How Japan Can Compete:

Executing the Ambidexterity Strategy and Managing Change for the DX and the post-COVID-19 Era

By Ulrike Schaede

University of California San Diego*
School of Global Policy and Strategy

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Abstract

This report covers 4 areas: 1) Japan's competitiveness in the new era of "digital manufacturing", 2) the execution of the ambidexterity strategy, 3) how Japanese companies can manage culture change, and 4) how strategy and culture change require a new, elevated role of HR practices.

The digital transformation (DX) and the post-new coronavirus world require new strategic positioning, if companies want to benefit from the new business opportunities. This report shows how leading Japanese companies are already competing powerfully in digital manufacturing. One tool for the new strategic positioning is the ambidexterity framework. While many Japanese managers are already familiar with ambidexterity, the mechanisms on how to execute this strategy are still not well-known. This report introduces three models that help with the execution of ambidexterity. The first is the **alignment model**, which shows that successful strategy execution requires a tight fit between the critical tasks (KSF), people, HR systems, and corporate culture. The second is the **DISCC model** of how to manage culture change. One component of this culture change model is a fundamental change in HR and performance incentives. An example of a new process is the third model, the **9-Box Grid**. This offers an example of a tool that links an employee's assessments with incentives and individualized training, tailored to each employee's goals. The tools of culture change and HR can be combined to create a new alignment for a company's innovation strategy, and this will result in new capabilities to compete in the digital transformation.

The digital transformation (DX) is combining with the COVID-19 pandemic to bring a large disruption to all global businesses. While this increases uncertainty, it also brings new opportunities to accelerate change and reinvention. This report shows that many of Japan's leading companies are well-positioned to compete. It introduces examples from digital manufacturing to highlight these competitive strengths. It is also suggested that now is the time to revisit the role of HR in large companies, not just as a support unit but as a critical lever in motivating and retaining employees and implement strategy change. To execute the dual strategy of ambidexterity and to run separate alignments within one company requires new leadership approaches. The tools presented in this report give managers examples and frameworks for how to think about managing corporate culture change and positioning their companies at the new global competitive frontier.

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1. Introduction: Two Shocks – The Digital Transformation and COVID-19

In 2011, Takeo Hoshi and Anil Kashyap wrote a NIRA report titled "Why Did Japan Stop Growing".[1] They pointed at the various structural challenges of Japan's postwar economic structure, including inefficiencies in the SME and retail sectors and an outdated financial system, the ageing and shrinking society, and macroeconomic factors such as mounting debt, stubborn deflation and a weak currency. They also highlighted what they perceived as policy mistakes, such as the creation of so-called zombie companies and insufficient monetary easing, fiscal spending, and deregulation. As economists, they looked at the larger setting of Japan's economy overall, and found that, at the macro level, Japan was facing many severe challenges.

However, when zooming in on the micro level – the individual company – the story is much more positive, and also more polarized. It is true that many Japanese companies, especially smaller ones, are being threatened either by technological change or globalization. Some larger companies are also struggling to change. These companies explain the low average productivity levels identified by Hoshi/Kashyap. Yet, it is also true that many large Japanese companies, including traditional ones, are undergoing a huge transformation. And newer firms such as Rakuten, Uniqlo and Softbank have also emerged as global players. At the micro level, there are strategies and opportunities for individual companies to change and compete.

This has already begun, and I have called this transformation of leading Japanese companies a "reinvention".[2] With this reinvention is meant the second phase of "choose and focus" and strategic repositioning. The first phase began after the banking crisis of 1998, when many large firms began to exit non-profitable businesses, launching a phase of rethinking their core businesses. But even as companies sold off non-performing businesses, they held on to their existing core businesses.

The current, second phase – choose and focus 2.0 -- began in the mid-2010s, when Japan's leading companies began to think about strategic repositioning in more structured ways. The concept of "ambidexterity" became very popular, because it offers an analytical framework for how to continue to compete in the

[1] Hoshi/Kashyap (2011)
[2] Schaede (2020)

current core businesses (that were important to maintain cash flow and revenues) with potential future core businesses (that are to be explored). The first companies to embark on this were either facing a crisis, or had leaders able to anticipate a coming crisis. For example, in 2000, Fujifilm CEO Shigetaka Komori realized that analog photography was at a peak, soon to be replaced by digital cameras. Eventually he even changed the company name to show this identity switch, away from a "photographic" film company, and toward digital imaging, advanced materials and health sciences. A few years later, Panasonic announced that it would turn from a B2C company to B2B. Meanwhile, Komatsu and Toyota started to remake themselves as "service" companies. New players emerged, such as Keyence and FANUC, and many of the new competitors were not widely known, even within Japan, such as JSR, Nitto Denko, Hirose Denki, THK, Advantest, Cosel, or DISCO. As these companies became highly profitable global competitors, many others followed suit.

Further momentum was added with the "Hitachi shock", when Hitachi -- arguably the most diversified company as well as the "gold standard" of Japan's electric machinery industry – announced a pivot to become a data solution provider and a smart infrastructure player, entering new businesses such as smart cities, smart energy and grid technology, and transportation-as-a-service. This moment was a shock because it undermined the excuses by other large, highly diversified companies that change was impossible: if the largest company could do it, all others could as well. As Hitachi began to carve out or sell its many subsidiaries, including the very successful Hitachi Chemical, the signs were clear that Japan's business reinvention toward a new style of competitiveness had taken full swing.

Still, many people, including many in Japan, continue to doubt that Japan can compete. In particular, it is said that Japanese companies will not be important players in the digital transformation. For example, in July 2019, SoftBank Group CEO Masayoshi Son called Japan an "underdeveloped" country in the use of artificial intelligence in businesses, lagging behind China and even Southeast Asian countries. "Japan once was a leader in technology but has become an underdeveloped country in AI. It is in a pretty bad situation so Japan needs to awaken."[3] Outside Japan, too, it is often assumed that U.S. companies such as Google, Amazon, Microsoft, Facebook and Apple (GAMFA) have already taken over the "cloud" and lead in the data collecting and data analyzing realms as well

[3] "Japan 'underdeveloped' in use of AI technology, says SoftBank's Masayoshi Son", *Japan Times*, July 18, 2019.

as the development of autonomous systems, machine learning, and deep AI. Chinese companies such as Alibaba and Tencent are often also considered strong in this area. In contrast, Japan and Germany are widely seen as providers of the necessary hardware at best, or bystanders of the digital transformation at worst. Is this view correct? This report argues that it is not.

To be sure, the COVD-19 pandemic is bringing another set of uncertainties. Japanese companies have long been known for a "wet" and "high context" culture that is relational and collectivist, and places emphasis on human relations, group work and due process. Japan's employment structure was geared toward this setting, with lifetime employment and reciprocal relationships between companies and their employers providing stability over time. The "membership system" provided a particular set of rights and responsibilities that was very helpful for the postwar period of rapid growth. In reality, by the time the 2019 Workstyle Reform program was instituted, the system had already begun to change.[4]

The COVID-19 crisis has further accelerated the shift to revising existing HR processes, with the sudden shift to telework (working from home). This will fuel ongoing trends, such as the turn to individual careers paths, new types of performance evaluations, and pay-by-job category (as opposed to company size). Telework will also accelerate the shift away from a focus on process, which is increasingly difficult to measure, to one on outcome. A more salient role of HR, with new evaluation tools, will help in this shift. Competition for talent means there is not much time to waste. Winners in the new work settings will be companies that are fast to structure new workflows in proactive, forward-looking ways, and find new mechanisms that allow teleworkers to collaborate and innovate.

In combination, the digital transformation (DX) and the COVID-19 pandemic are a cause for great concern, as they create tremendous uncertainty about the future. For companies that want to change, this crisis also presents an opportunity to accelerate, or even take more radical measures. Crisis invites and facilitates innovation and renewal.

This report introduces several management tools to implement change. It argues that the DX brings new innovation opportunities for Japanese companies that are already strong in smart infrastructure, digital manufacturing processes, and edge computing. In contrast to what people often say, it is still unclear who

[4] Schaede (2020)

will win, or what the industries of the future will even look like. Meanwhile, several Japanese companies have quietly risen to jockey for position.

This report will look at what it takes for Japanese companies to reposition and compete in the DX. It is organized as follows. It begins, in Section 2, with discussing digital manufacturing as an example how Japanese companies can compete in the DX. While the spotlight is on manufacturing, the subject matter applies equally to emerging technologies (e.g., blockchain and AI) in the service industries.

Section 3 looks at the tasks of designing the dual strategy needed to execute ambidexterity. It introduces the alignment model as a framework to highlight several management levers for positioning the company to compete in the future, including innovation streams, corporate culture change and new human resource management systems.

It will become clear that the execution of the ambidexterity strategy requires a new mindset. Section 4 offers the DISCC model as a framework for how to manage culture change. With the ongoing digital transformation and shift to telework, which may remain in some form after COVID-19, the old “way of doing things” will no longer work. The DISCC model is a 5-step model that indicates how culture can be managed.

Section 5 discusses how to redesign HR processes to complement ambidexterity and culture change. The chapter begins by laying out the costs and benefits of lifetime employment. It then suggests a more comprehensive, individualistic, and motivational approach to HR, with the goal to help companies to retain not only talent, but also the benefits of lifetime employment. The “9-box grid” model is offered as one example of how companies may approach this difficult task. Traditional practices may no longer suffice in the telework/DX world, and each company will find their own approach. This section presents some suggestions.

Section 6 concludes on the role of leadership, and suggests a silver lining: the current crises present a good opportunity to accelerate the change processes that many leading Japanese corporates have already begun. It is in the hands of top managers to grab the moment and guide this process. Change management cannot be delegated or outsourced.

Finally, readers may wonder how this positive analysis can coexist with the Hoshi/Kashyap view of the Japan that stopped growing. The answer is that these two can both be true, because we are analyzing different parts of the

economy. Hoshi/Kashyap looked at overall macroeconomic data. In contrast, this report only focuses on the best of Japan's economy. And here, the 80-20 rule applies: 20% of companies account for 80% of the vibrant, successful, efficient and innovative parts of the Japanese economy. This report focuses on those 20% and lays out what some of them doing to change internal culture and HR to compete in the 21st century.

2. Strategy Change for the Digital Transformation

2.1. The Digital Transformation - Definitions

The digital transformation – the DX – is opening new technology and business horizons. In the language of the DX, the internet-of-things (IoT) means that most things will have a chip and can interact. “Industry 4.0” refers to a new manufacturing paradigm in which all machines and parts are equipped with wireless connectivity and sensors to create an interconnected system that can visualize the entire production line and make decisions on its own. Blockchain represents new algorithms that can help make supply chain management, logistics, freight, retail, insurance and banking become more efficient. “Big data” is short for the collection of information from all these sensors and machines, and “artificial intelligence” (AI) means that the machines will eventually be able to learn and teach themselves. Finally, “5G” is the new communication technology base needed to accommodate this vast amount of data exchange at tremendous speed, and the “cloud” is the equipment that can store, scrape and analyze all the information that can now be gathered through the new sensors and connected systems.

All this brings new technology frontiers and new business opportunities, from autonomous systems and advanced system solutions, all the way to the requisite infrastructure components, such as sensors, actuators, and bin-picking robots. The question is, how can Japan compete in this DX?

It is often said that the U.S. and China will be the big winners in this DX, and GAMFA will share the gains with a few Chinese companies. In reality, however, there are many areas in the DX where Japanese and German companies currently have the upper hand – in particular in the so-called “digital manufacturing”, where the technology frontier is about advanced manufacturing system solutions. Many of the new autonomous production processes, 5G sensor systems and computing processes are not connected to the cloud, but rather located on the “edge”, i.e., embedded in the production location or autonomous system, and governed through so-called edge computing. Japanese and German companies are world leaders in this area.

While the analysis in this report applies to all companies and industries, we will take a closer look here at the strengths of Japanese companies in digital manufacturing, because this is the DX that is closest to becoming a reality. The following corporate culture change applies similarly to the service sector,

especially given that these boundaries are about to disappear as manufacturing companies begin to build out “as-a-service” business models.

2.2. Industry 4.0: The Disruption of the Production Automation Pyramid

The question for Japan’s leading manufacturing companies is how to be players in the Industry 4.0 manufacturing process technologies, and how to transition to the “digital *monozukuri*” world. That is, two separate opportunities present themselves: (1) to compete in the design, administration, and control of the digital shop floor (*gemba*), and/or (2) to exploit the new technologies for superior production processes. Although industry 4.0 does not yet exist, it is already becoming clear that Japanese companies are positioning to become leaders in the future DX shopfloor processes and technologies.

In the analog days of making cars, electronics and electric machinery, the *gemba* workers were guided by foremen who coordinated production processes among each other. With the development of numerical controls and robots beginning in the 1960s, more and more automation set in. Since then, engineers think about shop floor automation as a pyramid with four levels. At the bottom is the *gemba,* the shopfloor, where machines make things. These are equipped with devices, such as sensors, that feed information into the control level, where the minute details of the production are governed. Up from there are three levels that form an intricate hierarchy of software systems that each perform distinct parts of the manufacturing process.[5]

Industry 4.0 is the general term used to refer to the disruption of the current industrial system. In the future of manufacturing, all parts and all four levels of the current pyramid are unified. All parts and machines are equipped with a sensor, and 5G will provide the bandwidth so they can communicate quickly at all times. As a result, all production information can be known in real time. Production is much faster, machine-run, and governed by machine-learned “digital *kaizen*”. The final product also has a “digital twin”, which is a data file with all information regarding a part, throughout its lifetime. This allows the

[5] On top of the shopfloor with its individual machine, the SCADA (supervisory control and data acquisition) level generates network information, such as making two robots interact with each other. One level up is the MES (manufacturing execution system) which gives the concrete production orders to the machines. The top level is the ERP (enterprise resource planning) which runs the entire production run, such as what type of product is to be built, in what quantity, and with what parts. For details, see any textbook on operations, such as Groover (2016). The following is based on interviews with engineers and experts in operations management.

manufacturer to follow the parts even after then have been inserted into end products, sold, and used.

The “cloud” then stores all information needed for this process. In this new world, everything is known: where all the necessary parts are, where they are shipped to, and, over time, whether they have any defects, how customers are using them, what repairs are necessary in the future, and so forth. This knowledge allows optimization to a point where there will be no holdups or downtime caused by human error.

However, as of 2020, none of this exists yet. The platforms are still being built, and 5G is still being installed. Robots exist, of course, but they cannot talk seamlessly to each other yet, and there are no digital twins. And most importantly, there are still no “use cases” (applications) for the value-added of this digital *gemba* and its extensions in the cloud and AI-based optimization. Yet, it is certain that global manufacturing is moving in this direction. Who will win in this competition will be determined in the future, but the preparations for this race have begun.

2.3. Japan’s Main Competitors in Digital Manufacturing

For Japanese companies, this Industry 4.0 disruption offers a great opportunity. Japan is globally known for leadership in *monozukuri*, as well as in the equipment needed to manufacture. The core competence in making factories, designing system engineering, mechatronics and robotics comes from the high demands of the world’s best manufacturers, many of which are in Japan. This opens two opportunities: the first is to compete in the design of new production processes, including the advanced systems solutions, at a globally leading level and become a standard setter in the new technologies. The second is to collaborate with the world’s best manufacturers to create the first real “use case”. This means, to find the applications where Industry 4.0 can truly benefit from big data and AI in the cloud, and then be a first mover in building out these applications fast.

Exhibit 1: Value Creation in the Digital Manufacturing Age

Source: Adapted and expanded based on a chart from METI (2018), p.22

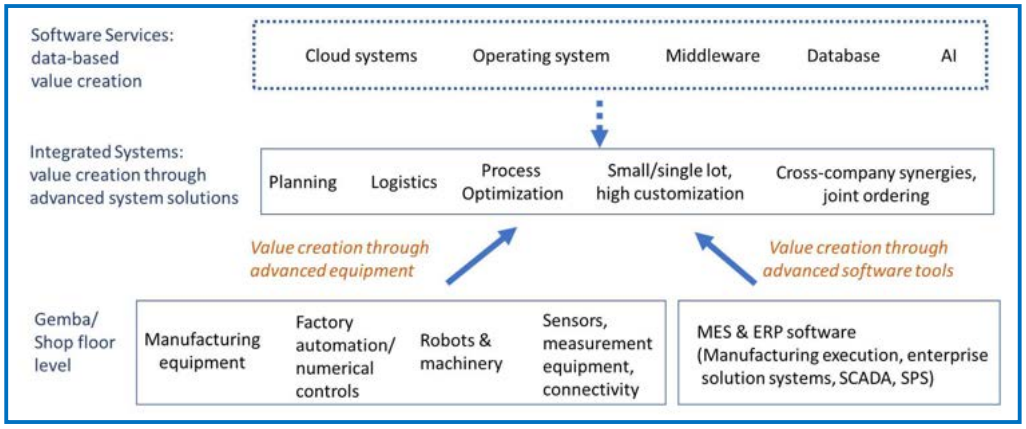


Exhibit 1 is a presentation of where value (profit) can be created in the three separate domains of the future world of digital *monozukuri*. The bottom layer represents the current production level at the *gemba*, divided into machines and equipment on the left, and software systems on the right. This is today's main location of profit generation. The arrival of the first players in DX are now opening in the middle layer. This consists of integrated systems that offer solutions and services that enhance manufacturing, such as AI-generated forecasting models of whether an engine needs a repair. Here, profit is earned by providing advanced system solutions. These include advanced equipment and plant installations, new production process solutions, logistics, customization and single-piece production, and the creation of synergies through platforms that allow optimization at various parts of these steps. Advanced software tools and supply chain management solutions will also be needed. This new middle level is at the forefront of competition now, as it is a new "blue ocean"—i.e., wide open and uncontested market space – and in factory automation.

The upper layer of Exhibit 1 is the cloud. The application of the cloud for manufacturing is still in the distant future, and it will probably not be realized any time soon. But the vision is that this upper layer – knowledge generated from the data that are collected through the new connectivity – will create value by providing feedback loops into the value creation on the shop floor. This is expected to be a "gold mine", i.e. a valuable new source of revenue. Famously, Alibaba's founder Jack Ma has referred to data as the "new oil". This means we

can think of data collection as the new oil drilling, and of data mining through AI as the new the oil refinery.

Reflecting Japan's *monozukuri* strengths, Japanese companies are very important global players in machinery, sensors and robots. As of 2019, industry observers suggested the following main players in each of the layers: Keyence, FANUC, Omron, Okuma, Mitsubishi Electric, Yaskawa, Fuji Electric and Yokogawa Electric and several mid-sized companies on the software side. There are many smaller companies in Japan that dominate certain aspects of this technology.

They have fierce competitors from Germany, not only from Siemens, but also Trumpf, Bosch and Dürr. In the U.S., there are Rockwell Automation and Honeywell on the equipment side, although in general, American firms are seen as somewhat weaker in this area. In software, Western companies such as Siemens, SAP, ABB, Autodesk and Schneider Electric are strong competitors.

Exhibit 2 lists the main competitors at each of these levels. Whereas U.S. and Chinese companies are comparatively weak at the *gemba*, they currently dominate the cloud, datamining and AI research. In 2016, China's Midea acquired the German robot maker Kuka in order to build a *gemba* presence, but the merger is widely considered a failure.[6] This showed, yet again, how strong the position of German and Japanese companies is in some areas of the *gemba*.

Exhibit 2: The Competitive Landscape in Digital Manufacturing (Examples)

	Advanced Shopfloor Equipment and Software	Integrated Systems: Advanced System Solutions	Platforms for Edge Computing	Software Services: Data and Cloud
Japan (examples)	Keyence, FANUC, Yaskawa, Omron, Okuma, Yamazaki, Fuji Electric, Nikon, Advantec, Kawasaki Heavy, Mitsubishi Electric, Yokogawa Electric, etc.	Mitsubishi Electric, FANUC, DMG Mori, Hitachi, Denso, Fujitsu, NEC	Edgecross Consortium, FANUC (FIELD), Mitsubishi Electric (e-F@ctory), Hitachi (Lumada)	SoftBank, Preferred Network, NEC
Germany (examples)	Siemens, Trumpf, Bosch, Dürr, SAP; Europe: ABB, Schneider Electric	Siemens, SAP, Bosch, Dürr, Zeiss, Software AG, Adamos	Adamos/Software AG (Cumulocity IOT), Siemens (MindSphere)	Siemens
United States (examples)	Rockwell Automation, Honeywell	Rockwell Automation, Honeywell, Xerox, Autodesk		Amazon AWS, Google, Microsoft, IBM, Oracle, Cisco, Intel, many startups
China (examples)				Alibaba, Huawei

The battle in this middle layer is about offering edge computing technologies, as well as the platforms that connect these new processes. The first

[6] https://technode.com/2019/03/29/midea-kuka-80-profit/

refers to the unifying *gemba* computing system that will govern everything that used to be the production pyramid. Within Japan, Mitsubishi Electric is fast emerging as a leader in edge computing, in particular through its e-F@ctory product and capabilities.[7]

Regarding the platforms, two different types are now emerging. The first are single-company platforms. Some of these are open, but many are proprietary (closed). Together with Siemens' Mindsphere, a global leader in this area is currently FANUC, which in in 2016 launched its FIELD platform. FIELD allows manufacturers to connect all of their automation equipment to a FANUC server which also offers software applications for lowering equipment downtime and improving operational efficiency. This is an open platform, so that users can add their own application, or buy FIELD apps written by device manufacturers, such as robots, sensors, and machinery. In contrast, Hitachi's Lumada platform is limited only to Hitachi clients and processes, with the goal to increase trust in and usage of the platform. The goal is to collect all data from all Hitachi businesses and their customers, and thus create knowledge through connectivity that is semi-proprietary. The U.S. tried to compete in this area through GE with its Predix platform, but this attempt failed and was discontinued in 2018.

The second type of emerging edge computing platforms are set up as free and open consortia. The goal is to create the industry standard in edge-computing manufacturing platforms, by being first to market and creating network effects: the more users, the higher the utility. The business goals are data collection and offering edge-computing services. In Japan, in 2017 six companies launched the "Edgecross Consortium" to establish IoT standard connectivity for edge computing, led by Mitsubishi Electric Corporation (MELCO), together with Advantec Co., Ltd., Omron Corporation, NEC Corporation, IBM Japan, Ltd., and Oracle Corporation Japan. The main competitor from Germany is Adamos, built by a group of machine-tool companies. Which of these platforms will win remains to be seen, but it is already clear that Germany and Japan are strong players with little competition.

The top level – the cloud – is widely assumed to be dominated by companies from the U.S., the GAMFA. These companies are investing heavily in building out operating systems, cloud mechanisms, and AI applications. The trade war between the United States and China that began in 2016 has greatly curtailed some of the Chinese competitors, in particular Alibaba and Huawei. However, Japanese companies are making inroads here as well. Exhibit 3 shows that in 2019,

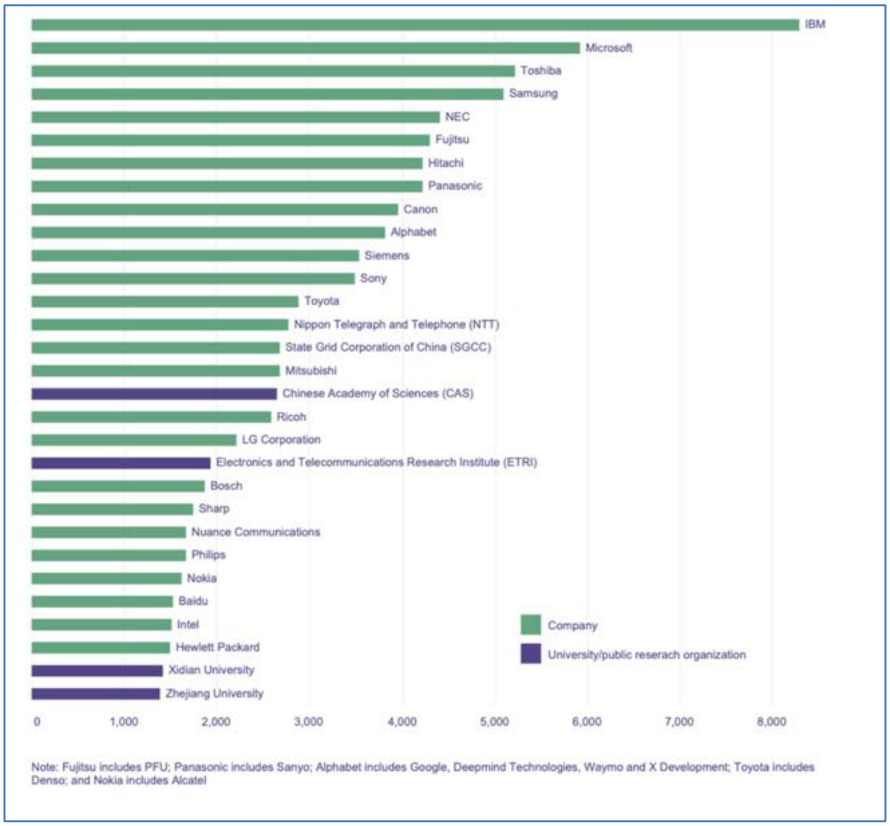
[7] For more, see https://www.mitsubishielectric.com/fa/sols/efactory/index.html

eleven of the top 20 AI patent holders are Japanese firms. While it is true that some of the most important developments may not be disclosed in patents, the table nevertheless underscores that it would be wrong to discount Japanese competitive strength in this field.

It is important to note that the competencies required for competition in the cloud are very different from those on the *gemba*. However, a direct connection to edge computing exists. A question for the future competition, then, is whether latecomers will be able to leapfrog, or whether synergies among the Japanese competitors can be created.

Exhibit 3: Top Applicants in AI (by number of patent families)

Source: Wipo (2019)



Finally, the shift to digital manufacturing means that many of Japan's manufacturing firms are crossing the border to becoming service sector companies. For example, Hitachi Ltd. and Mitsubishi Electric are now focusing to

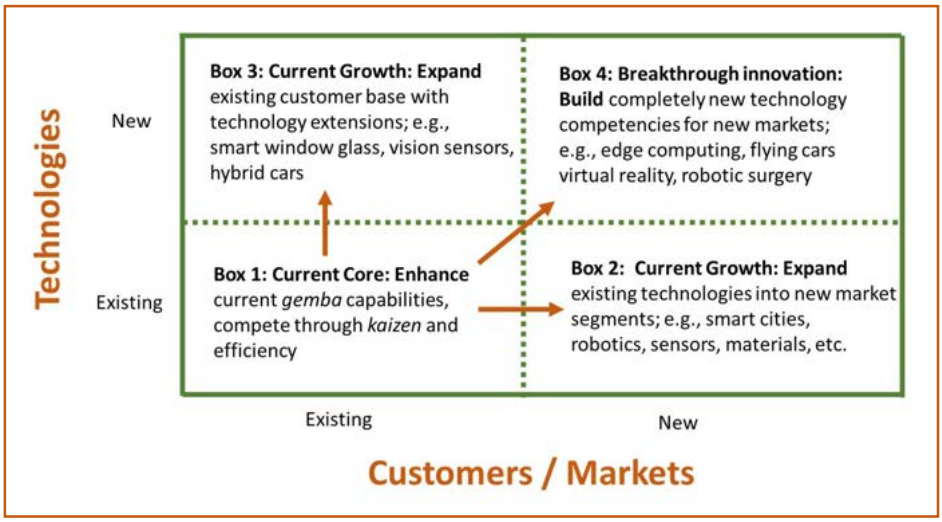
compete as advanced system solution providers and leaders in edge computing. Meanwhile, NEC is expanding efforts in AI applications and vision and facial recognition technologies. Companies like these are no longer traditional manufacturers. Rather, they are shifting their business models from “pipes to platforms”, and from making things to also providing services, or selling “things” as services. To give but one example of such a business model change, Siemens – Hitachi’s direct competitor in Germany – is already shifting away from selling trains to the German Railway company, and toward selling the service of running and maintaining trains (TaaS: transportation as a service). Likewise, car companies worldwide are preparing to no longer sell cars to individuals but to rent them out with subscription services, under the header of “MaaS” (mobility as a service). This means that revenue models are shifting, away from spot sales to recurring profit from service subscription income. As the DX takes hold, traditional ways of thinking about sectors of the economy, total factor productivity, and employment are also changing.

And most importantly, for the large companies, the DX means that in order to compete, it is necessary to develop new core competencies and to manage a new dual strategy. In this dual approach, companies constantly enhance their traditional business and also build new strengths for the new competitive tasks. This, too, has already begun among the leading companies.

3. The Execution: Ambidexterity and the Alignment Model

The DX is bringing new opportunities for all Japanese companies in all industries. To compete through this wave of disruptions requires that companies find new extensions of the existing business, even as they continue to enhance their existing businesses. In manufacturing, new possibilities are emerging in the construction of infrastructure (smart cities, smart energy, micro-grid), new means of transportation (self-driving or flying cars, new trains, etc.), new machines (robotics, drones), and of course the input parts, components, and materials that will increase the functionality of these new product offerings. In the service industries, the DX and blockchain open new opportunities in logistics, retail, insurance and banking. Profit is made in new business models that capture value along the entire solution chain. Exhibit 4 provides a framework of the emerging opportunity set, and maps how to think about business portfolio expansion.

Exhibit 4: Innovation Strategy Map



The two axes are technologies and customers, and each has existing and new areas. The questions to ask for each box are:

Box (1): How can we continue to compete powerfully in the current, existing core business, through *kaizen*, efficiency enhancement, etc.

Box (2): How can we take current technologies and sell them to new customers in new markets, including new applications of current technologies or new global markets?

Box (3): How can we help our current customers by developing new technologies and new applications?

Box (4): How can we develop completely new technologies and applications for new customers? In other words, how can we survive the DX disruption by adding new competencies that allow competition in the newly emerging market opportunities?

Great companies everywhere typically already operate in boxes (1), (2) and (3), and constantly extend their current technologies and markets. This involves mostly incremental innovation, and carefully planned extensions and additions to the current core. For example, over the past 20 years the Toyota Motor Corporation has continually improved its manufacturing skills (Box 1), has successfully extended car sales into new markets (e.g., pickup trucks for the U.S. market (Box 2)), and developed the Prius hybrid car for existing customers (Box 3).

The challenge is Box 4: moving into completely new customer needs with new technologies. This is much more difficult. Even though many companies say they do this, in reality they face tremendous challenges. This is because extending into Box 4 requires a dual strategy, with a new development and execution framework. In the Toyota example, Box 4 is about entering the MaaS business by offering transportation services with self-driving or self-flying cars (drones). However, adding this new line of business necessitates different engineers, a new approach to R&D, a new business and profit generation model, and overall a new business focus on speed and breakthrough innovation. Running these businesses at the same time is called ambidexterity.[8]

Yet, already several success stories are emerging in Japan. For example, Fujifilm has extended its long-standing core competencies in photo film and cameras (Box 1) into new types of films for input materials, such as polarizer film (Box 2), medical devices and medical imaging systems (Box 3), and has extended its R&D into cosmetics, pharmaceuticals, and regenerative medicine (Box 4). In the case of JSR (originally known as Japan Synthetic Rubber) , the company is still Japan's largest producer of synthetic rubber, but it has also built new businesses in specialized polymers for semiconductor production and polarizer and brightness films for LCD panels (Box 3) and is extending into life science materials (Box 4). Nitto Denko, one of Japan's leading materials and adhesives company,

[8] For a detailed background on the framework of ambidexterity, please read O'Reilly/Tushman 2016 (translated into Japanese 2019), O'Reilly/Tushman (2004), or Tushman/O'Reilly 1997.

has long pushed its innovation envelope through this process, which it calls "*sanshin*", the "three new", referring to boxes (2), (3), and (4).[9]

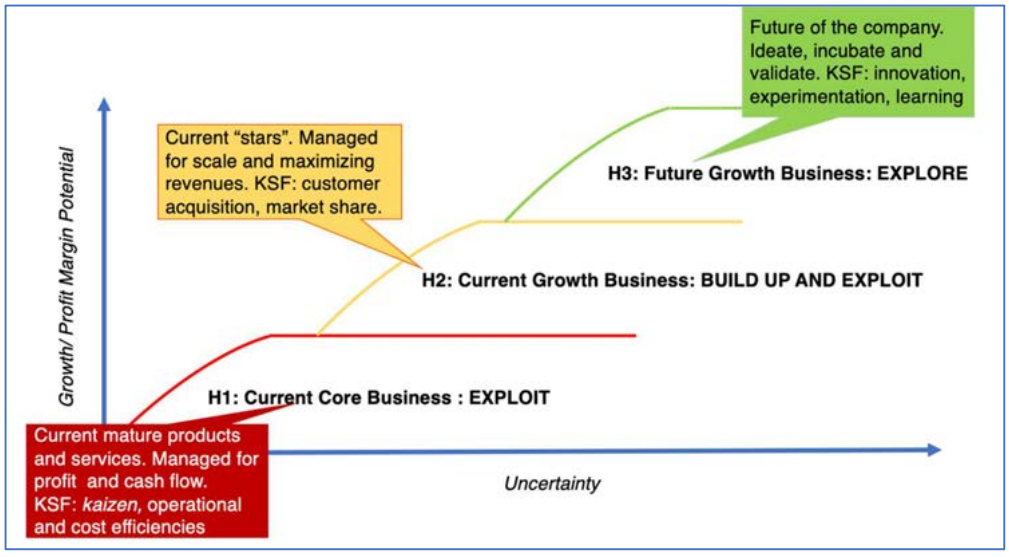
There is a reason why great companies constantly think about all four boxes: Box 1 will eventually mature and decline, and if the company is not prepared for competition in new industries, it will face extinction. While this brings great pressure to innovate, the difficulty lies in the execution. To execute ambidexterity successfully, the company has to manage different business units at the same time that are all at different stages of their life cycles. How can this be done?

3.1. The Framework: Managing 3 Business Horizons at Once

Ambidexterity is now a very popular framework in Japan, because it addresses precisely this challenge of preparing for the future while maintaining to run the current core business.[10] In the ambidexterity model, the different life cycles of the businesses in the 4 boxes are referred to as three "horizons". Exhibit 5 draws the business life cycle line for 3 separate horizons, to highlight the overlap.

Exhibit 5: Different Business Unit Time Horizons

Source: adapted and expanded from Coley / McKinsey [11]



[9] On Fujifilm, see Komori (2015); JSR: https://www.jsr.co.jp/jsr_e/rd/policy.html; Nitto Denko: https://www.nitto.com/us/en/about_us/concepts/businessmodel/

[10] O'Reilly/Tushman (2016, in Japanese 2019), Kato/O'Reilly/Schaede (2020)

[11] E.g., Coley (2009), O'Reilly/Tushman (2016, in Japanese 2019)

So-called “Horizon 1” businesses (red line) are the current core, mature businesses. These are very important, because they generate revenues and cash flow that stabilizes the company and guarantees continued operations. These businesses should be managed toward stable revenue generation, with a focus on *kaizen*, operational efficiency and cost reductions.

The harsh reality is that most Horizon 1 (H1) businesses have a declining growth and profit potential, and will eventually phase out when the product life cycle ends. Until that happens, the company should use and exploit those capabilities, markets and revenues. In addition, H1 businesses contribute the assets and cash flow that can be used to grow the H2 and H3 businesses.

Most companies have also already created Horizon 2 (H2) businesses (yellow line). These are the future profit generators, and they have room to grow and prosper. Revenue growth potential is higher than in the mature sectors, but so is uncertainty. These businesses should be managed toward increasing revenue and market share growth through new customer acquisition. They often invest in further product and production process developments.

Eventually H2 businesses will also mature. Therefore, companies always look to the future and develop explore H3 businesses (green line). This refers to building completely new capabilities that are not yet represented in the business portfolio. In these “Box 4” businesses, companies venture into new technologies for new customer needs, to compete into the future. Yet, because the future customer or market is still unknown, these H3 businesses require experimentation, ideation, and incubation.

These Horizon 3 (H3) businesses are the future of the company, and uncertainty is high, while revenues are minimal or zero. Certainly, in the initial stages, these “explore” businesses demand more resources than they earn. This often creates internal competition, envy, resistance, and other expressions of hierarchy and power. These sentiments may kill the new fledgling business before it has had a chance to fly. Not only in Japan, but globally there are innumerable examples of companies that missed the next business opportunity because of internal infighting and a culture clash between the old and the new businesses.

But it is necessary to run these three horizons at the same time, in-house. If they don’t, they miss out on the new business opportunities. The opposite of the ambidexterity strategy is the so-called “Dejima strategy”. It is well known that this refers to the island in Kyushu that isolated the foreign traders and missionaries during the Tokugawa Period. In business, Dejima projects are

allowed to work separately and independently from overall corporate strategy. [12] This is much easier to manage and therefore many senior executives prefer it. However, the problem with the Dejima approach is that there may be no positive spillover effects between the current business and the future activities, and this may eventually damage the company. For the company overall to be able to leverage its innovation, it should incubate and scale the new technologies in-house.[13] This means, all three horizon businesses are being managed at the same time. The DX may wipe out may of today's businesses, and has made this more urgent.

This is why ambidexterity has become popular lately. It describes a dual strategy. On the one hand, companies expand their competitiveness in the existing core and growth businesses. On the other hand, they build new structures that support speedy, risk-taking breakthrough innovation. These are two distinct management assignments, and senior managers is in charge of combining the two approaches. And it is this execution that is the most difficult aspect of the ambidexterity framework.

3.2. The Execution: Building the "Tasks-People-HR System-Culture" Alignment

The tool that helps execute the ambidexterity strategy is called the "alignment model". Developed in U.S. management research, this framework posits that the successful execution of a given corporate strategy requires the tight alignment of four separate components of corporate management.[14] It is the role of leadership to organize and proactively manage these four aspects of management execution components on a daily basis. Specifically, these are:

Critical tasks or *key success factors* (KSF) refer to specific economic activities and outcomes needed for the desired company strategy. In terms of managerial economics, these are the four or five activities necessary to earn a profit. For example, if the company's strategy is to be a low-cost producer, the task includes operational efficiencies that cut production costs. In industries with high fixed costs, the KSF is to ensure high capacity utilization at all times.

People 人材 refers to the motivation, competencies and mindset of employees that are needed to accomplish the critical tasks. This does not mean

[12] METI (2017)
[13] O'Reilly/Binns (2019)
[14] The alignment model is also known as the "congruence model". See also Kato/O'Reilly/Schaede (2020)

laying off or replacing people. Rather, it is to reorient the existing workforce toward the needed mind- and skillset. Sometimes, augmenting the team with new knowledge may be helpful. This factor is about guiding employees to embrace the corporate strategy and critical tasks, and help them perform in their main assignments. The employees' mindset should tightly match the critical tasks, if the company wants to have labor productivity.

HR Systems refers to the structure, metrics and systems for people management, including assessment metrics and incentives that anchor the standards for promotions and rewards. Employees everywhere have a keen sense of what the true metrics are by which they are assessed. They also constantly watch their colleagues' careers. If there is a mismatch between the critical tasks or what management says, and the metrics on which pay and promotions are determined, employee behavior will deteriorate and undermine the successful execution of the strategy.

Culture refers to the behavioral norms within the company that define what type of behavior is important. This is partially described in a company code of conduct. The other part of it is tacit and shared based on initiation and social construction when employees are first hired into the company. (This will be discussed in more detail in the next section.)

The important insight is that these four factors have to have a tight fit. For any strategy to be successful, there must be a tight alignment between the four components. In other words, they should form an internally consistent system.

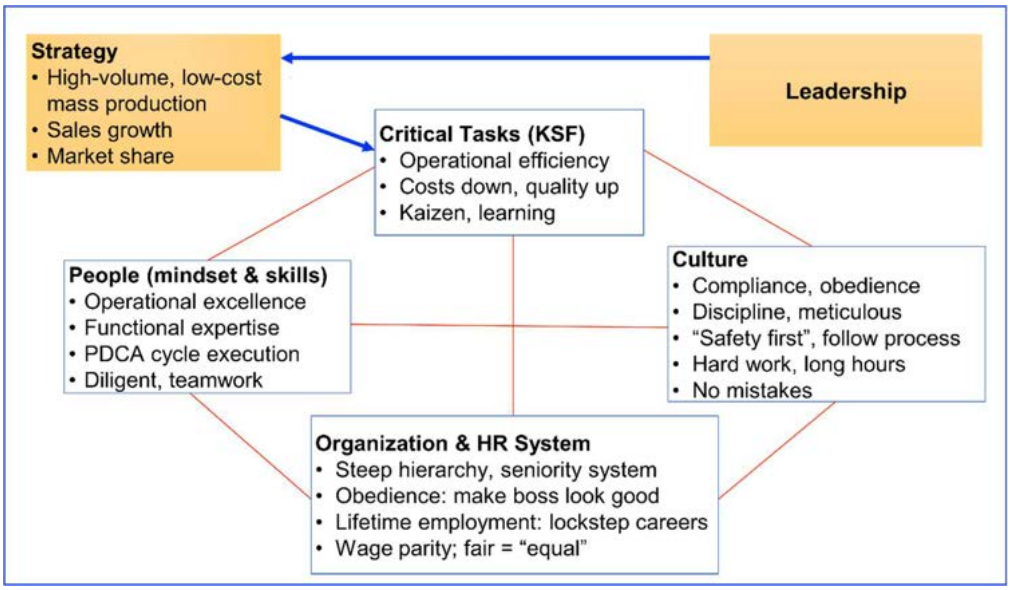
However, this alignment is different for each business horizon. In terms of Exhibit 4, the alignment for Box 1 is very different from Box 4. In terms of Exhibit 5, this means that the task-people-HR-culture fit for H1 business is completely different for that of H3 businesses. To manage a company that pursues the dual strategy requires running two separate alignments simultaneously.

Exhibit 6 presents the alignment of a typical, successful Japanese manufacturing firm.[15] In such a case, the strategy is to grow and build global market share through high-volume, high-quality, low-cost mass production. To accomplish this, the critical ***tasks*** are to drive costs down through incremental, continuous improvement (*kaizen*), and efficient, preset processes of organizational learning. The competencies and mindsets of ***employees*** are around functional expertise, such engineering skills, a willingness to follow orders,

[15] Schaede (2020)

short feedback loops and a knack for operational excellence (doing a job conscientiously, and precisely as described).

Exhibit 6: The Alignment Model for *Monozukuri* Businesses



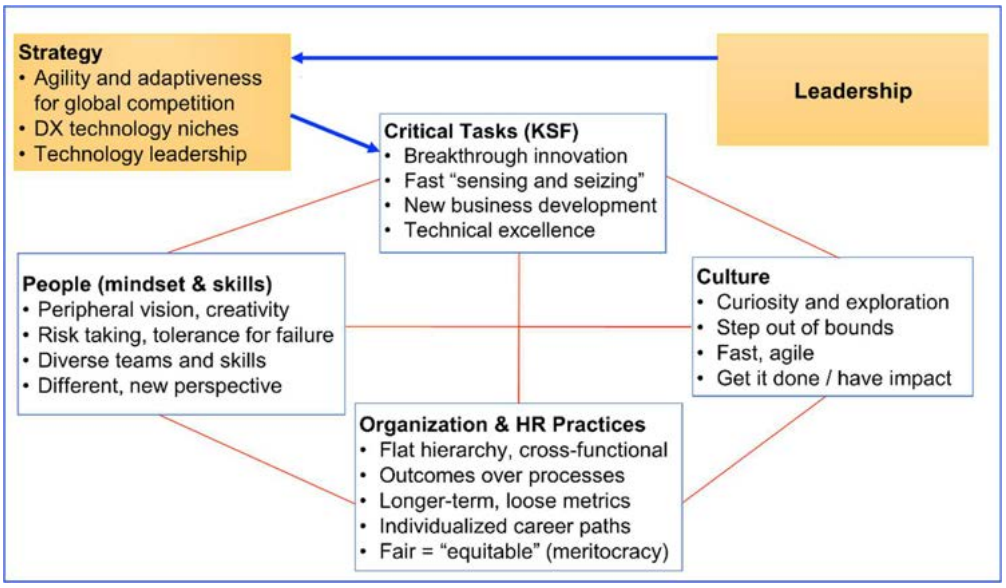
The ***HR Practices*** are designed to foster and reward compliance with rules and PDCA (plan-do-act-check) cycles, adherence to standard operating procedures, and contribution to embedded learning in these procedures. From the HR perspective, this works best if everybody is promoted in lockstep, and lifetime employment works very well toward this goal. The ***corporate culture*** is typically top down (or middle-down), and include discipline, compliance, meticulous order execution, teamwork and hard work for long hours. The leadership role is to clearly lay out direction, motivate employees to achieve clear metrics (e.g., sales targets), and to celebrate results so as to foster team spirit. The result of this alignment is a very powerful manufacturing process. To this day, this alignment is necessary for excellence in Japanese manufacturing industries.

In contrast, the alignment needed to foster future, H3 businesses is completely different. The new type of innovation is breakthrough, not *kaizen*, and it has to occur at high speed in deep-technology areas. To build this new capacity for innovation, new key success factors should be clearly identified, so that the entire tasks-people-structure-culture alignment can be adjusted accordingly. As shown in Exhibit 7, the goal with this innovation strategy is to be an agile

technology leader. This requires breakthrough ideas. To do so, the KSF include deep-tech excellence, fast sensing and seizing, and rapid new business development.

To accomplish this, ***people*** should be encouraged to be creative, open to diversity and confrontation, and risk-taking. They should be ***rewarded and promoted*** for doing this, through individualized career paths that bring out their best entrepreneurial ideas, longer-term metrics that are tailored to product development cycles, and initiatives to build bridges across functions in the company. The ***culture*** of an innovative company is about curiosity, trial-and-error, tolerance and being different. Many of the HR features of this new business alignment have already been included in the 2019 Workstyle Reforms. This suggests that many companies want to make room for such more flexible structures.

Exhibit 7: The Alignment Model for New Innovation Businesses



There are already several companies in Japan that are shifting to managing the dual strategy, with its dual cultures. To change the mindset toward design thinking, some companies have hired creative designers from architecture, fashion or interior design. Others have hired foreigners, to shake up the established ways of the core business culture.

Finally, a very important ingredient to the alignment model is the leadership by senior management. Their role is to change the tone of the organization, its incentives, key goals, and its culture, and to enable the dual strategy. As we will see below, the reason is that the execution of the dual strategy means changing the corporate culture of the entire company, toward more openness for coexistence and co-creation.

4. Managing Corporate Culture Change: The DISCC Model

It is sometimes said that changing the culture of a large Japanese corporate is more difficult than changing the course of a big cargo ship: it takes time, it is hard work, requires everybody to participate in the change, and it usually causes a lot of turbulence. Mid-level managers may resist because they are risk-averse, and change is too fast for their tastes. Younger workers may think that progress is too slow. In general, managing culture change is very difficult, and the larger the company the more difficult it is to reorient employees toward new ways of work.

Even among General Managers there is often resistance to such drastic change, and competition for resources. The existing H1 and H2 ("exploit") divisions generate most of the revenues, and they often want to grow further. They may be unwilling to subsidize the new, loss-leading divisions. Many employees may see the rise of the H3 businesses as a threat and be worried that their older divisions will lose status if the new businesses are successful. And, the existing corporate culture tends to be deeply engrained. Often people simply do not want to, or cannot, change their mindset toward more risk-taking and tolerance for mistakes.

4.1. What is Corporate Culture?

Corporate culture is sometimes translated into Japanese as "*bunka"* (culture in the sense of tradition, history and folklore) or "corporate DNA". Both are misleading, because it is impossible to change *bunka* or DNA. However, corporate culture refers to a shared set of norms that define the "right" behavior in a company. A better translation is the "in-house *yarikata*", namely "way we do things in this company". Some companies may be more conservative and stricter in their rules; others more permissive. These differences show that the rules of behavior are man-made, and therefore, they can be changed.

Although a company's culture can have a long tradition, it is still man-made, as it reflects the behavioral rules spelled out by its leadership. Over time, it can be adjusted to whatever purpose it needs to serve.[16] Therefore, when senior management is in charge of proactively changing the strategic direction of a firm, what that really means is that it is in charge of changing the "way of doing things".

[16] See Waldman/O'Reilly (2020)

In Japan, in general, the norms of behavior are to be polite, to be appropriate, and not to cause trouble or inconvenience.[17] At the company level, the meaning of "appropriate" is defined in two ways. One is the code of conduct, which spells out in detail what the company's right behavior is. In addition, all companies have their own understanding and norms of what is expected from all employees. These reflect a shared, tacit understanding of the right behavior. And, these are different for each company.

These behavioral norms are set by example, socialization, and daily sanctioning. A new employee who joins a company will try to fit in well, and therefore picks up cues from the surroundings. This is due to the so-called "social proof", a human desire to fit in by mimicking the behavior of others. Within a short while, the employee will have adopted the culture of his new employer. Moreover, new employees in Japanese companies usually go through an initial training, where these norms are also enforced.

At the division level, managers and colleagues guide employee behavior, by rewarding the right choices and admonishing or punishing behavior that is considered wrong. The manager is very powerful: even within one company, two divisions may have different sub-cultures, depending on the bosses. This means that a boss can set the tone of the workplace. Likewise, the CEO can set the tone of the company.

4.2. The DISCC Model: Managing Culture Change

In the U.S. there is large body of research on culture management, and on how senior management can lead corporate renewal and change. This research has identified five primary ways in which culture can be changed.[18] These five elements can best be summarized as the DISCC model, as shown in Exhibit 8. This model suggests that to change the culture, senior managers must engage in the following behavior:

(1) **Direction:** Senior managers give strong, consistent signals to all employees about the new vision, including a clear articulation of what the new culture (way of behavior) is, and they lead by example;

(2) **Involvement:** Senior management invites broad participation in the change efforts by employees at all levels of the company, by giving employees

[17] Schaede (2020)
[18] O'Reilly/Chatman (1996)

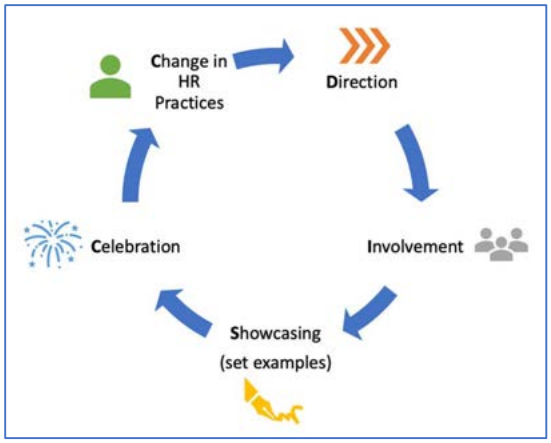
assignments such as contributing to the new vision, mid-term plan or position paper;

(3) **Showcasing:** Senior managers give vivid examples of the new culture, and practice the new behavior in front of employees;

(4) **Celebration:** Senior managers give awards and social approval for those who have changed and dared to adopt the new norm, e.g., thanking people who speak out or challenge the status quo;

(5) **Change in HR Practices**: These 4 steps are accompanied by a reform of the HR system, including selection, training and promotion, in support of the new culture.

Exhibit 8: The DISCC Model of Culture Change



The recent example of AGC provides some context on how this can be done.[19] When Mr. Takuya Shimamura took over as the CEO of AGC in 2015, he began his change effort with clear statements about changing the company from a glass- and windows manufacturer to an advanced materials company. He also articulated clearly that he wanted to end the previous culture of fear about reaching profitability goals, and shift to a culture of open dialogue and joint problem-solving (Direction). He formed task groups of mid-career employees and charged them with writing a new vision for the company (Involvement). To exemplify the new culture, he launched a series of more than 100 townhall meetings with employees at all levels of the company, and told employees to

[19] Kato/Schaede/O'Reilly (2019)

prepare and ask questions. He listened carefully and thanked those who asked the most challenging ones (Showcasing the new, frank communication patterns he wanted to create). Employees who were quick to adjust and take on the challenge were thanked publicly, and people representing the new culture were promoted into leadership positions (Celebration). All of this occurred while the HR practices (hiring, training) were also adjusted to emphasize the new culture of open dialogue. Using these five levers, Shimamura-san began transforming the AGC culture from one characterized by fear to one of teamwork to make all divisions stronger. Visitors to AGC reported to be surprised how openly young employees approached senior management.

As this example makes clear, culture change can be very time-consuming, effort-intensive hard work, and it is squarely in the hands of corporate leaders. It cannot be delegated, because direction-setting has to come from the top. It also cannot happen overnight, as it takes time to guide and nudge people to embrace the new norms of the appropriate workplace behavior.[20] Many different mechanisms come into play to convince workers to accept the new systems. For example, at one large manufacturing company, over a period of three years, the senior management team tirelessly organized more than 200 face-to-face meetings with employees, and conducted workshops and organized contests, to create employee buy-in and overcome employee concerns over uncertainty regarding the new system.[21]

4.3. Changing the Workplace Behavior Toward Efficiency and Productivity

Culture change means incentivizing people to change their behavior. It also means a change in their aspirations, i.e., toward a new self-identity of what they can do and how they should contribute to the company. In many Japanese companies, employees still think of themselves as order-takers until they are promoted to a certain level, and until that time, the hours worked or the effort expended are understood to be the most important aspects of performance.

Process orientation is very important in the *monozukuri* alignment, but it hinders the transition to the new innovation alignment. For new processes of innovation, a focus on outcomes and "getting things done" is more relevant than process, and efficiency and productivity are also more important. This may require a new behavior that is opposite from the traditional workflow. In addition

[20] For more on the theory of "nudging", see Thaler/Sunstein (2008).
[21] Interviews by author, Tokyo, 2019

to changing behavior, people also need a new mindset about the value of time and output. New management techniques and incentives will help nudge employees to change their views on what matters for success. To show how some Japanese companies have started this transition, we now look at three examples of how company behavior may be changed.[22]

Example 1: "Innovation Tourism"

As we saw in Exhibits 6 and 7, to compete in the new "agile technology leadership" strategy, people's mindset has to shift from incremental to breakthrough innovation, and to outside-the-box thinking, risk-taking and a new tolerance for mistakes as learning. Such a mindset shift cannot just be ordered from the top; rather, this type of reorientation has to be slowly groomed and carefully guided.

One example of a program to push this shift are the activities many corporates have launched under the heading of "open innovation".[23] The original concept included various processes of free innovation exchange, including crowdsourcing. However, in Japanese the term is often used to refer specially to processes and activities to open up corporate R&D processes and an innovation mindset. A 2017 government report estimated that more than 70% of large firm innovation activities were done completely in-house, in what was called the "self-sufficiency syndrome" (*jimae-shugi)*.[24] Open innovation was the idea of shaking up these processes and encouraging people to infuse new ideas and methods into the encrusted structures. This could be done by bringing in new ideation from the outside, through acquisitions or investment in startup companies, and through mid-career hiring.

One important aspect of open innovation was to engage in CVC (corporate venture capital) and work with startups, especially in Silicon Valley. In the early 2000s more than 200 Japanese companies launched their own venture funds, and for the decade between 2008 and 2018, it was estimated they invested in over more than 2,000 Silicon Valley startups. [25]

Moreover, more than 500 Japanese firms now have "innovation offices" in Silicon Valley. While some of these offices spearhead CVC investments and scout for startup technologies, others are also used to conduct culture change

[22] The following is based on interviews in Tokyo and Silicon Valley, spring 2018-2019.
[23] For the original concept, see Chesbrough (2005)
[24] METI (2017)
[25] METI (2019), and database constructed for the years 1996-2012, see Sasaki, Masato, and Ulrike Schaede JFIT Working Paper. La Jolla: UC San Diego.

workshops. They design structured, professionally coached training programs for the visitors from HQ. These labs range from small to quite large, with local employees and regular employees dispatched from HQ. The staff organizes and teaches workshops, such as in design thinking and brainstorming exercises, as well as strategy seminars and local tours.[26] Some of these offices have built this capacity into a new business of its own that is earning profits for HQ by running consulting programs for other Japanese companies.

The explicit goal with this "innovation tourism" is to pull employees out of their comfort zones. California is widely known to be culturally loose. It is also famous for novel approaches such as design thinking. Many program participants already arrive with a different mindset from the time they step off the airplane. Structured conversations about visions of the future of the company that are possible in California would probably not work in the HQ in Japan. And although these visitors may not be able to transpose California workplace culture to Japan based on just one short visit, they may return with a broader view of what is possible in a global market setting.

Example 2: Workspace and Office Design

Many large companies are now using office redesign to change the mindset of their employees, and pull them out of ossified routines. The purpose is to change behavior around taking initiative, and focus on outcomes rather than process.

Traditionally, Japanese companies are often credited with inventing the "open floor" office plan, with its highly structured layout that allowed one to assess the entire office hierarchy in just one look. From their desks in the far corner, division managers can constantly watch and assess the efforts of their entire unit at all times. This office layout is a good fit with the traditional *monozukuri* alignment (Exhibit 6).

However, in the new global competition and in light of the DX disruption, efficiency and outcomes are becoming more important than process. To reorient the employee mindset and break open rigid structures, some companies have switched to a "free address" office layout. Employees no longer have their assigned desks, but only a locker for their belongings. When they arrive at work in the morning, they pick a space that fits theirs needs of the day's assignments. The purpose is not just to be more modern and attract new young talent, it is also

about creating a new setting that changes the old routines and introduces new fluidity and creativity. [27]

Some companies have found that the transition to the new office design can be quite difficult. Managers face difficulty in finding their subordinates and assessing their performance. In one IT company that occupies two floors in an office tower, an employee was charged with building a new, highly detailed location software that would enable people to spot their colleagues. Conversely, for subordinates the free-address office can cause new anxieties on how to prove to their bosses that they are working hard. If their desk is far away from the boss, how can they show their effort?

This new uncertainty is often uncomfortable for both, but it is in fact the intended effect of the new structure. It reorients workers away from process and toward a new emphasis on outcomes. Some companies report that, initially, employees choose to sit at the exact same place every day, to ensure their presence was noticed. But after a few months of realizing the new possibilities offered by the free-address design, they often begin to choose spaces that help in the day's assignments, and more fluidity can be introduced.

As a result, employees are now looking for new ways of showing output, just as managers are searching for new assessment skills. As we will see below, the COVID-19 crisis has further accelerated these trends and needs, due to expansive telework. The combination of these changes is beginning to shift the "People" and "HR Practices" boxes in the alignment model of almost all large Japanese companies.

Example 3: The Value of Time

Productivity are about using time efficiently. Traditionally, many Japanese companies have valued due process above an individual's time. This is reflected in a large number of meetings that many people have to attend. There are many other examples of such time-intensive activities in Japanese offices.

One reason for these processes is that, traditionally, Japanese corporates viewed an employee's time as something they own. Spending time was seen as an employee's dedication, rather than an opportunity cost to the company. Still

[27] Based on interviews and multiple office visits, Tokyo, March 2018. See also Masumi Koizumi, "Office makeovers focus on comfort and productivity as activity-based working takes hold in Japan", *Japan Times,* May 2, 2019.

to this day, meetings in Japan often do not end on time, and rushing such “endless meetings” is seen as impolite.

However, the Workstyle Reform (see below), with new rules on vacation time, maternity leave and other accommodations, will require a shift to viewing time as a scarce resource. Companies that want to attract and retain young talent are advised to structure more individual-centered workdays. The labor shortage will bring more pressure to view time as a cost, and to structure workplace routines around getting things done. Telework will further push the attention toward outcomes, even though many companies still spend a lot of employee time on long web-based meeting with many participants. How to address this is the topic of the next chapter.

5. People Management: Toward a New HR Function

Many Japanese companies have already recognized the necessity to become ambidextrous, and have begun processes of new business development. Many have also realized that they should change their culture to adjust to the times. However, to truly execute both, the HR function also has to be revised. The confluence of the DX, the Workstyle Reform, and the sudden COVID-19 shock toward telework offer an opportunity to fundamentally revisit what role HR can play, or how it can contribute to productivity increase and employee retention. The goals of HR reform, then, are to create a fit with the changing corporate culture, and to harness the capabilities of workers at all levels of aptitude by structuring individualized training and promotion courses.

Until now, the rigid settings of Japan's lifetime employment system have been a strong obstacle to corporate reform. These restrictions come in three forms: (1) the systemic obstacles to layoffs; (2) the reputation costs of layoffs; and (3) the desire to maintain the positive aspects of lifetime employment. As a result, the HR function has long been viewed as an administrative function, without impact on strategy or execution. However, the 2019 Workstyle Reform and the sudden shift to working-from-home (WHF) and telework in 2020 have increased personnel policies options. This presents an opportunity to proactively reform the HR function and to accelerate necessary change.

5.1. The Costs and Benefits of Lifetime Employment

Discussions of lifetime employment in Japan are often held from the perspective of either society (providing stability) or political economy (what voters want or what the employment agencies can afford). But viewed from the perspective of the individual large company, different aspects come into play. From the corporate strategy viewpoint, Japan's lifetime employment system entails both significant benefits and substantial costs.[28] And, at this time of great disruptions, the question is how to preserve the benefits while reducing the costs.

On the positive side, lifetime employment assures employee loyalty and dedication. Employees identify with the company, they embrace teamwork, comradery and knowledge sharing. Due to perceived equality, wage parity, and lockstep promotion, morale and motivation are high. Equality may often be a façade, to abide by the behavioral norms of being polite. But this can also be

[28] Pfeffer/Baron (1988), Schaede (2008, Chapter 9)

positive, as there is no open competition between employees and everybody can save face.

Companies are also in charge of training, and, while they carry the full costs of employee education, they also fully earn the payoffs from these investments. The very targeted on-the-job training contributes to organizational learning, and honing company-specific areas of expertise. Because older employees are not worried about being replaced, they are happy to acquire new skills and proud to transfer knowledge to younger workers. New business exploration and development is made easier because people are less resistant to transfers into new assignments. They know that their salary remains unchanged and they will not lose their jobs. The company has more control over intellectual property and fewer concerns about leakage. It is also much easier to handle CEO succession, and to grow and select good in-house candidates.

On the negative side, lifetime employment is expensive. It turns labor into a fixed cost and requires outlet valves to adjust to cyclical downturns, such as a more flexible cadre of non-regular workers. Moreover, the highest cost factors are so-called “hiring mistakes”, namely people who turn out to not be a good fit or who lack the requisite skills but who cannot be laid off. This explains why HR managers are typically risk-averse in hiring and prefer to hire people whose personality profile is a good match, regardless of potential. Over time, hiring more of the same will limit a fresh influx of ideas from young employees.

Limited work mobility also means there is little cross-fertilization or fresh blood. The employee structure is bound to become top-heavy as the workforce ages, which is expensive in terms of benefits and pensions. To get ahead, people face huge pressure to please their bosses, and this can cause a tendency to become a “yes-man” – doing as told and never speaking out.

In the 21st century, global competition and performance expectations have made the downsides more expensive, and the upsides more difficult to preserve. The need for new processes of innovation and reinvention translates into a need for a different type of workforce: more independent thinkers than conscientious soldiers.

As a result, the Workstyle Reforms attempt to address the rising labor shortage and the new work expectations of younger people by introducing a new fluidity into the system to adapt to the times, while upholding an employee’s option to pursue a lifetime career.

5.2. Workstyle Reform

On April 1, 2019, the "Reforms of Work Practices", or "Workstyle Reform" (*hataraki-kata kaikaku*) went into effect. These reforms are encompassing and touch on many aspects of benefits, vacation time, overtime rules, etc..[29] The Workstyle Reform reflected some of the already ongoing changes in large firms, and taken together, they have begun to normalize some of the most excessive outgrowths of the lifetime employment system, such as excessive work hours. And, they offered a golden opportunity to redefine the contributions of HR to the execution of corporate strategy.

Going forward, pay will increasingly be determined not by tenure but job category, performance and achievement. No longer will all workers be promoted and rotated in the same way. Wage parity will be replaced with differentiated assignments based on personal assessments. This shift to meritocracy necessitates a clear articulation of goals and benchmarks, to justify differential promotions. As a first step, HR functions will benefit from building new skills in performance evaluations.

At the same, as is well-known, the *shūkatsu* hiring system is also being revised, and hiring is beginning to occur all year long, not just in April. This is a huge disruption for HR departments. They need to redesign the traditional apprenticeship-like training program in the first few years of employment. Going forward, training and coaching programs will become much more modular and individualized.

And, there will be a shift in the definition of what is "fair". In the old lifetime employment system, fair meant equal. In the new system, it will come to mean equitable. Star talents that are not treated equitably will leave the company. This is now more likely because of the labor shortage and fast-rising labor mobility. And, the shift away from "equal" is likely to introduce a new type of intra-office competition and infighting. At one level this can be healthy, but it may also promote resentment.

In terms of wages, the reforms spell the end of wage parity. Pay will be determined by job category and performance, and no longer by the size of the company. The rising number of job changers are introducing so-called "horizontal benchmarking", namely, a wage comparison across companies by job category.

[29] For more detail, see JIL (2018), Schaede (2020), Vogel (2018)

Telework, and WFH (working-from-home) bring another set of changes, as they push the shift toward a new focus on outcomes rather than process, and on evaluating accomplishments rather than attitude. And it is at this moment in time that Japanese companies have the opportunity to make revisions in their HR system that are aligned with an ambidexterity strategy, culture change, and the ability to retain talent and increase labor productivity.

5.3. HR Function Reform

In the United States, the HR function in large corporates has three main components: (1) attracting and retaining talent, (2) benefits, including pay, promotions, leave, insurance, etc.; and (3) legal compliance with labor laws and rules. In the U.S., HR is a clearly established and respected profession. At the Academy of Management, the largest global academic management association, there is a specialized HR track. In U.S. business schools, students can specialize in studying Organizational Behavior and HR, and academics produce research and have positions in HR Management. There are also many specialized societies, certifications, and professional training programs. A core aspect of this training is how to structure incentives, how to motivate people, how to conduct performance assessment, and how to coach individual employees to fulfill their potential and improve over time. The HR function can be important for discussion of strategic change and corporate renewal.

In Japan, one can say that the HR function has the following three components: (1) employment contracts: to hire, and to administer non-regular worker contracts; (2) benefits, including pay, overtime pay, and more recently sick leave and maternity leave; and (3) training and adherence to internal “business rules”, including dress codes, behavioral rules, and work safety rules. There are only few courses at business school on motivation, incentives, or coaching, and few professors conduct in-depth research on the matter.

What is more, while the HR department has a core of specialists to administer benefits and training programs, the managers of HR divisions, as well as senior managers of HR, are often on two-year rotations. The administrative staff, while well-trained, typically have little power to introduce change or develop a new vision of their own. As a result, they tend to be risk-averse, and in order to reduce problems they prefer to hire people who fit the corporate culture and can be expected not to cause trouble. They are unlikely to be involved in strategy change conversations, as they are mostly seen as implementors. While

this may be true elsewhere, arguably the constraints imposed by lifetime employment rules limited Japan's HR function more.

In terms of assessment, corporate Japan has long reflected the grading at schools, where pupils receive two grades: performance and attitude. In a worker's annual assessment, the aspects of performance and attitude are typically mixed into one grade, and most companies use a single 5-point scale, from S (superior) to the grades A, B+, B and C. Assessment tools such as 360-degree feedback are not typically used. The stress on attitude has led to the situation where workers are often eager to show effort, by working long hours, abiding by protocol, and being liked and behaving well.

Because layoffs are difficult, few people ever earn a C. This is similar to other countries and systems, where most workers receive an "above average" grade. The big difference is that in other countries, people who receive a "C" grades are either laid off or strongly urged to relocate. Because job markets are more fluid in other places, they may choose to leave to look for a better fit.

Assessing "performance plus attitude" with one mark works very well for the *monozukuri* alignment in manufacturing and exporting. It works less well in an era of competing through innovation. Not only has the labor shortage and rising job market liquidity given more power to employees, so that mediocre grades or unfair assessments may cause exits. The sudden, large-scale onset of telework under COVID-19 means that "attitude" can no longer be easily measured. With telework, the meaning of "performance" is changing away from following the guidance or doing a task as told in a given time to a much greater focus on outcomes.

Going forward, corporate HR departments face three main challenges. How can they turn the annual assessment into a "fair" (equitable) process that motivates people? How can they retain workers and help them to perform at their best? And, how can they measure a worker's contribution to the company at a time when attitude can no longer be observed? As it is no longer possible to watch people at all times, motivation has to become part of the overall HR management system and be geared toward outcomes.

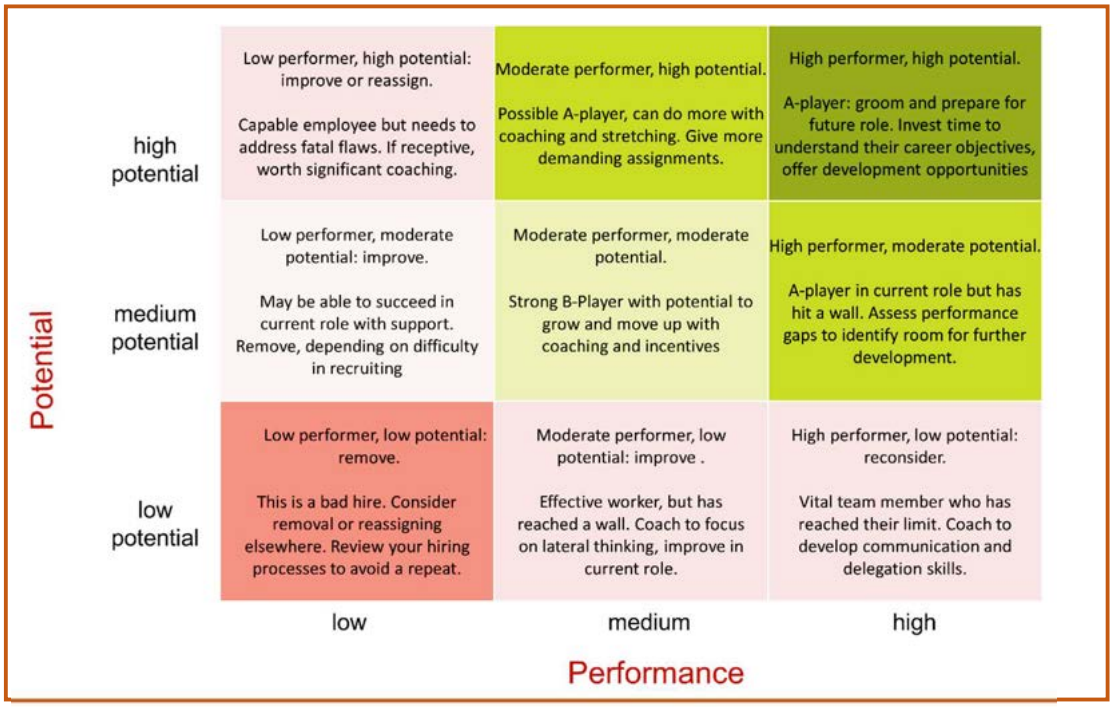
5.4. Example: The 9-Box Grid

Eventually, each company will find its own way of accomplishing this transition. But it is fair to say that, going forward, all companies will benefit from

more variegated and sophisticated HR tools used to assess, promote, train and inspire employees. These changes are inevitable, and the new coronavirus, increased telework, and the return to the regions are giving this change more urgency.

One example of an assessment tool that would open up new approaches to motivation and individualized career-path planning is the so-called "9-Box Grid" (Exhibit 9). This model is well-established, and can easily be gleaned from many sources on the internet. [30] Its origins are sometimes attributed to GE and other large U.S. companies, but it is now widely known and used as one of several approaches.

Exhibit 9: The 9-Box Grid for Performance-Potential Evaluations



The model assesses a worker's *performance* as well as *potential*, and then suggests individualized training options, as summarized broadly in Exhibit 9. All

[30] There are many internet-based sources for this. See, e.g., https://www.analyticsinhr.com/blog/9-box-grid/, https://www.predictivesuccess.com/blog/9-box/, https://bestpractices.clearcompany.com/9-box/index.html, https://cezannehr.com/hr-blog/2018/10/what-is-a-9-box-grid/,

employees are assessed and categorized into one of the 9 boxes, with appropriate development, coaching and training courses then determined for each employee. The purpose is to help employees grow and contribute more to the company by helping them live up to their potential.

Many specialized HR staff in Japan are familiar with this model, but until now they have rarely used this tool. Two explanations are usually offered: (1) companies have no way to deal with underperformers, and so the lower box cannot be used; and (2) the "potential" is hard to assess. Not only would that require a deep evaluation of an employee, but also a clear articulation by the of what type of potential is desired, so as to assess the employee in relation to that standard. Under lifetime employment in the *monozukuri* alignment, the perfect employee was the one with the right attitude. Little utility was derived from assessing potential.[31]

But now that companies are adjusting to the new realities of Workstyle Reform and telework, a new discipline and authority around HR management may help in setting new incentive structures and motivate and retain talent.[32] One advantage of using tools such as the 9-Box Grid is the possibility to craft individual career and promotion paths. For example, employees in the "high-performers + high potential" box (the so-called "stars") probably already receive advanced grooming and training. But the model suggests that the other 2 "highs" (high performers, high potentials) are possible A-players *if* they receive targeted training, depending on whether they are lacking in performance or potential. Moreover, the box in the middle (the so-called "core player"), could either just be rewarded and respected, or motivated to grow.

Given the looming labor shortage in Japan, the red boxes (medium/low performance or potential) may soon also become more important. To increase corporate productivity and profitability, companies are eager to find new ways to increase the output of medium- or high-potential workers that do not perform well, perhaps through specialized coaching sessions or by giving them new assignments or work environments. And finally, as labor mobility increases companies may also become more strategic in how to separate from the low potential/low performance workers.

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[31] https://bizhint.jp/keyword/59000., and interviews with several HR division employees, online in Tokyo, July 2020.

[32] E.g., see 日本企業の「人事評価」に欠けている２つの視点、Toyo Keizai Online, February 20, 2019, https://toyokeizai.net/articles/-/266550

What is more, this moment in time invites senior managers to clearly tie the HR function in the overall strategy change. Assessment shapes aspirations, and can be a powerful motivational tool. And, to compete in the DX and after COVID-19, clearly getting the best out of the workforce is a very important part of the strategy execution.

5.5. New Structures for Innovation with Telework

Finally, companies may also want to think about how to support innovation in a time of increased telework. Many companies hope that it will soon be safe for workers to return to the office. This is not only because some processes still require human interaction or office equipment. It is also because it has long been known that human interaction often leads to new ideas and innovation. And in this regard, now is the time for managers to think about how to proactively structure remote work routines so as to invite innovation.[33]

A key ingredient to innovation is serendipity. That is to say, chance encounters by people with ideas that bring about better processes, new inventions and new products. Traditionally, serendipity was helped by physical proximity, when people randomly run into each other, or meet at the office vending machine, in the cafeteria, the nearby lunch store, or a research conference. Research on clusters has shown that the chance of innovation success increases when more random run-ins of people, capital and ideas are triggered. This is why Silicon Valley is such a powerful model of innovation.

Working from home greatly reduces chance encounters for researchers, inventors, and entrepreneurs. It will become increasingly harder for informal interactions to foster new ideas. The question then is, how can companies create serendipity in a world with much less physical proximity?

Some models of contagion suggest that the likelihood of success of innovation increases when originators (people with ideas) have more time to develop and share their ideas, and when receptors (people with business experience, budget, etc.) have more time to listen to such ideas. This means that company employees who are working from home may benefit from room in the

[33] This section is based on work with Robert Feldman, see "How to Spur Innovation after COVID-19", *Nikkei Asian Review*, August 28, 2020, https://asia.nikkei.com/Opinion/How-to-spur-innovation-after-COVID-19

schedule that allows idea finding, as well as mechanisms to share them with co-workers.

One suggestion is for companies to proactively structure online meeting rooms, such as a 24/7 meeting room. This is a "non-work space" associated with the company, similar to the cafeteria, or the traditional smoking room of the old days. The goal is to give people opportunity to meet, ideally in random fashion. This should be open at all times, so employees can come and go at any time, including when they need a break, want to catch up on office gossip, are stuck in a rut, feel lonely, and of course if they want to share an idea. At first sight, encouraging employees to idle in breakout rooms may seem costly and an unproductive waste of time. But benefits can be substantial, if unstructured chat releases new innovative energy.

Some companies already run a daily Happy Hour site, or require "5 minutes of chat" prior to the start of a meeting.[34] Other use platforms such as Slack for communication purposes. However, such events do not allow for chance and serendipity.

Some new e-platforms are now being developed by startups in the United States to foster chance encounters at online conferences, such as Meetaway.com or Slack.[35] These apps show that virtual rooms can be even more diverse, more random, and thus more prone to serendipity and innovation than physical proximity. The digital transformation and machine learning play a role here too, because advances in machine learning offer opportunities to be structured about raising the odds of ideation and innovation, by guiding the process of who meets whom in the digital meeting place.

New pressures to foster innovative chance interactions in the telework setting are yet another example why companies want to pay great attention to culture change and the relevance of new HR processes. Crisis is a great opportunity for innovation. This moment in time offers a chance to be innovative

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[34] "So how's your cat? Panasonic orders chats to fight telework blues", *Nikkei Asian Review*, July 24, 2020, https://asia.nikkei.com/Business/Companies/So-how-s-your-cat-Panasonic-orders-chats-to-fight-telework-blues

[35] https://meetaway.com. Some of these new IT-services were originally dating apps, but with the onset of COVID-19, their owners quickly pivoted into making them conference apps. This is a fast-developing new industry. See also "Tech's Next Big Task: Taking the Office Water Cooler Virtual", *The Wall Street Journal,* Sept. 6, 2020.

about innovation and design new workplace rules based on novel mechanisms of assessment, motivation pay and innovation.

6. Conclusion: Leadership for the Digital Transformation

The DX brings big change and a big opportunity. Japanese companies have the opportunity to seize the moment and assume a dominant position in many areas, with digital manufacturing as one example.

To compete in the new era, companies need to build new processes of breakthrough innovation. This necessitates the introduction of new alignments as well as management practices that allow the co-existence of two types of the corporate cultures under one roof: one for the current core business, and one for the future businesses.

But the adoption of the dual strategy by itself is not sufficient to guarantee success. For the strategy to be successful, it needs to be part of a larger alignment of critical tasks with employee mindset, culture, and HR practices. To change the culture means building a new definition of what is appropriate behavior, and clearly defining individual assignments and expected outcomes. People will make this change only if it is recognized in assessments and promotions. This means the HR function needs to be part of the strategic repositioning effort.

The most important aspect of the alignment model is leadership. The execution of strategy requires a top-down process. The DISCC process of culture change can only be launched by the company's leaders. While involvement and showcasing are powerful parts of the DISCC model, these are not happenstance. Rather, they require carefully orchestrated management moves of inclusion and allowing people to have a voice in the project. Having their voices included increases agreement and facilitates buy-in by with the change toward the new strategy, vision, corporate culture and associated tasks. The appearance may be one of empowering all levels of the organization, but behind the scenes, it is senior management that is carefully involving certain employees in meticulously planned activities.

This has already begun in many Japanese firms. The 2020 crisis and the DX are presenting opportunities to make various changes fast. Japanese companies are facing a critical moment in global competition. If they grab it, they can definitely compete.

References

Chesbrough, Henry. 2005. *Open Innovation: The New Imperative for Creating and Profiting from Technology*. Boston: Harvard Business Review Press.

Coley, Steve. 2009. "Enduring Ideas: The three horizons of growth." Pp. https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/enduring-ideas-the-three-horizons-of-growth#.

Groover, Mikell P. 2016. *Automation, Production Systems, and Computer-Integrated Manufacturing*. Boston: Pearson.

Hoshi, Takeo, and Anil Kashyap. 2011. "Why Did Japan Stop Growing?" in Japanese: 『何か日本の経済成長を止めたのか?』 https://www.nira.or.jp/pdf/1002outline.pdf , https://www.nira.or.jp/pdf/1002english_report.pdf . Tokyo: NIRA.

JIL, (Japan Institute for Labor Policy and Training). 2018. "Work Style Reform Bill Enacted." *Japan Labor Issues* 2(10):2-7, https://www.jil.go.jp/english/jli/documents/2018/010-01.pdf.

Kato, Masanori, Charles A. O'Reilly III, Ulrike Schaede, and 加藤雅則, チャールズ・A・オライリー, ウリケ・シェーデ . 2020. 両利きの組織をつくる: 大企業病を打破する「攻めと守りの経営」*(Building the Ambidextrous Organization)*. Tokyo: 英治出版.

Kato, Masanori, Ulrike Schaede, and Charles A. O'Reilly III. 2019. "AGC Inc. in 2019: "Your Dreams, Our Challenge"." *Stanford Graduate School of Business* Case Study #103.

Komori, Shigetaka. 2015. *Innovating Out of Crisis: How Fujifilm Survived (and Thrived) as Its Core Business Was Vanishing*. Berkeley: Stone Bridge Press.

Lazonick, William. 2009. *Sustainable Prosperity in the New Economy? Business Organization and High-Tech Employment in the United States*. Kalamazoo, MI: W.E. Upjohn Institute for Employment Research.

METI, (Ministry of Economy, Trade and Industry). 2017. "イノベーション・ベンチャー政策について (Report on Innovation and Venture Policies)." https://www.kantei.go.jp/jp/singi/keizaisaisei/miraitoshikaigi/innovation_dai3/siryou4.pdf .

METI, (Ministry of Economy, Trade and Industry). 2018 "製造業を巡る現状と政策課題 ~Connected Industries の深化~ (The Current Status of Manufacturing and Policy Tasks: The Progress of Connected Industries)." https://www.meti.go.jp/shingikai/mono_info_service/air_mobility/pdf/001_s01_00.pdf .

METI, (Ministry of Economy, Trade and Industry). 2019. "第四次産業革命に向けた 産業構造の現状と課題について (Report on the Current Situation and Future Tasks associated with the Industrial Structure for the 4th Industrial Revolution)." Tokyo: https://www.meti.go.jp/shingikai/sankoshin/2050_keizai/pdf/005_02_00.pdf .

O'Reilly III, Charles A., and Jennifer A. Chatman. 1996. "Culture as Social Control: Corporations, Cults, and Commitment." *Research in Organizational Behavior* 18:157-200.

O'Reilly III, Charles A., and Michael L. Tushman. 2016. *Lead and Disrupt: How to solve the innovator's dilemma*. Stanford, CA: Stanford University Press. translated as チャー

ルズ・*A.* オライリー*,* マイケル・Ｌ・タッシュマン*,*両利きの経営：「二兎を追う」戦略が未来を切り拓く*”.* 東洋経済新報社 *2019)*.

O’Reilly III, Charles A., and Michael L. Tushman. 2004. "The Ambidextrous Organization." *Harvard Business Review* (April), pp.74-83.

O’Reilly III, Charles A., and Andrew J. M. Binns. 2019. "The Three Stages of Disruptive Innovation: Idea Generation, Incubation, and Scaling." *California Management Review* 62(1):49-71.

Pfeffer, Jeffrey, and James N. Baron. 1988. "Taking the Workers Back Out: Recent Trends in the Structuring of Employment." *Research in Organizational Behavior* 10:257-303.

Schaede, Ulrike. 2008. *Choose and Focus: Japanese Business Strategies for the 21st Century*. Ithaca: Cornell UP.

—. 2020. *The Business Reinvention of Japan: How to Make Sense of the new Japan and Why it Matters*. Stanford, CA: Stanford University Press.

Thaler, Richard H., and Cass R. Sunstein. 2008. *Nudge: Improving Decisions about Health, Wealth, and Happiness*. New Haven, CT: Yale University Press.

Tushman, Michael L., and Charles A. O'Reilly. 1997. *Winning through Innovation: A Practical Guide to Leading Organizational Change and Renewal,* Boston: Harvard Business School Press.

Vogel, Steven K. 2018. "Japan’s Labor Regime in Transition: Rethinking Work for a Shrinking Nation." *Journal of Japanese Studies* 44(2):257-92.

Waldman, David A., and Charles A. O’Reilly. 2020. *Leadership for Organizations*. Los Angeles: Sage.

WIPO, (World Intellectual Property Organization). 2019. "Artificial Intelligence." Geneva, https://www.wipo.int/edocs/pubdocs/en/wipo_pub_1055.pdf .