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THE PREMIER GLOBAL SOCIETY OF FINANCIAL EXECUTIVES

Message from the Chairman

Dear Valued IAFEI Members,

It is my great pleasure to welcome you to the 61st issue of the IAFEI Quarterly. As we move through the first half of 2026, IAFEI remains dedicated to its mission of fostering a global network of financial excellence and strategic leadership.

Key Activities in 2026

Our focus this year is on strengthening IAFEI's financial sustainability, international visibility, and the value we provide to our members. To that end, I would like to highlight three significant milestones:

• **1st Quarter ExCom Meeting**: On February 9, the Executive Committee convened to set our strategic direction for the year. We reached a consensus on enhancing our digital presence, expanding our global outreach, and revitalizing our Technical Working Groups to provide more practical insights to our members.

• **Global CFO Round e-Table**: Our session on April 20th was a resounding success, bringing together over 50 participants from across the globe. This dynamic forum allowed for deep engagement on critical issues currently facing CFOs, proving the strength of our international community.

• **Continuous Discussions with FMI**: We are building a productive partnership with the Financial Modeling Institute (FMI). Our ongoing collaboration includes the development of a white paper focused on the intersection of AI and financial modeling, as well as plans for a joint webinar to be hosted in July.

Highlights of This Issue

This edition of the Quarterly features a diverse range of thought-provoking articles that address the evolving role of the financial executive in a digital and complex world:

• **Human Insight and AI**: Ian Schnoor explores the critical role of human judgment and accountability in financial modeling within an AI-enabled environment.

• **Innovation and Management Accounting**: Changjiang Lyu and Kaijun Sun provide a compelling case study on how management accounting empowers technological innovation.

• **Intelligent Human Capital**: Bin Ke discusses the shift toward data-driven "Intelligent HCM" using big data and machine learning.

• **Strategic Financial Architecture**: Diletta Fuxa and Carola Valente Della Rovere offer strategic perspectives on transfer pricing as financial architecture and the organizational importance of intellectual property.

Special Feature: **The Biological Lens of Management**

We are also proud to include a special contribution from Hiroshi Yaguchi, who introduces a fascinating new series on "Biological Management". Mr. Yaguchi challenges us to view the company as a living organism that requires its own forms of "food, exercise, and sleep" to remain healthy. He emphasizes a crucial difference: unlike humans, companies lack the "instinct" to feel pain or fatigue. Therefore, the essence of management lies in the conscious and continuous diagnosis of the organization's health.

I encourage you to explore these insights and join us in our mission to uplift and energize the IAFEI community.

Sincerely,

Tsutomu Mannari
Chairman of IAFEI (2024 - 2027)

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Ian Schnoor

This paper argues that, in today's world where **artificial intelligence (AI)** is becoming widespread, **human judgment remains critically important in financial modeling**. While AI can accelerate tasks such as formula creation and data organization**, it cannot assess the validity of assumptions within a specific business context**. Therefore, professionals are increasingly expected **not to take automatically generated results at face value, but to verify their logical consistency and uphold accountability**.

The author emphasizes that, more than technical model-building skills, it is "governance"—the ability to manage and evaluate models from a critical perspective—that serves as the key to **reliable financial decision-making**. Ultimately, even as technology continues to evolve, **it is uniquely human insight that underpins responsible decision-making.**

10 **How Does Management Accounting Empower Technology Innovation?**
Changjiang Lyu, Kaijun Sun

This **dialogue** outlines how Shanghai Luoman Technologies Inc. ("Luoman") leverages management accounting to empower technological innovation and maintain stability during business expansion.

The following points summarize the key strategies discussed in the dialogue:

- **Comprehensive Budgeting and Responsibility Accounting**
- **Support for Strategic Investments**
- **Innovative Accounting Practices**
- **Technological and AI Integration**
- **Risk and R&D Management**
- **Resilience under Economic Uncertainty**

16 Human Capital Management in the Digital Age

Bin Ke

Shift to "Intelligent HCM": The paper proposes a transition from traditional people-centric models to a data- and algorithm-driven approach termed "intelligent management." This framework leverages big data and machine learning (ML) to optimize workforce decision-making and operational efficiency.

Practical Applications:

- **Recruitment Management**
- **Turnover Management**
- **LLM Integration**

Key Insights and Challenges:

- **Data quality** is often more critical than model complexity.
- When carefully designed and tuned to well-defined business objectives, ML models have the potential to **reduce human bias**, offering a more objective and independent governance tool.
- The ongoing development of intelligent HCM requires **deep collaboration between academia and industry** to bridge the gap between theoretical frameworks and practical applications.

27 Transfer Pricing and Global Finance: Why Internal Pricing Is a Financial Architecture Decision

Diletta Fuxa, Carola Valente Della Rovere

This article explores the relationship **between transfer pricing and global finance** from the perspective of CFOs and senior executives, arguing that **internal pricing mechanisms** should be viewed not just as tax compliance tools, but as critical instruments that determine how **financial outcomes, profits, risks, and cash flows** propagate through multinational structures.

31 Intellectual Property - A Strategic View from an Organizational View Point

Diletta Fuxa, Carola Valente Della Rovere

This paper examines the strategic management of **intellectual property (IP)** in modern multinational enterprises from the perspectives of organizational theory and economic reality. The authors emphasize the importance of the **DEMPE framework**—Development, Enhancement, Maintenance, Protection, and Exploitation—which prioritizes these substantive activities over mere legal ownership. Given the current reality where innovation is distributed globally, it elucidates how intangible assets, the core source of corporate value, are created and maintained. For executive leadership, it advocates the necessity of **aligning intellectual property governance with decision-making processes and organizational structures**, rather than treating it as a simple legal procedure. Ultimately, it frames intellectual property as a **reflection of the organizational capabilities** that underpin a company's competitive advantage and encourages its strategic oversight

35 **What Makes a Company Truly Healthy? : Rethinking Management from the Perspective of Life**
Hiroshi Yaguchi

This article, originally published in the **CEF (Corporate Executive Forum)**, explores what truly makes a company "**healthy**," moving beyond conventional financial indicators. Drawing on a biological perspective, it compares organizations to living systems that **require "food, exercise, and sleep"** to sustain vitality. It argues that, unlike human beings, companies lack instinct and therefore depend on management to sense imbalance and maintain alignment. The piece also highlights the importance of a company's "breathing" — its connection with society — as a **fundamental condition for long-term resilience**.

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The Human Modeler: Judgment, Accountability and Financial Modeling in an AI-Enabled Environment

***Ian Schnoor**, CFA, CFM, Executive Director, Financial Modeling Institute **

***Ian Schnoor** is the Executive Director of Financial Modeling Institute, the world's only financial modeling accreditation organization. Ian created the Financial Modeling Practical Skills Module for CFA Institute which is now part of the CFA Program.*

Ian began his career in the Investment Banking departments at Citigroup and BMO Capital Markets. He holds a Bachelor of Commerce Honours degree with academic distinction and is also a CFA charterholder. In 2002, Ian founded The Marquee Group, a leading provider of financial modeling training and consulting, which was sold to Training The Street in 2023. Ian is a passionate teacher who has trained thousands of students and professionals in practical financial modeling skills.

*** The Financial Modeling Institute (FMI) is headquartered in Toronto, Canada. It operates as a global certification body.** (Note from the Editorial Team)

Artificial intelligence is reshaping how financial models are developed.

Capabilities that once required significant manual effort, such as constructing formulas, organizing model architecture, and performing scenario analysis, can now be generated rapidly through AI-enabled tools. As a result, the technical barriers to model construction have declined.

This shift raises an important question for the profession: if models can be built more easily, what distinguishes high-quality financial modeling?

The answer is not speed. It is judgment.

From Technical Skill to Professional Judgment

Financial modeling has always required more than technical proficiency. At its core, it is a discipline grounded in the selection of assumptions, the framing of scenarios, and the interpretation of results.

While AI may assist in generating model components, it does not determine whether a model is appropriate for a given decision. It cannot assess whether key drivers have been correctly identified, whether assumptions are reasonable, or whether outputs reflect the underlying economic reality.

These remain fundamentally human responsibilities.

As AI reduces the time required to build models, the importance of professional judgment increases. The differentiator is no longer the ability to construct a model, but the ability to critically evaluate it.

The Risk of Apparent Precision

AI-generated outputs often present a high degree of apparent precision. Models may appear complete, coherent and internally consistent.
However, without a clear understanding of how assumptions are formed and how they flow through the model, there is a risk that users place confidence in outputs they cannot fully explain.

This creates several challenges:

- Assumptions may be misaligned with the underlying business context
- Scenario analysis may lack depth or relevance
- Model logic may not be fully transparent
- Outputs may be accepted without sufficient scrutiny

Example in Practice

Consider a simple scenario: an AI-assisted model generates a revenue forecast based on historical growth trends and industry benchmarks. The output appears reasonable and internally consistent.

However, the model does not account for a pending change in pricing strategy, a shift in customer mix, or a known operational constraint affecting capacity. Without these contextual adjustments, the forecast may be directionally incorrect, despite appearing technically sound.
In this situation, the role of the finance professional is not to rebuild the model, but to recognize what is missing. The value lies in identifying gaps in assumptions, challenging the underlying logic, and ensuring the model reflects the realities of the business.

Accountability in an Automated Environment

Financial models do not operate in isolation. They are relied upon by management teams, boards, lenders and investors.

In each of these contexts, the expectation is clear: model outputs must be explainable, supportable and defensible.

AI does not change this expectation. It reinforces it.

Regardless of how a model is constructed, accountability remains with the finance professional. The responsibility to explain assumptions, validate outputs and communicate risk cannot be delegated to an automated process.

Governance in an AI-Enabled Modeling Environment

As artificial intelligence becomes more integrated into financial modeling, the question is not whether it should be used, but how it should be governed.

AI can accelerate model construction, but it does not replace the need for oversight. In many cases, it increases it. When elements of a model are generated automatically, the responsibility to validate assumptions, review logic, and ensure consistency becomes more important.

Organizations will need to establish clear expectations for how AI is used in modeling. This may include defining where AI can be applied, where human validation is required, and how model development is documented.

In practice, finance professionals must maintain a clear understanding of how a model works, regardless of how it was created. The ability to trace assumptions, explain outputs, and identify weaknesses remains essential.

Governance is not about limiting the use of AI. It is about ensuring that its use aligns with the level of rigor expected in financial decision-making.

Reinforcing Discipline

In this environment, discipline becomes increasingly important.

Effective financial modelers will continue to:

- Apply rigorous thinking to the selection of assumptions
- Validate AI-generated content before relying on it
- Maintain clarity between inputs, logic and outputs
- Challenge results that do not align with business reality

The objective is not to limit the use of AI, but to ensure it is applied within a framework of professional judgment and accountability.

Implications for Finance Leaders

For finance leaders, the impact of AI on financial modeling is both practical and strategic.

As models can be built more quickly, the volume of analysis is likely to increase. This places greater pressure on review processes and on the ability of teams to interpret and challenge outputs effectively.

At the same time, the gap between technical output and professional judgment may widen. Teams may be able to generate models more efficiently, but not all professionals will have the capability to assess whether those models are appropriate or reliable.

This has implications for how teams are developed and evaluated. Technical proficiency alone is no longer sufficient. The ability to apply judgment, understand business context, and communicate clearly becomes increasingly important.

For organizations, this reinforces the need to invest in capability, not only in tools. Confidence in financial outputs depends on the people who produce and review them.

A Collective Responsibility

The implications of AI for financial modeling extend beyond individual practitioners. They raise broader questions for the profession regarding capability, governance and expectations.

The Financial Modeling Global Leaders Council (GLC), recently convened by Financial Modeling Institute, brings together senior practitioners, educators and industry leaders from around the world to consider these issues collectively.

One of the central themes emerging from these discussions is the importance of maintaining the human elements that underpin financial modeling as technology continues to evolve.

The Human Modeler

Artificial intelligence will continue to evolve. It will further reduce the time required to build models and increase the accessibility of analytical tools.

However, it will not replace the need for judgment.

The ability to interpret context, challenge assumptions, and stand behind financial conclusions remains the defining characteristic of a skilled financial modeler.

In an AI-enabled environment, that capability is not diminished. It becomes more important.

About Financial Modeling Institute

Financial Modeling Institute (FMI) promotes awareness, excellence, and discipline in financial modeling through rigorous accreditation programs and thought leadership.

The Advanced Financial Modeler (AFM) program is FMI's flagship accreditation. The AFM program guides candidates on how to build a world-class financial model. The accreditation exam requires candidates to build a 3-statement financial model of a company from scratch under time pressure, making the AFM the only credential that tests and demonstrates real-world financial modeling skills.

FMI's accreditations are relevant for students and professionals working in asset management, banking, business development, credit analysis, private equity, venture capital, and other areas of finance and accounting.

Learn more about **FMI**.

Exclusive 20% Discount for IAFEI Members on the AFM

For those interested in pursuing the Advanced Financial Modeler (AFM) accreditation, FMI is pleased to extend a special attendee discount.

Register here: **Checkout Page**

About the Financial Modeling Global Leaders Council

The Financial Modeling Global Leaders Council (GLC) unites 60+ of the world's foremost financial modeling experts to advance the discipline through collaboration, thought leadership, and data-driven insights. GLC members represent the highest standard of excellence in the financial modeling profession.

Meet the **GLC.**

How Does Management Accounting Empower Technology Innovation?

Changjiang LYU, School of Management, Fudan University
Kaijun SUN, Chairman of the Board and General Manager, Shanghai Luoman Technologies Inc.

Changjiang Lyu: What management accounting methods and techniques has Shanghai Luoman Technologies Inc. adopted, and in which business areas have they been applied? How effective have they proven to be?

Kaijun Sun: Shanghai Luoman Technologies Inc. (hereinafter referred to as "Luoman") employs a range of management accounting methods across business functions to support operations, focusing on project management, cost control, and risk management.

First, we utilize a comprehensive budget management system to enhance cost control—covering management and sales expenses—and optimize project resource allocation. Our budgeting process is aligned with the revenue targets of key business segments, such as urban lighting, as well as digital and smart energy, establishing clear expense budgets. It also incorporates management compensation and R&D investments. In 2024, despite higher personnel costs and depreciation from an overseas acquisition, overall expenses remained stable. Through strict budget control, our sales expense ratio even decreased. This comprehensive approach ensures budget execution and strategic expansion.

Second, we implement responsibility accounting and performance evaluations across all subsidiaries and business segments. Management accounting analyzes the revenue and costs of each unit to assess individual contributions. The compensation of key management personnel is tied to operational performance, effectively motivating each team. Despite the highly uncertain economic environment in 2024, we successfully expanded our digital and smart energy and digital entertainment segments while maintaining stability in our core business. Revenue from the digital and smart energy segment grew by 722.57% year-on-year, and digital entertainment saw a 644.65% increase, highlighting the success of our strategic adjustments. These new areas have rapidly driven overall growth, contributing to sustained double-digit performance increases.

Third, management accounting supports investment decisions. We assess investment value by analyzing the target business operations and calculating the present value of future cash flows. This approach was critical in determining the fair pricing of our 2024 acquisition of the UK-based Holovis.

Fourth, we leverage technological support and tools. Our integrated financial system streamlines contract management, cost accounting, and cash flow monitoring. It provides management with real-time, multidimensional insights into business performance—such as revenue and costs by region or project. If a project falls behind schedule or exceeds its budget, the system triggers alerts, enabling swift resource reallocation and cost adjustments.

In summary, Luoman's management accounting strategy centers on "cost and risk control across the entire project lifecycle". Tailored to the construction industry, we developed a proprietary full-cycle project management system for real-time progress tracking and comprehensive budget management. Furthermore, to support corporate mergers and cross-border operations, we enhance fair value estimation and cash flow management for external investments. These practices have provided strong support and clear objectives, driving the rapid growth of our diverse business segments.

Changjiang Lyu: What specific management measures has Luoman implemented, and how effective have they been?

Kaijun Sun: First, Luoman has implemented business strategy and market expansion management measures. We conduct thorough strategic and business analyses to optimize our business structure and venture into new sectors. While maintaining focus on our core landscape lighting business, we have made significant strides in developing digital and smart energy and digital entertainment segments. Acquiring overseas companies has quickly established a presence in international markets, delivering positive results. In 2024, the digital and smart energy segment grew by an impressive 722.57% year-on-year, and the digital entertainment segment saw a 644.65% increase, making these new sectors key drivers of revenue growth. Overseas revenue reached RMB122 million, signaling the early success of our international expansion. We have also effectively managed our investments in technology R&D and innovation, aligning with our strategic objectives and ensuring we remain competitive in our core technologies. We continue to allocate significant resources to R&D, with over RMB24 million invested in 2024 alone. This focus on smart landscape lighting and new energy technologies is helping to drive business and technological advancement. The results of these R&D efforts have been vital in supporting product innovation within our new business segments.

Second, we have implemented robust financial and cost control measures, focusing on refined cost accounting and project performance management. By leveraging information technology, we monitor revenue and costs for each project. The system integrates key processes throughout the project lifecycle, including contract management, cost budget reviews, and on-site inspections, to ensure accurate tracking of project progress and costs. While maintaining full compliance with accounting standards and tax laws, we have streamlined our tax costs, achieving a 40% reduction in taxes and surcharges. Enhanced project management has also improved cash flow, financing efficiency, and debt structure.

Third, we have implemented robust internal control and compliance management measures, continuously enhancing our internal control system. We have established clear processes for revenue recognition and cost accounting, and internal audits, to mitigate risks. We also strengthened compliance management for our overseas operations to ensure alignment with international regulations. These efforts effectively prevent significant internal control weaknesses, ensuring that financial statements accurately reflect operational results and maintain compliance with overseas business regulations. Furthermore, we have optimized related-party transactions and governance structures, standardizing the approval and

disclosure processes to ensure fair pricing and timely external disclosure. We have also reinforced the stability of our ownership structure, improving governance efficiency.
We have successfully expanded into new business areas through effective management measures, achieving notable results and making significant progress in our international expansion. Our financial accounting and risk management systems are well-established, providing solid support for business growth.

Changjiang Lyu: Has Luoman introduced innovations in its management accounting practices? What technologies or AI have been used to support these innovations? In which areas have they been applied, and how successful have they been?

Kaijun Sun: First, potential considerations for innovations in management accounting. Luoman has introduced an innovative approach to dynamic cost accounting, tailored to our engineering business. Our core businesses include landscape lighting and digital and smart energy projects, with revenue and cost recognition primarily based on the accurate tracking of project progress.

This approach requires dynamically tracking project costs and making real-time adjustments to the projected total revenue and costs, essentially refining traditional cost accounting practices. To enhance precision, we developed an innovative information system tailored to the specific needs of construction projects. This system links project progress with financial accounting, enabling real-time matching of costs and revenue, and offering a clearer picture of project profitability. In 2024, 92.01% of the revenue and 91.07% of the costs were recognized in line with project progress. The accuracy of this progress was verified through on-site inspections and owner confirmations during the audit, demonstrating that our self-developed system effectively adapts to the specific needs of engineering projects.

Second, exploring the application of technology and AI in management accounting. We manage numerous engineering projects across various regions, including East China, Southwest China, and overseas regions. By leveraging an information system, we can input real-time data on material procurement and labor costs into the project management system. The system automatically tracks project progress and synchronizes the data with the financial system, greatly reducing errors from manual calculations.

Third, automated financial data analysis. For our diverse business segments (urban lighting, digital and smart energy, and digital entertainment), we use advanced data analysis tools to segment and integrate financial data. These tools automatically generate management reports, including profit contribution analysis and cost structure comparisons, to inform resource allocation decisions. In 2024, the digital and smart energy and digital entertainment segments experienced significant year-over-year revenue growth, thanks to data-driven adjustments in business priorities.

Fourth, foreign exchange risk management for overseas operations. In 2024, Luoman's overseas revenue reached RMB122 million, with transactions conducted in multiple currencies, including the USD and GBP. We utilize a financial instrument valuation system that automatically tracks real-time exchange rates, calculates foreign exchange gains and losses, and simulates the impact of exchange rate fluctuations on profitability. This system plays a key role in shaping hedging strategies. In 2024, foreign exchange losses

represented just 0.8‰ of total foreign currency transactions, a relatively minor amount. Our financial instrument valuation system has laid a solid foundation for managing exchange rate risks as we expand our international business.

Our current management accounting innovations focus on "business adaptability." Methods like dynamic cost accounting and risk impairment models are customized for engineering project complexity, with a strong emphasis on information systems. As new business areas like digital and smart energy and digital entertainment continue to grow, we are likely to integrate AI algorithms to enhance project cost forecasting. This could involve training cost estimation models using historical data, implementing intelligent risk controls, and monitoring real-time changes in customer credit, all aimed at further boosting management efficiency.

Changjiang Lyu: Investing in technology, including AI, involves costs such as equipment and staff training. How has Luoman factored these into its strategy?

Kaijun Sun: First, Luoman's R&D investments prioritize business adaptability, with careful control over investment pace. In 2024, R&D expenses decreased by 5.98% year-over-year, reflecting stable, slightly contracted spending. The majority of these expenses are directed towards the development of smart landscape lighting, new energy technologies, and digital entertainment projects, prioritizing upgrades to technologies related to our core business rather than large-scale investments in general AI. This reflects a "targeted investment strategy with a focus on practicality". Regarding fund allocation, employee compensation accounted for 65.5%, while 11% was allocated to technical development, mainly supporting the iteration of existing business technologies rather than major equipment purchases or specialized AI R&D. Our investment strategy prioritizes R&D that is closely tied to core businesses like landscape lighting and digital and smart energy, ensuring that investments quickly translate into competitive advantages for projects, while avoiding speculative spending on high-risk, long-term emerging technologies. This approach avoids speculative spending on high-risk, long-term emerging technologies. In terms of staffing and structure, we concentrate our R&D efforts on optimizing existing technologies rather than recruiting large numbers of specialists in new fields, thereby minimizing additional training costs.

Second, our technology investments are closely aligned with our business strategy, with acquisitions replacing in-house R&D to minimize trial-and-error costs. In 2024, we expanded into the digital entertainment sector by acquiring Holovis. Holovis and its subsidiaries have developed a strong portfolio of digital entertainment technologies, such as immersive experiences and smart interactions. By acquiring Holovis, we gain access to established technologies, saving both time and resources that would otherwise be spent on developing new technologies like AI from scratch. Post-acquisition, Holovis's technologies can be immediately applied to digital entertainment projects, driving faster growth than in-house R&D would allow. Acquisition costs are amortized over time, mitigating the short-term impact of large technology investments on profits.

Third, our R&D funding strategy strikes a balance between short-term costs and long-term returns. While ensuring that enough reserves are available to meet immediate R&D and technology investment needs, we also allocate funds for long-term technology investments to avoid short-term financial strain. Additionally, we have implemented a return-on-investment evaluation system for our technology investments, including acquisitions. These investments are assessed based on their net present value, taking future cash flows into account to determine their feasibility.

We prioritize practicality in our technology investments. We focus on upgrading our existing businesses, such as landscape lighting and digital and smart energy, rather than pursuing cutting-edge technologies like AI, to manage both financial and human resource costs. By acquiring established technology companies, Luoman can quickly acquire new capabilities and minimize the trial-and-error costs of in-

house R&D. We also leverage our reserves and long-term financing to support these investments, striking a balance between short-term costs and long-term returns. This strategy underscores Luoman's focus on return on investment and effective risk management.

Changjiang Lyu: In times of high economic uncertainty, companies tend to focus on cost-cutting, but this may affect product quality and competitiveness. How has Luoman managed to address this challenge?

Kaijun Sun: First, Luoman focuses on fine cost management for its core businesses to ensure both project quality and performance. We dynamically track costs in line with project progress, ensuring that revenues and expenses are accurately matched. By monitoring project costs and adjusting estimated total costs in real time, we ensure that cost accounting stays aligned with project timelines. We also manage direct costs for each project, including materials and subcontracted labor, and verify the accuracy of these costs using supporting documents like procurement contracts and labor settlement forms, preventing any overstatement or omission. In 2024, costs recognized based on project progress accounted for 91.07%, ensuring consistency between cost and revenue recognition. This approach maintains project quality, such as adhering to procurement standards and construction specifications, without compromising on these due to cost-cutting, while also preventing resource waste. We optimize our supply chain and subcontractor management to control costs at key stages. For outsourced work in engineering projects, costs are settled based on the actual work completed by the subcontractor, with the settlement department thoroughly reviewing completion documentation to ensure subcontractor costs align with project progress. In 2024, subcontracting costs remained stable in relation to in-house construction costs within overall operating expenses. There were no quality disputes arising from cost-cutting, and the gross margin for core businesses stayed within a reasonable range.

Second, we employ differentiated cost control, strictly managing non-core expenses while ensuring strategic investments. It cuts inefficient costs and focuses on preserving core resources. In 2024, we lowered our sales expense ratio by 0.3% year-on-year, enhancing cost efficiency through optimized marketing channels and a focus on key project bids. While management expenses rose due to the acquisition of an overseas company, these funds were primarily invested in integrating the core team and technologies for the digital entertainment business, laying a solid foundation for future growth.

Third, R&D investments are focused on practical technologies, striking a balance between innovation and cost control. While R&D spending decreased in 2024 compared to the previous year, the investments were concentrated in areas closely aligned with our existing businesses, such as smart landscape lighting and new energy technologies, steering clear of high-risk, cutting-edge technologies. These R&D efforts directly supported revenue growth in the digital and smart energy sectors, boosted technology conversion efficiency, and ensured that cost-saving measures did not undermine our core competitive edge.

Fourth, we improve efficiency and reduce hidden costs through effective asset and capital management. We promptly dispose of underperforming assets to prevent hidden costs linked to overvalued assets. In 2024, the inventory balance increased by 12% year-over-year, aligning with business growth, and there was no negative impact on project delivery from excessive inventory reductions.

Fifth, we enhance cash flow management to reduce financing costs. By optimizing our borrowing structure, we maintain stable financial expenses, avoiding high-cost financing arising from short-term liquidity pressures. For accounts receivable, we implement refined collection management to minimize bad debt losses and safeguard profitability.

Sixth, strategic acquisitions have replaced organic expansion, reducing the costs associated with entering new markets. By acquiring the UK-based Holovis, we quickly gained access to established technologies and an experienced team, avoiding the high costs and long timelines typically associated with in-house

R&D. The digital entertainment segment generated RMB137 million in revenue that year—a 644.65% year-over-year increase. Acquisition costs are gradually amortized, helping to avoid the trial-and-error costs of starting a new business from scratch, while leveraging the acquired company's technologies to enhance product competitiveness.

Facing economic uncertainty, Luoman's cost control strategy focuses on "precisely reducing non-core costs while ensuring strategic investments". Through refined project cost accounting, differentiated expense control, and efficient asset and cash flow management, we effectively control overall costs without compromising project quality, core technology R&D, or new business expansion. It strikes a balance between cost efficiency and competitiveness. This strategy not only shields us from the impact of economic uncertainty but also lays a solid foundation for future growth.

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Human Capital Management in the Digital Age*

Bin Ke, Department of Accounting, National University of Singapore (NUS) Business School, NUS (Chongqing) Research Institute

ABSTRACT

The ongoing digital revolution is fundamentally reshaping human capital management (HCM). For the human resources (HR) industry to remain relevant and effective in an ever-changing landscape, it must embrace digital transformation. This paper proposes a conceptual framework for "**intelligent HCM**", illustrating its potential through case studies developed with industry partners. The author argues that moving beyond traditional, human-centric models requires deep collaboration between academia and industry. Such partnerships are crucial for advancing both the theoretical underpinnings and practical applications of intelligent HCM, thereby paving the way for innovative management solutions.

KEYWORDS

Human capital management (HCM); Intelligent management; Management innovation

** This paper is based on the author's recent keynote speeches and presentations to academic researchers and practitioners. The author would like to thank China Management Accounting Review for the opportunity to share insights on the emerging field of intelligent human capital management.*

I. Introduction

Traditional human capital management (HCM) has generally been people-centric, relying on human managers for key decisions. However, as firms integrate digital technologies into their core operations, a data-driven transformation of HCM practices is urgently needed. This paper explores how digital

transformation is fundamentally reshaping HCM practices and presents insights from research conducted by the author in collaboration with Chinese companies.

To address the challenge of modernizing HCM practices, this paper introduces a conceptual framework that provides a theoretical foundation for the next generation of **data- and algorithm-driven HCM**. This framework, termed "**intelligent management**" (Ke, 2024), highlights the transformative power of big data and machine learning (ML) in organizational decision-making. By leveraging advanced analytics, intelligent management redefines the HCM paradigm to optimize workforce decision-making, forecast trends, and enhance operational efficiency.

This paper illustrates the potential of intelligent management through several case studies developed by the author in collaboration with industry partners. These case studies demonstrate how integrating data and algorithms into HCM processes challenges traditional, people-focused approaches, yielding fresh insights and improving efficiency. From these initiatives, valuable experience in developing data- and algorithm-driven HCM technologies has been accumulated, offering practical and feasible recommendations for both practitioners and researchers.

The digital transformation of HCM is still nascent, and developing the theory and practical applications of intelligent management is both complex and time-consuming. Furthermore, widespread adoption will require organizations to fundamentally restructure their business and management processes. Concurrently, given the potential unforeseen consequences of integrating intelligent management, such as ethical, social, and governance risks, efforts to establish the necessary regulatory and operational support measures are ongoing to ensure the safe and reliable implementation of these technologies.

Addressing these challenges requires thorough research and well-rounded policies. Collaboration between government regulators, businesses, and academia is essential for understanding these urgent issues and developing effective, forward-thinking solutions. This paper aims to foster productive collaboration between researchers and industry leaders, paving the way for next-generation HCM methods and applications that benefit all stakeholders.

The rest of the paper is structured as follows: Section II outlines the institutional background for the emerging concept of intelligent management and its application in HCM. Section III details the conceptual framework in detail. Section IV illustrates its practical application through case studies. Section V concludes with insights from industry collaborations.

II. Institutional Background

HCM involves three fundamental stages: **recruitment, development, and transition**. The traditional model is people-centered, meaning human decision-makers are directly responsible for key decisions at each stage.

While the people-centered model has contributed to organizational success, it also has its clear drawbacks. First, it is inherently costly, slow, and difficult to scale. Second, human decision-makers are susceptible to cognitive biases, often leading to suboptimal decisions and significant direct and indirect costs for the organization. Third, the agency problem, where personal interests of decision-makers conflict with organizational goals, can cause inefficiencies and inconsistent results. These challenges are difficult to overcome within the traditional people-centered framework.

Meanwhile, widespread adoption of digital technologies is profoundly transforming the business landscape. Digital integration involves integrating digital tools and processes across all organizational functions, thus fundamentally reshaping operations and value delivery. Platforms like TikTok, Amazon, and Netflix demonstrate the disruptive power of data-driven approaches. Their hyper-personalized products and services have redefined customer engagement and set new business performance standards.

Furthermore, advancements in big data and ML have become game-changers in modern business. Companies use these technologies to analyze massive datasets, identify meaningful patterns, and generate actionable insights. This helps businesses boost operational efficiency, drive innovation, and guide strategic decision-making, enabling businesses to tackle the challenges of the digital age.

The digital revolution has significantly raised expectations for organizational management, rendering traditional "siloed" structures and limited knowledge sharing increasingly obsolete. Modern companies face growing pressure to foster open, collaborative cultures that promote shared ideas and cross-functional teamwork (Brennan et al., 2019). As HCM becomes more critical in helping organizations adapt to and navigate digital disruption, the traditional people-centered HCM model is shifting towards a machine-centered approach powered by big data and ML (Loftus, 2022). This shift allows organizations to overcome the inherent limitations of traditional HCM practices while leveraging digital technologies to enhance efficiency, drive innovation, and better align with strategic goals.

III. Conceptual Framework for Intelligent Management

Although this paper focuses on HCM, this section first introduces a broader management framework for the digital age: intelligent management, as proposed by the author in 2024. This framework is highly relevant, as HCM is a key component of overall management. In today's interconnected business world, HR professionals increasingly collaborate across functions. Shared theoretical foundations between HCM and other management areas can enhance cross-functional communication and collaboration, ultimately leading to more cohesive and effective organizational strategies.

To understand intelligent management, it is essential to first explore the core concept of "management". Some research suggests that management must address three fundamental challenges: information

uncertainty, information asymmetry, and cognitive biases (Ke, 2024). Information uncertainty arises when parties lack complete or reliable information, making decision-making challenging. Information asymmetry occurs when one party possesses more or better information than others, leading to imbalanced and potentially unfair decisions. Cognitive bias refers to systematic errors in human judgment or decision-making caused by mental shortcuts, such as overconfidence, availability bias, and confirmation bias, all extensively documented in psychological research.

Over time, decision-makers have developed innovative technologies to address these challenges. Tools like DuPont analysis and the balanced scorecard provide structured frameworks for management decisions, built on three types of analysis (see the left side of Figure 1).

- **Diagnostic analytics** — Analyzing the causes of past events;
- **Predictive analytics** — Using historical data and statistical models to forecast future events or trends;
- **Prescriptive analytics** — Proposing specific actions or solutions based on insights from diagnostic and predictive analytics.

Figure 1 Definition of Intelligent Management

Source: Ke (2024).

Historically, management has focused on providing human decision-makers with tools to address these challenges while aligning with organizational goals and stakeholder expectations. For example, visual dashboards have been widely used to aid managers in diagnostic analytics. However, due to technological limitations and a lack of forward-looking data, the use of dashboards for formal predictive and prescriptive analytics remains limited.

The digital age has triggered a shift from traditional people-centered management to a machine-centered approach, also known as intelligent management. The model leverages vast datasets, advanced algorithms, and powerful computing hardware resources to conduct diagnostic, predictive, and prescriptive analytics (see the right side of Figure 1). While human oversight and strategic guidance remain essential, AI systems can now handle many analytical tasks previously handled by humans (Schrage et al., 2024).

This transformative shift overcomes many of the inherent limitations of human decision-making, such as limited information processing capacity and susceptibility to cognitive biases. Intelligent management represents a new era where AI systems enhance human capabilities, enabling organizations to make smarter, more efficient, and more objective decisions. This evolution not only enhances the efficiency of management practices but also redefines the role of human managers in driving organizational success.

IV. Understanding the Conceptual Framework Through Case Studies

Over the past decade, while significant progress has been made in the adoption of intelligent management for consumer marketing, many other management functions, including HCM, remain rooted in the traditional people-centered management model of the 20th century. As noted in Section II, the widespread application of digital technologies and the ongoing digital transformation within organizations present a timely opportunity for businesses to implement intelligent management in HCM. Recent surveys underscore this shift's significance. For instance, over 70% of companies consider people analytics a top priority (Leonardi and Contractor, 2018). However, despite the enthusiasm, people analytics is still in its infancy, and there is a limited understanding of its overall effectiveness (Jarrahi et al., 2023).

The well-known "Gartner Hype Cycle" offers a practical framework for understanding the trajectory of emerging technologies. This model breaks down a technology's life cycle into five phases: the Technology Trigger, Peak of Inflated Expectations, Trough of Disillusionment, Slope of Enlightenment, and Plateau of Productivity (Fenn, 2007; O'Leary, 2008). According to Fenn (2007), the Technology Trigger is the initial phase, where a technological breakthrough, public demonstration, or product launch captures widespread attention from both the industry and the media. Based on this framework, intelligent HCM should be in the early phase of the Gartner Hype Cycle, where the focus is on creating compelling prototypes to spark public interest and attract the attention of organizations.

To showcase the potential of intelligent HCM, this section draws on cases from an ongoing research project. These prototypes illustrate how intelligent management technologies can redefine HCM practices, enhance decision-making capabilities, and drive organizational success in the digital age.

1. Employee recruitment management

Merchant and Van der Stede (2017) categorize management control systems into four types: action control, result control, personnel control, and cultural control. Employee recruitment is a crucial part of personnel control and typically follows a structured process from job posting to on-boarding.

However, current recruitment practices face several key challenges, primarily the lengthy and resource-intensive process. Most organizations follow a standard framework, spanning several stages, as shown in the employee recruitment funnel in Figure 2. In the first stage, recruiters sift through resumes based on job requirements, generally without evaluating soft skills or engaging in direct communication. The second stage involves initial interviews focused on the assessment of the candidates' job-specific skills. The third stage includes further interviews where team members and supervisors assess the candidates' soft skills, leadership potential, and ability to adapt to the role. In the fourth stage, the recruitment team evaluates candidates using a structured framework, focusing on skills and cultural fit. In the fifth stage, candidates decide whether to accept the offer based on personal preferences and other job opportunities.

Due to the volume of applications, recruiters often make rapid decisions during the initial screening, relying on limited information. Research shows that a Fortune 500 company rejected 95% of applicants at this stage (Li et al., 2024), with recruiters spending an average of just 31 seconds reviewing each resume (Lerner and Bergman, 2024). This quick, superficial evaluation can lead to the rejection of highly qualified candidates, a costly oversight that cannot be corrected in the subsequent interview stages.

Relying on human recruiters comes with two major challenges. First, cognitive biases often lead to inconsistent evaluation results, and recruiters' screening performance is only slightly better than random selection (Lerner and Bergman, 2024). Second, agency conflicts, such as favoritism, distort recruitment decisions. While subsequent interviews are more detailed, their subjectivity and lack of structure limit the reliability of human recruiters in making decisions. These issues can result in a mismatch between the

recruitment result and the organization's actual needs, negatively affecting overall performance (Hoffman et al., 2018; Kahneman et al., 2021).

(1) Improving recruitment via ML

Many startups use technology to enhance the efficiency and accuracy of the candidate screening process. For example, HireVue uses AI to conduct digital interviews, replacing human interviews with computer-based interactions. Workday Recruiting offers an end-to-end talent acquisition platform to improve the candidate screening process. In China, Boss Zhipin focuses on direct communication between employers and job seekers, thereby simplifying the recruitment workflow.

Despite these innovations, most commercial recruitment solutions have only automated specific steps of the traditional process rather than fully transforming the recruitment funnel. This limitation is partly due to an inability to access comprehensive employment lifecycle data, which restricts their ability to optimize recruitment outcomes for both individual and organizational performance.

In a collaboration with a Chinese financial institution, we explored the feasibility of leveraging AI and proprietary job application data to develop innovative selection models (Chen and Ke, 2024). Recognizing the inherent biases in manual screening during the initial stage of the recruitment process, an investigation was conducted into whether ML models based on materials submitted by applicants could outperform human recruiters. As a key competitive advantage of this project, access was secured to performance ratings and tenure data of newly hired employees, which are typically unavailable to recruitment agencies.

The findings were striking. A simple logistic regression ML model (logit ML model), using only data from the first stage of the recruitment process, can replicate human recruiters' decisions with an accuracy exceeding 90%. This indicates that the traditionally time-consuming, multi-stage recruitment process can be replaced by ML automation based on first-stage application data, delivering similar outcomes at a lower cost. Moreover, a more advanced random forest model shows remarkable predictive power, accurately identifying candidates who are likely to excel and make long-term contributions to the company. The company's HR managers and business leaders confirm that the ML model is more accurate than human evaluations and results in substantial cost savings.

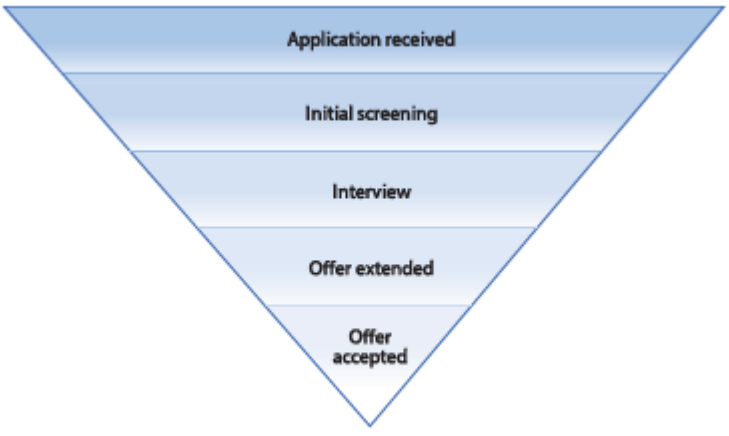

Figure 2 Employee Recruitment Funnel

(2) Expanding the application: Academic job market

The aforementioned research was limited to entry-level positions, which typically require lower levels of professional judgment. This leads to an interesting question: Can first-stage application data predict candidates for positions that require higher levels of professional judgment? To address this question, Ke

and Long (2024) studied the North American academic job market, focusing on recent PhD graduates in accounting. To predict the research productivity of these graduates in terms of publishing papers in top-tier journals over the next five years, they developed an ML model. This model relied on three key predictive factors available from the first stage of the recruitment process: first, the resume (predictive factor A); second, the university ranking and the research output of the supervisor/co-authors (predictive factor B); and third, the job market paper (predictive factor C).
Predicting long-term research productivity is inherently challenging due to hard-to-quantify factors such as judgment and creativity. However, the study found that ML models using predictive factors A, B, or C outperformed random guessing (Ke and Long, 2024).

Surprisingly, when predictive factor C (the job market paper) was combined with predictive factors A and B, it lost its relevance, calling into question the widely held view that the job market paper is the most reliable indicator of research potential. The model incorporating all three predictive factors outperformed human recruiters by a significant margin, even though recruiters had access to additional information such as recommendation letters and insights from interviews.

(3) Insights for recruitment

The research by Chen and Ke (2024), Ke and Long (2024) underscores the predictive power of first-stage application data across diverse labor markets. Their findings indicate that ML models leveraging readily available initial data from the recruitment process can greatly simplify and even transform the traditional recruitment process. This approach could help reduce costs, enhance recruitment accuracy, and ensure that recruitment outcomes are well aligned with organizational goals.

2. Employee turnover management

Managing voluntary employee turnover is another key aspect of HCM. High-quality talent is a major driver of organizational success, but these employees often have plenty of external opportunities, and the cost of losing them can be significant. According to a U.S. survey, replacing a key employee can cost an organization up to US$30,000 (CareerBuilder, 2017). Implementing effective strategies to monitor and reduce voluntary turnover is therefore essential.

However, large-scale monitoring presents a considerable challenge. In many organizations, HR personnel often manage a large workforce, while business managers, who oversee employees directly, may prioritize business growth over turnover management, potentially undermining HR's retention efforts.

Emerging digital technologies make it possible to address these issues by leveraging "**dark data**". Gartner defines "dark data" as information assets collected, processed, and stored during routine business operations, but typically not used for analysis, decision-making, or monetization. In HCM, sources of dark data include employee behavior data from attendance tracking systems, email platforms, enterprise resource planning (ERP) systems, corporate social media, video conferencing, and instant messaging applications (Weed, 2022). These sources have sparked growing interest in advanced people analytics, with the potential to revolutionize HCM (Weinstein, 2022).

To explore the value of employee-related "dark data" in HCM, Ke et al. (2024) partnered with a Chinese financial institution for a study that focused on two types of "dark data" to predict voluntary employee turnover: attendance records and office automation (OA) data. Attendance records track employee punctuality and absence rates, which are incorporated into performance evaluations. Employees may manipulate these data to protect their bonuses or professional status. In contrast, OA data measures employees' participation in corporate communication via the company's OA system, which is not linked to performance evaluations or management decisions, making it less susceptible to manipulation. To

establish a baseline, the authors also developed an ML model that relied solely on standard employee profile data, such as demographic attributes and past performance.

This study uses an eight-year dataset (2016-2023). Due to the proprietary nature of employee-related data, data spanning eight years is extremely rare in HR research. The long time series allowed for a thorough evaluation of the ML models' robustness, which is essential for practical business adoption.

Key findings from this study include:

- First, a simple logistic regression model (logit model) using only employee profile data outperformed both a more complex RUSBoost model using the same data and human managers. This aligns with earlier research by Chen and Ke (2024) and Ke and Long (2024), emphasizing the predictive value of employee resume information.

- Second, although consumer behavior data has proven to be highly predictive in marketing research, the findings of this study suggest that employee behavior data's value in predicting turnover is less consistent. Attendance data fails to offer additional value in predicting voluntary turnover, which aligns with concerns about its potential for manipulation. In contrast, OA data, which is harder to manipulate, does provide extra predictive value for voluntary turnover, but this only becomes evident when the data is included in the RUSBoost model. However, a potential risk is that if employees know their OA data is monitored and used for personnel predictions, there is a risk of future manipulation, questioning the model's long-term robustness when OA data is incorporated into ML models.

- Third, the logistic regression model using only employee profile data is even more robust than the RUSBoost model that incorporates "dark data". This highlights the value of employee profile data and the effectiveness of simpler models in applying ML to business contexts.

In collaboration with industry partners, this study (Ke et al., 2024) showcases the potential of customized ML models for intelligent turnover management and offers valuable insights into the utility of proprietary employee data, empowering organizations to make more informed decisions in managing human capital.

3. LLMs and HCM

Given the rapid growth and transformative potential of large language models (LLMs) in recent years, this paper explores their potential role in HCM. LLMs are expected to play a key role in advancing intelligent HCM by enhancing efficiency and empowering organizations. However, the risks, particularly the possibility of generating inaccurate or misleading information, associated with their use should not be overlooked. This underscores the importance of applying LLMs with caution and in the right way.

Given LLMs' powerful capabilities and diverse applications, it is impractical to cover all potential use cases in HCM. This section will highlight two specific cases to show how LLMs can improve the HCM process.

(1) Case 1: Extracting features from unstructured data

Research by Ke and Long (2024) shows that LLMs can help HR professionals efficiently and accurately extract valuable insights from unstructured data sources. For example, the resumes of fresh PhD graduates in accounting were used to predict their future research productivity. Resumes are a typical example of unstructured data, which usually requires significant time and resources to manually convert into a structured, accurate database. In contrast, with well-designed prompt engineering for an LLM, raw resume data can be processed and key features extracted in just seconds. Generally, developing these prompts

takes a student two to three weeks—a fraction of the time and cost required for manual resume processing.

(2) Case 2: Creating job market paper representations via text embeddings

The second case from the research by Ke and Long (2024) focuses on using LLMs to process job market papers from fresh PhD graduates in accounting. Job market papers present a unique challenge because candidates use various methods to explore a wide range of topics, making it difficult to standardize their content into structured data like resumes. However, LLMs can automatically generate structured representations of such papers through text embeddings. Specifically, the embedded text is extracted from key sections of the paper, such as the title, abstract, and introduction, as these typically capture the paper's core contributions.

This research shows that the embedding method captures essential information from job market papers. The resulting embedded text (referred to as predictive factor C) can independently predict a candidate's long-term research productivity, demonstrating the method's value in extracting meaningful insights from complex, unstructured data.

(3) Summary: Unlocking the potential of LLMs in intelligent HCM

These cases illustrate how LLMs can fundamentally transform HCM by simplifying processes and enhancing analytical capabilities, revealing significant potential. By efficiently processing unstructured data and generating structured insights, LLMs pave the way for the development of next-generation intelligent HCM technology. Yet, like any transformative technology, the success of LLMs in HCM will depend on careful implementation, robust safeguards, and a clear understanding of their limitations.

V. Conclusion

As intelligent management is still in the early stages of the Gartner Hype Cycle, both researchers and practitioners are working to understand and develop advanced management analytics. Collaborative research with industry partners has yielded valuable insights, particularly useful for the practical development of intelligent management technologies.

1. Rethinking business and management processes

For intelligent management to be truly disruptive, it requires a fundamental rethinking of existing business and management processes. While many current HCM solutions are convenient and efficient, intelligent HCM is deemed capable of transforming the way HR management is approached. However, this kind of disruptive innovation will require time and creativity, and the short-term benefits may not be immediately apparent. Research by Chen and Ke (2024) and Ke and Long (2024) indicates that such disruption is achievable in areas such as candidate screening, where data- and algorithm-driven approaches may outperform traditional, human-centered methods.

2. The key role of data quality

This research highlights that data quality is often more critical than the complexity of the methods for the success of ML models. This is significant because computer scientists typically focus on advancing ML technology, often treating the input data as given (Ng, 2021). Furthermore, the research in collaboration with industry partners shows that practitioners often underestimate the importance of data quality. Due to cognitive biases and limitations, many practitioners fail to recognize the value of proprietary data

sources. For companies aiming to implement intelligent management solutions, ensuring robust data quality should be the primary focus.

3. Challenges of small data

Although ML has grown with big data, many companies work with small datasets. For example, the sample sizes in the research by Chen and Ke (2024) and Ke and Long (2024) are relatively small, ranging from fewer than 150 candidates per year to a total of 3,000. Similarly, the annual sample size in Ke et al. (2024) ranges from 333 to 1,289 data points. In these cases, simpler models like logistic regression or ordinary least squares (OLS) tend to outperform more complex ML models, such as deep learning, due to their greater robustness and predictive reliability in limited-data scenarios.

4. The utility of dark data is to be determined

Although "dark data" holds potential, its role in HCM remains limited when compared to consumer marketing research, which targets millions of potential customers. This is because the number of employees in a company is relatively fixed. Ke et al. (2024) concluded that, although "dark data" holds promise[1], it is too early to conclude that it can significantly improve intelligent HCM. Companies should carefully weigh the costs and benefits of storing and processing "dark data" for decision-making.

5. Solving the bias issue in ML models

It is widely believed that ML perpetuates human biases. However, this research suggests that meticulous design can reduce bias in ML models. For instance, research by Chen and Ke (2024) shows that ML models, when carefully tuned to align with well-defined business objectives, exhibit less bias than human decision-makers. These findings underscore ML's potential as a more objective and independent governance tool, with far-reaching implications for global corporate governance systems, including those in China.

6. The collaborative synergy between academia and industry

Finally, research indicates that academia-industry collaboration generates significant synergies in advancing the theory and application of intelligent management.[2] In his work on disruptive innovation, Christensen (2016) explained how emerging technologies start in niche markets, gradually grow, and ultimately challenge mainstream products and services. Established companies often find it difficult to adopt disruptive innovations because of the rigidity in their existing processes and values. Christensen recommended creating autonomous, innovation-driven units dedicated to exploring disruptive technologies, focusing on experimentation and learning rather than precise forecasting.

This approach closely aligns with the development of intelligent management and is considered to meet the definition of disruptive innovation. However, before it can become a part of management and planning processes, many unknowns still need to be addressed. The collaboration between academia and industry is in strong agreement with Christensen's concept of autonomous organization, making it an effective way to advance the field.

The author of this study and other contributors collaborated with several forward-looking Chinese companies to trial the next-generation intelligent management framework and technologies. Guided by relevant theory, they initially held only a vague understanding of intelligent management. Throughout the process, they encountered numerous challenges and made mistakes—an inevitable part of exploring the unknown. Thomas Edison once said, "I have not failed. I've just found 10,000 ways that won't work.". These experiments deepened the researchers' understanding of how to develop disruptive intelligent management concepts and technologies.

Visionary organizations are invited to join in advancing intelligent management. Through collaborative efforts, this initiative will drive transformative change and shape the future of management in the digital age.

[1] It is acknowledged that "dark data" is useful in other types of management decisions, such as forecasting financial performance (Forker, 2023).

[2] For more details on the benefits of this collaboration for all parties involved, please refer to Ke (2024).

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Transfer Pricing and Global Finance: Why Internal Pricing Is a Financial Architecture Decision

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Abstract

Transfer pricing is traditionally viewed as a tax compliance mechanism designed to ensure that transactions between related entities reflect the arm's length principle (ALP). For multinational groups, however, internal pricing policies play a much broader role. They shape the distribution of profits, risks, and cash flows across the global organization and therefore influence the financial architecture of the group.

This article explores the relationship between transfer pricing and global finance from the perspective of CFOs and senior executives. It argues that internal pricing mechanisms should not be considered solely through the lens of tax regulation but also as instruments that determine how financial outcomes propagate through multinational structures. Transfer pricing affects the geographic allocation of profitability, the transmission of market volatility across entities, and the internal circulation of capital and liquidity.

In an environment characterized by economic uncertainty, commodity price fluctuations, and supply chain disruptions, static pricing policies may fail to capture the dynamics of modern value chains. As a result, finance leaders increasingly need to integrate transfer pricing considerations into broader financial planning and risk management frameworks.

Keywords

Global Finance; Transfer Pricing; Multinational Financial Strategy; Internal Pricing Architecture; Corporate Financial Governance; Global Value Chains; Profit Allocation in Multinationals; Cross-Border Financial Management.

The Financial Geography of a Multinational Group

Large multinational organizations are, in practice, networks of legal entities distributed across multiple jurisdictions. Each entity performs specific functions, manufacturing, distribution, procurement, financing, research, or intellectual property management. What connects these entities economically is a dense system of internal transactions.

Transfer pricing determines how the financial value generated by the group flows across this network. The internal price applied to a transaction between two related companies does more than allocate taxable income. It affects the profitability of individual entities, the distribution of operating margins across regions, and the stability of earnings reported by different parts of the organization.

For finance leaders, this means that internal pricing decisions shape what might be called the financial geography of the firm, the map that shows where profits, risks, and cash flows ultimately reside within the corporate structure [Avetisyan, Sergey, Financial Geography: The Geographical Nature of the Financial Economics (March 28, 2018). Available at SSRN: https://ssrn.com/abstract=3231903 or http://dx.doi.org/10.2139/ssrn.3231903].

Transfer Pricing and the Distribution of Financial Risk

In financial terms, one of the most important roles of transfer pricing is the allocation of economic risk. When multinational groups design their internal structures, they implicitly decide which entities will bear exposure to different sources of uncertainty. These sources may include:

- Fluctuations in commodity prices
- Changes in market demand
- Exchange-rate volatility
- Shifts in logistics or energy costs.

Transfer pricing mechanisms translate these economic exposures into financial outcomes. For example, a manufacturing entity that sells its output at a fixed cost-plus margin will experience relatively stable earnings regardless of market conditions. In contrast, an entity whose internal prices fluctuate with market quotations will absorb a much larger share of price volatility. In this way, transfer pricing becomes one of the channels through which financial risk is transmitted within the group [Wagdi, Osama and Tarek, Yasmeen, The Impact of Financial Risk on Systematic Risks: International Evidence (July 18, 2019). Journal of Applied Finance & Banking, Vol.9, No.6 (2019), Available at SSRN: https://ssrn.com/abstract=3422505].

Cash Flow and Internal Capital Allocation

Another dimension that connects transfer pricing with global finance concerns cash flow distribution. Internal prices determine where operating profits are generated and therefore where liquidity accumulates [Cheng, Agnes and Hollie, Dana, The Persistence of Cash Flow Components into Future Cash Flows (October 17, 2005). Available at SSRN: https://ssrn.com/abstract=541293 or http://dx.doi.org/10.2139/ssrn.541293]. This, in turn, affects the need for intra-group financing, dividend flows, and the allocation of capital across jurisdictions.

For CFOs, this dynamic is particularly relevant in periods of economic stress or market volatility. A transfer pricing model that produces stable margins for certain entities while concentrating profit volatility elsewhere may create unexpected liquidity imbalances within the group. Entities that appear profitable in accounting terms may generate limited cash flow, while others may require ongoing financial support from the parent company or internal treasury functions. In practice, this means that transfer pricing policies can influence not only reported profitability but also the internal circulation of capital within the multinational organization.

Transfer Pricing in an Environment of Global Volatility

The connection between transfer pricing and global finance has become more visible in recent years as multinational companies have faced increasingly volatile economic conditions [Ahadzie, Richard Mawulawoe and Ahadzie, Richard Mawulawoe, The COVID-19 Global Fear Index, Realized Volatility and Jump (July 22, 2021). Available at SSRN: https://ssrn.com/abstract=3891341 or http://dx.doi.org/10.2139/ssrn.3891341; D'Aguanno, Lucio and Davies, Oliver and Dogan, Aydan and Freeman, Rebecca and Lloyd, Simon and Reinhardt, Dennis and Sajedi, Rana and Zymek, Robert, Global Value Chains, Volatility and Safe Openness: Is Trade a Double-Edged Sword? (January 15, 2021). Bank of England Financial Stability Paper No. 46, Available at SSRN: https://ssrn.com/abstract=3766910 or http://dx.doi.org/10.2139/ssrn.3766910; Li, Zhiyong and Qiao, Fang and Wang, Tianyi, Global Currency Volatility Risk and Currency Return Predictability (February 29, 2024). Available at SSRN: https://ssrn.com/abstract=4742290 or http://dx.doi.org/10.2139/ssrn.4742290; Kang, Wensheng and Ratti, Ronald A. and Vespignani, Joaquin, Global Commodity Prices and Global Stock Volatility Shocks: Effects Across Countries (May 4, 2017). CAMA Working Paper No. 36/2017 , Available at SSRN: https://ssrn.com/abstract=2963431 or http://dx.doi.org/10.2139/ssrn.2963431]. Commodity price swings, supply-chain disruptions, geopolitical tensions, and rapid shifts in energy markets have exposed the limitations of internal pricing models designed for more stable environments.

In such contexts, the question facing finance leaders is no longer simply whether a transfer price complies with regulatory expectations. It is also whether the internal pricing framework accurately reflects how economic risks and financial outcomes should be distributed within the organization.

A pricing model that appears technically correct may still produce financial results that are difficult to reconcile with the operational realities of the business. For example, a subsidiary designated as a "routine" manufacturer may experience significant cost volatility due to fluctuations in energy or raw material prices. If the internal pricing mechanism does not allow for temporary deviations from target margins, the resulting financial outcomes may appear inconsistent with the entity's functional profile.

From a financial management perspective, the issue is not necessarily compliance but economic coherence.

The CFO's Perspective: Beyond Tax Compliance

For finance leaders, the challenge is therefore to view transfer pricing through a broader lens. Rather than approaching it solely as a tax requirement, CFOs increasingly need to consider how internal pricing policies interact with the group's broader financial strategy. Questions that become relevant include:

- How does the transfer pricing framework affect the volatility of earnings across different entities?
- Which parts of the organization absorb market risk and which operate under relatively stable margins?
- How do internal prices influence the distribution of liquidity and capital across jurisdictions?

These questions sit at the intersection of tax, finance, and strategy. In practice, they require a close dialogue between tax specialists, treasury teams, financial planning departments, and operational leadership.

Transfer Pricing as Part of Global Financial Governance

As multinational enterprises continue to evolve, transfer pricing is gradually becoming embedded in the broader governance of global finance. It remains, of course, a core component of tax compliance. But its implications extend much further. Internal pricing rules influence how financial value circulates through the corporate structure, how risk is distributed across entities, and how resilient the organization is to economic shocks.

For CFOs and executive teams, recognizing this broader role is increasingly important. When transfer pricing is aligned with the economic logic of the business and integrated into financial planning processes, it can contribute to a more coherent and stable global organization.

Viewed in this light, transfer pricing is not simply about determining the "right price" for internal transactions. It is about designing the financial pathways through which a multinational enterprise manages risk, allocates capital, and sustains its global operations.

Intellectual Property - A Strategic View from an Organizational View Point

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She regularly assists clients in tax audits, MAP and APA procedures, and high-stakes controversy matters, offering a rigorous and data-driven approach to cross-border tax risk. She is a Chartered Accountant, Statutory Auditor and ICAEW Associate Chartered Accountant and contributes regularly to tax and transfer pricing publications, with work centred on the interplay between economic substance, quantitative methods and OECD-aligned transfer pricing frameworks.

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She also advises multinational and mid-market groups on strategic transfer pricing, value chain analyses, end-to-end TP and integrated pricing models, as well as data-driven business and organizational restructurings. Before joining Crowe Valente, Carola worked at Simon-Kucher in strategic pricing and business strategy across several industries. She holds master's degrees from the University of Hong Kong, the London School of Economics and Sapienza University of Rome, an advanced IBFD certificate in Transfer Pricing, and regularly contributes to publications on transfer pricing, international tax and business strategy.

Abstract

In multinational groups, intellectual property increasingly represents the core driver of value creation, yet its economic significance often extends beyond legal ownership. The DEMPE framework – Development, Enhancement, Maintenance, Protection, and Exploitation – offers a useful lens for understanding how intangible value is generated and sustained across complex organizational structures. This article examines intellectual property from a managerial and organizational perspective, emphasizing how innovation typically emerges from distributed activities rather than from a single entity within the corporate group.
By exploring the life cycle of intangible assets and the multiple functions involved in their evolution, the article highlights the importance of aligning intellectual property governance with the operational realities of multinational enterprises. For CFOs and C-suite executives, DEMPE provides a framework for understanding how innovation capabilities, strategic decision-making, and organizational coordination shape the long-term value of intellectual assets. Rather than focusing solely on legal ownership, companies must consider where key decisions are made, how investments in innovation are managed, and how intellectual property is ultimately deployed across global markets. In this context, effective

oversight of DEMPE activities becomes a critical component of corporate strategy and long-term value creation.

Keywords

Intellectual Property Governance; DEMPE Functions; Multinational Innovation Management; Intangible Assets Strategy; Global R&D Structures; Corporate Innovation Governance; Intellectual Property Lifecycle; Multinational Enterprise Strategy; Intangible Value Creation; Strategic Management of IP Assets.

Introduction

For many multinational companies, the most valuable assets they own are not physical. Factories, logistics networks, and distribution channels remain important, but the real engines of growth increasingly lie elsewhere: proprietary technology, brands, software platforms, algorithms, industrial processes, and data.

These assets rarely appear prominently on a balance sheet, yet they often explain why one company commands premium margins while another competes primarily on cost. Intellectual property is therefore not simply a legal category; it is a reflection of how innovation and knowledge are embedded within an organization.

For executive leadership, the question is no longer whether intellectual property matters, but how the organization manages and governs the processes that create and sustain it.
Over the last decade, the concept of DEMPE functions [Navarro, Aitor, Literature review: Karol Dziwiński, The DEMPE Concept and Intangibles (Kluwer Law International, 2022) (March 20, 2023). 51(3) Intertax 263-265 (2023), Available at SSRN: https://ssrn.com/abstract=4763296] has emerged as a framework for understanding these processes. Although the concept originates in international tax guidance, its underlying logic speaks directly to how modern multinational companies generate value through innovation.

Innovation Does Not Occur in One Place

In many corporate structures designed during earlier phases of globalization, intellectual property was often associated with a single entity within the group. A company might hold patents or trademarks in a central location, licensing those rights to operating subsidiaries around the world.

That structure reflected a time when research activities were concentrated in a limited number of laboratories and when the commercial use of intellectual property followed relatively clear organizational boundaries [Screpante, Solange Mirna, The Arm's Length Principle Evolves Towards a 'Value Creation Functional (i.e. DEMPE) Formula Standard': A Barrier or a Gateway to Locational Business Planning?, (2020), 48, Intertax, Issue 10, pp. 861-878, https://kluwerlawonline.com/JournalArticle/Intertax/48.10/TAXI2020087].

Today, the reality is quite different. Innovation has become distributed. Engineering teams may work across multiple continents, product development cycles often involve collaboration between technical and commercial functions, and digital platforms evolve continuously through the interaction between software engineers, data scientists, and user communities. In this environment, the value associated with intellectual property cannot be easily attributed to a single legal owner. Instead, it emerges from a network of activities carried out across the organization.
The DEMPE framework captures this reality by focusing on the functions that sustain the life cycle of an intangible asset, rather than on the entity that formally holds the legal title.

The Life Cycle of Intellectual Property

Every successful intangible asset follows a life cycle that extends far beyond its initial creation. The development phase is often the most visible. It involves research, design, experimentation, and the allocation of significant financial resources. Decisions made at this stage determine not only the technical characteristics of a new product or technology but also the strategic direction of the company's innovation efforts.

Yet development is only the beginning. Once an intangible asset enters the market, it must be enhanced continuously. Software platforms receive updates, industrial technologies are refined, and brands evolve through new marketing strategies. In fast-moving industries, enhancement is not an occasional activity but a constant process.
Equally important is maintenance, the set of activities that ensures that the asset retains its usefulness and relevance over time. This may include software support, product adaptation to regulatory requirements, or the management of technological compatibility with other systems.

The protection of intellectual property adds another layer of complexity. Patents must be filed and defended, trademarks monitored, and contractual arrangements carefully structured to prevent unauthorized use or leakage of proprietary know-how.
Finally, there is exploitation, the phase in which intellectual property generates economic value. This may occur through the sale of products incorporating proprietary technology, through licensing arrangements, or through the strategic use of brands and digital platforms in global markets.
Each of these stages requires distinct capabilities within the organization, and each involves decisions that shape the long-term value of the intangible asset.

Organizational Complexity Behind Intangible Value

For CFOs and executive leadership teams, one of the most important insights of the DEMPE framework is that the value associated with intellectual property rarely emerges from a single decision or department.

Innovation is a collective process. Research teams may design the initial concept, but commercialization often depends on the work of marketing specialists, supply chain managers, regulatory experts, and customer-facing teams. Digital technologies add further layers of complexity, as user data and feedback loops increasingly influence product evolution. As a result, the value of an intangible asset reflects the coordinated efforts of multiple parts of the organization.

This organizational complexity has practical implications for how companies think about intellectual property governance. Legal ownership of an asset may reside in one entity, but the strategic decisions that determine its future may be made elsewhere [Pantulu, Akhilesh, The Impact of Asset-light Strategies and Ownership Structures on Intangibles. (June 12, 2025). Available at SSRN: https://ssrn.com/abstract=6047914 or http://dx.doi.org/10.2139/ssrn.6047914]. Investment decisions, product roadmaps, and market positioning often involve several functions operating across different regions. Understanding where these decisions occur and how they interact becomes essential for any organization that relies heavily on innovation.

Strategic Oversight of Intellectual Property

For C-suite executives, intellectual property governance is therefore not simply a technical matter delegated to legal or tax departments. It is a strategic issue that requires oversight at the highest levels of the organization. Several questions naturally arise:

- Where are the most critical innovation decisions made?

- Which teams shape the evolution of the company's core technologies or brands?
- How are investments in research and development coordinated across regions?
- Who ultimately determines how intellectual property is used in different markets?

These questions touch on the broader issue of how multinational companies organize innovation within increasingly complex global structures. In many cases, intellectual property governance requires balancing two competing objectives. On one hand, companies seek to maintain centralized oversight of their most valuable technologies and brands. On the other hand, innovation often flourishes in decentralized environments where teams operate close to local markets and specialized talent pools.
The DEMPE framework does not prescribe a single organizational model, but it highlights the importance of understanding how different parts of the organization contribute to the creation and evolution of intangible assets.

Intellectual Property as a Reflection of Corporate Capability

Ultimately, intellectual property is not just an asset category; it reflects what a company knows how to do well. Patents reveal technological capabilities. Brands reflect customer relationships and reputation. Software platforms embody organizational expertise in data and digital infrastructure. For multinational groups, managing intellectual property therefore means managing the capabilities that underpin competitive advantage [Madhani, Pankaj M., Management of Intangible Assets: A Value Enhancing Strategy In Knowledge Economy (2009). Intangible Assets: Measurement and Accounting Practices, Pankaj M Madhani, ed., pp. 20-36, Hyderabad, ICFAI University Press, 2009 , Available at SSRN: https://ssrn.com/abstract=1508383].

From the perspective of the executive leadership team, the challenge is to ensure that the organizational structures governing innovation remain aligned with the company's strategic priorities. This requires continuous dialogue between research teams, operational leadership, finance functions, and legal experts.

As the global economy becomes increasingly knowledge-driven, the role of intangible assets will only grow. Companies that understand how intellectual property is created, enhanced, protected, and ultimately deployed in global markets will be better positioned to sustain long-term growth.

In that sense, the DEMPE framework offers more than a technical guideline. It provides a lens through which multinational organizations can better understand the internal dynamics of innovation, and the structures required to support it.

What Makes a Company Truly Healthy? : Rethinking Management from the Perspective of Life

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***Mr. Hiroshi Yaguchi** is President & CEO of CFO Headquarters Co., Ltd. He graduated from the Faculty of Economics at the University of Tokyo and began his career at Sumitomo Banking Corporation (now Sumitomo Mitsui Banking Corporation), where he gained experience in business research, human resources, and corporate finance. In 2000, he founded the Japan CFO Association to develop finance leaders and build networks across corporate management and finance functions. He has also served as Asian representative and president of the International Federation of Financial Executives (IAFEI), and later established the Japan CHRO Association in 2018 and the Japan CLO Association in 2020 to strengthen corporate functions including HR and legal.*

Let me ask you a question: Is your company healthy?

When you hear the phrase "a healthy company," it may sound somewhat vague.

Is a company healthy if sales are growing? If profits are increasing? If its stock price is rising? Of course, such indicators are important. Yet we know from experience that even within the same industry, running similar businesses, one company can be "full of energy" while another remains curiously lacking in momentum. There is clearly a difference that numbers alone cannot fully explain.

Since founding the Japan CFO Association in 2000, I have spent 25 years supporting CFOs, business leaders, and finance professionals. In 2018, I also established the Japan CHRO Association, and in 2020, the Japan CLO Association, engaging with professionals across corporate functions. Through these experiences, I have repeatedly felt that the differences among companies cannot be explained by strategy or systems alone. Strategy and governance certainly matter. But they are not enough. Companies seem to possess something difficult to quantify—something like "health" or "vitality." That question has remained in the back of my mind for many years.

I gradually came to believe that we need the perspective of "life" itself to understand "companies**",** Human beings are living organisms, and companies are made up of those living beings gathered together. If so, perhaps companies too can be reconsidered through a biological lens. This series is an attempt to reexamine corporations and management from "the perspective of life".

To begin, I would like to start with three insights that help frame the entire series.

Companies Also Need "Food, Exercise, and Sleep"

What does a person need to stay healthy? First, the body's organs must function properly. The heart circulates blood, the brain makes decisions, the intestines absorb nutrients, and so on. But that alone does not sustain health. We are often told that the three essentials of health are food, exercise, and sleep. In fact, these apply directly to companies as well.

For a company, food means what it chooses to take in from the outside. Put simply, this means capital and people. What kind of investors provide capital? What kind of people are welcomed as colleagues? A

company changes according to what it absorbs. Just as the human body is shaped by what it eats, a company is shaped by the capital and talent it accepts, influencing its culture and character.

If a company relies only on investors demanding short-term returns, management decisions tend to become short-term as well. If it gathers people motivated only by compensation and immediate gain, the organizational atmosphere will inevitably change. For companies too, food is not merely about quantity—it is decisively about quality.

Exercise for a company is its business activity itself. Facing the market, engaging customers, experimenting, improving continuously. Just as muscles weaken when unused, companies weaken when they stop challenging themselves. Organizations that cling to past success and turn their backs on change may appear stable on the surface, but gradually lose strength.

Exercise involves strain. It is tiring. Yet just as a body weakens without exertion, an organization without challenge also weakens.

Food and exercise are easy to understand. But what is sleep for a company?

It does not mean becoming dormant, nor simply time outside work hours. Human beings use sleep to recover from fatigue, organize memory, and consolidate experience. Companies are no different. If they only keep running, experience never turns into wisdom. They need time to stop, reflect, learn, and repair.

This is not merely holding meetings, nor conducting superficial review sessions. It means seriously asking: What have we learned? What must we redo? Who needs rest? What needs to be realigned?

Companies that create spaces for reflection and learning may seem slower in the short term, but they become stronger over time. Those that do not may run fast for a while, but repeat the same mistakes and eventually lose competitiveness. It is no different from a person sacrificing sleep and pushing through exhaustion until health collapses.

Food, exercise, and sleep are habits that sustain personal health—but they are also principles of management. Yet there is one major difference between people and companies.

The Great Difference Between Humans and Companies

The human body is equipped with instincts that help preserve health. We feel hunger, sleepiness, and fatigue. Pain alerts us that something is wrong. These are mechanisms through which life protects itself. Even without understanding physiology, our bodies largely take care of us automatically. That is instinct.

But companies are different.

Companies do not feel hunger. They do not become sleepy. They do not say they are tired. Left unchecked, they can keep working endlessly. Meetings can multiply without limit. Investment can be postponed indefinitely. Short-term profit can always be prioritized.

This is because companies have no instinct.

I believe this is critically important when thinking about management. When asked what management is, we tend to answer: generating profit or increasing corporate value. Of course, those matter. But they are results, not the essence.

The essence of management lies in diagnosing the health of a body called the company—one that has no instinct—and making the necessary alignment. A company's health can only be maintained if someone consciously monitors it. Where is it fatigued? Where is strain emerging? What needs rest, training, or nourishment?

Because companies do not voice their suffering, management must sense it.

Looking at many corporate scandals and crises, I believe there were warning signs in almost every case. Someone should have felt discomfort. The atmosphere should have changed even if the numbers had not. People were leaving. Connections with society were weakening, among other signs.

But no one chose to see it. Or even if they saw it, they failed to confront it.

Unless we face the reality that companies have no instinct, such warning signs will continue to be overlooked.

That is why management requires an understanding of life itself. What is health? How does illness arise? Why do people move, tire, and recover? Without understanding the mechanisms of life, it is impossible to keep a life-like organization healthy.

What Is Least Noticed Is Often Most Fundamental

Food, exercise, and sleep are things people consciously work on. They think about what to eat, build exercise habits, and care about sleep quality. Yet there is something even more essential to life itself: "breathing".

It is said that we breathe nearly 20,000 times a day. Yet we are hardly aware of it. It is too natural. But if breathing stops, everything else loses meaning. Breathing is the least noticed, yet most fundamental, life activity.

So what is "breathing" for a company?

I believe it is connection with society.

A company exists not only in relation to customers, investors, and suppliers, but also within communities, the global society, and the natural environment. Yet many corporate people barely notice these connections. Customers are treated as a given. Suppliers are treated as a given. Society itself is assumed to simply be there.

Just like breathing.

But when connection with society is lost, a company quickly weakens.

Human breathing is usually unconscious. Yet when we intentionally regulate it deeply, our physical and mental state changes. Breathing techniques are one of the few ways humans consciously influence the cooperative relationship between humans and microorganisms living within us the autonomic nervous system (the body's self-regulating functions).

Could companies not be the same?

Connections with society may be taken for granted, but by consciously deepening and refining them, a company should be able to transform the nature of the company.

When the voice of customers no longer reaches the company, when ties with communities fade, when nature and the environment are seen only as costs, the company resembles a body breathing shallowly. It may still appear active on the surface, but internally it is steadily weakening.

By contrast, companies that consciously deepen their connection with society maintain sensitivity to change and are able to realign themselves continuously.

We have seen many companies lose trust rapidly after neglecting these connections. Corporate falls triggered by scandals and misconduct never cease. For companies, "breathing" is not about regulatory compliance, CSR, or ESG. It is the most fundamental activity required to continue existing as a living entity.

What This Series Will Explore

These three ideas are only the entrance to this series. Going forward, I would like to explore questions such as these.

First, what moves people?

We will examine emotional bonds, love, and purpose as principles of action, asking why people become motivated and what truly moves the human heart.

Next, what is life?
Using insights from life sciences—such as ATP, the gut-brain connection, and partnership with bacteria—we will examine the foundations of human existence.

Then, what is illness in a company?

Why do sincere companies commit scandals? Why do organizations become exhausted? Through the concept of "pre-disease" —the state of latent dysfunction before symptoms appear, we will consider early signs of organizational dysfunction

Human investment and capital investment.

Companies involve people investing themselves, while investors entrust financial capital. How we understand these two forms of investment changes how we view a company's reason for being.

Finally, the laws of nature and corporate sustainability.

Is there an appropriate size for a company? What is growth? What is sustainability? By comparing the logic of nature with the logic of business, we may find new answers.

To view a company as a living organism is not merely metaphorical play. It is an attempt to understand corporations and management more deeply and more fundamentally.

Next time, we will ask what truly moves people. No matter how excellent the systems or institutions may be, if people do not move, the company does not move. If a company is a living organism, then it is people who truly make it move.

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