**Lessons from Haier Enabling Open Innovation**

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**Introduction**

Since the publication of Chesbrough 2003 book on Open Innovation, the idea of companies and organizations adopting open innovation has become a dominant innovation paradigm. Yet, the actual adoption of open innovation organization designs and practices remain elusive, and ongoing examples of large companies practicing open innovation in mature industries are rare (see e.g. Mortara & Minshall, 2011, West and Bogers, 2014). Dahlander and Gann (2010: 707) review the open innovation research literature and conclude:

“As we have demonstrated, empirical work using qualitative and quantitative approaches to analyze open innovation processes has begun to emerge. It is important to note the risks of being pre-occupied with exploring the optimal level of openness rather than probing how openness has changed in a qualitative sense. Perhaps openness is today taking different forms than in the past,..”.

While Dahlander and Gann refer to new innovation technologies that may facilitate openness, Chesbrough and Brunswicker (2013) in a survey of large firms in Europe and the USA conclude that it is the cultural norms that are as important as formal practices (p.3). Despite the continuing interest in open innovation and the surging research on the topic, not much is documented about how, in particular, large companies interpret and implement open innovation. West et al. (2014: 27) confirm that “researchers more often focus on obtaining innovations, rather than the phases of integrating and commercializing those innovations.”

For a large established organization to transition to, and integrating open innovation capabilities is not an inconsequential transformation. Longstanding evidence describes and implies that companies experience severe innovation-to-organization impediments; resources, processes and meaning making adding up to an “anti-innovation configuration” (Dougherty & Hardy, 1996:1146; see also Crossan & Apaydin, 2010 for a review of innovation literature). Indeed in their study of large companies, Dougherty and Hardy (1996) found that “where individual innovation projects were successful, they depended on the efforts of particular individuals to use their organizational positions … to further and protect innovation efforts; they did not result from an organization-wide commitment to innovation” (p. 1133). Organizations may lack the absorptive capacity to recognize, and develop the potential of innovative products and technologies (Cohen & Levinthal, 1990), or they may simply lack the requisite organization enabling mechanisms to carry forward potential ideas that often require persistence, experimentation and complex coordination across the organization. Innovative ideas may also be contrary to the dominant logic of the company (Prahalad & Bettis, 1986) and hence lack institutional legitimacy or by their very nature present a disruptive hazard to the strategic direction that the company is committed to (Christensen, 1997). The inescapable consequence is that the innovation does not gain sufficient attention to move forward, remaining in the shadows and missing on its opportunity for impact.

In sum, many authors have judged organizations far from open and rather impermeable to innovation despite the common talk of its importance in competition (see Table 1). One may thus conclude that the dominating best practice – type of management practices select against innovation rather than support it (see e.g. Van de Ven, 1986, Doz and Kosonen, 2008, Hamel and Välikangas, 2003). There are difficulties of connecting innovation with routine operations, lack of availability of targeted resources at innovation, insufficient collaborative structures and processes that would coordinate innovative ideas, and no actionable strategy that would value innovation over the current way of doing business. Innovation seems to be selected against unconsciously and without scrutiny in a competition for attention and resources while embedded routines of annual incremental budget and planning practices determine short term decision making and leadership selection processes inside large organizations.

Table 1. Innovation Barriers as a Selection Regime Thwarting Open Innovation[[1]](#footnote-1)

|  |  |  |
| --- | --- | --- |
| *Innovation Barrier:* | *Authors:* | *Implied Selection Regime:* |
| Insufficient or non-available resources | Siguaw, Simpson and Enz, 2006 | Difficult to attain resources for exploration and experimentation |
| Perceived riskiness of innovation | Leifer, O’Connor and Rice, 2001; Marsh and Stock, 2006; O’Connor and Rice, 2013; Hewitt-Dundas (2006 | Selecting against risks that are unknown |
| Focus on current business or customers/routine operations | Christensen (1997); Johnson and Regner, 2009; Snihur & Zott, 2013 | “Invest in what is rather than what could be” (Hamel & Välikangas, 2003:60) |
| Myopia or complacency related to current performance | Starbuck and Hedberg (2003)  Levinthal and March, 1993 | Satisfaction with good enough and the familiar |
| Structural issues such as centralization, formalization or routinization | Amabile et al., 1996; Jung et al., 2008); Damanpour (1991) | In-built bias toward the peripheral and the informal |
| Lack of ability to coordinate around or absorb innovative ideas | Dougherty and Hardy, 1996; Foss, Laursen and Pedersen, 2011); Galunic and Rodan (1998)  Cohen & Levinthal, 1990 | Giving up when faced with the requirements of persisting attention or organizational complexity; Absorptive capacity |
| Company history shaping cognition; Inability to make sense of the new across the organization | McAdam (2004); Smith and Alexander (1999) | Insensitivity or in-alertness to what is novel in the business environment |
| Inability to gain institutional legitimacy to innovative ideas | Galunic and Rodan (1998); Bartel and Garud (2009) | Strong heritage rules; Leadership fails to support the radical or the disruptive |
| Unwillingness to take risks at the individual level | Shalley and Gilson (2004); Kotter and Schlesinger (2008) | Lack of motivation or biased incentives |
| Lack of sufficient attention | Ocasio (1997); Joseph & Ocasio (2012) | Everyone is busy already; Lack of integrative channels for attention |
| Organizational resistance to change | Hannan and Freeman (1984); Dougherty and Hardy (1996); Criscuolo, Nicolaou and Salter, 2012; Starbuck, 1983 | Lack of history of rehearsing/undergoing change; Change implies risk; Low aspiration levels for change |

A key catalyst for our study is captured in a statement by an executive from a leading white goods manufacturing company that was approached by a supplier to collaborate on a radical product innovation. Although he was very intrigued by the proposal his response was “…it would take me 18 months to go through our internal bureaucratic approval process to receive approval for a budget and a team to collaborate on this project”. This executive did not choose to proceed with the troublesome bureaucratic process. The supplier approached other major companies in the industry and was turned down in sequence. The innovation was eventually proposed to the Haier Company which co-developed the innovation and successfully marketed this innovation. In retrospect it is not surprising that every major white goods company that was approached to co-develop the innovation did not have the requisite effective selection regime - defined by Canales (2015:2) as “the constructive confrontation and negotiation based on power and influence”. No confrontation nor negotiation resulted as it would have been simply too time-consuming.

Beyond the time-sink efforts required to break embedded rational cost benefit business routines for approving novel departures, recent research by Christensen (2016) on why the approval of incremental innovations dominates innovation decision processes underlines the point attributed to Niccolo Macchiavelli: “The benefits to the innovator are uncertain but the costs to those affected by the changes involved are not.”

Or, to put it differently: Innovation is a distraction – until it pays off, usually on the watch of a later manager who was not involved in initial decision to launch the project.

**Toward an Open Innovation Organization at Haier**

One exception is represented by the Haier company, where an 18-month-study of the company’s adoption of six radical product innovations combining external and internal openness provides the basis for the lessons we draw effecting any transition to becoming an open innovation organization.

Under the leadership of Chairman Zhang Ruimin who assumed the leadership of the failing Qingdao Refrigerator company in 1984, the company has undergone five strategic reorientations as summarized in Table 2.

Table 2. The Five Strategic Reorientations at Haier

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Quality, Lean Mfg. and Building Brand (1984-1991)** | **Diversification (1991-1998)** | **Internationalization (1998-2008)** | **Open innovation**  **(2009-2012)** | **Micro enterprises and Networking (2012 - 2015)** |

Each strategic reorientation was preceded by a series of “letters to Haier Employees” or speeches in which Chairman Zhang Ruimin was expounding and evolving his ideas and directing attention (Ocasio and Joseph 2008) to future imperatives that Haier will need to confront. The very first imperative was to rescue the broken-down refrigerator company which was highly inefficient and was producing notoriously poor quality Refrigerators. This involved a top down directed transformation to adopt Japanese total quality and lean manufacturing production systems. His speeches during these formative years covered such imperatives as providing customers high quality products based on applying scientific management of total quality, become quality conscious, every employee is a quality “doer”, attention to little things is management job number 1, a defective product is a waste, conserving cash is more important than profit.

As the company successfully adopted total quality management and lean manufacturing systems, Chairman Zhang Ruimin also began to communicate his evolving contemplations about branding. In 1991 he adopted a new company name by borrowing from the German name of its partner [Liebherr](https://en.wikipedia.org/wiki/Liebherr) (pronounced in Chinese as "Li-bo-hai-er"). The name "Haier" is derived from the last two syllables of the Chinese transliteration of [Liebherr](https://en.wikipedia.org/wiki/Liebherr) (pronounced "Li-bo-hai-er"). As discussed by Chen (2016), the Chinese characters of "Haier" are quite symbolic: Hai (海) er (尔) literally means "you are the sea". The adoption of the new name became the beginning of the Haier brand. But it also serves to reconnect the people of Haier to a foundational 1994 speech - “Haier is the Sea” – which we discuss in a later section of the paper.

The focus of this paper is on the fourth strategic reorientation transitioning to becoming an open innovation company. The transition was again preceded by a series of “Letters to Haier Employees and speeches beginning in 2007 in which Chairman Ruimin directed attention to what became known as the three “Nos” – No Tail, No Wattage, and No Water. “No Tail” anticipated use of electricity for remotely activating lights or for charging batteries without cords or cables connected to an electrical outlet. “No Wattage” suggested greater efficiency in use of electricity, and “No Water” directed attention to the need to conserve water as in washing machines and dishwashers. These largely informal ruminations were consolidated into a formal letter to Haier people November 2009 which also added a fourth “No” - No Compressor - as well as the need for Haier to become an open innovation organization. Unlike the previous three strategic reorientations which laid out specific strategies, the “Open Innovation” letter did not outline or mandate specific organization design transformation with the exception of creating an informal corporate coordinating committee and the recruitment of Tom Wang as the director of open innovation.

**Six Radical Product Innovations**

The summary of the six radical product innovations is based on an 18-month-field study conceived by Professor Chen Jin and conducted by the first author with the support of Professor Yu-Shan Su Taiwan Normal University. In total the field work involved interviews with 57 key informants and archival documents and reports. Four radical product innovations were proposed by suppliers, the fifth resulted from an internal user innovation project and the sixth represents a nonwhite goods bottom up initiative.

Water Saving Washing Machine: Harnessing External Innovation

This project has its origin in 2011 when Tom Wang had the idea to organize an internal supplier exposition where suppliers could share with Haier product managers, innovative product, components or process ideas. A major Chemical company which has been supplying Haier with prepackaged insulation configurations for Haier refrigerators and freezers sought out the product manager of washing machines and pitched membrane filtering technology that could enhance dirt removal during the rinse cycle. The supplier approached Haier with the idea of applying the membrane filtering technology to washing machines after at least proposing the idea to a major white goods manufacturer in the US (there is some uncertainty as to how many other white goods manufacturers were approached but there is agreement on being turned by more than one manufacturer before approaching Haier).

To the surprise of the Chemical Company engineers, Haier Washing Machine Product manager and chief engineer expressed interest to explore potential applications. The discussions dragged over several months and eventually it became clear that Haier was not interested in improving the washing attributes of Haier washing machines. Haier began to explore the possibility of applying the membrane filtering technology to saving water during the washing and rinse cycle. Moreover, the Haier team challenged the Chemical Company team to design the new filtering device and to produce or procure prototypes that could be tested. The chemical company initiated what became an eighteen months project to design a filtering device that removed dirt released by washing machine detergents as well as remove worms, bacteria, mold and other nano size particles. The 18-month- process can be described as an interplay between design teams and Haier washing machine engineers and technicians, which for example required satisfying filtering volumes benchmarks, rinse cycle times, and physical designs to fit within the space of the standard size of washing machines on the market. The process was also punctuated by false starts, dead ends that required at least on one occasion to start “from scratch”. Eventually Haier washing machine engineers agreed that chemical company had designed a device that satisfied the final product criteria. The criteria themselves evolved over time as the design of the membrane filtering device stabilized and the operating characteristics met standards for water flow, rinse cycle and wash frequency before replacing or servicing the filter and other criteria such as costs and assembly. The final hurdle required selecting a supplier for this filter. The chemical company recommended two suppliers one in Thailand and one in Japan. However, to the surprise of the Chemical Company team the Haier supply chain organization responsible for selecting and approving vendors, did not approve either of the suppliers as they did not appear in the list of trusted suppliers. It appeared that the entire project was doomed because at Haier there was no formal mechanism for overruling the decisions of the supply chain team. The Chemical company team was extremely discouraged and began preparation to shut down the project. However, Dr. Tom Wang and a sub group of the Corporate Open Innovation Coordination Committee was able to work out an exception that allowed the Japanese supplier to produce and supply the filter device. In 2014 the new washing machine was introduced to the market as both saving 40% water (when compared to average washing machine on the market) but more important was differentiated in the market by the capability to filter out worms, bacteria and mold spores. The second generation high end washing machine was introduced in 2015.

No Compressor: Self Organizing Serendipity

In 2013 a secretary supporting the Corporate Open Innovation Group in Qingdao serendipitously initiated an e-mail that she sent to every Director of Department of Commerce in the fifty states of the United States. As the Associate Director of the North Carolina Department of Commerce scanned the one-page email, the term “no compressor” caught her attention. She immediately called the CEO of Phononics, a local technology startup. Phononics was established in 2008. The company, located in Cary NC is focused on developing solid state technology that replaces compressors in refrigeration applications. Two weeks following the call, a Phononics team under the leadership of the co-founder and CEO Toni Atti, showed up unannounced in Qingdao China Haier campus and asked to meet with the Haier refrigerator engineers and management.

The Haier team was naturally quite surprised to see the Phononics team. After two weeks of explaining their the Phononics goal of revolutionizing refrigeration by exploiting breakthroughs in solid state thermoelectric dynamics, the Phononics team was under the impression that they were making progress and that Haier refrigeration team was genuinely interested in this revolutionary refrigeration innovation. On Saturday of the second week Haier chief refrigeration engineer interrupted the morning discussions and abruptly challenged the Phononics team – “I will take out the compressor from this refrigerator and the you can install your..”. That was when the Phononics team understood, as the CEO put it, “that was when I realized that Haier refrigeration engineering team had no grasp of what we have been sharing with them. They had no conception, no understanding that solid state thermoelectric was a disruptive game changing refrigeration technology.” Refrigerators require high cooling power as the fridge door is frequently opened which could not be satisfied by the new technology. The two company teams turned to collaborating on wine coolers instead, which are less demanding in cooling requirements than refrigerators. The ‘no compressor’ wine cooler was released in 2014 with the second generation model already on the market. The US is the largest market for the wine coolers. At the time of this study, Haier was also considering making an investment in Phononics.

On-Demand Water Heater: Bottom Up Open InnovationAs is his custom, the Haier product manager made the rounds of the 1200+ manufacturers exhibiting their latest models at the 2013 bi-annual exposition. He knew that all the manufacturers’ products use the same basic heat exchanger. However, this time he came across a manufacturer with an entirely different heat exchanging technology. All standard technology applies heat to water at the moment the water starts flowing. Hot water is released after a short delay. The new design released hot water instantly. Impressed, the Haier product manager began to negotiate a possible joint venture or perhaps a licensing agreement with the company in question. The technology utilized a ceramic phase material that can store energy which is released as the water flows through the material, not unlike a battery. The product was already commercially proven and the company was marketing a premium model under the brand name of major American company. Eventually the Haier Company entered into a joint venture with the company that owned the new on-demand water heating technology.

The Tianzum Air Conditioner: Social Media and User innovation

Beginning in 2014 Chairman Zhang Ruimin began to discuss in letters to Haier employees the idea of user innovation. A group in the stand alone home air conditioning business started using WeChat and other social media platforms to solicit consumer thoughts about standalone room air conditioners. Within a short time of a few weeks Haier received over 750,000 comments. A team of twenty five staffers worked around the clock sending out thank you notes. However, the group soon realized that they did not have analytics capabilities and outsourced the analysis of this trove of user comments. The first observation that stood out was that people did not like cold air directly blowing at them. The second dominant suggestion was to integrate air filtering into the air-conditioner. Haier engineers designed a new type of air diffuser that did not blow cold air at people in the room. The new Tianzum air conditioner was a success in the market. Haier then decided to build an in-house analytics capability.

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ThundeRobot Professional Gamers Notebook Computer: Skunkworks Innovation

A small group in the orphan Haier PC division bootlegged the development of an application that served professional video gamers. When management learned about the project which seems to have been developed in skunkworks-style secrecy, the ThunderRobot PC had sold almost 100,000 units and was recognized as the leading Professional Video note book on the market. The Notebook computer division did not fit with white goods business and began to develop management presentations for spinning off the division. But by the end of 2015 Haier management has not decided on whether to spin off the division subject to evolving the new Venture Capital fund.

Haier Venture Capital Fund

Towards the end of 2015 Haier announced the establishment of a venture capital strategy. The strategy consisted of the Haier Capital Fund which consisted of Haier Angle Hatch; Haier VC Fund and Haier Industry Fund. By the time of this study concluded no information was available on what differentiates the three funds, what are investment goals for the funds or their performance criteria. However, it transpired that Haier was not investing its own capital. In actuality it received the capital from allocations by the central government under very favorable conditions that only required the return of the capital invested. Companies that set up such funds received venture funds from the central government capital. These details emerged as Haier was contemplating spinning off the ThundeRobotics business by acting as a “Venture Capital Fund”.

Haier is the Sea: Origin of Socially Enabling Culture of Innovation.

# During the many interviews which traced the beginning and process of adoption of each radical product innovations several informants asked the case researchers whether we heard of, or knew about a speech to Haier employees that Chairman Zhang Ruimin made in 1994. Our notes show that for each product innovation that the research team was tracing at least one informant and sometimes two or three raised the question about the speech titled “Haier is the Sea”. Mostly the informants who directed us to the speech were employed at Haier at the time. But at least nine informants have been at Haier less than five years. The research team also interviewed Chairman Zhang Ruimin who ostensibly wanted to be briefed on the purpose and progress of the case studies. During the interview which lasted over three hours, Chairman Zhang Ruimin declared that he is a “deep believer in Daoism” and directed the team to read his speech “Haier is the Sea”. The speech (In English and Chinese) is reprinted and deconstructed by four commentators in *Management and Organization Review* (issue 12.4, 2016). A second theme that Chairman Zhang pointed to was his obsession with counteracting organizational inertia which is always poised to calcify organizational routines and resist change. It became clear that Chairman Zhang’s antidote to inertia were periodic strategic initiatives that required organizational reorientations as summarized in table 2.

In this speech (sometimes referred to as Letter to Haier employees), Chairmen Zhang Ruimin uses the metaphor of “Haier is a Sea” to inspire Haier people to embody the essence of the sea’s characteristics especially power of the waves, ever presence of uncertainty and ambiguity and therefore, the imperative of flexibility, adaptively and openness to change as Haier finds the way to survive and grow.

Born January 5, 1949 in Laizhou, Shandong Province, Chairman Zhang Ruimin is a first generation Chinese manager born at the time when Mao Zedong founded, in 1949, the Peoples Republic of China. He was 35 years old when he received the assignment to shut down the loss making Qingdao Refrigerator Company known for poor quality and unreliability of its products. He is lionized in China because instead of shutting down the factory he galvanized attention to the imperative of total quality by smashing every refrigerator on the assembly line and then executing a transformation to total quality and lean manufacturing which culminated in 1991 by renaming the company and creating the Haier brand.

What is unclear is how, as a rising member of the Chinese Communist Party, Chairman Zhang Ruimin became a student of the Tao and how he acquired a deep belief in Daoism philosophy and values that served to guide his leadership of the company. The metaphor “Haier Is a Sea” derives from Lao Zi’s Daoist imagery and the intrinsic meanings of water as powerful and forgiving and neutral as it sustains life. Lao Zi believed in an enlightened leadership that does not manipulate subordinates and instead earns adherents by himself being humble and accepting of bottom up ideas. Chairman Zhang’s letter “Haier Is a Sea” expounds on how he expects the qualities of the sea to be reflected in Haier’s business practices and employee collective attitudes and behavior. In essence he emphasizes the imperative of readiness to change and adapt, contribute of self to the good of the collective (Haier Company), counteract any selfish tendencies and feel free to exercise self-organization aligned with company single-mindedness on finding the way (top down bottom up).

It became altogether clear that the speech “Haier is the Sea” evolved to become the essence of socially embraced mechanisms for accepting and being open to change and which served as an invisible absorptive capacity underlying the company successful open innovation journey.

**Lessons: Effecting the Open Innovation Organization**

Open innovation organizations seem rare. In part this is due to the lack of research on implementing open innovation organizations as noted earlier, in part it may be due to the prevalence of innovation barriers in organizations more generally. Especially radical innovations still seem more of an exception than a rule in many companies based on the reading of current innovation literature.

The prior literature acknowledges a lack of an understanding of internal selection regime (how companies select for or against innovation) as it relates to their innovation strategy processes. Canales (2015) suggested a categorization of strategic initiatives based on their origin, whether initiated by the CEO (‘cascade’), triggered at the customer front (‘spring’) or originated by the middle management (‘flow’). The origin was proposed to influence whether the initial selection was based on strategic fit or feasibility. Earlier research such as Burgelman (1983) has suggested that autonomously developed initiatives challenge the induced strategy and sometimes effect change. The selection environment has been suggested to be culturally determined (Burgelman, 1991) or strategically guided (Lovas and Ghoshal, 2000).

Beyond strategic fit, feasibility, and cultural endowment the particular criteria for selection and actual decision processes remain surprisingly under-researched. The literature on innovation barriers as discussed earlier may offer some insight. Researchers have found formidable barriers to innovation (as documented in Table 1). These barriers can be interpreted as de facto selection criteria that effectively work *against* innovation. As earlier discussed, these barriers against innovation include difficulties of connecting innovation with routine operations, lack of availability of targeted resources at innovation, insufficient collaborative structures and processes that would coordinate innovative ideas, and no actionable strategy that would value innovation over the current way of doing business (following Dougherty & Hardy, 1996).

Against these typical innovation barriers, we draw some lessons from Haier that seem to suggest a different, enabling, selection regime, more open for innovation.

First, in table 3 below, we summarize how the six radical innovation cases illustrate the open innovation organization in action. We will then discuss the effecting mechanisms – totemic leadership battling routine, opening up for serendipity and improvisation instead of formalization - in turn.

Table 3. Six Radical Innovations and Their Effecting

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Toward Open Innovation Organization:** | **Water Saving Washing Machine** | **No compressor wine cooler** | **On-demand water heater** | **Tianzum Air Conditioner** | **ThundeRobot Professional Gamers Notebook Computer** | **Venture Capital Fund** |
| Connecting innovation with routine operations | Supplier initiated idea at a Haier internal Expo, of applying membrane technology to improve cleaning function. Haier Washing Machine engineers and management express interest. Persistence in exploring new membrane filtering technology leads to new water saving functionality | A staff assistant serendipitous search (e-mail) for external partners | Serendipitous encounter by Haier product manager at Bi-annual Product Expo. Rapidly morphs into a negotiation for licensing of new technology and/or a joint venture. . | Use of social media in the soliciting of customer comments and experiences concerning  standalone room air conditioners | A skunkworks operation | Leverage government-provided venture capital for internal venture fund to spinoff of own entrepreneurial start up initiatives and for external investments in startups. |
| Availability of targeted resources at innovation | Overcame a supplier selection deadlock | Two-week intense explorations of no compressor refrigeration technology. Reveal a lack of internal Haier technological comprehension | An instant realization that a novel technology may have disruptive  potential.  On demand water heaters exhibition | Lack of analytics capability required outsourcing.  Build internal data analytics. | Created its own resourcing; Became a leading video notebook in the market | Networked to Central Government and China Communist Party. |
| Collaborative structures and processes that coordinate innovative ideas | Collaborative challenge;  Testable prototypes | Adoption of solid state cooling technology in a less demanding wine cooler product context | Joint venture | Building of an internal analytics capability | Spin-off as an independent company under discussion with top management | Various funds |
| Actionable strategy that values innovation over current way of doing business | “No Water” as a top down directing attention | “No compressor”  Adopted as an emergent disruptive cooling technology. | Serendipitous innovation | Integration of customer ideas into products (e.g. new air diffuser and air-filtering) | Venture capital investment | Diversification beyond white goods? |

*The First Effecting Mechanism: Totemic Leadership Battling Routine*

As in the case of most other companies, strategy is influenced by the leadership of the company. Beyond guided leadership or political negotiation between autonomous and induced strategy, Haier seems to have managed an environment where all sources of innovation flourish from inside and outside the company. We refer to this all-encompassing leadership style as totemic as it offers grand frames for transformative action but leaves their interpretation and implementation up for each employee to make sense of. The totem has been Haier’s journey from a the low-quality Qingdao refrigerator factory to a world class leading manufacturer of appliances and the way the Chairman has given impetus to the journey by his symbolic actions and his speeches. Smashing the low quality refrigerators on the assembly line at the start his tenure is well-known. However, the Chairman’s 1994 letter to Haier employees “Haier is the Sea” and the consequent Haier evolution to imprinting and sustaining an open innovation culture are not widely recognized outside of Haier. Chairman Zhang Ruimin deep belief in Daosim may be pivotal in understanding his leadership style (e.g. high tolerance for ambiguity, preference for self-organization) which is consistent with Lewin and Stephens (1994) analysis of extreme psychological attributes as determinants of CEO leadership style and preference for organization designs.

The Chairman’s fear of inertia has been driving periodic company strategic transformations, and hence innovation selection has been underlying and mediating successive strategic foci that have changed from quality to open innovation and most recently, micro-enterprise platform (Caixin: Haier’s New Look: ‘Micro-Enterprise’ Platform, August 27, 2014). As the strategic focus has changed about every 5-7 years it has had the effect of counteracting the hardening of decision processes and organization routines and has enabled different kinds of innovation ideas to spring up and offer new strategic product opportunities. It has also impacted the kind of people who have chosen to work for Haier – more entrepreneurial perhaps and able to cope with ambiguity that is implicit in a highly adaptive self-organizing organization.

Beyond selecting innovation for the fit with strategic transformations, the second criteria featured in the studies of selection regimes, feasibility, seems to be less of a decision made at any one point in time and more of an openness to new ideas. This is followed by an iterative development activity at Haier where the problem – such as minimize water usage during washing machine cycle – chases the development of a solution (Simon, 1957) such as recycling and filtering water for reuse to minimize total water intake. The feasibility decision is hence postponed until it is sufficiently shaped and prototyped. This is not unlike 3M’s maxim of “Thou shall not kill a new product idea”. Postpone until solved. Skunkworks in some organizations work to hide and protect the efforts until the innovation outcome can be brought to critical examination which was the case with ThundeRobot professional gamers notebook computer.

Supportive of such an open selection regime are the broad strokes by which the Chairman paints the vision for the company. The totemic leadership offers a justification for entrepreneurial action seeking solutions even when no immediate feasibility is in sight. The maintenance of fluidity in the application of formal management practices may be a contributing factor in that it invites self-organizing behavior by individuals to search for solutions that are available to them, using persistence or creativity. Without totemic leadership however, such a lack of routine might contribute to a loss of strategic focus and a sense of confusion of direction. However, the frequency with which employees refer to Chairman’s speeches suggest that the way the chairman was directing attention offer deep meaning and help frame the implementation efforts.

*The Second Effecting Mechanism: Opening Up for Serendipity*

In all of the innovation cases discussed, serendipity plays an important role. This may be true for innovation more generally as its source is often difficult to plan in any meaningful way. However, opening up the organization for serendipity is more remarkable in that the Haier executives express interest in the development of unexpected external ideas and that such development is resourced despite its suddenness (Phononics executives arrive unannounced) or fuzzy, hard to understand nature (such as a new solid state technology replacing tired and true compressor technology). Indeed, such harnessing of novel ideas from inside and outside the organization seems like the core capability that an open organization should master. The value of open innovation is not in whether others are motivated to submit ideas but rather whether the organization is capable of absorbing and developing those ideas into offerings in the marketplace. Yet assuming the importance and desirability of novelty, it is difficult to implement open innovation without opening up the organization for serendipity.

*The Third Effecting Mechanism: Improvisation Instead of Formalization*

We suggested in the beginning of the article that many management practices of the “best practice” – variety may be to blame for embedded systemic innovation barriers so well documented in the literature. It appears that the radical innovation breakthroughs at Haier result more from improvisation rather than formalization of innovation practices. There are creative actions, clever solutions to problems, persistence in finding a solution and making an exception to linear rational rules that would have otherwise killed the innovation (e.g. making exception for a non-approved supplier). Thus rather than manifesting “functional stupidity” or a lack of reflexivity and initiative (Alvesson & Spicer, 2012), the Haier employees improvise problem-solving intelligence.

The study raises important issues about the functionality of formalization of management practices in terms of innovation. An Open Innovation Coordinating Committee existed but the six radical innovations underlying this paper did not result from a formalized or even common innovation process. Common measures such as KPIs or innovation metrics did not feature in our research discussions. This may be due to a different management style indigenous to China; yet it may also suggest that such formalization is counterproductive to innovation in general and it is one of the root causes of poor innovation performance. Ambidexterity may be the current management vogue for resolving the organizational tension between exploitation – a formalized activity- and exploration – something that requires openness to serendipity and its further evaluation and application.

As one leading mobile phone executive stated tellingly some years ago: “We are not (yet) a normal company”, meaning that management practices dominant elsewhere had not yet been adopted – rather the company was growing fast and improvising its way to success. (It should be added the company’s fortunes ended sometime after – by the criteria used by the manager – the company had finally become a normal company with the usual, perhaps inevitable, management linear rational processes.)

**Conclusion: From an Innovation Hero to an Everyday Problem Solver**

The art of managing open innovation - interpreted as second order renewal - is founded on principles that can be derived from complexity science, including the management of internal rates of change, the enabling of self-organization and emergence, and the synchronization of concurrent exploration and exploitation. The lessons from Haier illustrate one firm specific example (perhaps an outlier case) of Chairman Zhang Ruimin approach to managing these principles by articulating strategies and values in his totemic leadership, counteracting structural inertia in regular transformations and preferring flexible managerial processes that open up the organization for the serendipity and variety of innovation, all of which in terms of complexity science increase the life chances of the firm (Volberda & Lewin, 2003).

Yet the extent of individual initiative at Haier is striking in the emergence and adoption of radical innovation cases reported in this study. While prior studies have noted the occasional autonomous action in organizations (Burgelman, 1983), and the studies on innovation-to-organization barriers have celebrated but also noted he shortcomings of a persistent innovation hero (Dougherty & Hardy, 1996), the individual initiatives at Haier are less heroic and more everyday actions, ranging from following up on a discovery of a new technology at an expo to sending letters of inquiry abroad. They also seem to include the ability to get around standard operating barriers such as unapproved suppliers that are needed to proceed and continue problem solving or capability building until the innovation target is reached, be it a new compressor-less product or a social media analytics capability.

It is as if openness to innovation is actually part of the job at Haier: the behavioral alignment with the strategic meaning of Haier as a Sea. Such individual initiative taking may even be surprising in a culture that is often considered collective in its overall tone. Yet the Chairman’s resonant sanction, both legitimizing initiative and requiring selfless action from everyone, may be unique but also the basis for rethinking how any company can manage self-renewal innovation across technology, products and business models.

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