Application of Complexity Science Perspective on New Business Development: A Case Study of VISA Organization

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ABSTRACT

Complexity science perspective, covering many different disciplines, mainly describes the dynamic properties of a non-linear system. Due to the fast-changing environment and increasing emphasis on process research orientation, social sciences are trying to apply complexity science perspective in related studies. Based on this direction, new business development can be explored from complexity science perspective, because it is basically a social process with considerable complexity and dynamics. Therefore, this paper, from complexity science perspective, adopts process-oriented and longitudinal research method to analyze a successful business development case – VISA. Under the leadership of Dee Hock from 1968 to 1980, VISA had been developed as the leading brand of a worldwide value exchange system, connecting a number of banks, stores and consumers. The purpose of this paper is to interpret and analyze the process regarding to the participation and interaction of business agents and the emergence of new business, and to gain insights on management practices through the application of complexity science perspective. The research results show four strategic implications for new business development. First, far from equilibrium is the favorable external condition for a new business. Second, attractor forming is the critical initial design to start a new business. Third, self-organization is the internal momentum to support new business development. Finally, emergence of macro-structure is the outcome of continuous development of a new business. The strategic implications include the full process of new business development from complexity science perspective and can be referred for future studies.

Keywords: Complexity Science Perspective, New Business Development, Process Research Method

MOTIVATION AND OBJECTIVE

Complexity science originates from different research fields, such as physics, mathematics, and biology. It mainly describes the dynamic properties of a non-linear system (Gleick, 1988; Waldrop, 1992; Gell-Mann, 1994). In recent decades, due to the fast-changing environment, the social sciences increasingly emphasize dynamic and process research orientation, instead of traditional static and linear way of thinking (Mathews, White & Long, 1999). Based on this trend, the research field of organization and management has also attempted to apply complexity science perspective in related studies, including creativity and leadership (Wheatly, 1992; Stancey, 1996), organization transformation (Leifer, 1989; Macintosh & Maclean, 1999), strategic management (Brown & Eisenhardt, 1998; Stancey, 1995), and entrepreneurship (Bygrave, 1993; Lichtenstein, 2002; McKelvey, 2004). Through an analog of social behavior model, complexity science perspective helps to explain the dynamic and interactive process of multiple agents in a social system.

New business development is basically a context-related social process (Low & Abrahamson, 1997). First, participation of sufficient business agents is the key to realize the potential value of a new business.
It emphasizes the relationship between the interaction of business agents at micro-level and the emergence of new business at macro-level (Garud, Jain & Kumaswamy, 2002; Lichtenstein, 2002). Second, the outcome of new business development is the cumulative results of a series of events (Stevenson & Harmeling, 1990), which have some influence on each other, and closely depends on the initial conditions in which a new business starts. It is a process with considerable complexity and dynamics (Bygrave & Hofer, 1991). Therefore, in essence, a new business itself can be seen as a "complex system" and its developmental process can be appropriately explained from complexity science perspective (Lichtenstein, 2000; Bruyat & Julien, 2001; McKelvey, 2004).

Based on the efforts of previous related researches, this paper, from complexity science perspective, adopts process-oriented and longitudinal research method to analyze new business development. The purpose of this paper is to interpret and analyze the process regarding to the participation and interaction of business agents and the emergence of new business. At the same time, complexity science perspective can be further applied to provide more insights on management practices.

**METHODOLOGY AND CASE SELECTION**

Following the methodology of case study, this paper will strengthen the theoretical understanding on new business development (Yin, 1994). Based on the essence of complexity science perspective, the case chosen for analysis should demonstrate radical changes in business system involving organization renewal or network reconstruction. It means that the focal firm has fully realized the ideas of a new business, not only completely facilitating participation of multiple agents, but also making the new business to be an integral part of social system. VISA is one of the successful cases satisfying the requirements.

VISA Inc. was officially founded in 1970. The democratic, member-based governance structure proved able to consolidate the strength of banks effectively and developed into a worldwide value exchange system linking institutions and individuals together. By 1980, 12,614 financial institutions had become VISA members, with an aggregate of eighty-nine million credit card users and over three million stores that accepted VISA cards. Purchases paid with credit cards amounted to US$43 billion. This turned the originally marginalized and problem-laden credit card system into a star product in the financial industry and successfully led to the widespread of credit cards later. It has been forty years since VISA started and VISA has accounted for over 50% of the credit card market share since 1980, becoming the leading credit card brand. In this study, the development of VISA during the company’s startup period between 1968 and 1980 will be analyzed.

The case data is mainly collected from a couple of books, which describe the VISA’s history in detail. The books especially include “Birth of the Chaordic Age” written by Dee Hock (the founder of VISA), “VISA: The Power of an Idea” containing the first-hand material from interviewing related business agents, “Paying with Plastic: The Digital Revolution in Buying and Borrowing” and “The Credit Card Industry: A History” recording the happened events in credit card industry, “A Piece of the Action: How the Middle Class Joined the Money Class” explaining the influence of the credit card on financial industry.
LITERATURE REVIEW

Complexity science encompasses many different disciplines, models, and perspectives, including complexity theory, catastrophe theory, dissipative structure, chaos theory, fractal theory and self-organized criticality. Lissack and Letiche (2002) pointed out that the research of complex systems is not a science but a collection of concepts, interpretations, and analytical tools. Morel and Ramanujam (1999) also believed that the Complexity science does not yet fulfill the many requirements of a “theory”. Rather than a unified theory, it is more of a perspective of research. Therefore, it might be more suitable to call it the “complexity science perspective”. In this section, main theories of complexity science are briefly explained and some core concepts are pointed out from the theoretical discussions.

Theories of Complexity Science

Dissipative structure was developed by the Belgium physicist Ilya Prigogine, the winner of the Nobel Prize in chemistry in 1977. Based on his work in non-equilibrium thermodynamics, he explained why order and development occurs in our universe. Dissipative structure combines the concepts of physics and biochemistry and redefined the second law of thermodynamics in an open system. It describe a system that obtains matter and energy from its surroundings and the non-linear dynamic processes inside the system would increase internal fluctuation and cause the system to go into an unstable state away from equilibrium. After that, the system will then form a new, complex order at the threshold or bifurcation point (Prigogine & Stengers, 1984). Germany physicist Hermann Haken, in an attempt to describe the same issues, developed the theory of Synergetics in the 70s. He believed that the agents in a system away from equilibrium have to interact in some way to produce an ordered structure and functional behaviors at the macro-level. The system would then gain characteristics not present at the micro-level (Haken, 1983).

Dissipative structure and synergetics explain the self-organization and evolution of an open system. However, they fail to define the final state of a system at the end of the evolution process. Fortunately, chaos theory made up for this deficiency. The origin of chaos theory was the research on non-linear dynamic systems. It can be traced back to Henri Poincaré, a French mathematician. While he was studying the deterministic formula of the three-body system, he found a non-periodic pattern. His discovery contradicted the traditional notion that “a deterministic system is completely predictable”. With the advancement of computer technology, the American meteorologist Edward Lorenz proved that there is innate randomness in a deterministic system, and that a small variation may produce large and unforeseeable variations in the long term. This is called the “sensitivity to initial conditions”, and Lorenz dubbed the phenomenon the Butterfly Effect.

At the same time, Lorenz also discovered the so-called “strange attractor”. They are the nonlinear locus or parameter space of deterministic system behavior, and can both attract and repel. In other words, when observed as a whole, the system’s loci have a stable outline, with specific order and boundaries. This means the behavior of the system is finite. However, local observations can also reveal unpredictability, which means that close loci would repel each other and exponentially diverge. In other words, chaos does not equal randomness. There is a hidden order where certainty and uncertainty co-exist. The behavior of such a system would show self-similarity but not self-replication.

Both the dissipative structure theory and chaos theory describe the evolution of a nonlinear dynamic system. In other words, with the increase of control variables or the moving away from equilibrium, the system undergoes an irreversible qualitative change of increasing complexity via bifurcation or
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self-organization. However, the focus of the dissipative structure theory and chaos theory are not the same. The former attempts to explain a system’s convergent evolution from chaos to order and emphasizes on the emergence of order or dissipative structures. The latter explains the divergent evolution of a system and focuses on the co-existence of randomness and certainties in chaos. Complexity theory, on the other hand, explores the evolution of a biological system. It combines with chaos theory and dissipative structure theory in order to explain the self-organization and adaptiveness of a complex system.

Complexity theory was developed by the Santa Fe Institute, which was established in 1984. The focus of complexity theory was a nonlinear system (or the complex adaptive system) at the edge of chaos (Waldrop, 1992). Through self-organization, these systems continuously show adaptive or life-like behaviors. The complex adaptive system is a system composed of many interacting agents. Every agent in the system only connects with some of the other agents. It behaves according to the behaviors of connecting members and innate rules or schemas (Anderson, 1999). It would also use expectation, feedback and re-organization mechanisms to reach the edge of chaos and show the emergence of life-like behavior of the entire system. This was demonstrated in Craig Reynolds’ famous “Boids” experiment. Without a central control mechanism, individual boids could still autonomously and adaptively avoid obstacles and flock when only a set of simple rules was applied. This is a perfect example of a complex adaptive system.

Core Concepts of Complexity Science Perspective

**Self-organization** occurs when the control variables of a system reach a specific threshold, its interacting agents would move autonomously toward order, or from a simple order toward a complex one (Ashby, 1962). In other words, self-organization is the natural result of the nonlinear interactions between the agents of an unstable system, and not caused by individual agent’s tendency to achieve order. Therefore, when positive feedback cycles are present in the majority of interactions, some behaviors would emerge and eliminate the possibility of other behaviors. At that time, the agents would be locked in a cycle of self-reinforcement, and cause the order of collective behavior to emerge in a bottom-up manner (Anderson, 1999).

Microscopically speaking, a system capable of self-organization has to have a loosely linked network. Individual agents only interact with some other agents based on partial information. When the system veers away from stability and reaches a threshold or bifurcation point, the agents at an advantageous position would become the order parameter and determine the system’s evolution. Furthermore, auto-catalysis would control the interactions between the agents and move the system toward a new structured order (Haken, 1983). Simply speaking, self-organization is the phenomenon in which agents of a system autonomously re-establish connections with each other to form a new pattern with the parameters guiding outside energy to enter the system effectively (Holland, 1995; Smith & Gemmill, 1991). During the self-organization process, all the agents in a system would adapt and evolve together in “fitness landscape”.

**Attractors** attract the trajectory of a system’s dynamic behavior in a phase space with some parameters as its axis. It can cause a hidden tendency of behavior aggregation (Stacey, 1996). Attractors, as their name suggests, can be considered a center of gravity. It can be a specific point or an area (the attraction basin). Its purpose is to limit the behaviors of a system within a fixed boundary (McDaniel & Walls, 1998). Therefore, the appearance of an attractor signifies that a system will become stable from an unstable state. It also means that order has been introduced into a complex system. If you drop a marble into a bowl or swing a pendulum, despite the initial wild movements, eventually the marble and or the
pendulum would stop at the lowest point. In other words, the dynamic behaviors of a system are guided. Over time, it would get closer and closer to the attractor and cease changing once reaching the attractor (Crutchfield, Farmer, Packard, & Shaw, 1986).

According to chaos theory, there are three types of attractors: stable attractors, unstable attractors, and strange attractors (Stacey, 1996). A stable attractor is the single or periodic stable state of a system. An unstable attractor is the unstable and random state of a system. A strange attractor is the system with both stable and unstable elements. Between order and chaos there exists another type of attractors: the complex attractor (Marion, 1999). Compared to strange attractors, complex attractors are more stable, so the system can show adaptive and life-like behaviors. From the dissipative structure perspective, when the system has field potential, an attractor represents a configuration or an initial condition. They are also the structural channels that can facilitate resource flow and lower the field potential (Lichtenstein, 2000).

**Emergence of Macro-Structure** is the phenomenon in which interactions at the local level cause the appearance of entire structures at the macro level (Mihata, 1997). In other words, the combination of individual elements can bring forth brand new entities at the macroscopic level. The characteristics of this brand new entity cannot be observed in those individual elements by reduction, or, “the whole is greater than the sum of its parts.” Basically, the emergence of macro structures has three different characteristics. First, emergence has radical novelty. It cannot be understood by observations at the microscopic level, expectations, or reduction. Secondly, emergence has coherence, which means the elements at the microscopic level need to form a coherent whole at the macroscopic level. Thirdly, emergence is dynamic, not as the previously given whole, but the system’s display of evolution and bifurcation as time passes.

A complex adaptive system usually has a multi-level structure (Holland, 1995; Anderson, 1999). Emergence can be seen as low level agents showing a coherent and new structure or form at high levels by self-organization (Goldstein, 1999) and become the basic structural units that interact and self-organize at high levels. One example of this would be atoms gather to form molecules, and molecules gather to form cells. With constant re-organizations, the system would develop signs of life and permanent newness (Holland, 1995). Therefore, self-organization is the driving force behind macro structure emergence (or dissipative structures), and the emergence of macro structures is the result of self-organization. In essence, scholars have pointed out that the focus of complexity science should be exploring and explaining the emergent patterns of a macroscopic order in a nonlinear system.

**Far from Equilibrium** is the condition in which an open system is able to receive negative entropy from surroundings and achieve self-organization and evolution from the dissipative structure perspective (Prigogine & Stengers, 1984). In the famous Bénard experiment of the 19th century, a frying pan with thin oil was heated evenly. This causes the oil to be far from equilibrium. The instant the oil boils, convection cells, which look like honeycombs, will emerge in the oil. These are called the Bénard Cells (Mainzer, 1997). The experiment demonstrated that when there is a energy differential or field potential between an open system and its surroundings, the system will move away from equilibrium. At the bifurcation point, internal agents would autonomously engage in bulk movement and form a special structure in order to dissipative the outside energy (McKelvey, 2001).

Therefore, whether a system is far from equilibrium is close related to changes in the surroundings. When there is a misalignment or field potential between the environment and the system, energy input and nonlinear feedback mechanisms can magnify some random fluctuations, especially when symmetry breaking occurs (Smith & Gemmill, 1991). This would cause the system to become unstable far from equilibrium (Chen, 2003). At this time, the appearance of some order parameters can use outside energy
to become the driving force behind interactions between system agents. As a result, a new ordered structure will form and achieve harmony with the surroundings by lowering the field potential (Smith & Gemmill, 1991). In other words, being far from equilibrium can create space for a new ordered structure to grow (Macintosh & Maclean, 1999).

CASE DESCRIPTION: HISTORY OF VISA (1968 ~1980)

The Background Condition

The history of VISA can be traced back to 1958 when Bank of American, the largest American bank at the time, issued the first blue, white and gold credit card called BankAmeri card. Unlike the charge cards in earlier days, the BankAmeri card had the revolving credit function and credit loan control heretofore belonging to banks was given to cardholders. It was an epoch-making innovation in the history of banking business. Later, for further market expansion, Bank of America came up with a licensing plan in 1966. Under the premise of being responsible for each one’s own profit and loss, other banks could be licensed to issue the BankAmeri card and those fully authorized could again sign contracts with other banks for them to establish agreements with stores and recruit credit card users. For many banks, the licensing plan allowed them to share the card issuance foundation and experience of Bank of America and form a nationwide card issuing alliance with other banks to enhance the value of credit cards. As a result, it attracted a large number of banks within a short time.

In the same year that Bank of America initiated the BankAmeri card licensing plan, other banks also started to get into credit card business either individually or through alliances. Wanting to preempt others yet lacking adequate preparation, these banks mailed out large numbers of credit cards and people with bad intentions took advantage of the opportunity. As a result, a lot of such mail was stolen and fraud cases happened one after another, causing escalating loss to these banks. The huge amounts of bills and receipts and mailing costs that came with the rapid expansion of credit licensing almost collapsed the primitive settlement and store licensing systems. Moreover, as the banks were competitors but credit card transactions involved settlement and cooperation between banks according to the licensing plan, when these banks chose not to follow the licensing regulations and there was no trust in between, payment deferment and account falsification were often adopted as measures for retaliation between banks. Facing such chaotic credit card licensing operations, Bank of America showed no intention to take action to solve problems and this created discontentment and suspicion among the licensee banks.

Establishment of the Committee and Achievement of Consensus

In Oct. 1968, Bank of America held in Ohio a meeting attended by the heads of credit card departments of the licensee banks. Conflict and discontentment reached culmination and the meeting almost went out of control. Eventually, Bank of America appointed the representatives from seven licensee banks to form a committee to study related problems and find solutions. One of the committee members Dee Hock from the National Bank of Commerce of Seattle came up with the idea of setting up a new mechanism. The licensee banks had to have a say about the future development of the BankAmeri card. As Bank of America was unable to handle the situation, the representatives attending the meeting unanimously approved the establishment of the committee and elected Hock to be the chairman.

Despite his being the head of the credit card department of the National Bank of Commerce of Seattle, Hock explained to the general manager of his bank Carlson the significance of maintaining fairness and transparency in the work he was supposed to do as the chairman of the committee and he had
to be disregard the interests of the National Bank of Commerce in order to win the trust of other banks. General Manager Carlson totally respected Hock’s decision and authorized Hock to utilize the resources of the National Bank of Commerce to promote the work of the committee.

Initially, Hock reorganized the committee into a nationwide executive committee formed with regional representatives from all over the country. In light of the severity of the condition, Hock began to contemplate the nature of credit cards and eventually concluded that credit cards had nothing to do “credit” business. In fact, they were new currency tools for value exchange. All banks had to be united to establish a transnational value exchange system so that institutions and individuals could be connected and massive amounts of transaction information could be quickly processed. Immediately, he selected three liberal-minded bank representatives, including Dillion from Bank of America, and met in Sausalito, California to work out the principles of the new organization. Through persuasion and guidance, Hock not only won the support of these three individuals but also successfully convinced the licensee banks to accept the ideas.

The Promise of Bank of America and Support of the President Committee

After the committee reached consensus, the biggest obstacle was whether Bank of America would be willing to transfer the ownership of the BankAmericard. In Jul. 1969, under the coordination of Dillion, Bank of America in principle gave its consent for the establishment of the new organization but requested that the committee seats had to be allocated in accordance with the sales of each bank and Bank of America would also retain the ownership and trademark right control. For Hock, the request had already deviated from the principles of the new organization and he therefore convened an emergency meeting of the executive committee right away to use the power of the committee to lay pressure on Bank of America. As a consequence, Vice Chairman Stewart of Bank of America agreed to meet with Hock to resolve the discrepancies in between. Hock pointed out for Stewart the future development that credit cards should have and the proposal from the committee could facilitate collaborations between banks as well as comply with the long-term interests of Bank of America. Two weeks later, Bank of America promised to transfer the ownership and Hock gained full support from Bank of America and Vice Chairman Stewart.

After Bank of America gave its promise, Hock accepted the suggestion from General Manager Carlson of the National Bank of Commerce and tried first to gain the support of influential bank presidents. Vice Chairman Stewart of Bank of America made personal effort and talked 12 presidents into forming a bank president committee. These members respectively represented the decision-makers of major licensee banks in different parts of the country. In Feb. 1970, the first president committee meeting was convened in New York. Stewart chaired the meeting and clearly stated that Bank of America accepted Hock’s proposal and would become a member of the new organization. In Mar. 1970, the president committee met again in Chicago. The intense questioning and discussion indicated high level of regard the president committee held for Hock’s proposal. After the meeting, all the members of the president committee expressed their willingness to join the new organization and asked Hock to continue to lead the new organization.

Participation of the Licensee Banks

More than just showing their support, the members of the president committee also spent a half day’s time to meet with high-ranking executives from fully licensed banks in their regions and explained the work already accomplished and their commitment to the new concept. This had a positive effect on
banks that were still hesitating or holding an opposing position and caused them to reassess their decisions. After spending two months revising and discussing related regulations, Hock contacted one after another bank to understand their needs, expectations and standpoints and explained patiently to seek recognition and ask those promising to join the organization to help convince other banks. Meanwhile, as more and more banks promised to join in, those choosing not to be part of the organization would end up in a disadvantageous situation of not being able to participate in decision-making and this prompted the ones that had refused to join the organization to change their minds. By the mid 1970s, all 2700 banks agreed to be part of the new organization--National BankAmerica (NBI).

Throughout the entire preparatory process, Hock particularly stressed the importance of fairness in the committee’s operation. Whether in consensus achievement or task execution, everything was completed through coordination, discussion and communication. As a result, the level of trust of the members increased day by day. In addition, the regulations also fully complied with the principles proposed by Hock and this helped strengthen the confidence of the members as well.

International Membership and Changes in the Financial Industry

When Bank of America released the licensing plan in 1966, it also began licensing overseas. However, a lot of problems occurred. In transaction settlement, due to the primitiveness of the system, the bills and receipts for all the transactions had to be mailed to Bank of America to be processed. The process was time-consuming and costly. Plus, Bank of America had little knowledge about the language, currency, cultural and system differences in other countries and coordination was difficult. Above all, the anti-America sentiment was strong in Europe during the Vietnam War and obtaining licensing from Bank of “America” became a sensitive issue. However, inspired by the success of NBI, European licensee banks started to think about setting up a new organization in Europe.

In consequence, major licensee banks in Europe sought Hock’s assistance in Aug. 1972, hoping to separate from Bank of America and create a new organization in Europe. Hock understood the ethnic characteristics of the Europeans and their objectives; therefore, he came up with analyses on different issues and the corresponding solutions. In particular, Hock took special care to comply with the needs of European bank representatives when considering the name and management of the organization. After the basic consensus was formed, Hock presented the proposal of setting up a global organization, not just a European one, in his attempt to guide European banks to cooperate and bring a tiptop global value exchange system to realization. In Sep. 1974, the new organization IBANCO was created with 18 founding members from 14 countries.

When Hock accepted the appointment to set up the international organization, he presented a statement to the board of directors of NBI to explain the significance of his remaining independent in his work. At the same time, European bank representatives were confident in Hock because of his earlier success in establishing NBI. Throughout the preparatory process, Hock’s sincerity and respectful and mild approaches gradually resolved the discrepancies between banks derived from language, cultural and economic differences. He won the trust of everyone and also improved the interactions between the members.

Due to the common goals and principles, the VISA organization developed into a global network with close interactions. Under Hock’s appeal, many remarkable talents from the banking industry joined VISA and became promoters of Hock’s ideal and principles, including Portuguese banker João and Italian banker Scarpetta that helped expand the European Market and Puerto Rican banker Partridge who provided assistance in Latin America. These people were proud to be part of the revolution in banking.
business around the world. When the organization was renamed VISA, it only took the members less than one and half years to complete all the conversion work. The strength of the relationships among members was impressive. By the 1980s, VISA already surpassed all its rivals and took leadership in the market.

**CASE ANALYSIS: APPLICATION OF COMPLEXITY SCIENCE PERSPECTIVE**

**Far from Equilibrium**

The state of being far from equilibrium refers to a situation when the business members sense the urgency of improving the current condition. In the case of VISA Inc., the licensee banks were in a state of being far from equilibrium in the beginning. The rapid expansion of licensing without full preparation and the massive amounts of bills and receipts and communications costs nearly collapsed the primitive settlement and store licensing systems. Payment deferment and account falsification happened repeatedly. Facing the chaos derived from credit card issuance, Bank of America showed no intention to take action and solve problems and this generated discontentment and suspicion among the licensee banks.

Hock saw the tensions and emphasized that the severity of the problems was nothing that Bank of America could handle by itself. At the same time, he also proposed to the licensee banks the idea of a new mechanism. It came at the right time and met the need. For this reason, he was elected the chairman of the committee and this first step was crucial to the foundation of the VISA organization. By fully expressing his idea, Hock tried to make the licensee banks understand how difficult the problems were and the committee would be unable to come up solutions under the existing licensing scheme. Only a new organization would be able to improve the situation and keep the BankAmericard system from falling apart.

**Attractor Forming**

Attractor forming is the new business’s propositions created by the focal firm. During the initial stage of the development of the international VISA organization, Hock proposed a new mechanism to the licensee banks. The licensee banks would work together to solve problems and, through the committee, they could have a say about the future direction of the BankAmericard. In the meantime, as the chairman of the committee, Hock had to ensure fairness and transparency and he stressed that he would disregard the interests of the National Bank of Commerce of Seattle to which he belonged. For this reason, he was able to win the confidence of other banks in the committee. After repeated discussion, the committee and licensee banks gradually reached conclusions on the concepts and principles for the new organization. Without any domination or coercion, these concepts eventually became the consensus among the licensee banks.

Facing the chaos created by credit card issuance, Bank of America promised to transfer its ownership of the BankAmericard and gave its full support for the plan proposed by Hock. Being the largest domestic bank in the U.S. at the time, Bank of America definitely had its clout in the banking sector. With Vice Chairman Stewart presiding over the meeting and openly giving his endorsement, it indirectly proved that Hock’s proposal apparently was no empty talk and this also aroused hope and expectations for the development of the new organization. As for banks overseas, Hock thought the new organization had to include consolidated and local management and American influence and intervention had to be ruled out. Without doubt, this totally complied with the expectations of licensee banks overseas.
Self-Organization

Self-organization refers to the new business attracting participants or facilitating network connections. In light of the credit card mess, Hock proposed a new operating mechanism for the committee. The licensee banks were like a mob. Hearing Hock saying the proposal would bring certain advantages with no string attached, they quickly gave their consent and achieved consensus on the new organization. Once the standpoint of the committee was confirmed, Hock started to persuade Bank of America and forced it to promise to transfer the ownership of BankAmericard. With support from Bank of America, 12 bank presidents soon followed the footsteps of Bank of America and became members of the new organization.

The fact that Bank of America and the president committee both openly declared their commitment to the new organization, setting an example leading to the participation of licensee banks. After a number of prestigious banks committed themselves to the new organization, those originally holding an opposing position started to sway and eventually decided to join in. As the number of member banks increased, everyone’s expectations for the organization also grew stronger like it was contagious. Under Hock’s persuasion and guidance, even licensee banks overseas were willing to disregard their own gain and loss and work together to build a global and fair new organization out of a greater sense of mission and more inclusive concept of community.

Emergence of Macro-Structure

Emergence of macro-structure means that the ideas of a new business are fully realized and its business operations are closely integrated in the social system. After the new organization was set up, many problems were dealt with and resolved. Meanwhile, electronic settlement systems were introduced and boosted transaction efficiency. As credit card operations started to move on stably, many banks invested large amounts of resources to get a better share of the market. Furthermore, when the organization was renamed VISA, each bank was able to motivate itself and complete the conversion work quickly. Along with the growth of the consumer financing market, consumer financing gradually became more and more valued in the banking industry. The members of the new organization formed the VISA community. They shared the same sense of mission and sentiment about having been able to participate in a social revolution that increased the prevalence of credit cards. The worldwide value exchange system was brought to realization and VISA became the leading credit card brand.

CONCLUSION

Far from Equilibrium is the Favorable External Condition for A New Business

Being far from equilibrium state means the existence of “adaptive tension” in a system. Due to the gap between expectation and reality, agents in the system sense the urgency to improve the current situation. A tendency of latent fluctuation is forming. As the system condition in the state of far from equilibrium, if the focal firm can propose corresponding ideas of a new business, the agents will participate in the new business development with higher motivation to relieve the tension they face. However, from the research results, if some agents don’t clearly feel the tension, the focal firm can try to magnify some disturbances and make the system move towards far from equilibrium condition.
Attractor Forming is the Critical Initial Design to Start A New Business

Like the center of gravity, attractors can guide the flow of resources and system evolution and are channels to relieve the adaptive tension. In the case study, attractors are the ideas of the new business proposed by the focal firm. They help to catch business agents’ attention and build a consensus. In other words, in order to facilitate participation, about the design of a new business, its vision and value should be able to fulfill the expectation of business agents, and its resource arrangement and rules should also win the trust of the agents.

Self-organization is the Internal Momentum to Support New Business Development

Self-organization is the phenomenon that system agents collectively move towards certain structure from specific local parts to an entire whole. It is the power that supports the system evolving from chaos to order. After the participation of some business agents, due to resource commitment and the changes of network structure, it not only directly helps new business development, but also indirectly impresses other potential business agents, making new business more attractive. Self-organization is happening as the potential agents are influenced to join the business and positive feedback cycles are present in the interactions.

Emergence of Macro-structure is the Outcome of Continuous Development of A New Business

Emergence of macro-structure means that certain system’s new order or model appears after continuous self-organization process. In other words, as the network connection progressively expands, the focal firm is turning the ideas of a new business into reality. Agents in the system have totally agreed on the business arrangements. The new business itself also becomes an integral part of overall environment, creating a lot of niches for related business groups. The signs of macro-structure emergence include positive incoming flow of agents’ resources, a well-earned reputation of the focal firm, and established standard business operations.

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