Equipment control)
- IT classroom
- School administration support services

Office・Distribution services

- Retailer community services
- Unified communication
- Document solution

POS

Digital signage

IP Phone

PC

Tablet   **MFP**

Social infrastructure

Transport Solutions

Building Solutions

Medical Solutions

Home Solutions

Water Solutions

Heating Solutions

Electric Solutions

ICT Cloud Platform

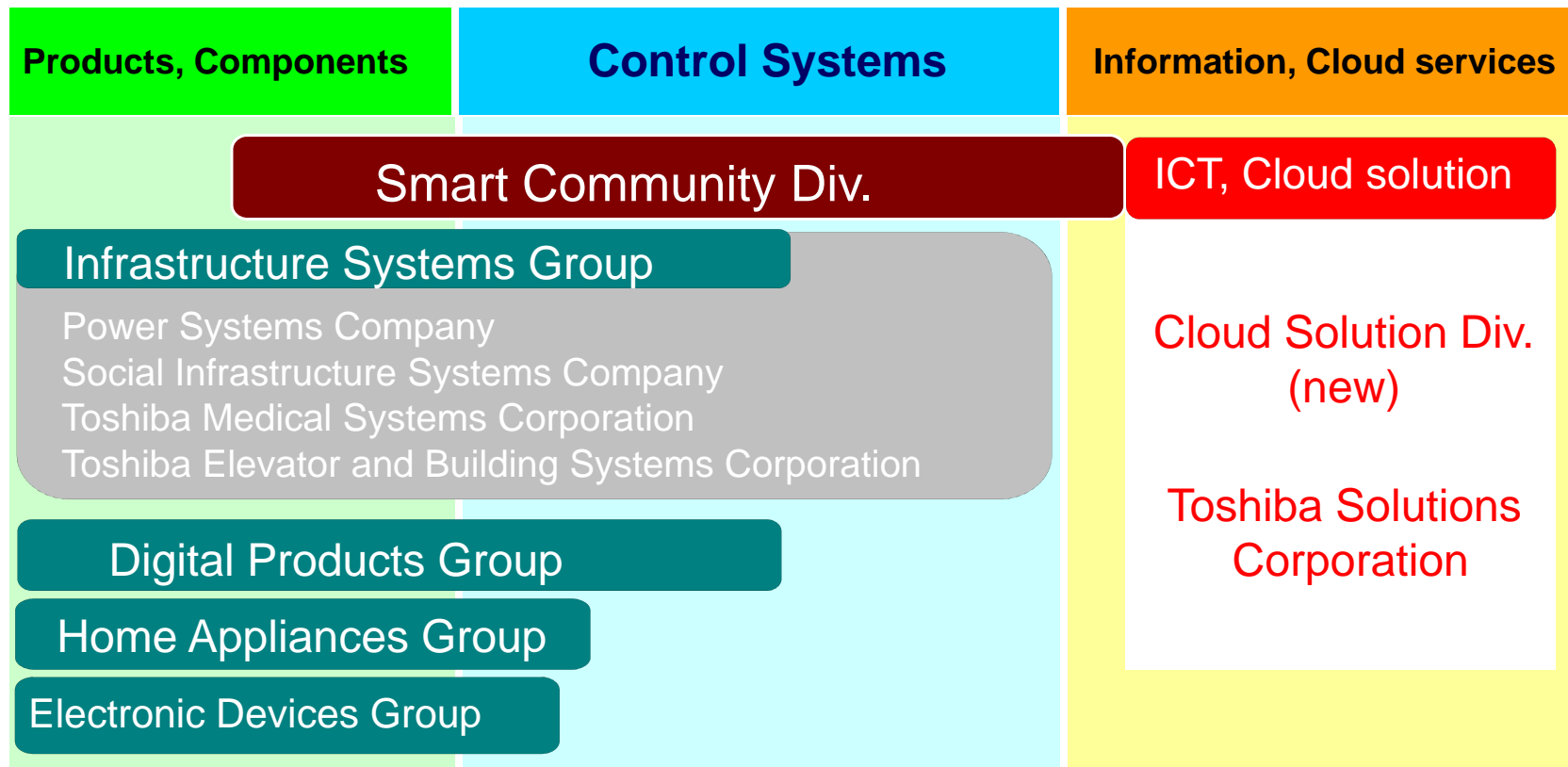**Common platform for application services**

Accelerating Meta Cloud

Enhancing ICT Cloud Platform

Common framework: customer management platform, multi-language, application platform, security, collective knowledge processing, etc.
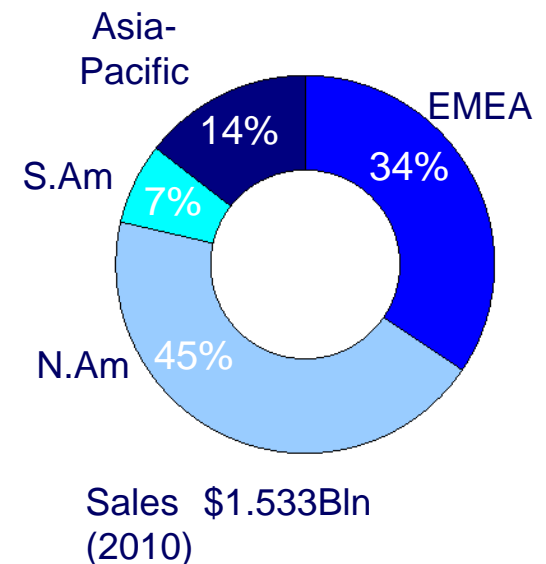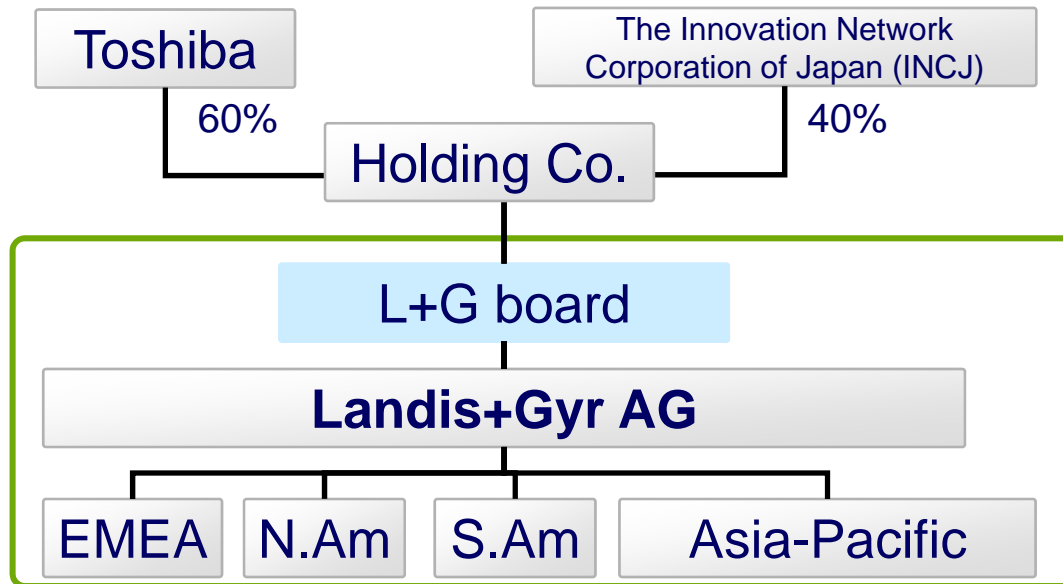
Accumulated Data

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Reinforce Smart Community Business Structure: Jan. 1, 2011

Integrate Group-wide ICT and cloud solution services

Products, Components	Control Systems	Information, Cloud services

Smart Community Div.

ICT, Cloud solution

Infrastructure Systems Group

Power Systems Company
Social Infrastructure Systems Company
Toshiba Medical Systems Corporation
Toshiba Elevator and Building Systems Corporation

Digital Products Group

Home Appliances Group

Electronic Devices Group

**Cloud Solution Div.
(new)**

**Toshiba Solutions
Corporation**

Landis+Gyr Acquisition and Operation

- Acquired: July 29

- Purchase price: $2.3Billion

- Promote "local-fit" business in four regional markets

Toshiba — 60%

The Innovation Network Corporation of Japan (INCJ) — 40%

Holding Co.

L+G board

Landis+Gyr AG

EMEA | N.Am | S.Am | Asia-Pacific

Asia-Pacific 14%
S.Am 7%
N.Am 45%
EMEA 34%

Sales $1.533Bln (2010)

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Toshiba T&D

PV power generation

Transformer
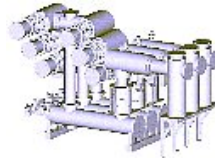
GIS[1]

Relay

MVSG[2]

Storage Battery

Home Photovoltaics

PowerCo

Zigbee   RF Mesh

muEMS

Power distribution automation

Meter data management system   19%   [3]

Smart meters   34%

Market Share

Landis+Gyr

Together, both companies cover Smart Grid components

*1 GIS: Gas Insulated Switchgear,
*2 MVSG: Middle Voltage Switchgear

*3 North American market share of a Landis+Gyr Affiliate

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Purpose of Acquisition 2: Utilize Landis+Gyr's Global Presence

Landis+Gyr's hubs and major customers

Legend:
- ■ R&D Center
- ● Mass production Factory
- ▲ Assembly Factory
- ◇ Sales Office

EMEA

E.ON (Europe)
British Gas (UK)
ERDF (France)
ACEA (Italy)
City Power Johannesburg (South Africa)
etc.

Asia-Pacific

SP Ausnet (Australia)
Ausgrid (Australia)
MGVCL (India)
State Grid Corporation of China (China)
etc.

North America

Oncor (US)
AEP (US)
PSE (US)
Hydro Quebec (Canada)
etc.

South America

Rede Group (Brazil)
AMPLA (Brazil)
LIGHT (Brazil)
Copel (Brazil)
etc.
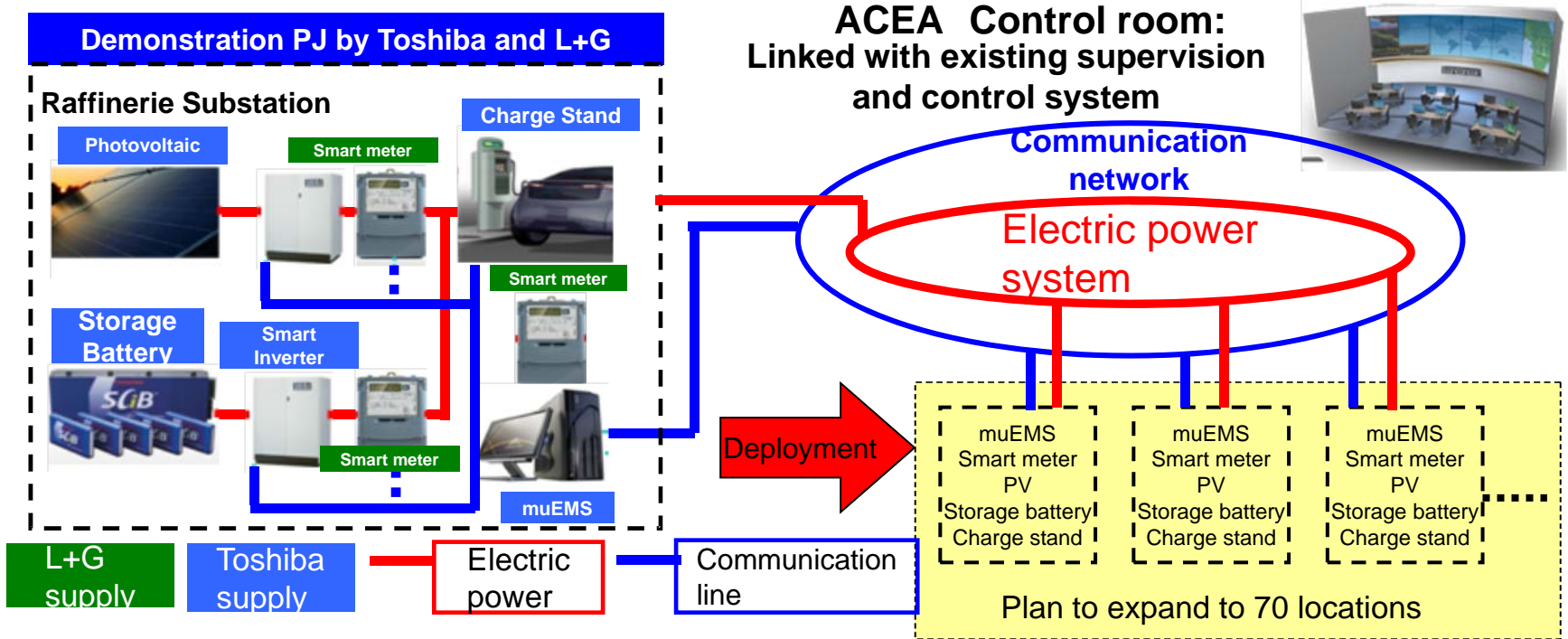
A global presence, in over 30 countries with more than 8,000 corporate customers
⇒ Promote Smart Grid system to current customers

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Example: Synergy from the Acquisition

Smart Grid system for Italy's ACEA photovoltaic power supply for electric vehicle charge stand

Demonstration PJ by Toshiba and L+G

Raffinerie Substation

Photovoltaic

Smart meter

Charge Stand

Smart meter

Storage Battery

Smart Inverter

Smart meter

muEMS

ACEA Control room:
Linked with existing supervision and control system

Communication network

Electric power system

Deployment

Plan to expand to 70 locations

muEMS
Smart meter
PV
Storage battery
Charge stand

muEMS
Smart meter
PV
Storage battery
Charge stand

muEMS
Smart meter
PV
Storage battery
Charge stand

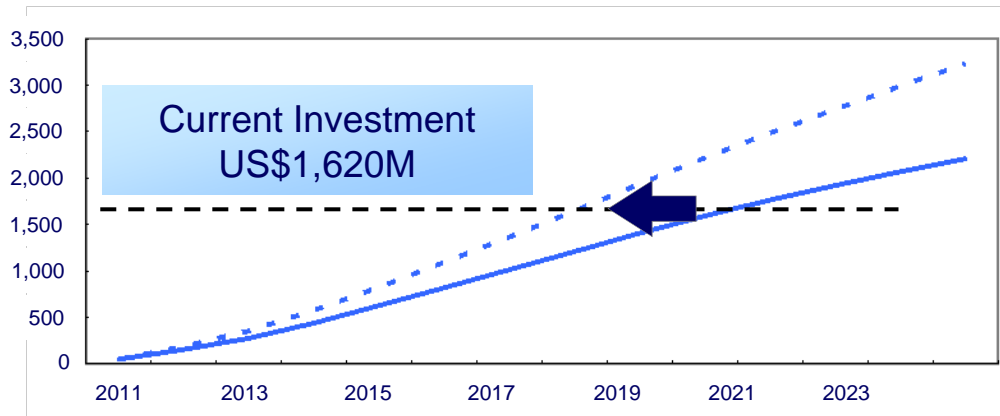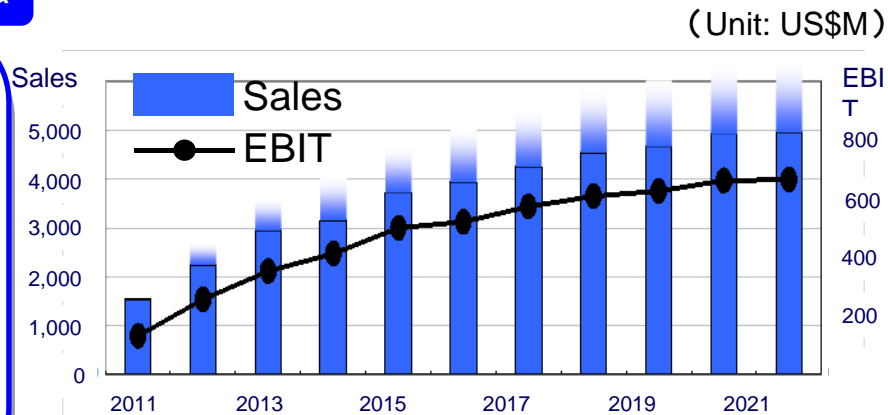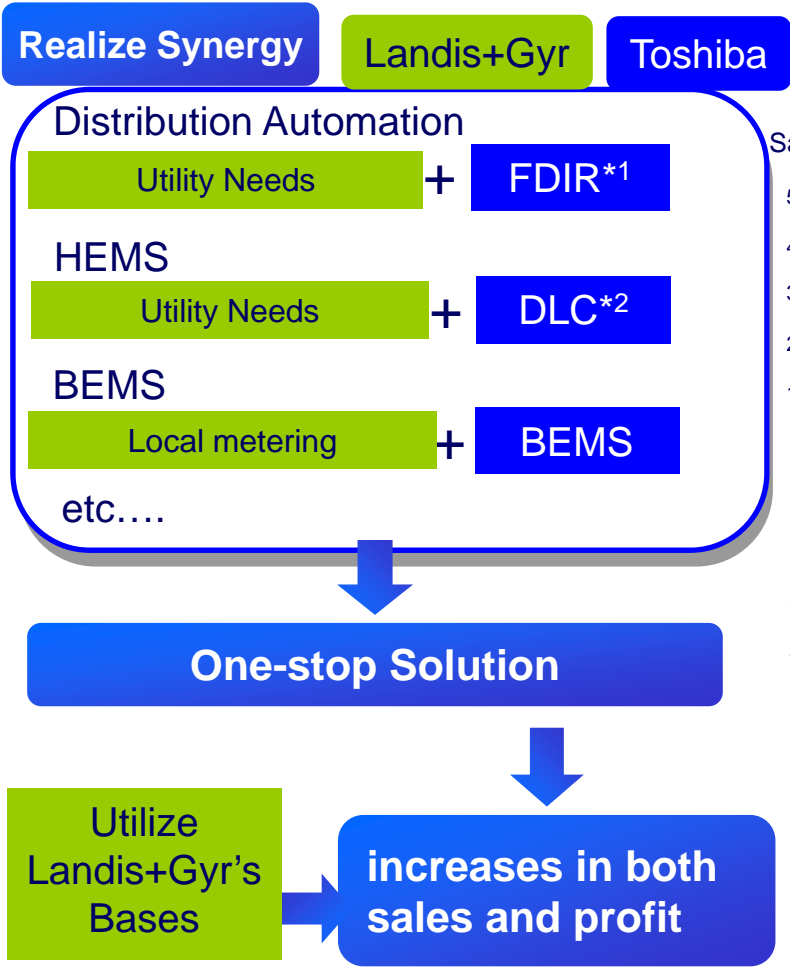L+G supply | Toshiba supply | Electric power | Communication line

Supply of Landis+Gyr's smart meters and Toshiba's related products (photovoltaics, storage batteries (SCiB), charge stands, muEMS, etc.) for ACEA's Smart Grid demonstration PJ.

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Recovery of Investment
Sales and operating profit plan, excluding Toshiba's existing businesses

Shorten 9 years initial plan to 7 years by realizing synergies

Realize Synergy | **Landis+Gyr** | **Toshiba**

Distribution Automation
Utility Needs + FDIR*1

HEMS
Utility Needs + DLC*2

BEMS
Local metering + BEMS

etc….

↓

One-stop Solution

↓

Utilize Landis+Gyr's Bases → **increases in both sales and profit**

（Unit: US$M）

Sales chart, 2011–2021, with Sales (bars) and EBIT (line)
Sales: 5,000 / 4,000 / 3,000 / 2,000 / 1,000 / 0
EBIT: 800 / 600 / 400 / 200

Investment recovery chart, 2011–2023
3,500 / 3,000 / 2,500 / 2,000 / 1,500 / 1,000 / 500 / 0

Current Investment US$1,620M

EBIT・・・Earnings Before Interests and Taxes

*1 FDIR : Fault-Detection, Fault-Isolation, and Recovery
*2 DLC： Direct Load Control

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Targets of Smart Community Business

Provide total solutions from planning to construction and operation management

Plan and Design

In cooperation with developers and consultants, propose smarter way from master plan to detailed design

Operation and Management

ICT supports advanced operation and management

Business cycle
Smart community town planning

Construct infrastructure including energy supply, transport, health, water, buildings, homes, etc.
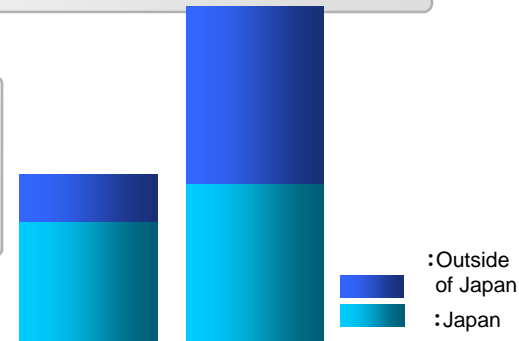
Construction

Conventional town planning

Deliver equipment for energy supply, transportation, health, water, buildings, homes, etc.
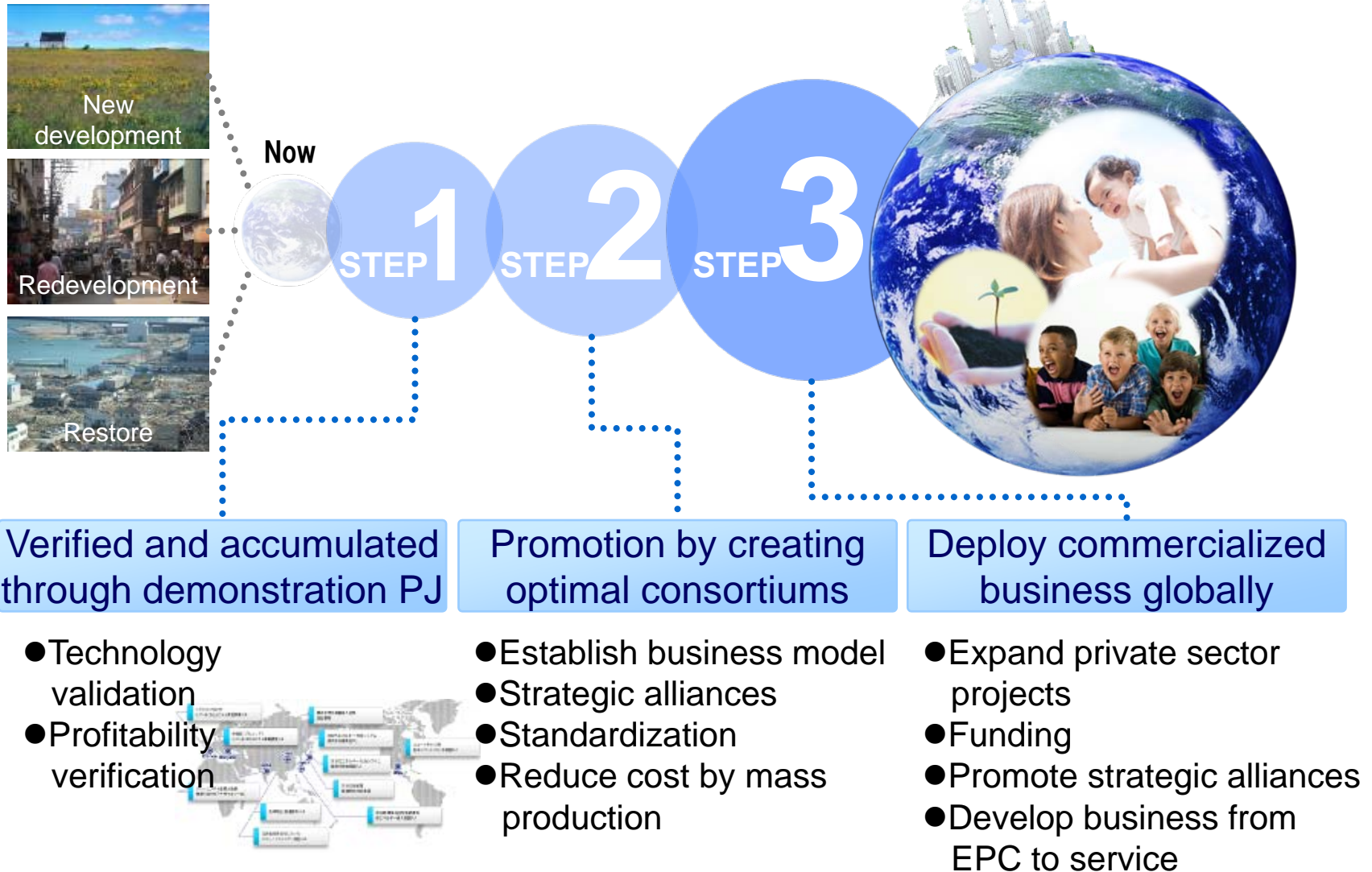
FY2015
900 billion yen

about
400 billion yen
at present

: Outside of Japan

: Japan

- Mega-trends Forming the Near-future and the Smart Community Business

- Toshiba's Total Solutions for Realizing Smart Communities

- Toshiba's Approach to the Smart Community Business

- Global Business Structure

- **Towards Town Planning for the Future**

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Towards the Future of Urban Development

New development

Redevelopment

Restore

Now

STEP **1**

STEP **2**

STEP **3**

| Verified and accumulated through demonstration PJ | Promotion by creating optimal consortiums | Deploy commercialized business globally |

- Technology validation
- Profitability verification

- Establish business model
- Strategic alliances
- Standardization
- Reduce cost by mass production

- Expand private sector projects
- Funding
- Promote strategic alliances
- Develop business from EPC to service

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