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## **Entrepreneurship as the Management of Multiple Strategic Action Fields**

### **1 Introduction**

Historic turn in organization studies has been progressed (Clark & Rowlinson, 2004). This academic movement highlighted new aspects of the process writings between the past and the present with a set of unique methodological assumptions (Wadhvani and Bucheli, 2014). For example, some organizational historians write an organizational changing process as a shift from one stable situation to another stable situation, focusing on the unstable world (Bucheli & Salvaj, 2013). It shows that historical perspectives is useful for understanding organization development (Cummings & Worley, 2018).

Our paper will explain the process of the organizational development led by an entrepreneur who managed the multiple organizational fields to open up a better future. Based upon a start-up in the Tokyo metropolitan area we will explore how a new robotics startup in Japan created a new organization field. In this regards we shed light on entrepreneurs who tried to manage a multiple Strategic Action Fields (SAFs) introduced by Fleigstein and McAdam (2011).

With our exploration of the cases we provide not only insights into how entrepreneurs construct and eventually reconstruct their narratives along tensions between firm's profitability and societal challenges but also strengthen the narrative perspective in entrepreneurship research (Garud, Gehman, & Giuliani, 2014a). In this way, we add to the interpretative perspective which, despite the importance of entrepreneurs and their talking and acting in the start-up process, "has remained conspicuously sidelined" (Packard, 2017: 537) in entrepreneurship research. The same applies to the historical perspective that also deserves more attention when analyzing start-up activities and practices (Lippmann & Aldrich, 2016).

## 2 Strategic Action Field and Entrepreneurship

Fligstein and McAdam (2011) introduced a new framework, *Strategic Action Fields (SAFs)*, to explain social movement with collective strategic action. Strategic action is defined as the attempt by social actors to create and maintain stable social worlds by securing the cooperation of others (Fligstein, 2001). According to this definition SAFs are meso-level social order where actors (who can be individual or collective) interact with knowledge of one another under a set of common understandings about the purpose of the field, the relationships in the field (including who has power and why), and the field's rules (Fligstein and McAdam, 2011:3). We would expect that actors in SAFs would share a consensus as to what is going on with shared understandings about the rules in the fields. Actors also possess powers. They know 'who their friends, their enemies, and their competitors (Fligstein and McAdam, 2011:4).'

SAFs are seen as comprised of incumbents, challengers, and governance units (Fligstein and McAdam, 2011:5-6). Incumbent are those actors who wield disproportionate influence within a field and whose interests and views attend to be heavily reflected in the dominant organization of the SAFs. Challengers occupy less privileged niches within the field and ordinarily wield little influence over its operation. Challengers have an alternative vision, but most of the time they can be expected to conform to the prevailing order. In addition to those two main actors governance units facilitate the overall smooth functioning of the system. Governance units, such as trade associations, are not to serve as neutral arbiters of conflicts between incumbent and challengers, but to reinforce the dominant logic.

Those actors possess a social skill. The social skill can be defined as how individuals or collective actors possess a highly developed cognitive capacity for reading people and environments, framing lines of action, and mobilizing people in the service of these action frames (Fligstein, 2001, Jasper 2004, 2006). This view suggest that people are always acting strategically. In the stable social world, such skilled strategic actors are institutionalized and foster the social order. On the contrary in the uninstitutionalized world skilled actors can become institutional entrepreneurs (DiMaggio, 1988). In other words, it is generally accepted in SAFs theory that entrepreneurial ability to help create and maintain collective identities comes to the fore and in unstable SAFs.

However, there has been little research on how entrepreneurs create stable SAFs from unstable situation. The aim of this paper is to examine the creation process of

stable SAFs with special reference to entrepreneurial management of multiple unstable SAFs.

### **3 Method**

We apply a qualitative case study design (Eisenhardt, 1989; Yin, 2014). We chose to identify suitable ventures in the emerging field of robotics which is particularly advanced in Japan and situated in and around Tokyo: CYBERDYNE. The case were selected from a larger set of start-ups initially contacted and interviewed. The major reason for choosing the case was the prominent position of the companies in the field of robotics.

Currently, CYBERDYNE employs approximately 150 people. CYBERDYNE was started by Professor Sankai as a spin-off of the University of Tsukuba. The founder started research leading to the present humanoid robot in 1991. Between 1995 and 1997 he produced a prototype and in 1998 launched the first humanoid robot named HAL-1 (Hybrid Assistive Limb). He continued R&D and showed HAL-5 to the world in the 2005 World Exposition in Aichi, Japan. CYBERDYNE began renting out HALs to welfare facilities and hospitals in June 2009. By the end 2017, almost 500 of these suits have been rented out to hospitals, not only in Japan but also in Europe.

Data collection was based on an analysis of the companies' websites, press reports, and interviews with the management. In all, we have so far conducted interviews with 6 informants at their facilities plus several background interviews with representatives from industry, government and research. In addition to interviews with industry experts, government officials and researcher, a media analysis of the Japanese robotics discourse was conducted for a better understanding of the field.

According to Doganova and Eyquem-Renault (2009), when looking for investors and other stakeholders, entrepreneurs need to convince these in terms of not only calculations but also narratives. In particular, the presentation of the new business model “must pass 'the narrative test' (is the story coherent?) and 'the numbers test' (do the maths work?)” (p. 1562, with reference to Magretta, 2002). Therefore, when analyzing a narrative, it is important to focus on the tensions the plot implies, with regard to the market, technological and societal environment the firm is embedded in, and how these tensions are solved by the entrepreneur.

## 4 Robotics in Japan: the case of CYBERDYNE

### The origins of robotics in Japan

Let us start with the prehistory about Japanese robotics. This provides us a starting point for understanding the characteristics of the SAF in Japan's robotics industry. Current robotics industry in Japan was grown along with the domestic narrative. While researchers created basic technologies in this field, business concentrated on application of these technologies. Government supported the two streams from the 1980s onwards. Media talked about this favorably. The combination of these two streams constituted the domestic narrative: robotics technology was born in Japan.

The ElectroTechnical Laboratory (currently: National Institute of Advanced Industrial Science and Technology) founded in 1970 introduced one of the earliest model of robots, named ETL Robot Mk-I in October 1970. Some members specialized in motor control, others specialized in robotics designs, image processing or artificial intelligence. From the first time, research on robotics was divided into its parts of whole system. The members of the Institute were spread around Japan later. Some became researchers of private companies, most became professors of research universities. The Robotics Society of Japan was founded and focused on these researchers in 1983 (Takase, 2016).<sup>1</sup>

Compared to the struggle about best technological solutions in academia, companies did not pay much attention to basic technologies but prioritized issues directly connected with potential profits such as improvement of technological performance. The industrial robot in Japan started from an imitation in the late 1960s.<sup>2</sup> The more the market expanded, the more independently each company engaged in R&D. As a result, the Japanese industrial robot companies focused on application technologies based on market demand in the 1980s.

### The emergence of the unstable SAFs

With the brief history out of the way, we now proceed to analyze the creation process of SAFs, firstly focusing on the unstable SAF organized by the governance unit, the New Energy and Industrial Technology Development Organization (NEDO). The project of humanoid robots based on academic technologies started in 1998 and was

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<sup>1</sup> [https://sankoukai.org/secure/wp-content/uploads/untold\\_stories/kunikatsu-takase\\_final.pdf](https://sankoukai.org/secure/wp-content/uploads/untold_stories/kunikatsu-takase_final.pdf)

<sup>2</sup> This description is based upon Kusuda, Yoshihiro (2004). A history of Japanese Industrial Robotics. *Survey Reports on the Systemization of Technologies*, 4: 1-47.

named the Humanoid Robotics Project; its initial total budget was 4.57 million yen (about 35 million €) for 5 years. Not only large industrial robot companies belonged to the project but also academic institutions including professor Sankai, who was the founder of CYBERDYNE, which had just completed the first prototype robot. However, researchers from academia played a central role of this project as incumbents. Academic researchers were gathered on the issue to create a common understanding about basic technologies of the humanoid robot rather than commercialization. On the other hand companies with the strong interests of application technologies did not actively participate in the projects. As a result the SAFs on robotics remained unstable in terms of the continuation. Even so, NEDO continued to provide funds. The Basic Plan of 21<sup>st</sup> Century Robot Challenge Program issued by METI in 2002 and The Next Generation Robot Practicalization Project started from 2004 were almost the same with regard to project objectives and members.

The founder of CYBERDYNE, professor Sankai, got started as one of the numerous incumbents of the national robotics projects in 1998. Until World Expo in 2005 he was an inconspicuous element of the existing SAFs. He adjusted his action to the project aim. For example, he introduced the whole body suit robot that looks good for the purpose of exhibiting in the EXPO, although his research focused on the assisted robot for human limbs. As a result of acting in compliance with the rules in the SAF, the final report of the third program in 2005 picked up his robot, HAL-5, as one of the successful two cases (NEDO, 2007: 24-26). He told us joining the support system by national institutes was one of the opportunities to found a company:

I founded CYBERDYNE on June 24, 2004, but the company was still like a walking baby. I had created the company's articles of incorporation. At that time METI thought about collecting robots for Aichi EXPO 2005 from all over Japan. I tried hard as a member for the Expo. Since some media interview will come after the Expo, corporate activities will start full-scale in February 2006.

NEDO regarded professor Sankai as an exemplary incumbent and a legitimate successor of the projects of humanoid robot. After founding the CYBERDYNE, he continued to receive a part of the funding from NEDO's successor project, Development of Basic Technology for Practical Applications of Human Assisted Robot with total budget 2.62 billion yen (20 million €) from 2005 to 2007. Until today, NEDO continues to play a critical role not only for establishing robotics industry in Japan but also for CYBERDYNE. With the help of NEDO this firm internationalized it's

activities into Germany, supported by the International R&D and Demonstration Project in Robot Field with 0.68 billion yen (5.2 million €).

### **Stabilizing the SAF: the inheritance of the legitimacy and managing SAFs**

We should note that Professor Sankai never destroyed existing system. Rather, he inherited a legitimacy of it. After establishing CYBERDYNE in 2005, as an incumbent of the former SAFs he coined the term 'cybernetics' and received legitimacy for it from national support programs. He started to connect to VCs and the potential capital they could provide to grow his business. Here, he referred to the future of an aging society and stressed his prototype included a key technology, 'cybernetics,' for resolving the problems that come along with it.

In addition to utilizing the legitimacy, he began to stabilize the SAF of robotics to manage other two SAFs. Shortly after one newspaper wrote an article about his new startup company, Daiwa House Industry Company, Japan's largest homebuilder, called him. Professor Sankai joined a roundtable for development projects in Tsukuba area before its visit. Namely he was also an incumbent of another SAF. The company made a successful bit of the project and asked him about its details and his HAL project. Sankai recalled back its process as follows:

Then, Daiwa House started to develop this area (*Note: "This area" refers to the Kenkyu Gakuen Area (the science research area), where CYBERDYNE currently exists*), so they wanted to hear my opinion. I was able to see the president easily. When I explained to the president Higuchi the predecessor HAL 5, he decided to invest 30 minutes after starting to talk. Investment was already decided before showing the robot. I think he thought about the next industry. Japan was developed but someday the growth would stop. Investing in my company was one of the first options to open up the next industry.

The president of Daiwa House replied immediately and offered him the third party allotment increase. Daiwa House intended to use the HAL not only in the main shopping mall in the Tsukuba area as an eye-catching object, but also in the nursing home and sports center business. In February 2007 he received 1 billion yen (about 7.64 million €). By November 2010, Daiwa House had increased its share to 4 billion yen.

Furthermore, Professor Sankai attempted to stabilize the SAF of robotics by joining another SAF created by the Cabinet. Because of the few new and successful industries in Japan following the stagnation in the 1990s, robotics technologies

developed by Japanese researchers caught an eye of the Cabinet. Even though the founder of CYBERDYNE did not specifically work on raising his fame, the Cabinet positively picked him up. He had chances to make recommendations to the Cabinet which sometimes accepted his advice about the new robotics industry. At the same time, he actively strengthened his storytelling to use a phrase of ‘for the first time in robotics industry’, though acknowledging that he realized some of it with the help of national support system. The Cabinet, in turn, emphasized the positive outcome of its support and the media widely announced it – creating a virtuous cycle. The meaning of robotics was making through interplay of Sankai and the Cabinet.

### **The situation today:**

Today, CYBERDYNE is regarded as one of the best successful startups in Japan. CYBERDYNE went for an IPO at Tokyo Stock Exchange’s Mothers’ market in 2014, raising almost 65 million euros. Japanese robotics startups and big companies like Honda are incumbents of the robotics SAF, but CYBERDYNE are relatively easier to receive a support from governmental units overtly and covertly. When CYBERDYNE tried to give the HAL into the field of healthcare, which was highly regulated, the Cabinet authorized an exception to their business from 2009. Along with the Cabinet policy, the Ministry of economy, trade and industry (METI) supported its entry of Europe. By the end 2017, almost 500 of HAL suits have been rented out to hospitals, not only in Japan but also in Europe. Further, when CYBERDYNE tried to make a technological standards for the safety use with other incumbents of the robotics, governmental units, Japanese Industrial Standards Committee and METI, mainly supported CYBERDYNE’s opinions.

## **5 Discussion and conclusion**

Entrepreneurs often act differently before and after starting up company from the vantage point of the SAF theory. Before starting business entrepreneurs do not have enough resources and connections. In other words they do not have a legitimacy in business, therefore uses existing institution. However, after business going well an entrepreneur can tell own story to get or strengthen legitimacy (Lounsbury and Glynn, 2001). This transition process will illustrate deeply how entrepreneurs can craft narratives that will generate legitimacy for their ventures.

Our findings show research on entrepreneurship has to pay more attention to the existing unstable SAF. From the CYBERDYNE case entrepreneurs did not necessarily make his or her own story to expand business. Founder of the company utilized the existing rules legitimized by the governmental unit. After receiving a legitimacy in real time, he gradually started to manage multiple SAFs but not contradictory to the former SAFs.

It is noted, however, that the circumstances will differ in politically unstable countries like dictatorship. If regime change happens, firms depending on the previous administration lost a legitimacy like the failure of ITT in Chile in the 1960s (Bucheli and Kim, 2014). Studio Ousia was one of the similar case after losing legitimacy from the nation. AI technologies were regarded as a failure and AI start-up did not get support from the states. Hence the founder of the firm had to put himself into another narrative from Silicon Valley, where the other legitimated companies like Google were only allowed to tell a future. Globalization in business can support start-up companies like Studio Ousia. However, becoming a successor in AI business field like CYBERDYNE in robotics might be very difficult. We need more research about the timing to entry into the business field.

New ventures are created within a specific historical context that may imprint subsequent developments and even cumulate in a path-dependent development (Marquis & Tilcsik, 2013; Schneiberg, 2007; Sydow, Schreyögg, & Koch, 2009). This imprinting effect is what makes the original construction and, possibly, reconstruction of the entrepreneurial narrative so important, reaching far beyond its impact upon resources access in the present.

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