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Strengthening Dynamic Capabilities in Domestic Firms[1)]

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Editor's Note: Professor David J. Teece is known worldwide for his outstanding research in a wide range of fields, especially concerning Dynamic Capabilities. At the invitation of Keio University, he was scheduled to visit Japan and attend the honorary doctorate ceremony at the university in March 2020. Unfortunately, the ceremony was postponed due to the current Covid-19 circumstance. As soon as I discovered this situation, I immediately emailed him and asked if he would like to send me the PPT for his presentation at the ceremony. He was happy to accept my invitation. A few months later, he completed a complete paper based on the PPT. We publish in this volume because we believe that not only our Japanese readers, but also our overseas readers can benefit greatly from the many insights in the paper.

Abstract

The growth of Japan's productivity per worker has been declining. An important way to think about a firm's productive activities is in terms of its capabilities. This includes the ordinary capabilities that determine a firm's efficiency level when producing today's products and the dynamic capabilities that help the top management team choose and develop future products and services. Strong dynamic capabilities are critical because the global economy is volatile, uncertain, complex, and ambiguous (VUCA). The development of dynamic capabilities can be undermined by an emphasis on improving ordinary capabilities. This imbalance may be one source of Japan's current productivity decline. Japanese firms would benefit from adopting more features of entrepreneurial management, particularly speed when moving from understanding to action.

Keywords: *dynamic capabilities, entrepreneurial management, productivity, strategy, VUCA*

INTRODUCTION

Japan has a productivity problem. The formerly world-beating growth of its gross domestic product (GDP) per worker has been trending downwards for decades. In recent years (prior to the novel coronavirus pandemic), Japan's growth of GDP per worker was below that of Europe and the US (Baily, Bosworth, and Doshi, 2020, Figure 1). Economic growth models generally see growth and productivity improvement as arising from the application of generic labor, capital, and technology to production activities by a set of "representative firms." In reality, the explanatory variables in neoclassical growth models are not just a simplification but a caricature of how productive activities take place,

omitting what matters most. In particular, entrepreneurs and managers are completely missing from the model. Moreover, all differences among firms in terms of their histories and capabilities are totally ignored.

Like many other scholars in the field of strategic management, I have devoted much of my academic career to building a framework that captures the ways that companies differ. This framework uses a far more sensible abstraction than what economics generally offers, with roles for both managers and entrepreneurs. It can help managers and policymakers reach better decisions.

To be more direct, I believe the right way to think about firms is in terms of their capabilities. Capabilities help define what firms can produce and how they can change what they do as circumstances allow or require. One cannot truly understand productivity statistics without understanding capabilities.

In particular, well-managed companies are always looking ahead to the next big thing. Doing so—and getting it right—requires strong "dynamic capabilities." I first used the phrase in a working paper (Teece, Pisano, and Shuen, 1990). Its first formal publication was in an article I co-authored with one of my students (Teece and Pisano, 1994). More articulated versions of the framework include Teece (2007, 2012, 2014, and 2016).

The importance of capabilities to the performance not only of firms but also of nations is beginning to catch on, even outside the field of strategic management, where it now has very strong currency. John Sutton of the London School of Economics states in his book *Competing in Capabilities* that "The proximate cause [of differences in the wealth of nations] lies, for the most part, in the capabilities of firms" (Sutton, 2012, p.8). Stated another way, economic growth is not just a matter of financial and human capital and technology; it's also about building and harnessing the private sector's organizational capabilities.

The key point is that organizational capabilities, which include the capabilities of individuals, matter for the development of the business enterprise and for productivity and national economic performance more generally. The dynamic capabilities of government agencies (or their weakness) are important, too.

VUCA AND FIRM PERFORMANCE

Differences in the performance of business firms appear to be widening, with the spread between the best and the worst performers expanding considerably since the 1990s (Furman and Orszag, 2015). However, the ability of individual firms to stay in the ranks of the most profitable also declined over that time. In the past, a firm could be a little more relaxed once it became a leader in its industry. As shown in Figure 1, the chances of staying in the top quartile of profitability from one year to the next were about 80% in the mid-1970s. But, by 2000, this had fallen to about 50%. The likelihood of maintaining high profitability for six or more out of the prior ten years fell even further, hitting 20% by the mid-2000s.

The driving forces behind these changes include globalization and the Internet. A few firms can stake out stable, dominant positions, but most businesses are forced to constantly reinvent themselves to stay relevant.

In times of change, there is a need not just to adapt and adjust, but also to shape the business environment and the marketplace, if it's possible to do so. Strong management teams can do this. It is during difficult times—and during opportunity-rich times—that strong dynamic capabilities are most valuable.

I have defined dynamic capabilities as "the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments" (Teece, Pisano, and Shuen, 1997, p.516). In the capabilities framework, organizational routines and managerial decision-making are tight complements (Teece, 2012). However, routines frequently need to be upgraded. Innovation and growth require it (Karim and Mitchell, 2004).

Strong dynamic capabilities require entrepreneurialism in both the management team and the organizational culture. When present, they enable innovation, effectiveness, and adaptability. Note that efficiency isn't on this list. A single-minded pursuit of efficiency can become the enemy of adaptability and innovation.

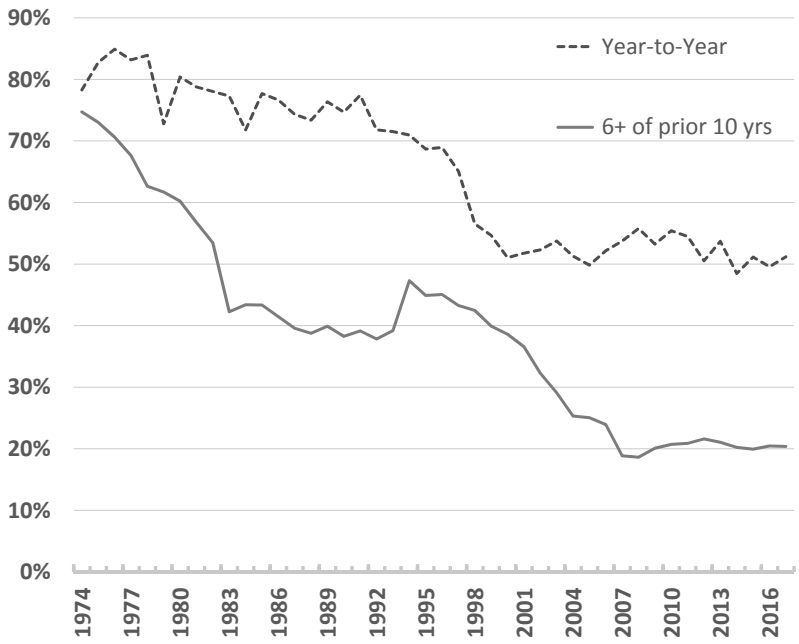

Figure 1: Percentage of Firms that Sustained Top-Quartile Profitability Over Time

Source: Compustat

Notes to Figure 1:

- Figure shows data for firms that maintained top-quartile performance from one year to the next (dashed line) or in six or more of the prior ten years (solid line) in their industrial sector
- Profit margin is defined as earnings before interest and taxes (EBIT) divided by revenue
- The sample was restricted to firms with $100 million in revenues in at least one of the years between 1965 and 2014
- Industries were defined using manual grouping by the 2-digit SIC code. Quartiles were calculated across all industries
- Annual data derived from the financial statements of active and inactive North American publicly traded companies.

Other key elements are leadership, sensing (and sensemaking), and asset orchestration (to maintain alignment). My impression is that most Japanese firms have leaders who are admired and respected, who can effectuate incremental change and can manage (orchestrate) complex webs of relationships. I'm less sure that they're strong when it comes to sensing the next opportunity or threat. It is sometimes said that it's not "the big that eat the small" but rather "the fast that eat the slow." Japanese firms have tended to be slow, cautious, and consensual—slow to perceive the need to change and slow to effectuate it. How many firms foresaw the seriousness of the conflict between the U.S. and China for global trade flows?

Meanwhile, the world is becoming even less predictable, with new ways of operating (e.g., cloud computing) and new disruptions (e.g., mobile money, Covid-19) springing up regularly. A popular term for such an environment is VUCA, which stands for Volatile, Uncertain, Complex, and Ambiguous. In a deeply VUCA world—and we certainly seem to be in one—firms with weak dynamic capabilities are most likely to stagnate, decline, and disappear.

To succeed in a VUCA world, (at least some) managers need to act like entrepreneurs, looking ahead, having a sense of urgency, and being ready to improvise. Leaders and administrators are also needed; but it's entrepreneurial management that can best respond to the positive and negative surprises that arise (Lee and Teece, 2013; Teece, 2016).

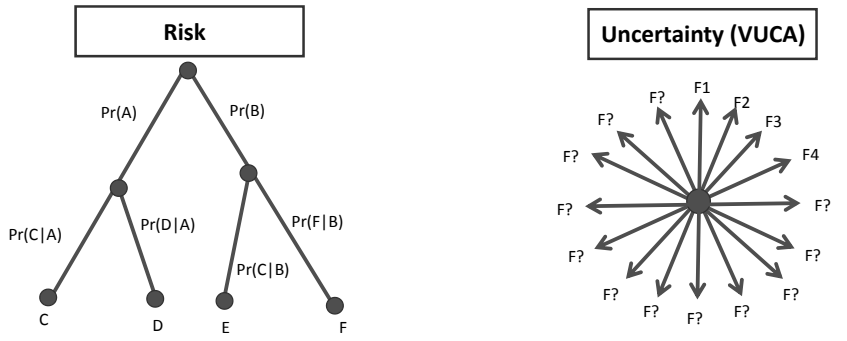

Figure 2: Differentiating Between Risk & Uncertainty

Source: Teece and Leih (2016)

But this creative nature is not always well rewarded in a corporate setting. Entrepreneurial managers stick out, and they don't always make it to the top—even when they should.

A particularly valuable skill that entrepreneurial managers bring to a VUCA world is an understanding of the difference between risk and uncertainty. Many managers, particularly in banks, think that once they've done their risk management then they've finished the job. But risk is where you can assign probabilities to known possible outcomes, and risk is not what's catching people off-balance right now. The challenges that are making business today especially volatile are the "black swans" (Taleb, 2007) and the "unknown unknowns" (Rumsfeld, 2002). It's not only the probabilities of outcomes (or future states of the world) that are unknown. It's the futures themselves that are unknown (Figure 2). Covid-19 and the rapid breakdown of relations between the U.S. and China are examples. Japanese firms seem to manage risk just fine, but I'm less sure they're prepared for uncertainty.

Competition under uncertainty requires a readiness to think in new ways about the business and to improvise. A good metaphor for this is mixed martial arts (MMA). MMA combines fighting styles from around the world (karate, Brazilian Jujitsu, wresting, and so on) and involves few rules.

Yet chess is a far more common (though clearly outdated) mental model for business strategy. In chess, each move is knowable. You can give the problem to a computer. IBM's Deep Blue computer beat world champion Garry Kasparov in 1997.

A computer isn't helpful for an MMA contest.

Let's take a moment to explore why uncertainty is a problem. Nobel laureate economist Ken Arrow noted that, if there were no costs associated with reversing asset positions, then uncertainty wouldn't matter (Arrow, 1973). This was a brilliant and clarifying insight.

If all capital stock—hardware and software—was generic and interchangeable, then you'd never need to change anything (apart from growing or shrinking the total). There would be no need to look into the future. If today's plan proves unprofitable, the firm can try something different tomorrow without penalty. This uncertainty-free fantasy world would demonstrate no path dependence; strategic renewal would be like rewriting a computer program.

But, of course, commitment isn't costlessly reversible and organizational change is hard. I think that's especially true in Japan.

The Japanese system was built on history, tradition, and culture; but it was also designed to catch up with the United States. And it worked. But chasing the leaders requires different skills than deciding where the frontier is and getting there before

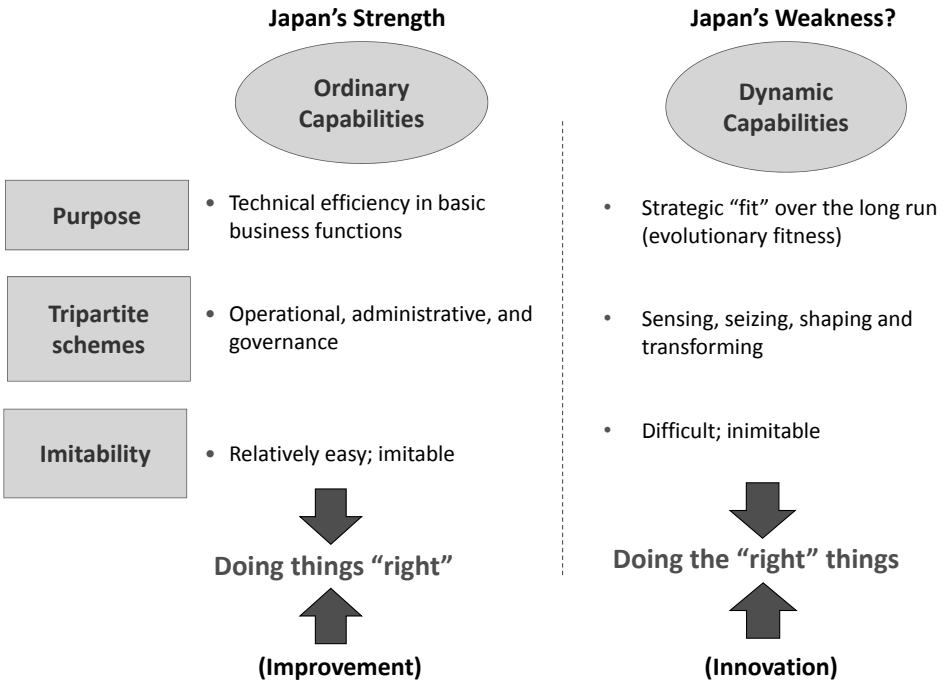

Figure 3: Dynamic Vs. Ordinary Capabilities

rivals. The incremental approach often favored by Japanese firms—and characterized by a relentless focus on best-practice operation—are no longer as potent as they once were. Ironically, many Japanese firms suffer from weak dynamic capabilities in part because of their strong ordinary capabilities. The result is insufficient innovation, low productivity growth, and slow expansion.

ORDINARY CAPABILITIES AND THE DOWNSIDE OF BEST PRACTICES

I want to return to the potential conflict between efficiency and entrepreneurialism, which I think is particularly relevant for Japan. During the present Covid-19 crisis, the US medical system has been unable to meet demands when the virus surges because it has been impaired by years of cost cutting. The fear that too few intensive-care beds would be available when the Covid-19 pandemic struck led to the adoption of extreme lockdowns. New Zealand is another example where the availability of only a handful of intensive-care facilities led to the use of a draconian lockdown.

The problem is that when you shrink an organization to make it more "efficient," you also lose its flexibility. You save by eliminating the "excess" capacity, but then the capacity is not there for emergencies. It was only "excess" in a static sense.

The just-in-time system is another example. Many supply chains had problems when borders closed. They were optimized for a free-trade world. Companies had stopped holding inventory in order to minimize their financial burden. They relied on one or two factories. That's all starting to unravel.

One way to think about this is the difference between dynamic capabilities and ordinary capabilities (Figure 3). Ordinary capabilities are the operations, administration, and governance needed to execute a given plan. They rely on standard operating procedures that can be honed into best practices. They're not easy to get right, but they are relatively easy to acquire, through business schools, management consultants, and so on (e.g., Bloom et al., 2013).

While the diffusion of best practices across firms is not instantaneous, only a few firms need to master them to drive prevailing prices down to competitive levels, which dissipates any economic rents.

In the automobile industry, for example, best practices in manufacturing are close to universal and thus no longer valuable, as explained by Bob Lutz, the former vice chairman at General Motors:

> The operations portion of the automobile business has been thoroughly optimized over many decades, doesn't vary much from one automobile company to another, and can be managed with a focus on repetitive process. It... requires little in the way of creativity, vision or imagination. Almost all car companies do this very well, and there is little or no competitive advantage to be gained by 'trying even harder' in procurement, manufacturing or wholesale... Where the real work of making a car company successful suddenly turns complex, and where the winners are separated from the losers, is in the long-cycle product development process, where short-term day-to-day metrics and the tabulation of results are meaningless. (Lutz, 2011)

In other words, strong ordinary capabilities guarantee technical efficiency, but they do not ensure that the current production schedule is on a profitable path to follow for the future. They are insufficient to undergird sustainable competitive advantage in response to changes in the business environment. That requires strong dynamic capabilities.

Japanese companies led the world in developing best practices for manufacturing. However, a continued focus on operational excellence may have unknowingly weakened their dynamic capabilities for innovation and adaptability. Optimization is all about reducing variance, but innovating outside of existing trajectories requires a willingness to tolerate greater variance (Benner and Tushman, 2003).

Disruption is hardly a new phenomenon, but the pace of change has accelerated. After centuries of prestige and power, the samurai were disrupted by innovations imported from Europe: firearms and hierarchical military structures. When the Meiji Restoration ended their feudal role, the samurai "were totally unequipped and unaccustomed to the demands of agriculture, commerce, and industry" (Harootunian, 1960, p.443).

In a VUCA world, an optimization-only policy is a recipe for stagnation or decline. By contrast, the right products, even if produced "inefficiently," can be highly profitable. This increasingly appears to be the case, for example, with Tesla. The kaizen and hard work can come later. Incrementalism gets in the way of major radical shifts such as building and shaping the market for electric vehicles.

The auto industry is currently going through multiple transitions. Its "hardware" is increasingly being devalued in favor of software and services (e.g., connected and autonomous vehicles). New business models such as car sharing and online sales are starting to upend standard operating procedures. Incumbents need to improve their software skills, recognize the impossibility of doing everything in-house, and develop an understanding of ecosystem management. In many companies, this amounts to changing the organizational DNA.

Toyota created a major success with its hybrid Prius, which worked within the existing internal-combustion infrastructure. But it didn't (nor did its major rivals) make the leap to the next stage and develop a market-shaping electric vehicle like the Tesla S. That was left to a US startup willing to begin with a niche product and build out the battery recharging infrastructure as it built up its automobile business. A big firm can potentially harness the managerial mindset of a startup; but this requires organizational ambidexterity (a dynamic capability) and a willingness to allow a "skunk works" to operate without interference and with minimal oversight (O'Reilly and Tushman, 2008).

Years earlier, Sony had a global success with the Walkman. It even introduced a digital version in 1999, two years before the iPod. So why did it fail to extend its dominance of portable music players? One problem was that it relied on a limited digital rights management system to avoid undermining its income from Sony Music. Sony's digital Walkman didn't accommodate the open mp3 standard until 2004. The Walkman also lacked the support of an easy-to-use digital music store such as the iTunes Store that Apple introduced in 2003 after Steve Jobs reached agreements with all the major record labels.

It is my guess that the prioritization of best

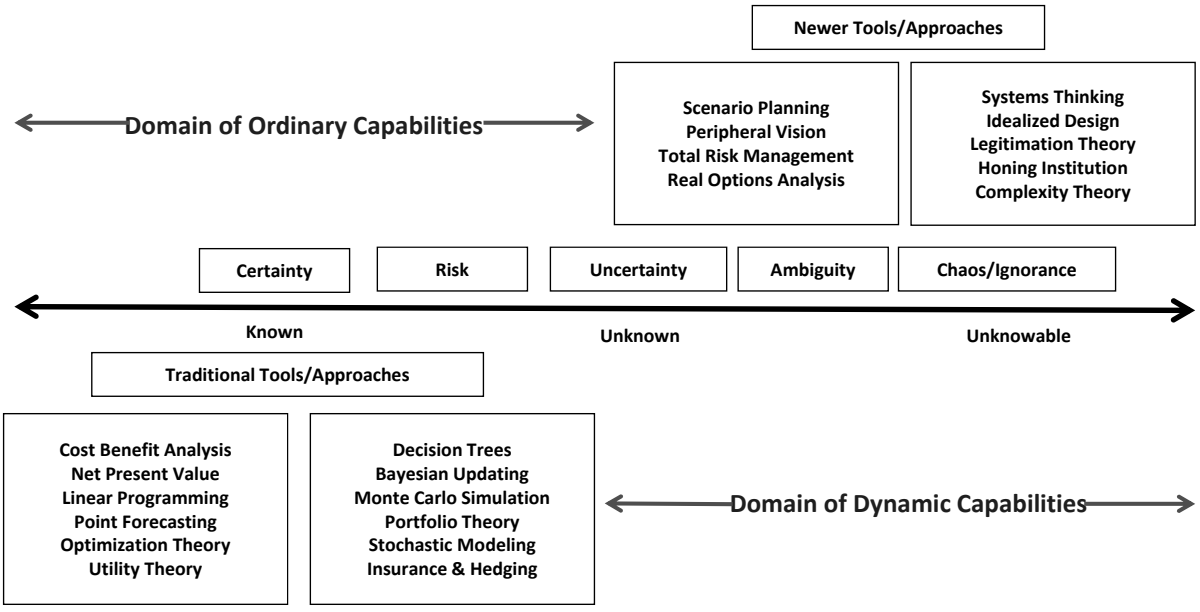

Figure 4: Different Business Environments Demand Different Approaches

Source: Adapted from Schoemaker (2011), Figure 5-1

practices—and its implied barriers to innovation—is part of Japan's productivity problem. On the surface, it is a strength. Casual observation confirms that Japanese workers take pride in the mastering of their activities. This runs deep in Japanese tradition. As the 17th century samurai Musashi wrote: "If we know the path of the sword well, we can wield it easily."

However, perfectionism can lead to being frozen in time. Perhaps this is unfair. It may not be best practices so much as the absence of entrepreneurialism. But I think these are two ends of a spectrum. A laser-like focus on best practices undermines entrepreneurialism and adaptability.

THE IMPORTANCE OF WHAT CAN'T BE MEASURED

W. Edwards Deming, who helped develop high-quality production in Japan, warned of the danger of focusing only on what can be counted.

> He that would run his company on visible figures alone will in time have neither company nor figures... Actually, the most important figures that one needs for management are unknown or unknowable... but successful management must nevertheless take account of them. (Deming, 1982/2018, pp.103–104)

He actually wrote these words to warn American manufacturers that they failed to understand how "wasteful" activity which improves quality leads to happier customers and more sustainable competitive advantage. But if we transfer his words from the shop floor to the board room, from the improvement of quality to the innovation of new products and services, then the lesson may be relevant for Japan. Pursuing new avenues with potentially large payoffs depending on how the future unfolds may look like waste in the "visible figures," but it may help ensure a future for the company. On a larger scale, the "wastefulness" of America's startup culture, where nine in ten efforts end in failure, has led to a sustainable national advantage.

At the company level, adaptability and innovation are not free. Costs range from the effort of building sensing and forecasting routines to the expense of maintaining slack capacity or inventory.

The correct level of investment in flexibility must be chosen, and different tools and approaches

are needed in different environments (Figure 4). These are decisions that must be made before they're needed. They involve forming a mental model of the business environment. The more certain the environment is perceived to be, the more the standard toolkit of business school accounting and finance can suffice. The more volatile and uncertain the environment is believed to be, the more effort that needs to be placed in hypothesis testing, scenario development, and system-level understanding.

Of course, the risks of a mistake are asymmetrical. Investing in adaptability in a world of certainty is inefficient. Failing to invest in adaptability in a world of VUCA can be disastrous.

These things are not crisp; they're not elegant. That is one reason they're not as well established in the fields of economics and management. The pursuit of what Berkeley Nobel laureate George Akerlof (2020) calls "hardness" has gotten in the way. By hardness, he means the ability to be precise and have tight logic about a concept, especially through the medium of a formal (mathematical) model. Academic economists typically demonstrate this bias, because it's the easiest path to advancement in the field. However, in the real world of business, "hard" tools are less suited to matters of strategy, especially in the face of deep uncertainty.

Consider the matter of investment. The private investment rate in Japan may be too low, as periodically occurs in capitalist economies (Baily, Bosworth, and Doshi, 2020). Lord Keynes, the leading British economist during the crises of the 1930s and 40s, saw that investment depends on the "animal spirits" of managers, "and not as the outcome of a weighted average of quantitative benefits multiplied by probabilities... if the animal spirits are dimmed and the spontaneous optimism falters... enterprise will fade and die" (Keynes, 1936, p. 161).

In a similar vein, Jeff Bezos, the CEO/founder of Amazon, noted that "there are decisions that can be made by analysis... Unfortunately, there's this whole other set of decisions that you can't ultimately boil down to a math problem" (Deutschman, 2004, p. 57). If you wait for uncertainty to be resolved, it's probably too late!

The Keynesian concept of animal spirits is very consistent with dynamic capabilities. "Animal spirits" does not mean irrational behavior. Investments need to be supported by analysis, but that means more than spreadsheets. An understanding of the future must be developed through a process of sensemaking. Then a "leap of faith" must be made if action is to be taken because it will be too late by the time the fog of ambiguity around financial outcomes has cleared.

In the 1960s, Tom Watson at IBM committed the financial capital and technical resources to develop and deploy the System/360 system while competitors acted cautiously. During the downturn that began in 2008, Intel invested in two new fabs. They weren't waiting for the economy to improve; they spent the money needed to build the future. A lot of companies wouldn't have done this. We need managers with animal spirits; we need managers and organizations with strong dynamic capabilities.

Japan has had glimpses of these proclivities in the past. Japan gave the world the first portable transistor radio (Sony), the first pocket calculator, the Walkman (Sony again), and LED lights. Japan's companies were known around the world in the 1980s for making products lighter, thinner, and better. However, when software became more important, and large, bold steps were needed to stay ahead, Japan fell behind. Put differently, when dynamic capabilities really began to matter, few Japanese firms had strong ones in place.

One problem is Japan's limited startup community. Such communities are quintessentially rich in dynamic capabilities. Startups are typically born with sensing and seizing capabilities (i.e., the entrepreneur has identified a latent need and formed a plan to satisfy it), and their organizational structures are less ossified and in need of transformation.

DYNAMIC CAPABILITIES AND JAPAN

Dynamic capabilities can be thought of as falling into three categories (Teece, 2007):

- Sensing: The Identification of opportunities and threats at home and abroad
- Seizing: The mobilization of resources to deliver value and shape markets

- Transforming: Continuous renewal and periodic major strategic shifts

Sensing is the ability to foresee future opportunities and threats. This is what Jack Welch, the former CEO of GE, once referred to as the ability to "see around corners" (Welch, 2005, p.89).

Sensing activities utilize the firm's "antennae" (salespeople, engineers, customers, etc.) to bring in a mix of strong and weak signals. These data streams must be collated and interpreted for developing a variety of scenarios about the future of the firm's business ecosystem.

The less clear the future, the more management must engage in a process of building and testing hypotheses through prototyping, beta releases, focus groups, and so forth. Through this process of sensemaking, management can "discover" the future ahead of the competition. As economist Kenneth Boulding remarked, "while we have to be prepared to be surprised by the future, we do not have to be dumbfounded" (1984). A firm can prepare for a surprise even if it can't predict it with any precision. The goal is to develop a state of mind (and a corporate culture) that does not freeze when crisis hits.

Sensemaking does not result from a fixed routine that can be followed precisely. It's more a creative act. However, there are processes that can help. One such process, "abductive reasoning," includes the development of conjectures to explain patterns in pools of data, and can be used to create hypotheses about what to do (Hanson, 1958, p.85; Teece, Peteraf, and Leih, 2016). Whereas induction and deduction seek to explain the past, abduction seeks to develop new ideas about the future.

Seizing activities include creating and executing a self-sustainable business model (Teece, 2018a). This requires assets and organizational units inside and outside the company to be orchestrated together in order to seamlessly deliver value to the customer.

The boundary between the internal and external resources must be set with attention to the true sources of value and the potential "bottleneck" assets that can drain profits from the rest of the system (Teece, 1986). This is particularly critical in "virtual" companies with complex supply chains, like Apple. Apple maintains powerful in-house engineering and design assets while famously relying on partners to provide the parts and manufacturing for its massive hardware production.

The key point is that complementarities and cospecialization must be carefully managed. Managers must decide how to bring resources together in a way that strengthens the financial performance metrics for the company while also satisfying deeper customer needs.

Transforming is how the company maintains its internal and external fit. Transforming activities take place all the time in small ways, and, less often, in large ways. Lou Gerstner, IBM's former (turnaround) CEO put it this way:

> In anything other than a protected industry, longevity is the capacity to change... The leadership that really counts is the leadership that keeps a company changing in an incremental, continuous fashion. It's constantly focusing on the outside, on what's going on in the marketplace, what's changing there, noticing what competitors are doing. (Davis and Dickson, 2014: p.125).

This is easier said than done. As Nonaka and Takeuchi noted, "Many find it difficult to reinvent their corporations rapidly enough to cope with new technologies, demographic shifts, and consumption trends" (Nonaka and Takeuchi, 2011, p.59).

It's about more than redeploying assets; it's about leadership, about how you inspire a willingness to change, whether it's the product mix or some other part of the business model. Change is almost always very hard.

The first goal of transforming is to instill a culture that makes the organization ready to move when necessary. My image is one of punctuated equilibrium, with radical shifts occurring periodically, separated by periods of relative calm. You've got to be ready to move, but that doesn't mean constantly turning the company upside down or inside out.

Consider Haier, a Chinese rival of several Japanese manufacturers. Haier has truly embraced the concept of dynamic capabilities. Under the entrepreneurial leadership of CEO Zhang Ruimin,

China's Haier has progressed from a backward maker of low-quality refrigerators in the mid-1980s to the world's largest producer of appliances.

Zhang's first transformational act was to switch from a strategy of filling quotas to a strategy of raising quality and building a brand, i.e., improving the firm's ordinary capabilities (Fischer et al., 2015). By the late 1990s, Zhang began to feel that further transformation was needed in order to move from simply responding to customers to being so close to them that Haier could anticipate their needs, i.e., improving the firm's sensing capabilities. New practices introduced at that time included the creation of semi-autonomous micro-divisions and open online user platforms (Frynas, Mol, and Mellahi, 2018).

In 2014, Haier converted the micro-divisions to micro-enterprises, with decision autonomy and a mandate to seek outside investors, including IPOs. (Frynas et al., 2018). More than 10,000 middle managers were laid off in order to flatten the hierarchy (Michelman, 2017). Haier has more than 200 of these units, spreading dynamic capabilities throughout the company. Sales goals and base salaries are no longer set by the headquarters, which still plays a role in terms of allocating resources and developing a strategic vision for the company as a whole.

The Haier example is extreme, but it shows what's possible. Haier has transformed from an executive culture to an entrepreneurial culture.

So far, I have hardly mentioned strategy. Strategy is vital to dynamic capabilities, but it is also separate. The two go together. A strategy without strong capabilities to deploy is likely to fail, as are strong capabilities without a strong strategy to guide them. As Lou Gerstner took charge of a troubled IBM (which he successfully turned around), he told Fortune that "you have to be fast on your feet and adaptive or else a strategy is useless" (cited in Sellers and Kirkpatrick, 1993).

Massive resources alone are not enough. As the Chinese war strategist Sun Tzu wrote in the 5th century B.C., "Numbers alone confer no advantage." Having larger forces helps, of course, but it is not decisive. Strategy and culture (morale) matter.

Capabilities must be built over a long period. As Apple's CEO Tim Cook said:

> Apple still has strong growth opportunities because of its ability to work simultaneously on hardware, software and services... Apple has the ability to innovate in all three of these spheres and create magic... This isn't something you can just write a check for. This is something you build over decades. (quote from Taipei Times, February 14, 2013)

Strategy is more short-term and situational. A good strategy involves a diagnosis of the situation, a guiding policy, and a plan for coherent action (Rumelt, 2011). A bad strategy is full of empty, grandiose language and lacks any recognition of the challenge to be addressed.

A classic example of good strategy is Admiral Lord Nelson's approach at the Battle of Trafalgar in 1805. He engaged the enemy by dividing his smaller force into two columns directed perpendicularly at the larger Franco-Spanish fleet—a complete break from prevailing tactical orthodoxy of engaging in parallel. His plan, which proved successful, was to isolate the enemy's flagship to limit its ability to coordinate the enemy fleet. In the ensuing chaos, Admiral Nelson's more agile ships and crews would have a better chance to prevail in ship-to-ship actions. Lord Nelson knew that the better seamanship and faster reloading speeds of the Royal Navy gunners would play a key role. In other words, he leveraged the more agile capability of his naval force, which had been built up and trained (through transformation, in dynamic capabilities terms) before the battle took place. The strong dynamic capabilities of the Royal Navy enabled Nelson's brilliant strategy to succeed in the decisive battle despite a smaller number of ships.

Like strategy and capabilities, all elements of an organization and its ecosystem must be kept in alignment. This is a systems approach (Churchman, 1968; Teece, 2018b). The underlying logic was later redeveloped into a pragmatic model of organizational alignment by Nadler and Tushman (1980), their approach lacks critical components, such as a business model. Like any good application of systems theory, the dynamic capabilities approach applies at multiple levels, e.g., the nation-state as well as the firm.

Even if all internal elements of the firm fit well together, the organization may still fail if it doesn't fit what the market requires, or if its business model is misspecified.

Yet this big-picture awareness is not what business schools generally teach. Disciplinary incentives for advancement mean that most management education remains siloed. But the "wise leader" must be able "to see the trees and the forest at the same time" (Nonaka and Takeuchi, 2011, p.63).

Japanese firms have displayed strong dynamic capabilities over the years. During the Yamaha-Honda motorcycle "war" of the 1970s, agility was key to success. Honda shaped the market by experimenting, introducing 113 new models versus just 37 rather drab offerings from Yamaha. Sony's latest turnaround is another example. The key is to develop an understanding of latent customer needs and deploy the necessary capabilities to satisfy them better than rivals.

But, more often, fresh management thinking that comes into Japan becomes diminished and diluted by local customs, culture, and habits. Large businesses are being reinvented, but only incrementally and at a slow pace (Schaede, 2020). Nearly two thirds of employees are still in the lifetime category, which brings employee loyalty and team spirit, but sacrifices intellectual diversity and organizational flexibility. Startups are being encouraged (again), but when the government launched yet another program in 2016, it picked "winners" instead of leaving market competition to select the best (ibid., p.200).

Japan's largest listed Internet firms include Recruit and Softbank, both of which pre-date the Internet era, and a handful of others in e-commerce, gaming, and so on, with business models that are sustainable but not particularly innovative. Perhaps more revealing is that, while the United States and China have hundreds of "unicorns" (privately held startups valued at over $1 billion), Japan has just three.[2)] Given the high labor productivity of Internet-based unicorn firms, their near-total absence from Japan is one reason that Japan's productivity improvement is lackluster.

CONCLUSION

I believe that an understanding of the dynamic capabilities framework, which has its roots in the Silicon Valley model of entrepreneurship and innovation, can help guide firms and policymakers in Japan and elsewhere to better, more productive, futures. Dynamically capable firms (and government agencies) are more than just agile, if agility is defined as the ability to do commonplace things faster and cheaper. What matters most is management's ability to quickly identify new and better commercial avenues, then redeploy physical, financial, and human assets in support of a profitable business model.

As Indra Nooyi, former CEO of Pepsi, said of her tenure there:

> I had a choice. I could have gone pedal to the metal, stripped out costs, delivered strong profit for a few years, and then said adios. But that wouldn't have yielded long term success. So I articulated a strategy to the board focusing on the portfolio we needed to build, the muscles we needed to strengthen, the capabilities to develop... we started to implement that strategy, and we have achieved great shareholder value while strengthening the company for the long term. (quoted in "How Indra Nooyi Turned Design Thinking Into Strategy: An Interview with PepsiCo's CEO," Harvard Business Review, September 2015, p.85).

Firms cannot cost-cut their way to greatness. Cutting costs may be necessary in the short term, but it's never sufficient for the long haul. Greatness comes from continuous innovation focused on the right technological and market opportunities coupled with the agility to move quickly when the time is right.

I'm not proposing that Japanese companies adopt Western models wholesale. Western management has its own shortcomings, such as a proclivity to focus on short-term results. Japanese firms are great at taking the long-term view. They just need to be better at acting on it in the present. The dynamic capabilities framework calls for companies

to mobilize their resources today for the hard work required to build, maintain, and renew their future competitive advantage. This is how, in the end, Japanese productivity will begin to accelerate again. When Japanese management begins to focus more on doing the right things rather than only doing things right, the Japanese economy will fare much better.

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NOTES

1) This article is based on an initial lecture for delivery at Keio University, Tokyo, on March 11, 2020 but indefinitely postponed due to the novel coronavirus pandemic.
2) The information about unicorn companies comes from October 2020 data at https://www.cbinsights.com/research-unicorn-companies, accessed October 29, 2020.

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