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Information & Telecommunication Systems Business Information Meeting

Effectively Utilizing Big Data

December 7, 2011

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President & CEO
Information & Telecommunication Systems Company
Hitachi, Ltd.

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1-1. Today's Information Meeting

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- Fields of Future Focus (Announced in June 2011)

1-2. Society is Overflowing with Beneficial “Data”

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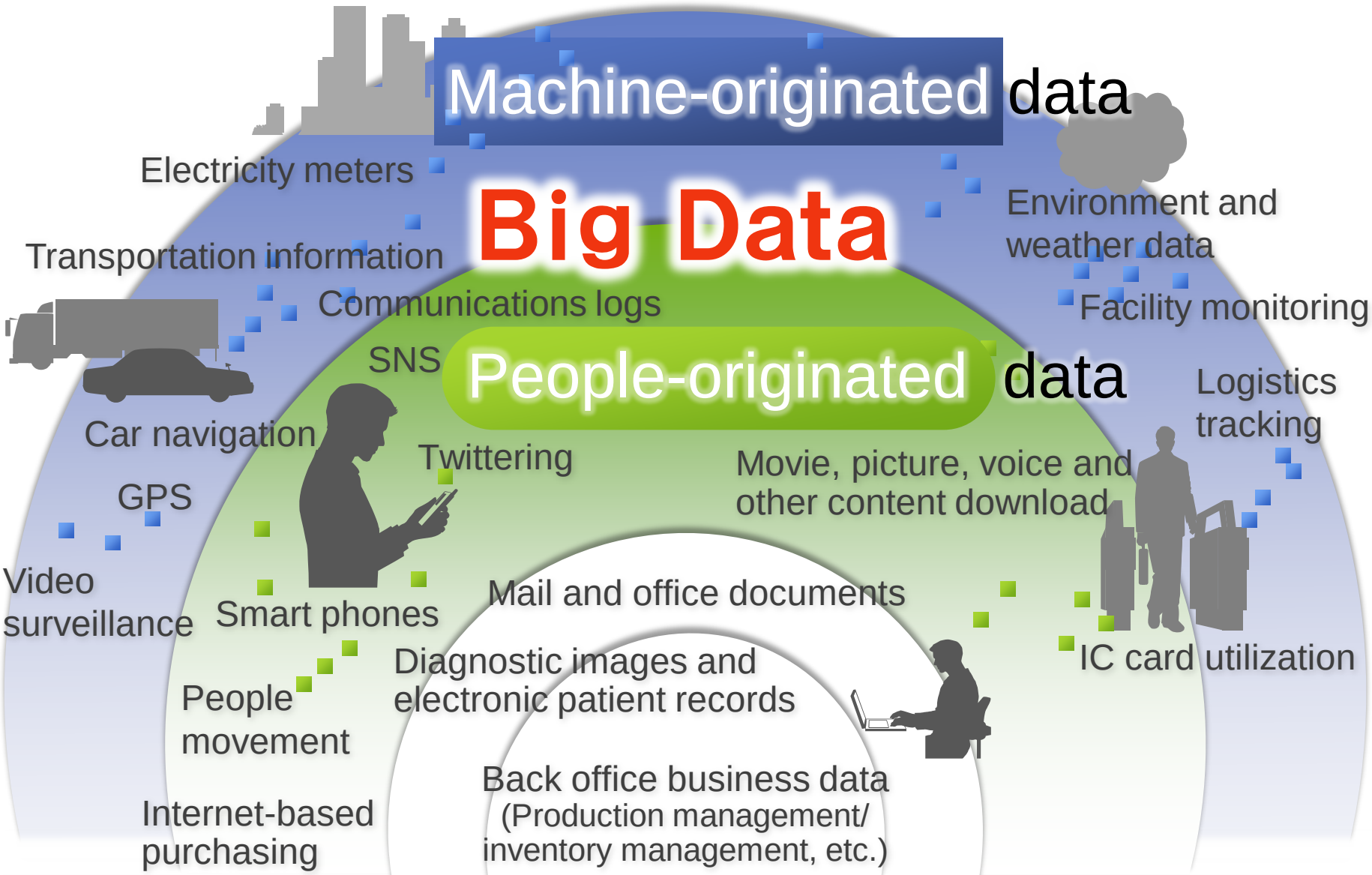

1-3. Increasing Data Volumes and Diversification

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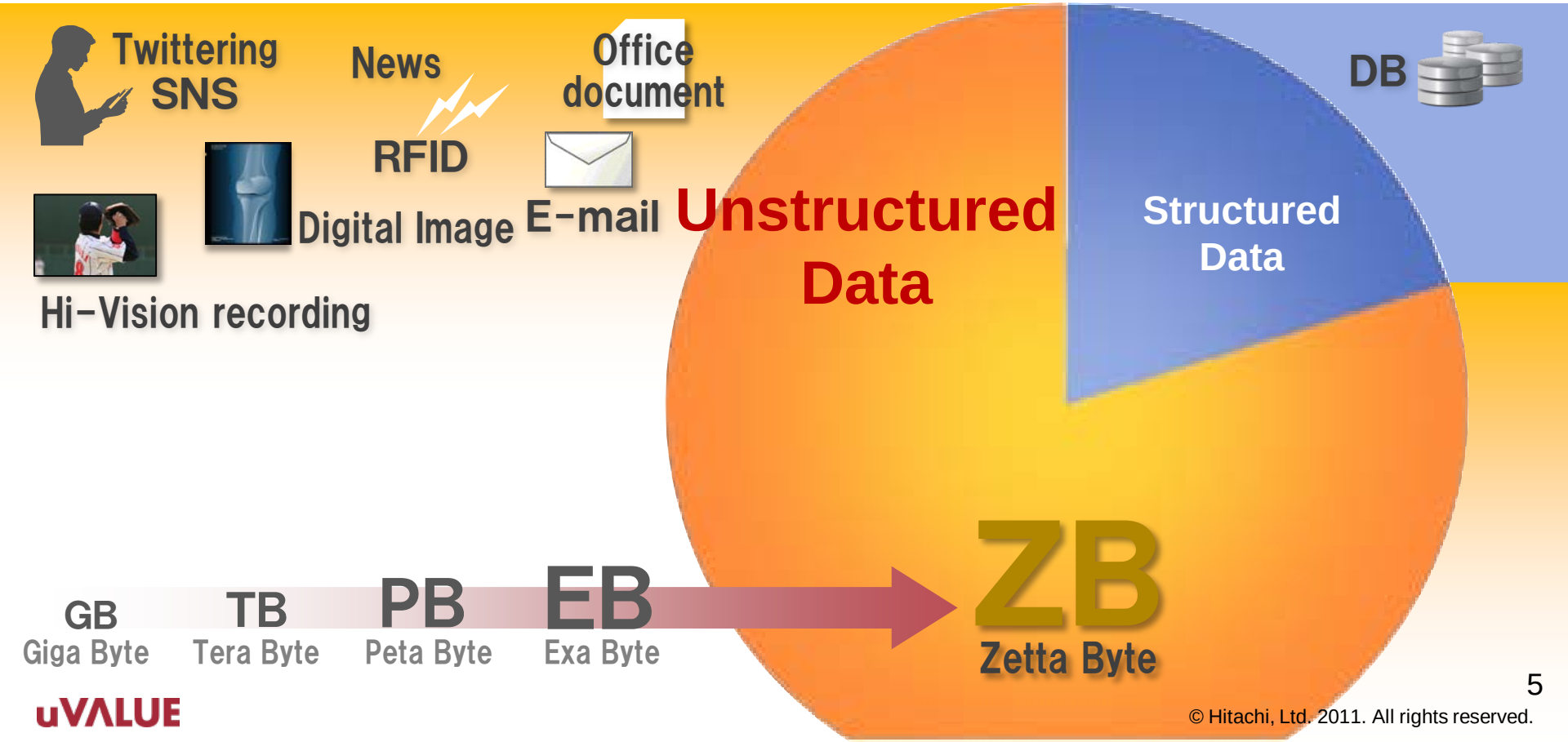
- From Peta/Exa Byte to Zetta Byte Era of all data in the world
- 80% of all data is unstructured



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1-4. The Big Data Era Has Come!

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Future Spread utilizing Big Data related Business

- Apply utilizing Big Data included unstructured Data to the actual business
- Enhance platform technologies for utilizing Big Data

NOW Launch utilizing Big Data related business

- Progress the development of high value service by informatized/intelligent Big Data globally
- Enhance various technologies for utilizing Big Data

1-5. Big Data Utilization Fields - Data Generated by People

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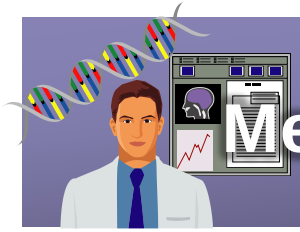
Retail field One-to-One marketing



Medical field Personalized medical care

Banking/ insurance field Banking and insurance services tailored to specific customer segments

Public administration field Public opinion analysis, decision-making support

1-6. One-to-One Marketing Utilizing Big Data

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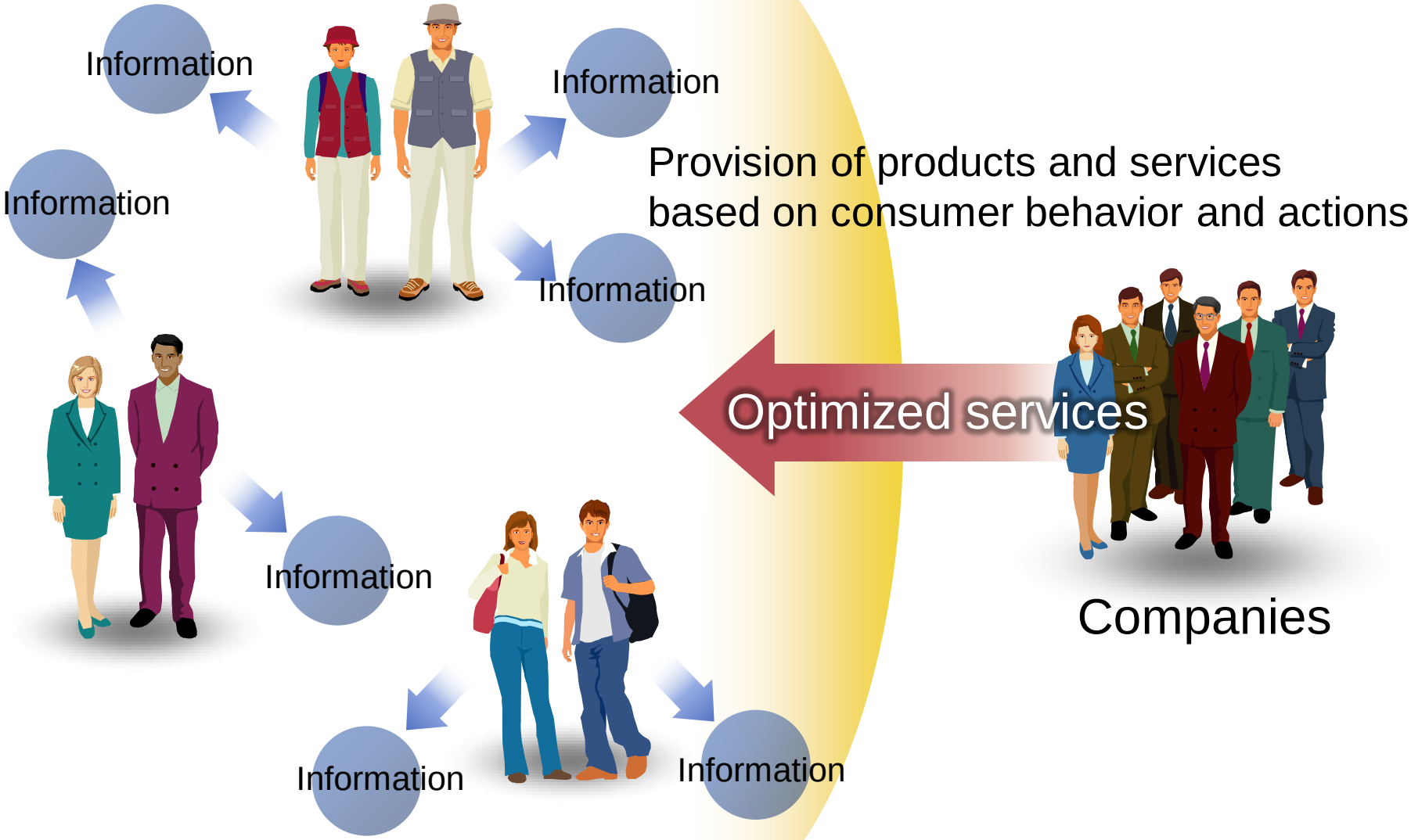

1-7. Big Data Utilization in the Medical Field

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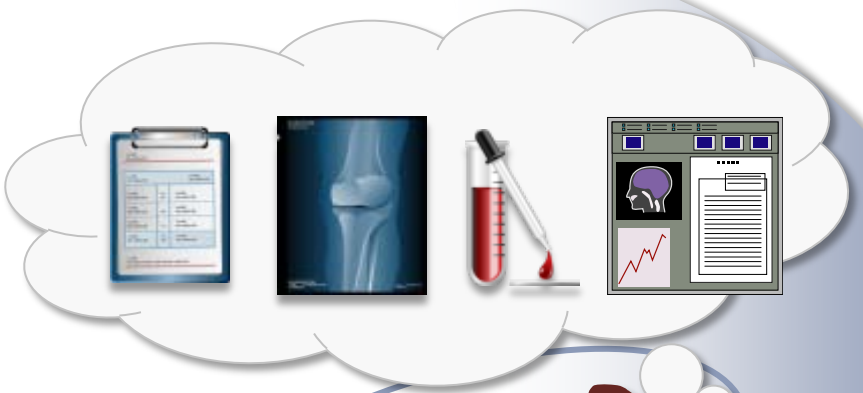
- Advanced and personalized medical care utilizing various data



- Advanced medical care, new treatment development

- Personalized medical treatment based on genetic information
- Effective drug administration, side-effect prevention
- Lower medical costs
- Link with local medical treatment, legal compliance

1-8. Big Data Utilization
- Data Generated by Machines and Equipments

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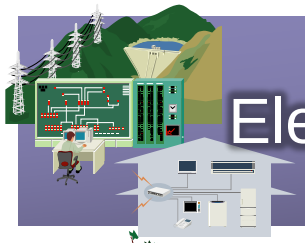
 Maintenance field	Preventive maintenance and operation services
 Electricity field	Power supply-demand forecasting services
 Transportation field	Crowd movement analytics and forecasting services
 Communications field	Communications analysis services

1-9. Big Data Utilization in the Railway Field

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Satellite imagery, geological and land utilization data, facility logs, 3D-CAD diagrams, rail line plans, etc.

Spatial information	Infrastructure information	Activity information
Railway line geography Station buildings	Rolling stock, railway facilities Power, communications facilities	Railway operation Movement of train station users

Information platform for 3D city spaces
(International standard terminology)

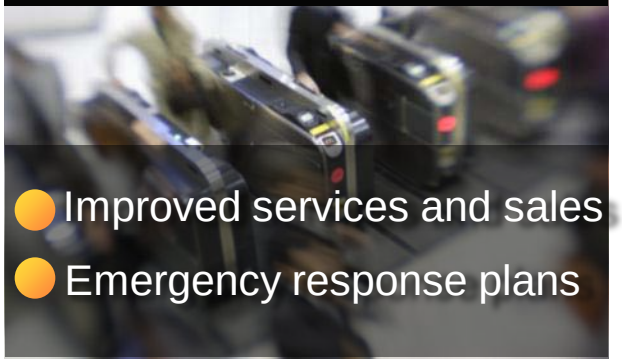
Development along railway lines

- Real estate management
- Urban development in and around train stations

Facility management

- More efficient design and operation
- Preventive maintenance planning

Services



- Improved services and sales
- Emergency response plans

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1-10. Big Data Utilization in the Smart City Field

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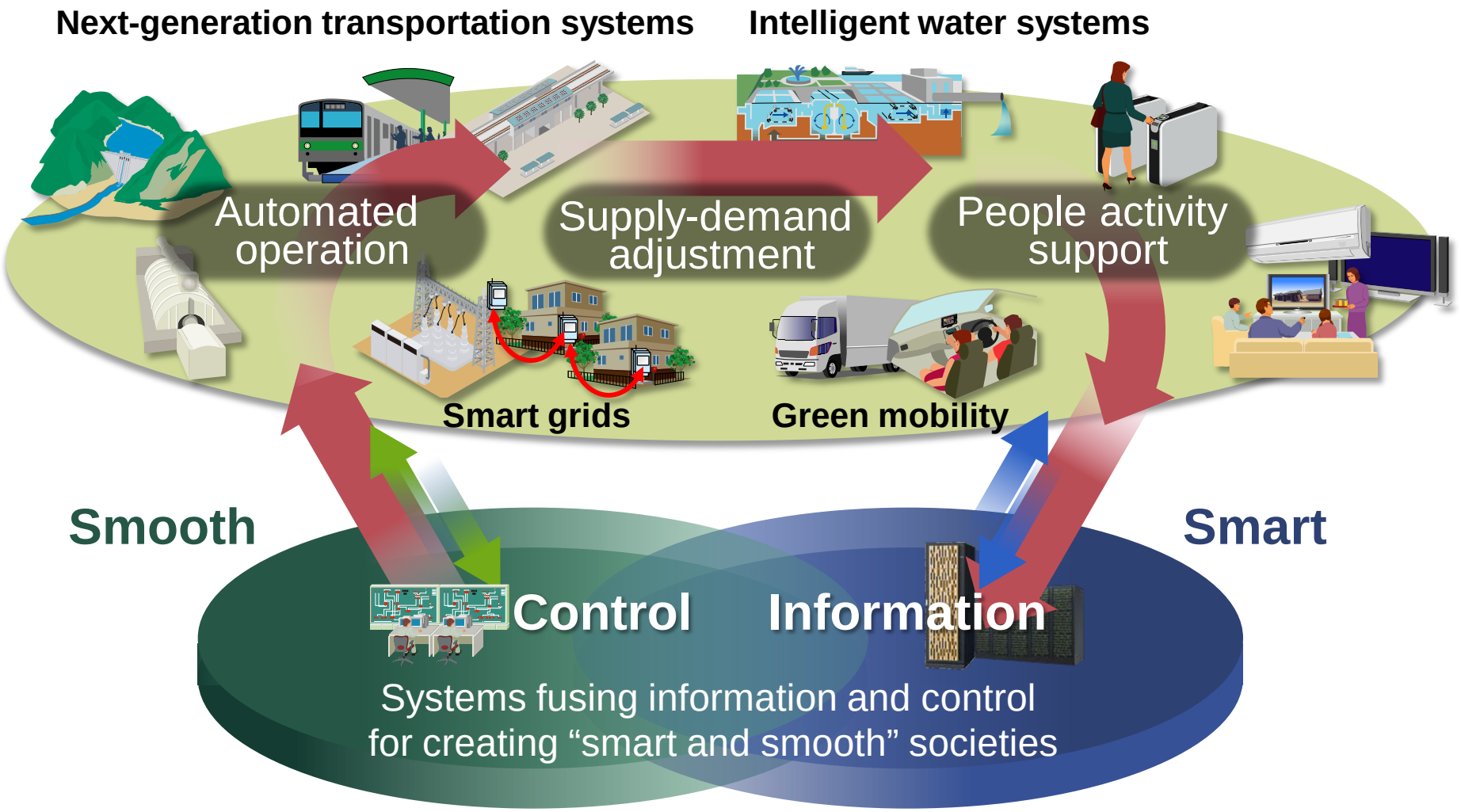
Connect social infrastructure and lifestyles with services to create a safe, secure, comfortable and eco-friendly society



1-11. Comfortable Services Effectively Utilizing Big Data

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2-1. Steps for Effectively Utilizing Big Data

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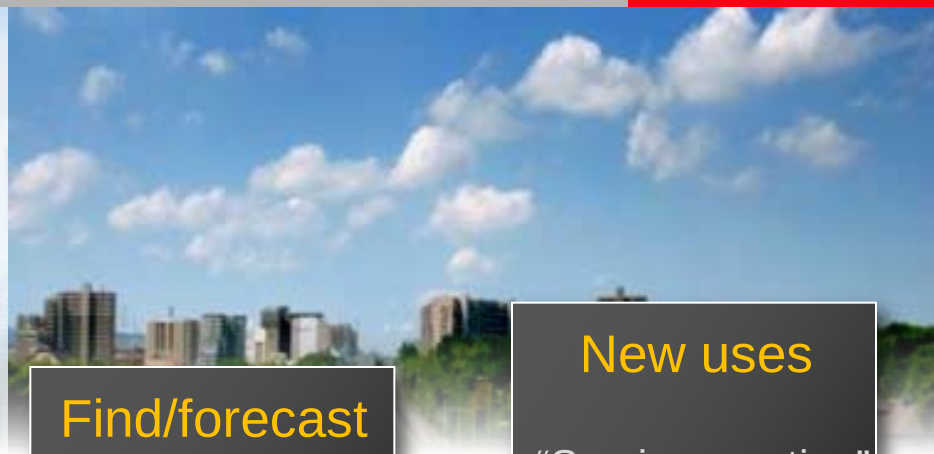
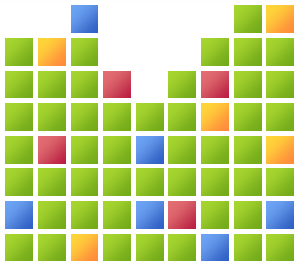
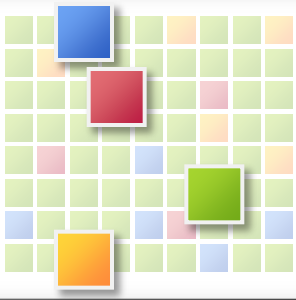


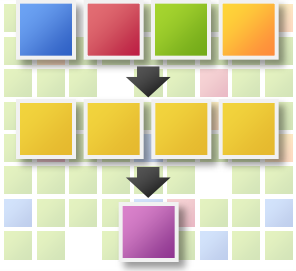
Collection/ storage
"Data accumulation"



Search/use
"Easy searching"



Find/forecast
"Analysis/ forecasting"



New uses
"Service creation"

2-2. Hitachi's Strengths (1) Platform Strengths

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Collection/storage
"Data accumulation"

Search/use
"Easy searching"

Find/forecast
"Analysis/forecasting"

New uses
"Service creation"

Delivering world-class, advanced storage systems

- A powerful, global customer base
- Strategic business development with leading U.S. and European customers
- Provision of management systems integrating various data and IT platforms

Manufacturing ability as a manufacturing company to complete social infrastructure projects. Long building IT systems fused with social infrastructure, and operational and maintenance expertise.

Joint development with laboratory based on our business strategy

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2-3. Hitachi's Strengths (2)
IT and Social Infrastructure Technologies

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Wide range of applications.
From company information systems to social infrastructure systems

From construction, operation and maintenance to manufacturing

Company business systems

Industry/distribution/finance/ public administration

Social infrastructure systems

Communications

Electricity/railways roads/water…

Information system technologies and control system technologies

- Virtualization
- Large-scale, high-reliability databases
- High-speed transaction processing
- Security
- Simulation and analysis technologies
- Control systems middleware

Platforms and components

Information and telecommunications platforms

- Servers and storage
- Data centers
- Cloud
- High-speed networks

Control components and power electronics products

- Control servers
- High-voltage inverters
- EIC* integrated controllers
- UPS

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*EIC: Electricity, Instrumentation, Computer

2-4. What is Data Analysis?

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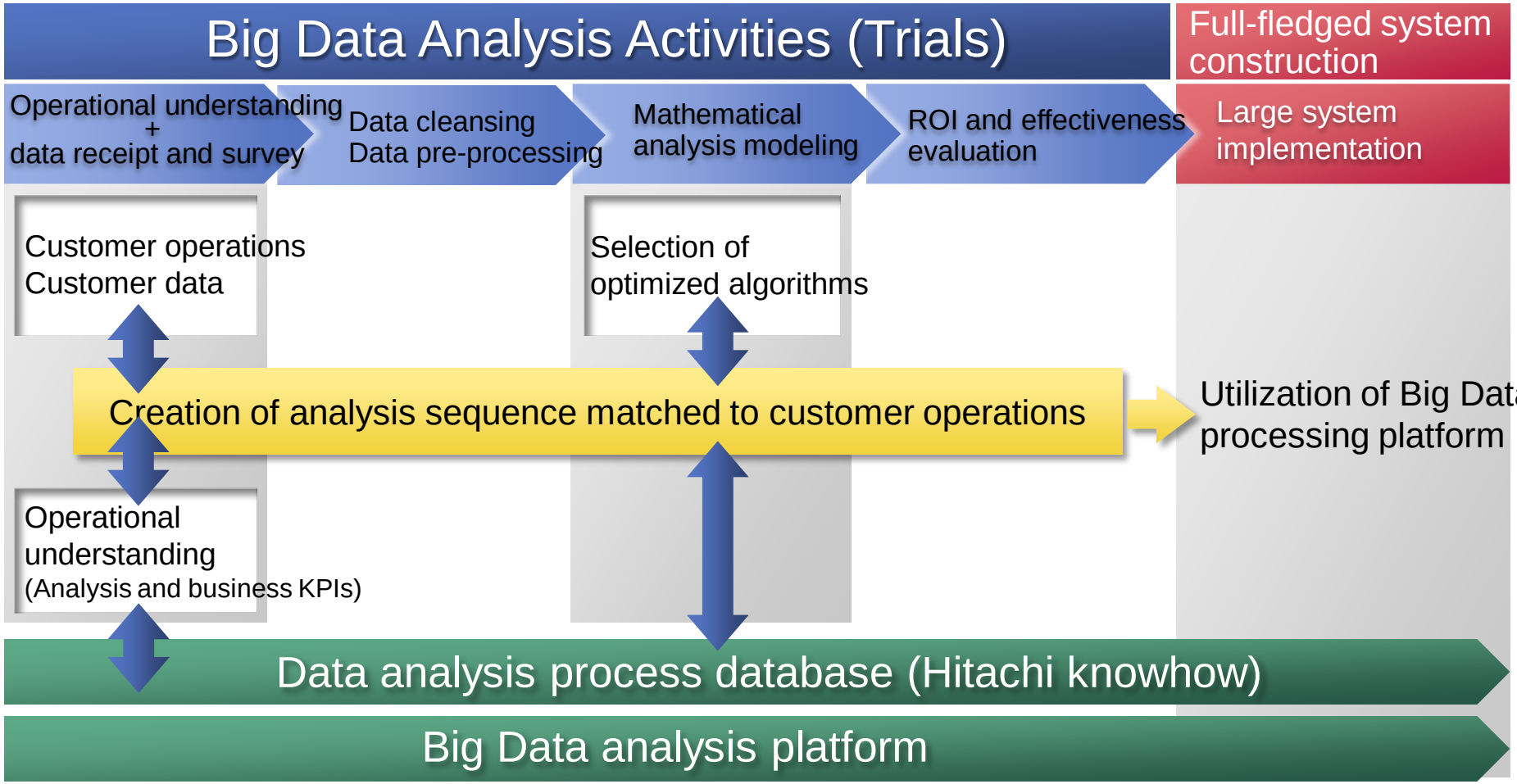
- Trials to form relationships between “analysis” and “customers’ operations”
- Joint operations between mathematical analysis (IT) and determination of effectiveness (people)
- Leverage Hitachi’s expertise as a manufacturing company



2-5. Initiative Policy in the Big Data Era

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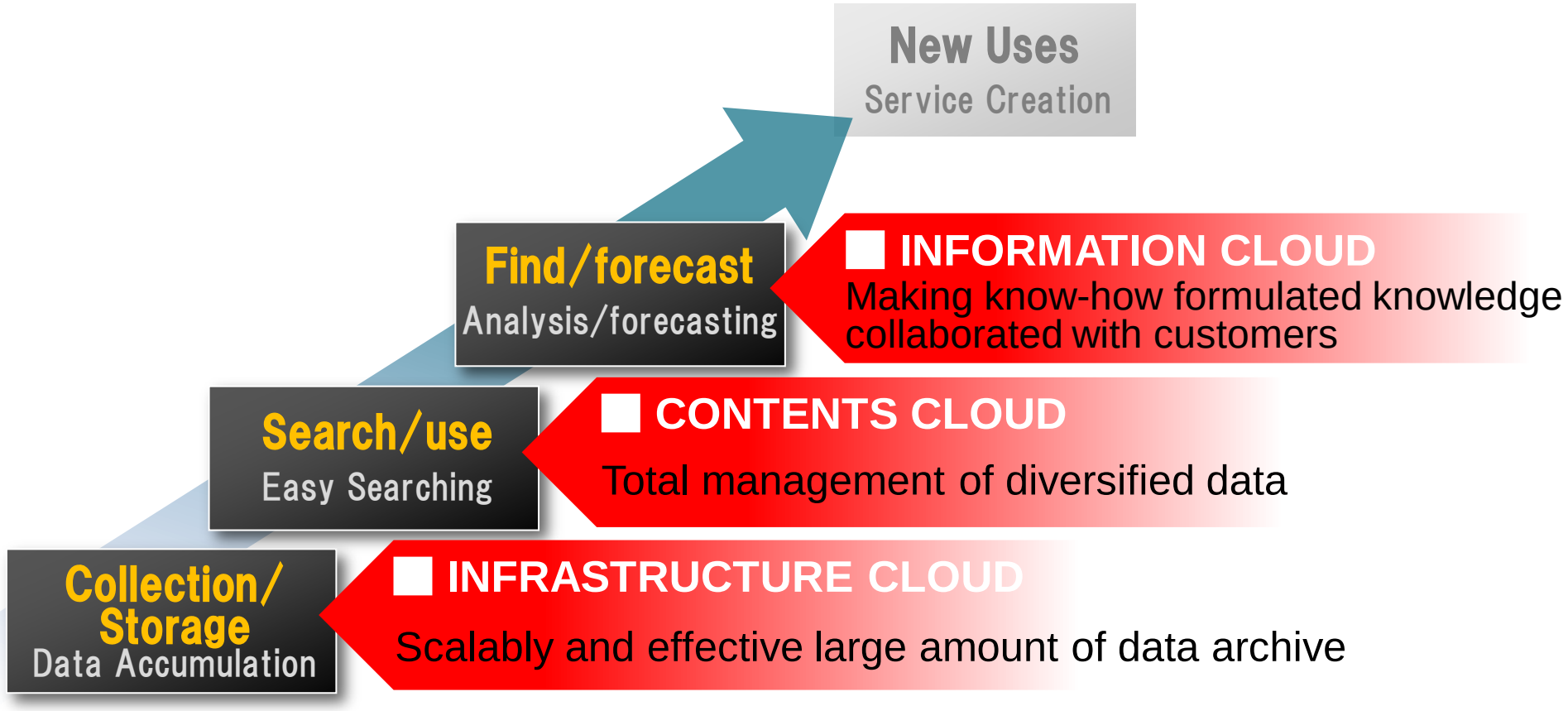
Strategic Approach from “INFRASTRUCTURE CLOUD” to “INFORMATION CLOUD”



2-6. Basic Policy (1)

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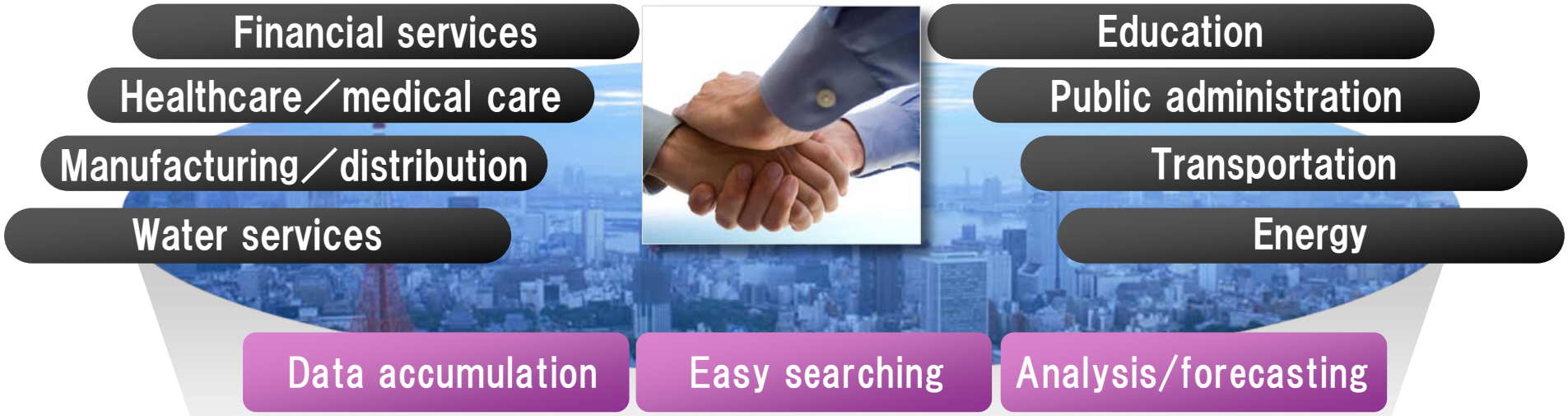
Effectively Utilizing Big Data by INFORMATION CLOUD

- **Expand the collaboration with advanced customers**
  - Expand service business utilizing abundant know-how based on the experiences of building social infrastructure systems
  - Implement analysis and accumulation of knowledge by utilizing know how as a manufacturing company
- **Implement development and provision of products/services for Big Data**



2-7. Basic Policy (2)

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Integration of internal and external wisdom for Hitachi

- **Expand business in global market: Advanced utilizing Big Data**
  - Implement by Global one team
- **Aggressively implement collaboration with the experts of each industry**
  - Management/IT consulting/Statictics mathematical principle etc
- **Jointly develop with laboratory based on our business strategy**
- **Provide Security/IT governance proven by operation in Hitachi Group internal systems**

2-8. Hitachi Data Systems Corporation (HDS)

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Business development in over 100 countries and regions worldwide

- Established in 1989, headquartered in Santa Clara, California, U.S.A. (Approx. 5,300 employees as of September 30, 2011)
- Customers: 82% of Top 100 companies Fortune Global 1000®
- Alliances with over 300 solution vendors
- A leader in virtualization technologies based on the delivery of more than 19,000 controllers
- Accounts for approx. 90% of consolidated revenues in the storage solutions business

Expand from the storage solutions vendor to the platform solutions vendor

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3-1. HDS: A Company Transformed

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- **Q2 FY11: 25% y/y growth; Highest revenue quarter in Hitachi Storage business history!** (consolidated and in U.S.$)
  - 26% 1HFY11 y/y growth
  - 18% FY10 y/y growth
  - Eight consecutive record quarters
- **Expanded portfolio**
  - Leader in storage virtualization
  - File and content – fastest growing segment; 100% y/y growth trailing 12 months
  - Software and services revenue mix – from low 20s in FY02 to near 50% in FY10
- **Recent acquisitions**
  - BlueArc – File & Content
  - ParaScale – Scale out
  - Shoden Data Systems – South Africa

3-2. Consistent, Record-Breaking Growth

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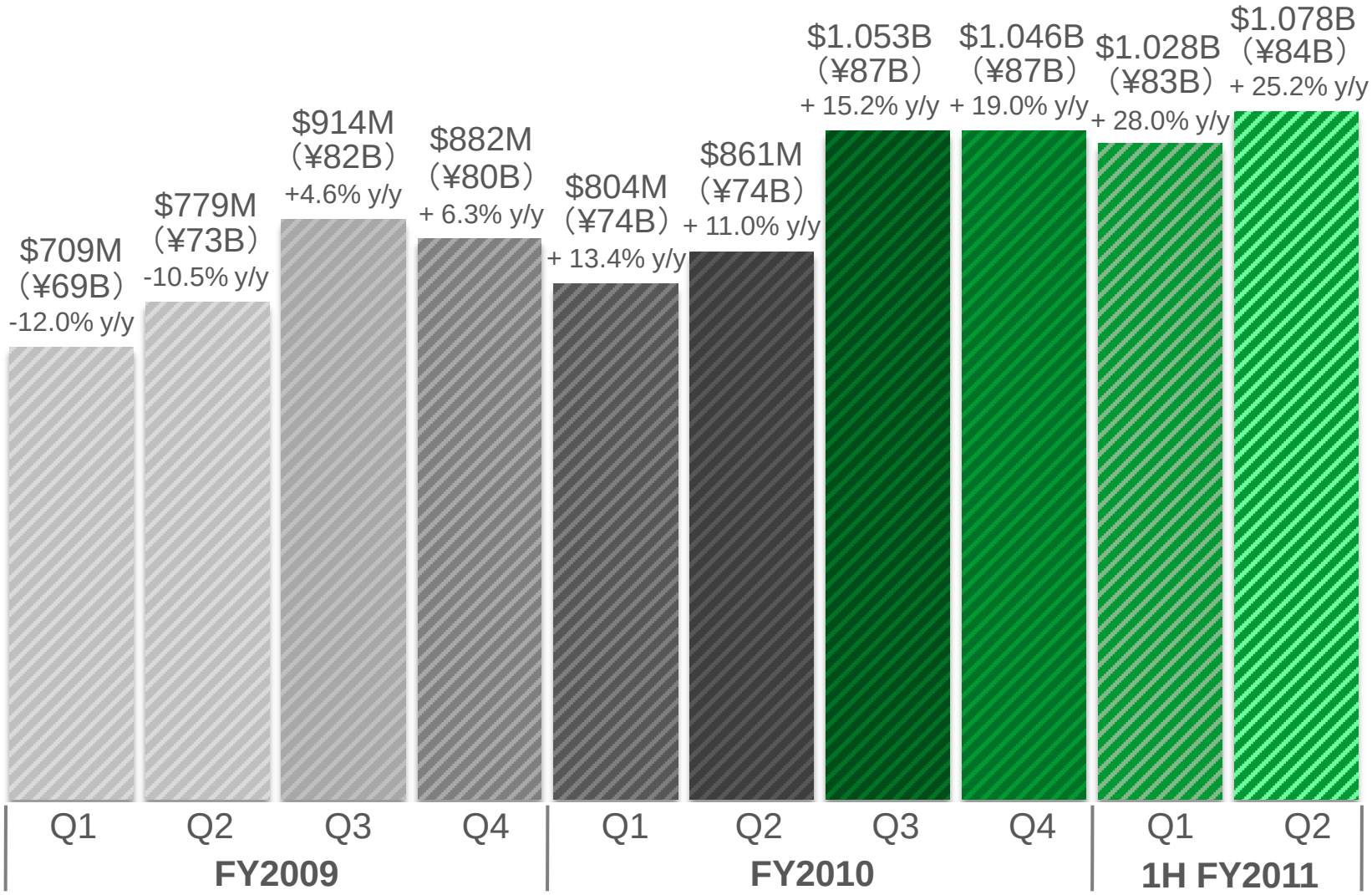
HITACHI STORAGE BUSINESS CONSOLIDATED REVENUE RESULTS



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3-3. HDS State of the Business

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TOTAL HDS CONSOLIDATED REVENUES: US $1.078B (Q2); US$2.092B (H1)

KEY METRICS	Q2 FY11 Y/Y% GROWTH	H1 FY11 Y/Y% GROWTH
HITACHI CONSOLIDATED REVENUE	25%	26%
HDS Y/Y% GROWTH IN FOLLOWING AREAS*:		
AMERICAS	21%	15%
EMEA	30%	39%
APAC (excluding Japan sales)	36%	40%
HARDWARE**	High 20s	Mid 20s
ENTERPRISE STORAGE**	High 40s	Mid 40s
MODULAR STORAGE	Mid single digits	Mid single digits
FILE & CONTENT (includes storage drag)	High 80s	Low 90s
SOFTWARE**	High 20s	Low 40s
SERVICES	Mid 20s	Mid 20s

ALL NUMBERS BASED ON ACTUAL F/X RATES
*HDS UNCONSOLIDATED BASIS
**THE HARDWARE AND SOFTWARE NUMBERS DO NOT INCLUDE ANY OEM REVENUE

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3-4. The World's Data and Information Challenge

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- An Information-Centric World, Governments, Enterprises, Organizations, Person, Consumer…Creating, exchanging, consuming, enhancing data
- The world had 486 exabytes of data in 2008. Doubling in 18 months.
- Unstructured data is growing at 10x structured data
- By 2014 there will be 1 billion applications
- E-discovery and search across all applications, media, archives, devices…
- A world of Analytics to turn discovered data into usable information!
- Management and governance of data for 10, 20, 50, 100 years, more, forever?
- Must repurpose data every 5 years for new applications & devices? Billions, trillions of objects?
- Backup-less vs. Archive data…always on, always available, always ready.
- Cloud of content and information
- Scale…Scale….Scale…Scale…Scale

3-5. The Challenge

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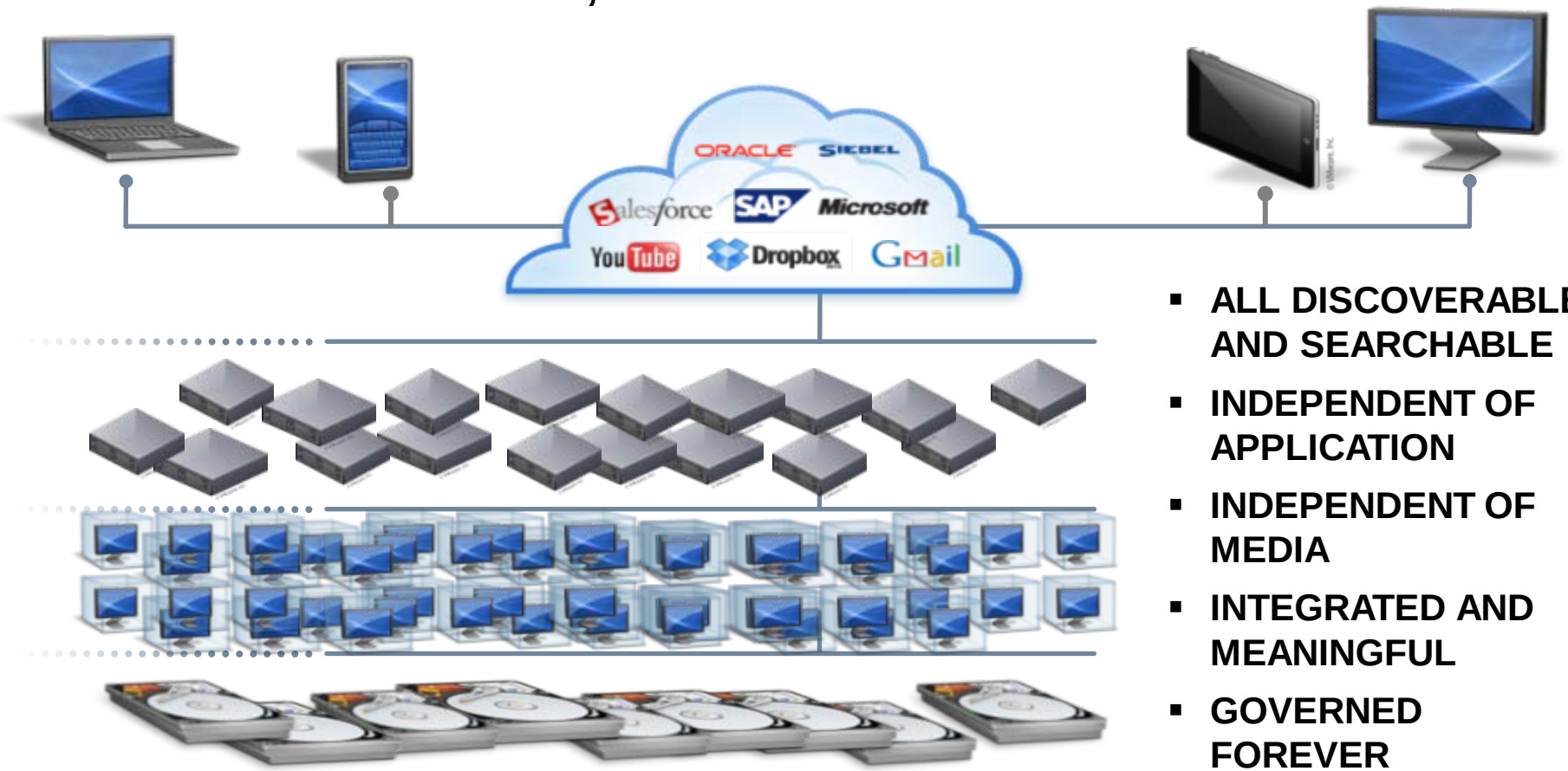
INFORMATION ANYWHERE, ANYTIME, ALL THE TIME… FOREVER



- ALL DISCOVERABLE AND SEARCHABLE
- INDEPENDENT OF APPLICATION
- INDEPENDENT OF MEDIA
- INTEGRATED AND MEANINGFUL
- GOVERNED FOREVER

3-6. HDS Strategy: The Path to the Information Center

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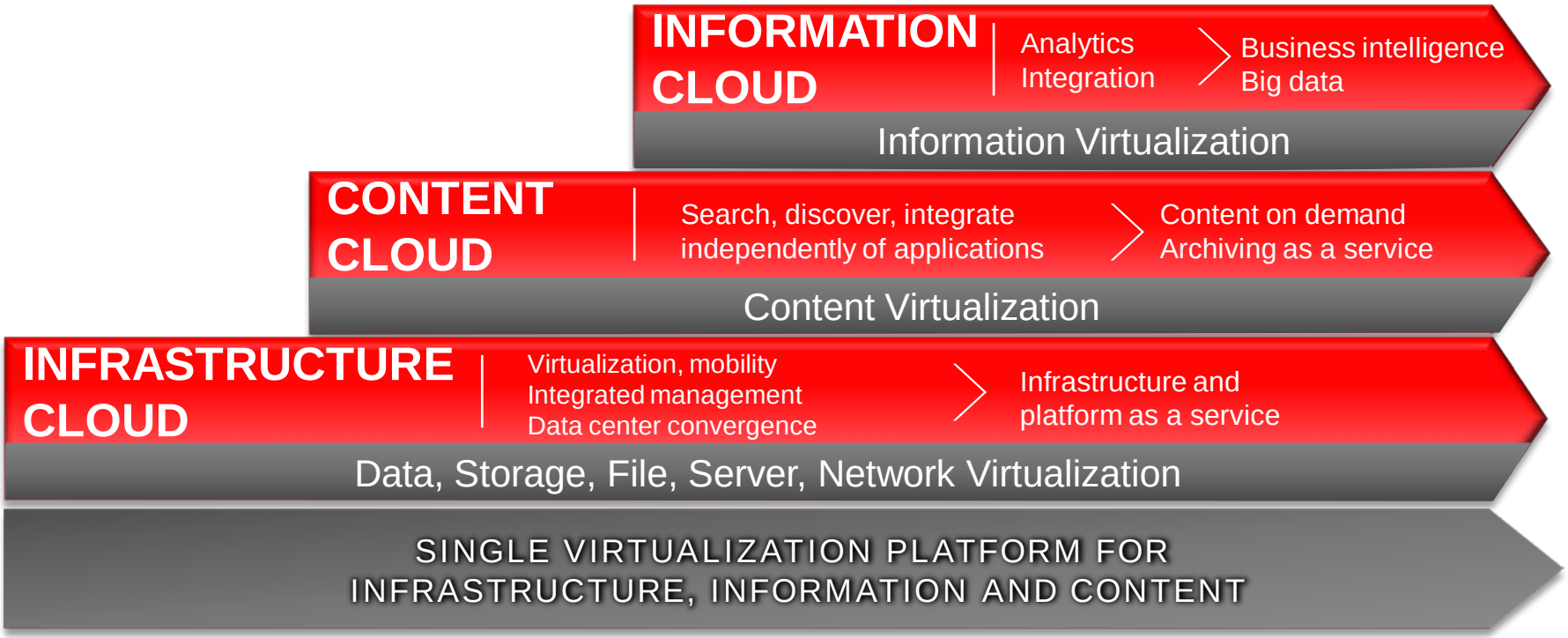

Infrastructure

- Converged solution stacks
- Converged platform for storage and compute
- Heterogeneous virtualization

Data Intelligence

- Data lifecycle management
- Index, search, and discover independent of application
- Integrated meta data management

Information Analytics

- Analytical search
- Derived data integration
- Data analytics independent of application and media

Results in cost savings, efficiency, seamless access to information for business insight and competitive advantage

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3-7. The Infrastructure Cloud

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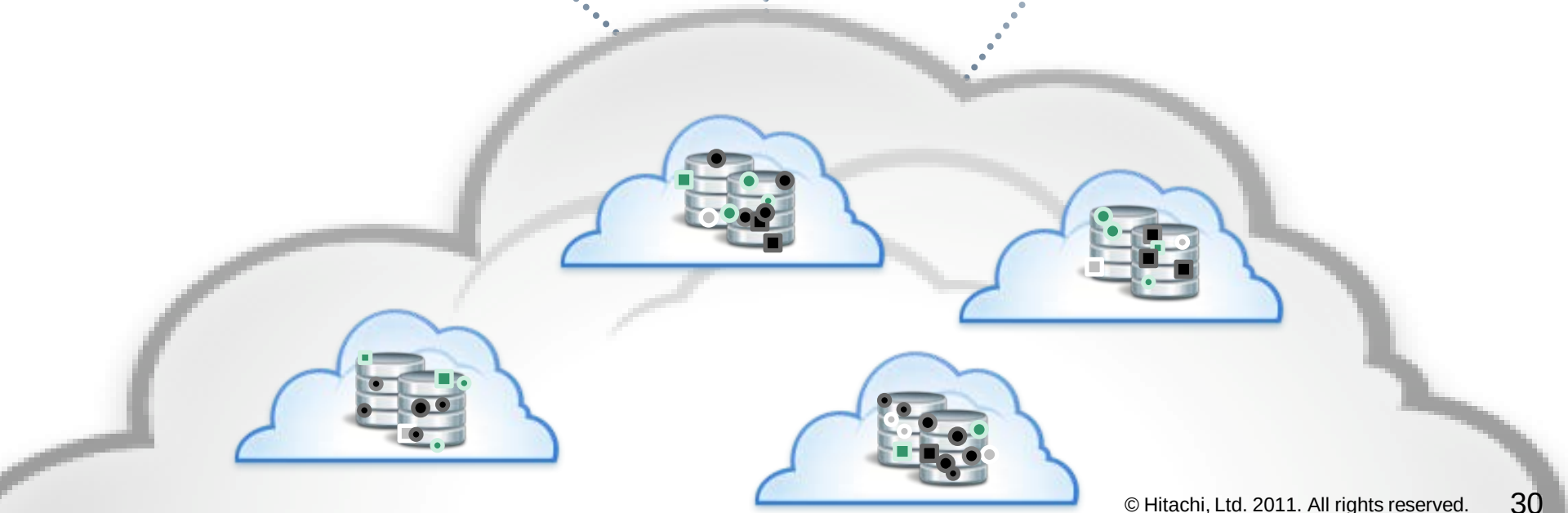
INFRASTRUCTURE AND PLATFORM AS A SERVICE

RAPID, ON-DEMAND DEPLOYMENT

ELASTIC SCALABILITY FOR PRIVATE, HYBRID AND PUBLIC



3-8. Inside the Content Cloud

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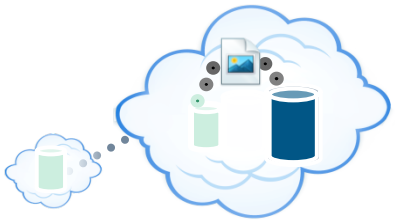
DISCOVERY & SEARCH ACROSS APPLICATIONS

CONTENT CORE

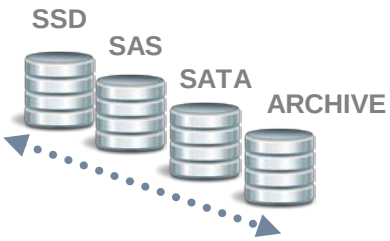
MULTI APPLICATION INDEXING
AUTOMATED TIERING / ARCHIVING
CONTENT REPURPOSING
DATA LIFECYCLE MANAGEMENT
VIRTUAL CONTAINERIZATION

CONTENT & DATA VIRTUALIZATION

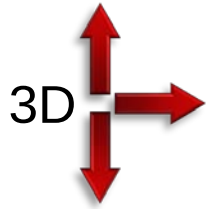


CONTENT INDEPENDENT OF APPLICATION & MEDIA

CENTRALIZED GOVERNANCE



MASSIVE SCALABILITY & PERFORMANCE



3-9. Healthcare Content Cloud in Use Today

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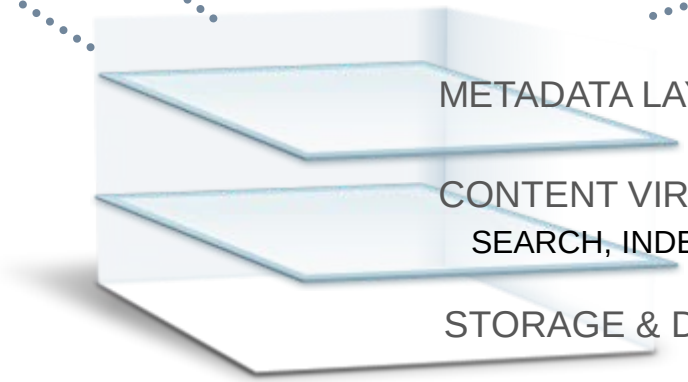
KLINIKUM WELS SOLUTION ARCHITECTURE

ADMISSION X-RAY LAB PHYSICIAN

DEPARTMENTS

HOSPITAL
HEALTH PORTAL

INFORMATION CLOUD
CONTENT CLOUD
INFRASTRUCTURE CLOUD
SINGLE VIRTUALIZATION PLATFORM



METADATA LAYER

CONTENT VIRUTALIZATION LAYER
SEARCH, INDEXING, DATA LIFECYCLE MGMT

STORAGE & DATA VIRTUALIZATION LAYER

SECONDARY
SITE

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3-10. Imagine the Possibilities – Access to Integrated Patient Data

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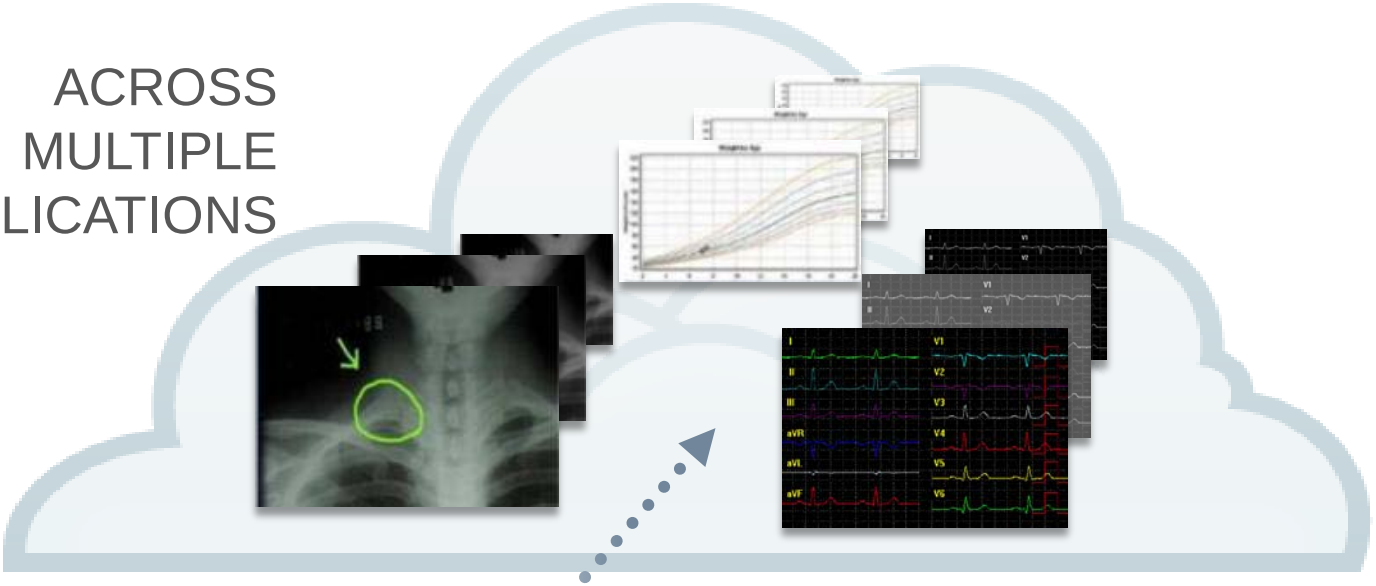
ACROSS
MULTIPLE
APPLICATIONS



TIME

30 years…

10 years

5 years

- Generations of applications and media
- Cumulative effects of growing data
- Moving petabytes of data – lifecycle management
- Repurpose billions to trillions of objects
- Protect, delete billions to trillions of objects
- Discover and correlate meaningful trends and analytics

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3-11. Scalable Content Cloud – Today!

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BLUEARC + HDS
FILE AND CONTENT MOBILITY, INTELLIGENT TIERING AND HOLISTIC SEARCH

HDS DATA ANALYTICS, BUSINESS INTELLIGENCE, MASSIVE SCALE-OUT LEVERAGE PARASCALE

INFORMATION CLOUD

CONTENT CLOUD

INFRASTRUCTURE CLOUD

SINGLE VIRTUALIZATION PLATFORM FOR INFRASTRUCTURE, INFORMATION AND CONTENT

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3-12. An Integrated Hitachi Vision: Big Data / Analytics

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FINANCE


PUBLIC


DISTRIBUTION


MEDICAL

ENTERPRISE SYSTEMS


RAILWAY


ELEC. POWER


TRAFFIC


SECURITY

SOCIAL INFRASTRUCTURE INTELLIGENCE

HITACHI, LTD. CLOUD SOLUTION

(SERVICE DELIVERY)

INFORMATION CLOUD
Information Virtualization

CONTENT CLOUD
Content Virtualization

INFRASTRUCTURE CLOUD
Data, Storage, File, Server, Network Virtualization

- **BIG DATA MANAGEMENT**
- **MACHINE TO MACHINE NETWORK**
- **EQUIPMENT MANAGEMENT**
- **COOPERATION WITH CONTROL SYSTEMS**

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3-13. HDS Business Execution of the Vision

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STRONG GLOBAL REVENUE GROWTH

TRUSTED BY 82% OF THE TOP 100 FORTUNE GLOBAL 1000®

INTEGRATED R&D INVESTMENTS

STRONG INTEGRATION ACROSS HITACHI COMPANIES

BLUE ARC®
PART OF HITACHI DATA SYSTEMS

SHODEN
DATA SYSTEMS

KEY 2011 ACQUISITIONS

2011 WORLD'S MOST ETHICAL COMPANIES
WWW.ETHISPHERE.COM

RESPECTED BUSINESS CULTURE

3-14. HDS Growth Strategy

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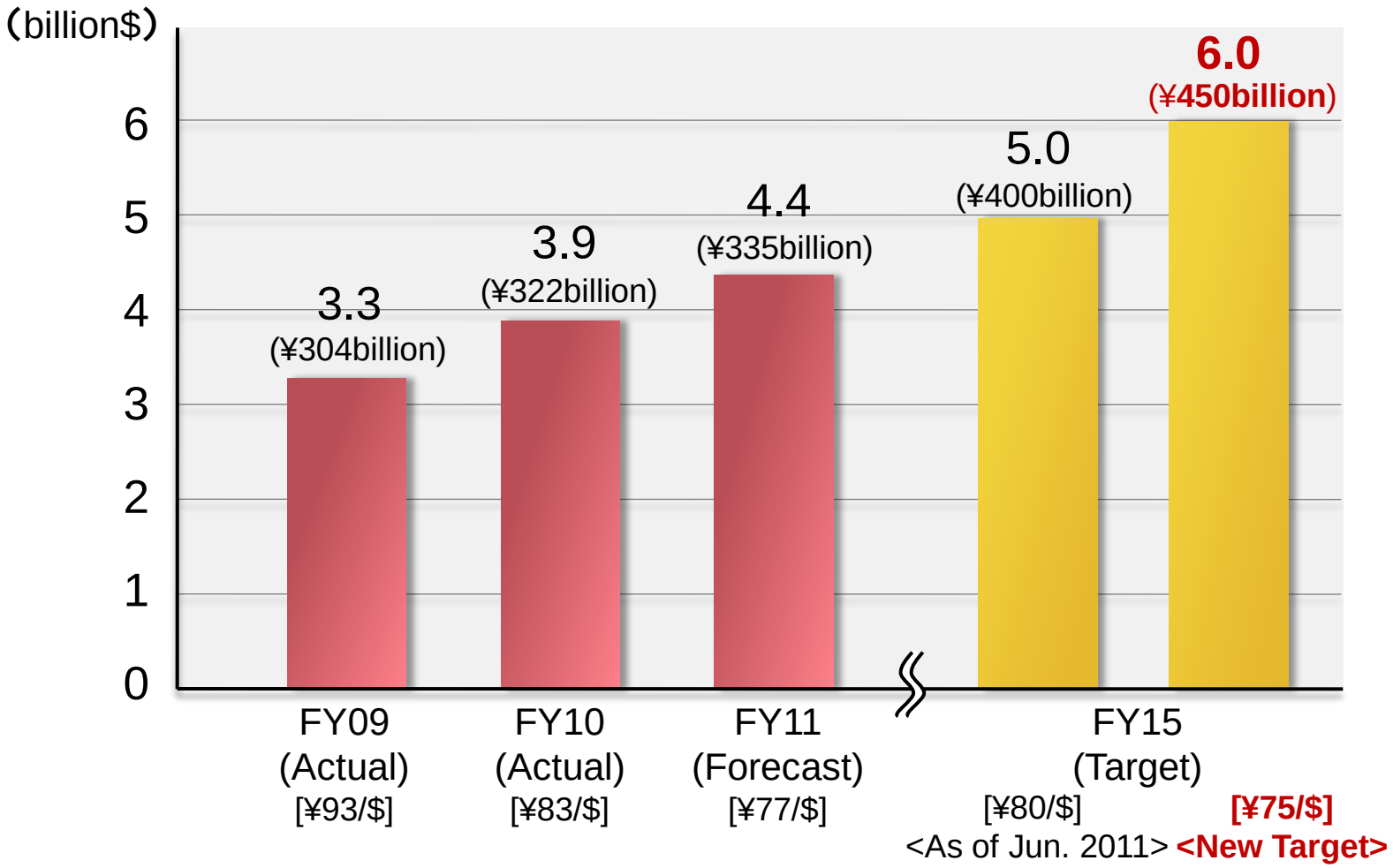
Business Model Shift to Software and Services	Invest aggressively in software intellectual property and portfolio depth
Leveraging our Partnerships	Strengthen channel, alliance and systems integrator programs
Market and Global Expansion	● Integrated strategy for structured and unstructured data including Big Data, cloud, managed services ● Vertical markets (e.g. Health and Life Sciences, Telco, Media, Entertainment) ● Strong emerging market growth in BRICs and Africa

3-15. Revenue Targets: Storage Solution Business



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4-1. Conclusion

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FY2015 Business Targets

Revenues: ¥2.3 trillion / Operating income ratio: 8%

Overseas revenues: ¥800.0 billion / Overseas revenue ratio: 35%

- Strengthen domestic businesses
- Expand global businesses

Fields of future focus

- Fused businesses
- Highly reliable cloud businesses
- Businesses for effectively utilizing Big Data

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Cautionary Statement

Certain statements found in this document may constitute “forward-looking statements” as defined in the U.S. Private Securities Litigation Reform Act of 1995. Such “forward-looking statements” reflect management’s current views with respect to certain future events and financial performance and include any statement that does not directly relate to any historical or current fact. Words such as “anticipate,” “believe,” “expect,” “estimate,” “forecast,” “intend,” “plan,” “project” and similar expressions which indicate future events and trends may identify “forward-looking statements.” Such statements are based on currently available information and are subject to various risks and uncertainties that could cause actual results to differ materially from those projected or implied in the “forward-looking statements” and from historical trends. Certain “forward-looking statements” are based upon current assumptions of future events which may not prove to be accurate. Undue reliance should not be placed on “forward-looking statements,” as such statements speak only as of the date of this document.

Factors that could cause actual results to differ materially from those projected or implied in any “forward-looking statement” and from historical trends include, but are not limited to:

- economic conditions, including consumer spending and plant and equipment investment in Hitachi’s major markets, particularly Japan, Asia, the United States and Europe, as well as levels of demand in the major industrial sectors Hitachi serves, including, without limitation, the information, electronics, automotive, construction and financial sectors;
- exchange rate fluctuations of the yen against other currencies in which Hitachi makes significant sales or in which Hitachi’s assets and liabilities are denominated, particularly against the U.S. dollar and the euro;
- uncertainty as to Hitachi’s ability to access, or access on favorable terms, liquidity or long-term financing;
- uncertainty as to general market price levels for equity securities in Japan, declines in which may require Hitachi to write down equity securities that it holds;
- the potential for significant losses on Hitachi’s investments in equity method affiliates;
- increased commoditization of information technology products and digital media-related products and intensifying price competition for such products, particularly in the Components & Devices and the Digital Media & Consumer Products segments;
- uncertainty as to Hitachi’s ability to continue to develop and market products that incorporate new technologies on a timely and cost-effective basis and to achieve market acceptance for such products;
- rapid technological innovation;
- the possibility of cost fluctuations during the lifetime of, or cancellation of, long-term contracts for which Hitachi uses the percentage-of-completion method to recognize revenue from sales;
- fluctuations in the price of raw materials including, without limitation, petroleum and other materials, such as copper, steel, aluminum, synthetic resins, rare metals and rare-earth minerals, or shortages of materials, parts and components;
- fluctuations in product demand and industry capacity;
- uncertainty as to Hitachi’s ability to implement measures to reduce the potential negative impact of fluctuations in product demand, exchange rates and/or price of raw materials or shortages of materials, parts and components;
- uncertainty as to Hitachi’s ability to achieve the anticipated benefits of its strategy to strengthen its Social Innovation Business;
- uncertainty as to the success of restructuring efforts to improve management efficiency by divesting or otherwise exiting underperforming businesses and to strengthen competitiveness and other cost reduction measures;
- general socioeconomic and political conditions and the regulatory and trade environment of countries where Hitachi conducts business, particularly Japan, Asia, the United States and Europe, including, without limitation, direct or indirect restrictions by other nations on imports and differences in commercial and business customs including, without limitation, contract terms and conditions and labor relations;
- uncertainty as to the success of alliances upon which Hitachi depends, some of which Hitachi may not control, with other corporations in the design and development of certain key products;
- uncertainty as to Hitachi’s access to, or ability to protect, certain intellectual property rights, particularly those related to electronics and data processing technologies;
- uncertainty as to the outcome of litigation, regulatory investigations and other legal proceedings of which the Company, its subsidiaries or its equity method affiliates have become or may become parties;
- the possibility of incurring expenses resulting from any defects in products or services of Hitachi;
- the possibility of disruption of Hitachi’s operations in Japan by earthquakes, tsunamis or other natural disasters, including the possibility of continuing adverse effects on Hitachi’s operations as a result of the earthquake and tsunami that struck northeastern Japan on March 11, 2011;
- uncertainty as to Hitachi’s ability to maintain the integrity of its information systems, as well as Hitachi’s ability to protect its confidential information or that of its customers;
- uncertainty as to the accuracy of key assumptions Hitachi uses to evaluate its significant employee benefit-related costs; and
- uncertainty as to Hitachi’s ability to attract and retain skilled personnel.

The factors listed above are not all-inclusive and are in addition to other factors contained in Hitachi’s periodic filings with the U.S. Securities and Exchange Commission and in other materials published by Hitachi.

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