

RIETI Policy Symposium (2008.1.11)

Innovation Process and Performance: Findings and lessons from inventors surveys in Japan, the U.S., and Europe

HITACHI
Inspire the Next

Future R&D Strategy and Policy

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Challenges

Environmental conservation
Declining population
Scarce resources



Product

Productivity Improvement

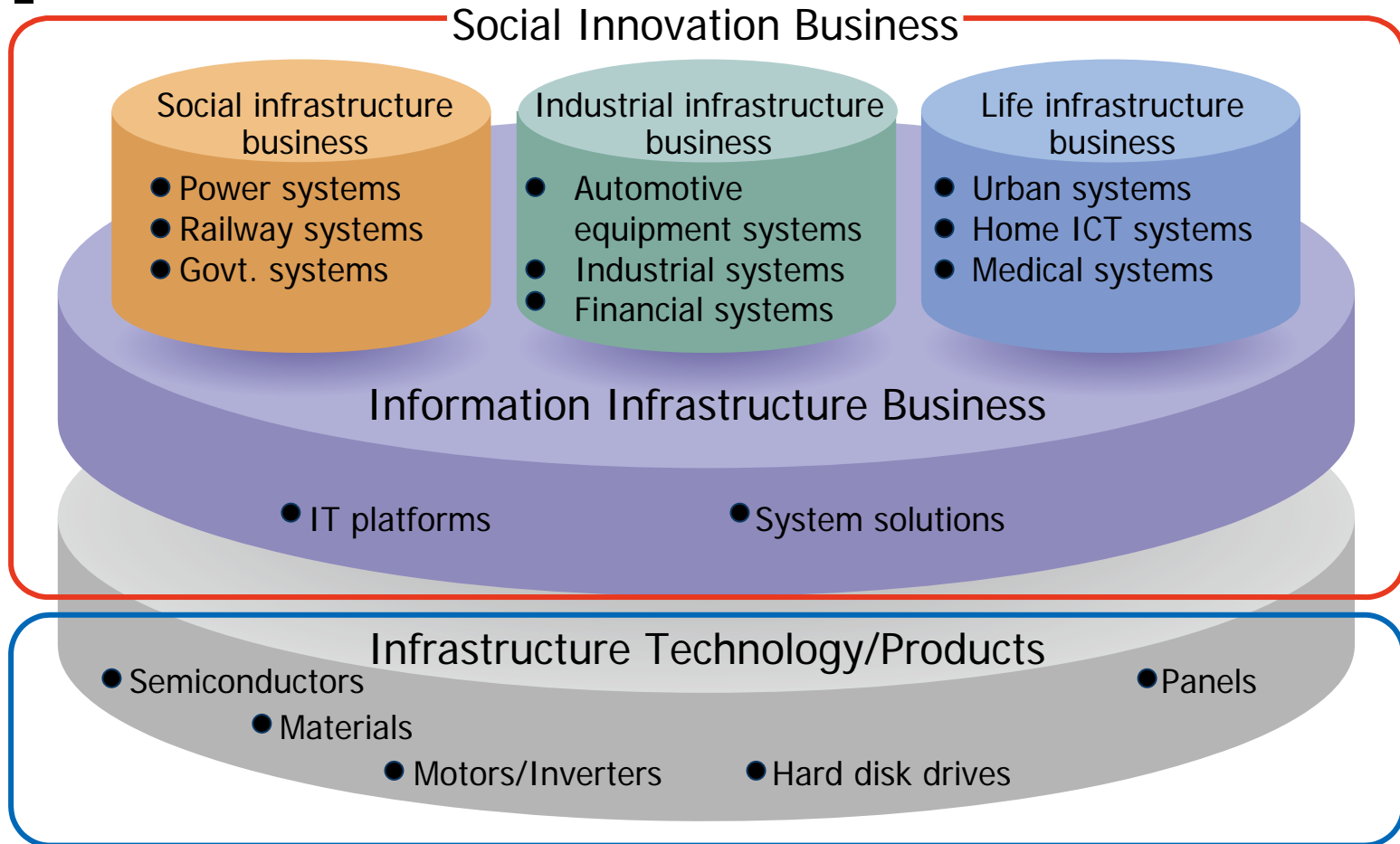
R&D process
Production process
Sales process
Service process

Science

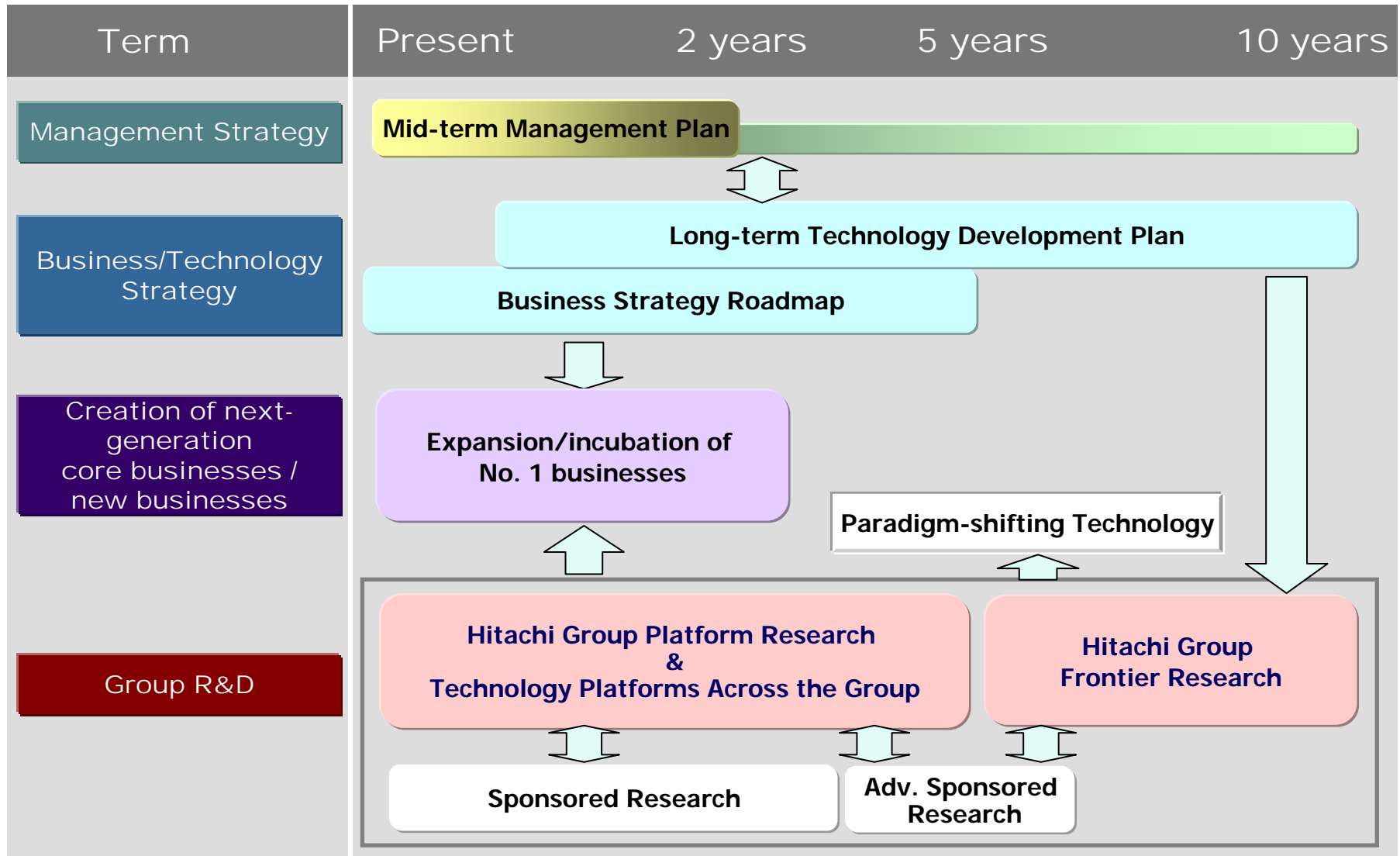
Natural, social, human

- Difficulty of adapting technology to increasingly complex market needs → Human capital development process
- Gateway management
- Open innovation
- Globalization
- Collaboration / Individual capability

- ◆ Fortify social innovation business
- ◆ Maximize synergy with infrastructure technology/products
- ◆ Profit-focused innovation

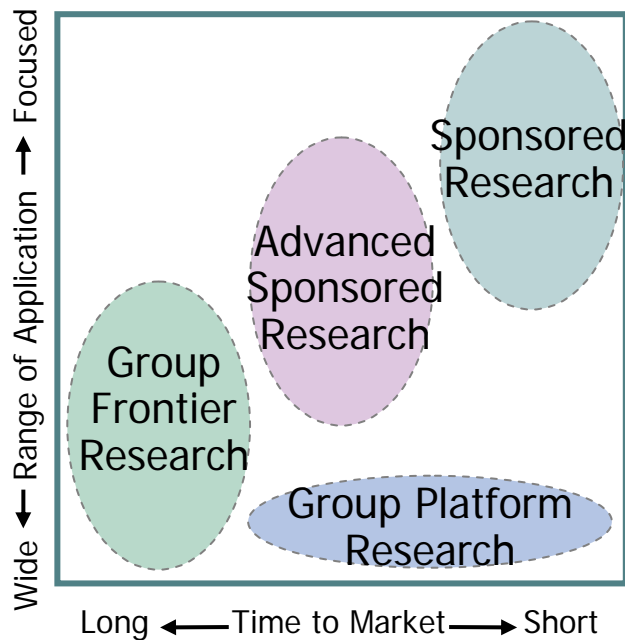


Hitachi Group Research Schemes



Research Schemes – Types of Research –

Sphere of research schemes



Category	Group Frontier Research	Group Platform Research	Adv. Sponsored Research	Sponsored Research
Purpose	Basic / Frontier research <ul style="list-style-type: none"> • Exploration of new core business for the Hitachi Group; • R&D and IP on paradigm-shifting technology & new business models 	Common platform technology research <ul style="list-style-type: none"> • Speed-up Hitachi Group productivity, reliability & devt. speed by advancing MONOZUKURI platform technologies 	New business research <ul style="list-style-type: none"> • R&D on technology in-line with the mid-long term technology strategy of the Business Groups 	New product research <ul style="list-style-type: none"> • Development of technology indispensable for business growth / development of the sponsor
Target Time to Market	5 years <	1~5 years	3~5 years	1~3years
Funding	Funded by Business Groups & Hitachi Group companies on a business-level scale		Projects funded individually by Business Group and/or Hitachi Group company	
Managed by	Head of Frontier & Fundamental Research Segment		Research Segment Head	Business Gr. / Hitachi Gr. company
%		15%	25%	60%

Technology Platforms across the Hitachi Group

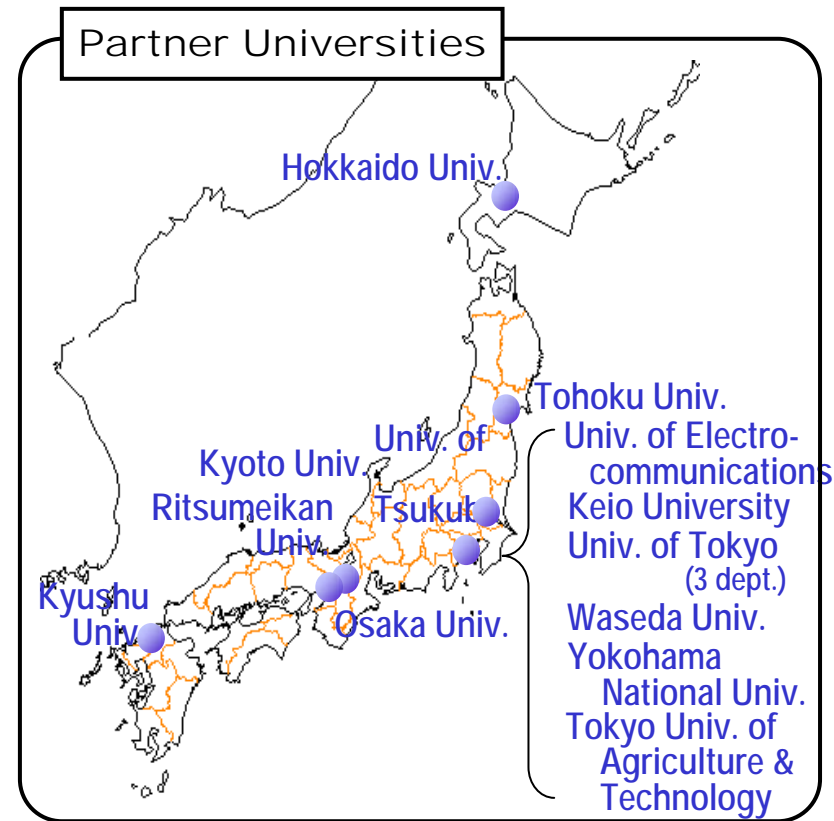
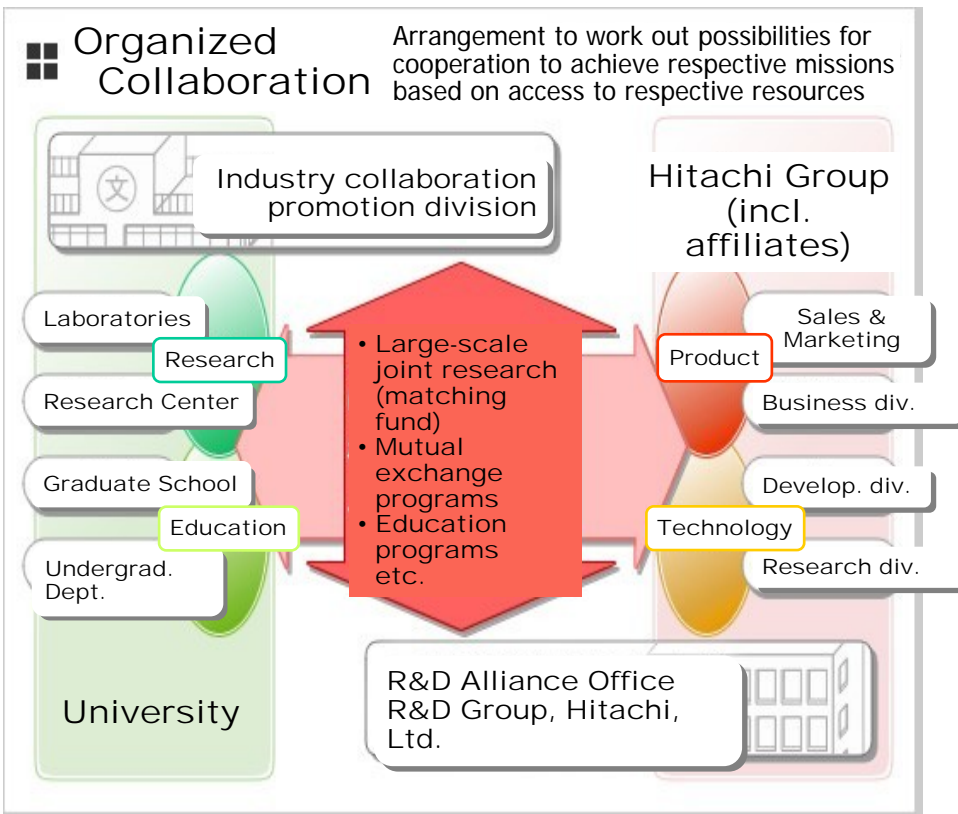
- ◆ Group wide enhancement & fusion of common key technology and personnel development

	Mechanical & Electrical		Electronics			Information			
Purpose	Fostering No.1 technology Improve business competitiveness		Improve product competitiveness Improve productivity			Development of service businesses Reform of solution operations			
Details	Materials	Digital Engineering	Embedded Systems			Service Science			
	Electronics Environment & Energy New materials Medical & Biotechnology Nanotechnology	Electron beam-based measurement Non-destructive measurement Product design support Optimal motor development	Solution LSIs Efficient systems developmt. Platforming Project management Optimal inverter development			Outsourcing EA*/SoA**/Initial stage consulting Application of advantage technology and devices New Service Methodologies *EA: Enterprise Architecture **SoA: Service Oriented Architecture			
Technology Platform	Materials Research Laboratory '04.04	Mechanical Innovation Center '05.03	Advanced Simulation Center '04.04	Motor Innovation Center '05.10	Adv. Measurement & Analysis Center '04.04	Inverter Innovation Center '06.04	Embedded System Platform Research Laboratory '05.04	uVALUE Innovation Center '05.10	Cooperative Creation with Customers (Lab. Open Days) '02 ~
Industry - academia cooperation									

Industry-Academia Collaboration

Purpose: Promotion of "Open Innovation"

- Speed-up of R&D and business development
- Creation of new products and services through the technological fusion of multiple areas
- Creation of disruptive technologies to realize paradigm shifts and establishment of new business



Global R&D Network

● Hitachi Europe Ltd.



<30>

Oct. 2005: Established Automotive R&D Lab.

Fundamental Device
Physics
Organic Electronics
Numerical Analysis
Mobile Communications,
Security
Automotive Systems

● Hitachi Asia Ltd. (Singapore) <5>



April 2005: Established Hitachi Storage
Mechanics Laboratory

Storage
Mechanics

● Hitachi (China) Research & Development Corporation



<80>

Apr. 2006: Established Digital Appliance
Development Center

IP Networks
Digital TVs
Innovative
Software
Materials

● Hitachi America, Ltd.



<40>

(Hitachi GST Yerba Buena building)

Automotive Products
Advanced Wireless
Systems
Storage Area Network
Solutions

R&D Organization

<R&D Personnel>

Main Research Themes

Culture for Learning & Growth (1)

Purpose

- Association within the Hitachi Group & Hitachi Zosen Co., of doctoral degree holders
- Foster an in-house ethos of aspiring to higher-learning
- Promote wide technological cooperation through close exchange between members
- Contribute to society and its development through science & technology

Establishment

- 1952 (initiated by Dr. Kumeo BABA, 1st General Manger of CRL)

Origin of Name

- Taken from the teachings of the Chinese philosopher, Meng-tzi (Mencius)

「愛人不親返其仁」(孟子) - 仁 ("愛" "慈悲")の心に返る -
ヒトヲアイシテシタシマザレバソノジンニカエレ

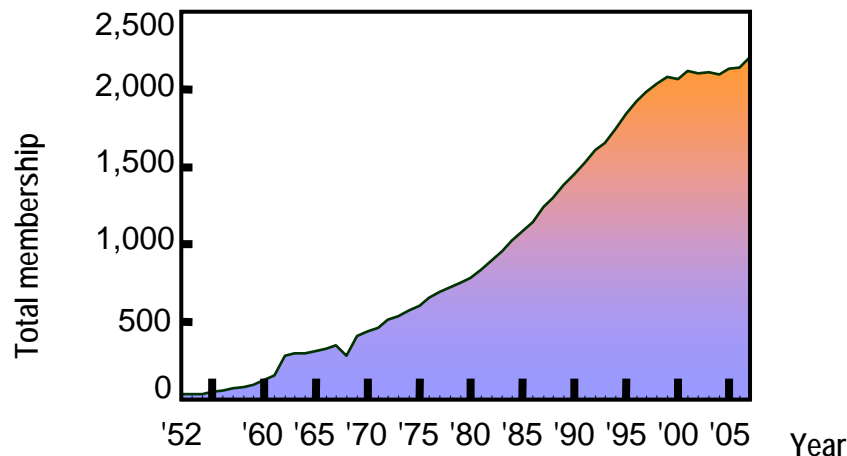
(Initially, "Association of 30 Doctors". In 1953, changed name to Henjin-kai (変人会、eccentric person); and in 1959, adopted current name Henjin-kai (返仁会、return benevolence))

Membership

- Total membership 2,205
(as at 2007/3/31)



Silver medal with the image of Dr. Baba, the 1st Henjin-kai President on the front, and the name of the recipient on the back



Fellow

- established to recognize the distinguished service and contributions of an employee to the progress of science and technology on a world-level and to the international acknowledgement of Hitachi's high standard of technology.
- Hitachi Fellow is equivalent to that of a Board Director, and a Fellow is assured freedom of choice in research theme, research funding and support for external professional activities.

Introduced

- June 1999



伊藤 清男
ITOHI Kiyoo

Appointed June 1999
(Semiconductor
Memory)



外村 彰
TONOMURA Akira

Appointed June 1999
(Holography Electron
Microscope)



小高 俊彦
ODAKA Toshihiko

Appointed June 2002
(Large-scale
general purpose
computer, supercomputer)



神原 秀紀
KAMBARA Hideki

Appointed June
2003
(DNA Sequencer)



小泉 英明
KOIZUMI Hideaki

Appointed April
2004
(Optical
Topography)



中村 道治
NAKAMURA Michiharu

Appointed April
2007
(Nanoelectronics)