

Fifty years of history as seen in the “Hitachi Souken” Journal

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In September 1973, the year of its founding, Hitachi Research Institute (HRI) began publishing the “Hitachi Souken” Journal as a research journal limited distribution to Hitachi Group companies. In May 2006, the journal was reorganized for a broader audience outside the Hitachi Group and has continued to be published to this day. To date, 51 volumes and 187 issues have been published, with the number of articles written by researchers at HRI (including “Research Report”) exceeding 400. On the occasion of the 50th anniversary of the founding of Hitachi Research Institute, let us look back on the world trends that HRI has seen over the past 50 years by reviewing the changes in research themes that have been covered in the “Hitachi Souken” Journal. Specifically, we extracted the keywords frequently tackled in research articles of different time periods from the three perspectives of (1) macro environment, (2) region, and (3) corporate management. We then looked at the themes explored in research articles in relation to these keywords for each time period. (Note: Some of the titles of the articles have been abbreviated or shortened for this article).

1. 1970s: “Resource and Energy Problems”, “Western Europe”, and “International Management”

1.1 Macro Environment: Resource and Energy Problems

In the 1970s, two oil crises occurred respectively in 1973 and in 1978, leading to the emergence of resource and energy problems as major global challenges. HRI was established at the initiative of Kenichiro Komai, then Chairman of the Hitachi, Ltd. Komai was in fact a member of the Club of Rome, which had published *The Limits to Growth* in 1972, a report that warned against the depletion of global resources. Hence, HRI dealt with resource and energy issues from the time of its establishment.

The inaugural edition of “Hitachi Souken” Journal,

published in September 1973, just before the first oil crisis occurred in October 1973, tackled the resource problem in Japan (Table 1, 1-(1)). And the second edition issued in December 1973, immediately after the first oil crisis occurred, included two articles (1-(2), (3)) on the effects of the crisis in Japan. HRI then published analyses on the effects of the oil crisis from various angles, such as new energy sources to replace oil (1-(4)), the impact of the oil crisis on the international competitiveness of Japanese industries (1-(5)), and the effect of oil money on global financial markets (1-(6)), while looking into the future of major resources other than oil from the perspective of resource nationalism (1-(7)).

Table 1. Articles posted in “Hitachi Souken” Journal on resource and energy problems

No.	Article title (Month and Year)
1- (1)	Resource problem in Japan (Part 1) (Sep 1973)
1- (2)	Recent energy situation: Resource problem in Japan (Part 2) (Dec 1973)
1- (3)	Analysis of the impact of reduction in oil supply on Japan’s economy (Dec 1973)
1- (4)	Future energy resources (Mar 1974)
1- (5)	Comparison of international competitiveness between Japan and West Germany after the oil crisis (Oct 1974)
1- (6)	Credit uncertainty in the Euromarket and the current situation in Japan (Oct 1974)
1- (7)	Outlook on resource problems (Sep 1975)

1.2 Regions: Western Europe

Japan achieved high economic growth in the 1960s and became the world’s second-largest economy in terms of gross national product (GNP) after the U.S., joining the ranks of the world’s advanced economies. However, its growth rate gradually declined in the 1970s leading to a period of stable growth. On the other hand, the population aging rate exceeded 7% in 1970, ushering in the so-called aging society. It was, therefore, a time when the challenges that faced Japan

as a mature economy began to emerge. These issues were examined by taking Western European countries, as developed countries with a long history similar to Japan, as benchmarks.

In addition to labor-management relations (Table 2, 2-(1), (2), (3)), employment policies (2-(4)), and industrial policies (2-(5)), HRI also studied a number of Western companies to offer benchmarks for corporate management, such as those related to export strategies (2-(6)), foreign exchange measures (2-(7)), priority strategies (2-(8)), developing country strategies (2-(9)), human resources development (2-(10)), and international financial strategies (2-(11)).

Table 2. Articles posted in "Hitachi Souken" Journal on Western Europe

No.	Article title (Month and Year)
2- (1)	Background and generative factors of management participation in Western Europe (Dec 1976)
2- (2)	Comparison of Japanese-style industrial relations and West-German industrial relations (Dec 1977)
2- (3)	A new perspective on management participation system in West Germany (Mar 1979)
2- (4)	Unemployment and social problems of young workers in Western Europe (Sep 1977)
2- (5)	Background and problems of nationalization in Western Europe (Mar 1977)
2- (6)	Plant export structure in West Germany - Focusing on electrical machinery-related turnkey projects in the Middle East (Dec 1976)
2- (7)	Response of West German companies to the appreciation of the deutsche mark (Jun 1978)
2- (8)	Priority strategies under a slowdown in growth - Siemens case study (Dec 1978)
2- (9)	Strategies for developing countries by Western European heavy electric companies - Focusing on the example of Siemens - (Jul 1979)
2- (10)	On the approach to engineering and human resource development of Western European heavy electric companies (Jul 1979)
2- (11)	Siemens' international financial strategy (Aug 1979)

1.3 Corporate Management: International Management

In 1972, the amount of foreign direct investment (flow) by Japanese companies rose from the level of several hundred million dollars a year to a level exceeding two billion dollars for the first time. The year became known as

the "first year of direct investment." The 1970s was therefore a time when Japanese companies began full-scale overseas expansion. Meanwhile, the yen appreciated due to the dollar shock (1971) and the shift to a floating exchange rate system (1973), making management amid an increasingly international and complex business environment a major issue among Japanese companies in the 1970s.

HRI's research during this time focused on international management from various angles, such as corporate multinationalization (Table 3, 3-(1)), human resource management (3-(2), (3), (4)), overseas expansion strategies (3-(5), (6), (7)), international logistics (3-(8), (9)), and international financial strategies (3-(10)).

Table 3. Articles posted in "Hitachi Souken" Journal on international management

No.	Article title (Month and Year)
3- (1)	Problems associated with the multinationalization of Japanese companies (Mar 1974)
3- (2)	Recent overseas labor situation (Mar 1974)
3- (3)	Labor situation in Singapore (Oct 1974)
3- (4)	Recent labor management issues in the U.S. (Sep 1977)
3- (5)	Investment environment and business expansion in Brazil (Mar 1975)
3- (6)	Changes in market entry conditions in Saudi Arabia and responses to the changes (Jun 1978)
3- (7)	Strategies for developing countries by Western European heavy electric companies - Focusing on the example of Siemens - (Jul 1979)
3- (8)	International logistics of multinational corporations (Mar 1976)
3- (9)	International deployment of production, sales, procurement, and finance - International logistics (Dec 1978)
3- (10)	Siemens' international financial strategy (Dec 1979)

2. 1980s: "Structural Transformation", "United States" and "Marketing"

2.1 Macro Environment: Structural Transformation

In the 1980s, Japan's growth rate continued to decline from the high growth rate of the 1960s to stable growth following the oil crises of the 1970s. During this period, the structural transformation of the Japanese economy and industry was dealt with as an important issue. For example, the MITI Industrial Structure Council's "Vision

for Trade and Industry Policy in the 1980s” considered the aggregation of creative knowledge to overcome the constraints of resource-poor countries as a fundamental policy issue. Also, in response to the rapid appreciation of the yen after the Plaza Accord in 1985, the so-called Maekawa Report in 1986 pointed out the necessity of shifting from “an export-oriented economic structure to an international cooperative economic structure.” There were thus various discussions on the necessity of structural transformation of the Japanese economy and industry.

Under these circumstances, in the first half of the 1980s, HRI paid attention to changes in the industrial structure due to technological innovation (Table 4, 4-(1)) and firms’ responses to such changes (4-(2)). In the second half of the 1980s, more studies were conducted in relation to changes in the export structure and industrial structure due to trade friction and the appreciation of the yen (4-(3), (4), (5), (6)).

Table 4. Articles posted in “Hitachi Souken” Journal on structural transformation

No.	Article title (Month and Year)
4- (1)	Long-term economic forecast and changes in the industrial structure (Jun 1982)
4- (2)	New management strategies in a period of structural transformation - Focusing on the policies of the presidents of different companies (Aug 1984)
4- (3)	Structural changes in the Japanese economy and new growth opportunities for the electronics industry (Dec 1985)
4- (4)	Corporate strategy in the industrial structure transformation period (Sep 1986)
4- (5)	Challenges and countermeasures for the home appliances business in the transformation period (Jul 1987)
4- (6)	Semiconductor market transformation and strategic issues (Dec 1987)

2.2 Region: United States

In the first half of the 1980s, the Latin American debt crisis that occurred in 1982 and the slowdown in import growth in oil-producing countries prevented high growth in developing markets, bringing attention to developed markets, especially the U.S. market, which was the largest. On the other hand, the sharp increase in Japanese exports to the U.S. led to an increase in the U.S. trade deficit and intensified the trade friction between Japan and the U.S. through the late 1980s.

In the first half of the 1980s, HRI turned its attention to trends in the U.S. market for high-tech products, such as industrial robots (Table 5, 5-(1)), information and

communications (5-(2), (3)), office automation (5-(4)), and home automation (5-(5)), which were ahead of Japan. It also conducted research on considerations for Japanese companies entering the American market (5-(6), (7), (8)). Throughout the 1980s, the U.S. was one of the main research topics that HRI focused on, such as its studies on the U.S.-Japan trade friction (5-(9), (10)) in the latter half of the 1980s.

Table 5. Articles posted in “Hitachi Souken” Journal on the United States

No.	Article title (Month and Year)
5- (1)	Deployment trends and market opportunities for industrial robots in the U.S. (Feb 1981)
5- (2)	Trends and market opportunities in the new information and telecommunications market in the U.S. (Aug 1982)
5- (3)	Trends and market opportunities in the U.S. information and telecommunications market - Trends in the new PC and peripheral markets (Feb 1985)
5- (4)	Trends and business strategies in the U.S. office automation market (Dec 1983)
5- (5)	Trends and market opportunities in the U.S. home automation market (Feb 1984)
5- (6)	Trends in and responses to prohibition of employee discrimination in the U.S. (Jul 1981)
5- (7)	Response to the employment discrimination problem in the U.S. by Japanese companies (Dec 1981)
5- (8)	Corporate social responsibility philosophy and strategies in the U.S. - Focusing on IBM (Mar 1988)
5- (9)	Recent export trends and the U.S.-Japan trade friction (Sep 1985)
5- (10)	Current status of the U.S. antidumping issue and future challenges (Jul 1988)

2.3 Corporate Management: Marketing

The surge in prices triggered by the oil crises in the 1970s caused reluctance in the purchase of various products. Corporate product sales strategies, which until then had focused on reducing costs through mass production and mass consumption (“Marketing 1.0”), therefore, had to be revised. In the 1980s, Japanese companies faced the major challenge of shifting to a customer-oriented framework of producing products that meet user needs (“Marketing 2.0”).

Focusing on this trend, HRI also published studies on the challenges in product strategy in a mature economy (Tables 6, 6-(1)) and on customer-oriented marketing strategies (6-(2), (3), (4)). It also conducted research on proposals to market from manufacturers based on user knowledge (6-(5)) and on

product and sales strategies in particular industries, such as home appliances (6-(6), (7)) and semiconductors (6-(8)).

Table 6. Articles posted in “Hitachi Souken” Journal on marketing

No.	Article title (Month and Year)
6- (1)	Corporate strategies in a mature economy: Challenges in product strategy (Dec 1981)
6- (2)	Strengthening competitiveness by responding to market needs (Jun 1984)
6- (3)	Product strategy for market diversification - Focusing on user-oriented marketing (May 1985)
6- (4)	Challenges in product development emphasizing user comfort (Dec 1988)
6- (5)	Manufacturer-driven market creation (Dec 1989)
6- (6)	Survival strategies of home appliance retail stores - Report on the actual situation of consumers and retailers (Dec 1980)
6- (7)	Challenges and countermeasures for the home appliances business in the transformation period - Focusing on new product planning and distribution VAN (Jul 1987)
6- (8)	Semiconductor market transformation and strategic issues - Focusing on changes in user needs (Dec 1987)

3. 1990s: “The IT Revolution”, “Globalization”, and “Restructuring”

3.1 Macro Environment: The IT Revolution

In addition to the advancement of electronics and communication technologies that had been led by the U.S. since before the 1990s, the commercialization of the Internet, which had until then been limited to military and research purposes, and the spread of PCs with the launch of Windows 95 in 1995 led to a revolution in information and communication technology in the 1990s. This so-called IT revolution, which was believed to bring about rapid changes to society as a whole—from the industrial structure and the state of government to the lifestyles of individuals— attracted wide attention.

HRI also kept an eye on trends in related industries and technologies, including multimedia (Tables 7, 7-(1), (2)), computers (7-(3), (4)), and telecommunications networks (7-(5)). It also conducted research on the impact of the network society brought about by the spread of advanced networks on various industries such as finance (7-(6)), manufacturing (7-(7)), and service business (7-(8)) and examined the ideal form of corporate management in a network society (7-(9)).

Table 7. Articles posted in “Hitachi Souken” Journal on the IT revolution

No.	Article title (Month and Year)
7- (1)	Trends and strategic issues in multimedia-related business (Jul 1991)
7- (2)	The dawn of an advanced visual information society (Jul 1992)
7- (3)	Computer business strategies in the transition period: The case of Sun Microsystems (Oct 1991)
7- (4)	Computer business strategies in the transition period: Analysis of corporate user trends (Apr 1992)
7- (5)	Recent noteworthy technologies in communications networks - Trends in emerging wireless technologies (Oct 1999)
7- (6)	Latest trends in new payment systems (Mar 1996)
7- (7)	Manufacturing in a network society (Jun 1996)
7- (8)	New developments in the service business in the network era (Apr 1997)
7- (9)	Emergence and influence of the Internet economy: Conditions for success in the Internet economy (Jul 1999)

3.2 Region: Globalization

The end of the Cold War in 1989, which was followed by the fall of the Berlin Wall, the unification of East and West Germany, and the dissolution of the Soviet Union, led to rapid economic globalization in the 1990s, as Eastern Europe and other former communist countries entered the Western capitalist economic system.

HRI expanded the scope of its research to various countries and regions beyond developed countries in Europe and the U.S. to include Eastern Europe (Table 8, 8-(1)), China (8-(2), (3), (4), (5), (6)), India (8-(7)), South America (8-(8)), Asia (8-(9), (10), (11)), and Russia (8-(12), (13)). Moreover, it turned its attention to corporate management in response to economic globalization (8-(14), (15), (16), (17)).

Table 8. Articles posted in “Hitachi Souken” Journal on globalization

No.	Article title (Month and Year)
8- (1)	Challenges and responses to business strategies in Eastern European countries (Dec 1990)
8- (2)	Recent changes in the Chinese market and key points in the business environment (Mar 1991)
8- (3)	Future business development in rapidly changing China (Jan 1994)

No.	Article title (Month and Year)
8- (4)	Considerations for conducting business in China as it enters a new stage (Dec 1995)
8- (5)	Conducting business in China in anticipation of changes (Dec 1996)
8- (6)	Rapid expansion of the information and communications market in China (Feb 1999)
8- (7)	Re-evaluation of the Indian market (Oct 1994)
8- (8)	Revival of the South American market (Oct 1995)
8- (9)	Understanding the instability factors in Asia as a global company (Mar 1996)
8- (10)	Asia stepping up in research and development (Jun 1996)
8- (11)	Prospects for urban transport infrastructure development in Asia under economic crisis (Feb 1998)
8- (12)	Attractiveness of the Russian market (Apr 1997)
8- (13)	Global deployment of R&D utilizing Russian intellectual resources (Nov 1997)
8- (14)	Globalization of management by learning from leading electronic component manufacturers - Toward optimal allocation of functions across borders - (Jan 1995)
8- (15)	Human resources strategy in the transition to globalization: Seeking opportunities for Japanese employees to work abroad (Mar 1995)
8- (16)	Sales and product strategies in the globalization of business - Focusing on the case of the industrial machinery market in Southeast Asia - (Dec 1995)
8- (17)	Understanding of ethnicity and religion essential to capturing emerging markets (Dec 1996)

3.3 Corporate Management: Restructuring

While the world in the 1990s experienced major changes brought about by the IT revolution and globalization, Japan entered the “lost 30 years” after the bursting of the asset price bubble in 1991 and the subsequent financial system crisis in 1997. Corporate restructuring to resolve the three excesses of employment, capacity, and debt became a major challenge.

HRI conducted research on the efforts of U.S. companies to lead restructuring around the world (Table 9, 9-(1), (2)) and the management reforms implemented by American and European companies (9-(3)). It also published studies on restructuring and management reform of Japanese companies (9-(4), (5), (6)).

Table 9. Articles posted in “Hitachi Souken” Journal on corporate restructuring

No.	Article title (Month and Year)
9- (1)	Restructuring in large U.S. companies (Sep 1992)
9- (2)	Path to revival through IBM restructuring: A sense of crisis as the “Too Big IBM” and the creation of the “IBM Federation” (Jun 1993)
9- (3)	Towards implementing and establishing management reforms - Recent trends in leading European and American companies - (Apr 1994)
9- (4)	Computer business strategies in the transition period - Restructuring of WS sales network - (Oct 1993)
9- (5)	Attention on outsourcing as a new management method: Significance and potential of “staff function spin-off” (Jul 1998)
9- (6)	Challenges for revitalizing the electrical machinery industry under economic crisis (Feb 1999)

4. 2000s: “Environmental Problems”, “China”, and “Corporate governance”

4.1 Macro Environment: Environmental Problems

At the 3rd Session of the Conference of the Parties to the United Nations Framework Convention on Climate Change (COP3), held at Kyoto in 1997, legally binding numerical targets were decided for the reduction of greenhouse gas emissions by industrialized countries, and in 2005, the Kyoto Protocol to prevent global warming came into effect. The 2000s were thus a time when environmental problems, particularly global warming, became largely focused on. In Japan, the Basic Act for Establishing a Sound Material-Cycle Society (Waste Recycling Law) was enacted (2000), the Environmental Agency was reorganized into the Ministry of the Environment (2001), and the Home Appliance Recycling Law was enforced (2001). There was therefore progress in the introduction of policies aimed at addressing environmental problems.

During this period, HRI conducted research on domestic and international policy trends (Table 10, 10-(1), (2)) and the impact of environmental problems on industries (10-(3), (4), (5)) and enterprises (10-(6), (7), (8)).

Table 10. Articles posted in “Hitachi Souken” Journal on environmental problems

No.	Article title (Month and Year)
10- (1)	Advancement of environmental policies leveraging market mechanisms (Aug 2001)
10- (2)	Current status of environmental problems in China and future issues (Aug 2007)
10- (3)	Environmentally friendly vehicles: Impact of driveline innovation on the industry (Mar 2000)
10- (4)	Response to environmental problems with oil sands and relationship with Japan (Aug 2007)
10- (5)	Material technologies for next-generation solar cells - Focusing on organic photovoltaics - (Jul 2009)
10- (6)	Developing new businesses from changing environmental problems (Nov 2004)
10- (7)	Project for strategic research on global environmental problems (Oct 2008)
10- (8)	Deepening environmental management through green logistics (Nov 2009)

4.2 Region: China

In the 1990s, under its “socialist market economy” policy, China promoted the separation of ownership and management of state-owned enterprises, privatization, and the nationwide expansion of economic open zones, thereby establishing itself as the “factory of the world.” Furthermore, in the 2000s, China opened up its domestic market by joining the World Trade Organization (WTO) at the end of 2001, expanding its presence as a “market of the world” and continuing high economic growth. In 2010, it overtook Japan in terms of gross domestic product (GDP) and became the world’s second largest economy.

HRI has been conducting research on China since before the 2000s and continued to focus on China in the 2000s from various perspectives, including IT (Table 11, 11-(1)), finance (11-(2)), corporate management (11-(3)), industrial policy (11-(4)), national planning (11-(5)), and environmental problems (11-(6)).

Table 11. Articles posted in “Hitachi Souken” Journal on China

No.	Article title (Month and Year)
11- (1)	The IT revolution in China - Focusing on mobile phone business - (Dec 2000)
11- (2)	Current financial situation in China (Nov 2002)

No.	Article title (Month and Year)
11- (3)	Management issues and recommendations for Japanese companies in China (Apr 2004)
11- (4)	Industrial policy and dynamism of the market economy in China’s television industry (Oct 2005)
11- (5)	China’s 11th Five-Year Plan and the future of the Chinese economy (May 2006)
11- (6)	Current status of environmental problems in China and future issues (Aug 2007)

4.3 Corporate Management: Corporate Governance

Japanese companies, which promoted restructuring in the 1990s, had to deal with amendments to the Commercial Code and Companies Act and changes in accounting standards that started in 2001, the discovery of a series of corporate deception and concealment issues in 2002, and the Livedoor shock in 2006. These events led to questions about the fundamental form of corporate governance, including the relationship with stakeholders such as shareholders, customers, employees, and local communities (discussions on “to whom does the company belong to?”), and about how to implement transparent, fair, prompt, and decisive decision-making and information disclosure.

During this period, HRI also took up issues related to corporate governance from various perspectives, such as approach to group management (Table 12, 12-(1)), corporate value evaluation (12-(2)), M&A (12-(3), (4)), information disclosure (12-(5)), and corporate finance (12-(6) (7)).

Table 12. Articles posted in “Hitachi Souken” Journal on corporate governance

No.	Article title (Month and Year)
12- (1)	Recent discussions on holding companies: Focusing on active ownership (May 2000)
12- (2)	New trends in financial service needs in operating companies and the need for business evaluation (May 2003)
12- (3)	Analysis of mergers and acquisitions using econometric models (Nov 2003)
12- (4)	Steps to realize new business strategies in mergers and business integrations (Oct 2005)
12- (5)	Proposal for information disclosure of intangible assets - Potential use of value chain scoreboard (VCS) - (Apr 2004)
12- (6)	Management innovation of operating companies by leveraging finance functions (Aug 2006)
12- (7)	Changes in corporate finance and expectations for financial services (Oct 2008)

5. 2010s: “International Trade Policy”, “Emerging Countries”, and “Data Management”

5.1 Macro Environment: International Trade Policy

In the midst of economic globalization in the 1990s, the WTO, which was established in 1995, expanded its regional coverage, with China joining in 2001 and Russia in 2012. However, efforts toward trade liberalization (multilateral trade negotiations) came to a standstill in the 2000s due to conflicting interests between developed and emerging countries. On the other hand, worldwide, movements toward the conclusion of individual free trade agreements (FTAs) have accelerated further, such as the Trans-Pacific Partnership Agreement (TPP) in which Japan joined in 2013.

The movements in various countries and regions toward the conclusion of FTAs were complex and diverse. During this period, HRI tackled the progress of trade negotiations focusing on Asia, which has close ties with Japan (Tables 13, 13-(1), (2), (3)) as research topics, while also paying close attention to developments in China (13-(4)), Russia (13-(5), the EU (13-(6)), and the U.S. (13-(7)), which had an impact on those negotiations.

Table 13. Articles posted in “Hitachi Souken” Journal on international trade policies

No.	Article title (Month and Year)
13- (1)	Deepening, multi-layering, and broadening of trade negotiations in Asia (Feb 2012)
13- (2)	Deepening ASEAN economic integration as the foundation of mega-FTAs, RCEP (Nov 2013)
13- (3)	Growing expectations for financial cooperation among ASEAN+3 (Mar 2014)
13- (4)	ACFTA and China’s foreign trade policy (Mar 2010)
13- (5)	The impact of Russia’s accession to the WTO on Japanese companies (May 2012)
13- (6)	EU’s goal in promoting the conclusion of free trade agreements with ASEAN countries (Nov 2013)
13- (7)	Economic and trade policies of the Trump administration and their effects (Feb 2017)

5.2 Region: Emerging Countries

After the global financial crisis in 2008, the growth rate of developed economies slowed, partly due to the sluggish growth of Europe, which was subsequently hit by the Euro crisis, and Japan, which was reeling from the aftereffects of the bursting of the economic bubble. Meanwhile, emerging

countries mainly in Asia, such as BRICS¹, VISTA², and Next11³ showed remarkable economic growth.

As these promising emerging countries gained increasing attention, HRI expanded its research horizons to Asian countries and regions, such as the “Asian Belt” (Tables 14, 14-(1)), Indonesia (14-(2)), and the Mekong region (14-(3)), as well as to the Islamic region around the Middle East (14-(4), (5)) and to Africa (14-(6)). It also engaged in exploring business opportunities for Japanese companies in emerging markets (14-(7), (8), (9), (10)) and analyzing “emerging giants” (growing companies in emerging countries) (14-(11), (12)).

Table 14. Articles posted in “Hitachi Souken” Journal on emerging countries

No.	Article title (Month and Year)
14- (1)	Economic development in the Asian Belt and the role of Japanese companies (Mar 2010)
14- (2)	Challenges toward sustainable development in Indonesia, the emerging domestic demand giant (May 2011)
14- (3)	Transformation of the Mekong region through multi-linkage (Nov 2012)
14- (4)	Flow of Funds supporting the rise of the Islamic economy – Oil money and Islamic finance (Aug 2012)
14- (5)	Malaysia aiming to become a hub for the Islamic world (Feb 2013)
14- (6)	Four Southern African countries undergoing transformation (Southern Four) (Aug 2012)
14- (7)	BOP business in developing countries (Aug 2010)
14- (8)	Infrastructure needs seen through living conditions in rural communities in Indonesia (May 2011)
14- (9)	African market aiming to achieve growth through cross-border infrastructure (Feb 2016)
14- (10)	Establishing a hydrogen society in Asia (Feb 2016)
14- (11)	Research on emerging giants (Oct 2010)
14- (12)	Emerging market companies advancing to become the world’s top enterprises (Feb 2011)

5.3 Corporate Management: Data Management

Even after the IT revolution in the 1990s, information and communication technology continued to advance rapidly, and an environment for practical use of large

¹ BRICS: Brazil, Russia, India, China, South Africa

² VISTA: Vietnam, Indonesia, South Africa, Turkey, Argentina

³ Next11: Eleven emerging countries foreseen to grow after BRICS

amounts of data (big data) was created, such as through the spread of IT equipment including sensors, and the lowering of the cost of storing data through storage infrastructure. Data, therefore, came to be called the “oil of the 21st century.” In its 2011 report on Personal Data: The Emergence of a New Asset Class, the World Economic Forum contended that personal data is the new oil for the Internet society and the new currency for the digital world, affirming its high economic value. Further, with the advancement of digital technologies such as IoT and AI, the utilization of data on not only humans but also on things came to be recognized as a source of economic growth. Consequently, data management on how to utilize these data in business and management became a major challenge for companies in various industries in the 2010s.

HRI examined advanced trends in data management and data utilization (Table 15-(1), (2)), and conducted research on data utilization in various fields such as human resource management (15-(3)), finance (15-(4), (5)), biotechnology (15-(6)), mining (15-(7)), supply chain management (15-(8)), and small and medium enterprise management (15-(9)), as well as on trends in data-related regulations in different countries and regions (15-(10)).

Table 15. Articles posted in “Hitachi Souken” Journal on data management

No.	Article title (Month and Year)
15- (1)	Data management-related trends in the U.S. (Jun 2014)
15- (2)	Emergence of a transactive economy (Nov 2016)
15- (3)	Reform of human resources work offered by HR Tech (Feb 2017)
15- (4)	Prospects for new services & businesses provided by financial innovation (May 2017)
15- (5)	Minimizing friction costs with blockchain technology (Nov 2018)
15- (6)	Globally accelerating use of biodata (Aug 2018)
15- (7)	Promotion of IoT for development of mines (Aug 2018)
15- (8)	Digitally driven structural change in E2E supply chains (Nov 2018)
15- (9)	Digital transformation of SMEs for the age of Society 5.0 (May 2019)
15- (10)	Tightened regulations on data distribution and retention in the United States, China, and Europe against the backdrop of competition for data hegemony (Feb 2019)

As remarked above, we looked back on the past 50 years by extracting keywords of themes that were frequently tackled in research articles posted in “Hitachi Souken” Journal from the 1970s to the 2010s from the three perspectives of macro environment, region, and corporate management. These studies only capture a small part of the increasing complexity and uncertainty around the world through the years. HRI has been conducting research activities to respond to the needs of the times, throughout Japan’s rapid and stable growth periods and beyond, such as on the transformation of the industrial structure and the resolution of global issues. Only four years into the 2020s, we have already experienced successive epochal events that will define this period, such as the COVID-19 pandemic, the Russian invasion of Ukraine, and the rise of generative AI—pointing to the ever-increasing complexity and uncertainty of the world around us. HRI will continue to strive to contribute to the resolution of various issues facing the world and Japan through discussions with various experts and key persons at the forefront of business.

Author Introduction



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He assumed his current position after working at the Corporate Planning & Development Office of Hitachi, Ltd., among other positions. His recent research themes include energy and the environment, corporate finance, and ESG management.



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