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Internal incubators in Chinese state-owned enterprises

Management challenges

Max von Zedtwitz and Li Que

Since the late 1990s, many Chinese State-Owned Enterprises (SOEs) have established internal incubators to provide entrepreneurial outlets for core technologies. The authors interviewed senior SOE and incubator managers in China to identify specific dangers and challenges of SOE internal incubators. They also questioned motivation and objectives of incubator management and strategy. Their research builds on similar research done previously in China with non-SOE incubators, and internal incubators of Western companies. Their research points to several fundamental dilemmas within SOE incubators relating to the incubators' role of technology commercialization platforms and internal organizational change agents.

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Introduction

China is the world's largest economy in transition. Since the opening up of the country in the 1980s, pressure on state-owned enterprises (SOEs) to be more market-oriented and to generate sustainable revenues has mounted. This pressure has heightened in the wake of increased entry of foreign companies in China, and China's accession to the World Trade Organization (WTO). The stakes are enormous, as SOEs employ hundreds of millions of people and are responsible for key industries and technologies in China.

Economic growth is driven both by technological innovation¹ and entre-

preneurship.² China's economy has grown at an average of about 8-12 per cent annually in the 1980s and 1990s. Entrepreneurship is a quality found mostly in new or small firms, as the competitive advantage of large firms rests in scale economies and leverage. SOEs have thus become increasingly out-of-date in terms of technology, products, and organization. In the 1990s, SOE managers were given more control over their companies as the Chinese government yielded towards a 'free' market economy. For instance, in 1999 the Chinese government had increased the proportion of T-bonds used for technological upgrad-

ing (a financial instrument aimed at generating capital to be used for technology and R&D investment), and provided such bond subsidies for 880 key projects, involving RMB 19.5 billion of T-bonds over the next two years.

In the 1990s, entrepreneurs led the way into the New Economy, and many incumbent industry leaders followed or developed capabilities compatible with the new Internet paradigm. While individual entrepreneurs sought assistance from independent start-up incubators, established companies provided support to their internal ventures with 'corporate incubators' or 'company-internal incubators'. Even though the New Economy collapse in 2000 had significant consequences for the start-up and venture capital industry, it allowed companies to commercialize new innovative technologies and to experiment with new forms of organizations.

This paper focuses on internal incubators in Chinese SOEs. In the hope to pursue a planned and directed reorganization of the SOE, incubators were established relatively late in China. Incubators and start-ups embody the very nature of entrepreneurship, which is technical and market uncertainty, and the necessity to take risk and assume personal accountability for action. Like any large organization, SOEs were ill-prepared for this shift.

Our research starts with the strategic and managerial steps undertaken by SOEs to establish internal incubators. We also looked at strategic objectives and managerial decision-making. Our guiding research question was "do internal incubators enhance innovative capabilities of Chinese state-owned enterprises?" In this context, we also studied organizational features and incubation processes in SOEs.

Overall, we find that SOEs benefit little from their internal incubators in terms of technological innovation, but there is some evidence that SOE incubators provide cash contributions and improved brand image to their parents. Also, based on an argument of organizational prototyping often made for start-ups, we investigated the role of incubators as organizational laboratories, but found no conclusive support.

This paper is structured as follows: first we review the state of SOEs in

China as well as general Chinese incubation. Then we summarize the history of incubators in China and describe the current state of SOE incubation. Next we present a business model of SOE incubation adapted from Zedtwitz's³ incubator model with respect to Chinese-specific conditions. Based on our empirical qualitative research, we then discuss and develop hypotheses on SOE incubators management and the role of SOE incubators in organizational reformation. In the last section we draw some conclusions and end with future research implications.

Incubation, and SOEs in China

Literature on SOE incubators is scarce; furthermore, most of it was written in Chinese and thus inaccessible to the international scientific community. McMillan and Naughton⁴ have argued that it is not necessarily privatization but competition that leads to increasing performance in an economy. Like in most transition economies, the reform of state-owned enterprises has been slow.⁵

Although the Chinese government has introduced policies that have led to the establishment of many non-state enterprises, SOEs still account for a dominant share in the economy,⁶ which is estimated at 51.6 per cent of all industrial added value at the end of 2002.⁷ SOEs are expected (or even needed) to provide social welfare,⁵ because independent institutions for social safety are lacking, and firms with strong profit incentives have little incentive to promote social stability. Thus, given that SOEs continue to be charged with a multitask function, their profit expectation will be maintained at a low level, and hence their financial performance will continue to be poor.⁵

From their study of performance and organizational structure of SOEs, Lin and Germain⁸ find that SOE growth performance is higher when formal control is strong, and lower when control is decentralized to lower management ranks. Before the mid 1980s, when the consumer goods industry shifted towards market-orientation, SOEs performance was measured by political norm adherence and not economic efficiency.⁹ Not least with the en-

try of foreign firms in China, this may have changed. However, there is an inherent dilemma, given Bai et al.'s⁵ conclusions that SOEs will continue to be an important element in social welfare. A typical SOE organization is 'feudal' in nature,^{8,10,11} and SOE managers often lack the skills necessary to compete in a market economy.¹² SOEs are thus not well equipped to execute the transformation from a planned to a market orientation under the additional constraint of maintaining predetermined social responsibilities.

The prospect of incubating SOE technology through internal ventures into companies in their own right, and thus generating revenues for their SOE parent organizations as well as increasing market-orientation of their managers, has thus become attractive. Molnar et al.¹³ found that start-up survival rates can be as high as 95 per cent, by far exceeding the typical success rate of about 20 per cent of independent start-ups (measured as "still in business" three years after graduating from the incubator).

Incubators are start-up facilitators offering, mainly, access to physical resources, office and onsite secretarial and administrative support, access to capital, coaching and mentoring support for first-time entrepreneurs, as well as access to networks and external organizations.³ The actual service mix depends on the focus of the incubator as well as on the needs and preferences of the entrepreneur.¹⁴

Internal incubators focus more on internal sources of technology and on entrepreneurs, pursuing their general objective of developing potentially innovative products outside the strategic limitations of market and technology focus of the parent company. Company-internal incubators offer the opportunity to retain and gather projects that do not fit in the company but are still attractive from a profit/revenue point of view. As such, they may be in competition with R&D and new business development departments.

State-owned enterprises are thus neither immediately capable nor fully mandated to act as truly market-oriented and profit-driven organizations. This, however, is a prerequisite for the success of start-up ventures, which SOEs

Box 1: How this research was conducted

There is very little literature available on SOE incubation, even among Chinese publications. SOE incubators came into existence only in the late 1990s, and there was little opportunity to study this field in-depth. As a consequence, we pursued an explorative research approach.

The study that led to the present contribution was based on 12 interviews with Chinese incubator directors. Most of the interviews were carried out between December 2003 and January 2004, conducted initially in person, using a semi-structured interview guideline, and then followed up by telephone and e-mail. Literature and internet searches, as well as personal observation during site visits (all of them were located in Beijing, Tianjin or Shanghai) and reports by the Chinese and Beijing incubation associations completed the data collection to satisfy Yin's¹⁵ rules of data triangulation. Where we visited the incubators, we also sought to speak with local incubator tenants and other incubator personnel. This confirmation of our interpreted observations was necessary to guarantee the validity of our interpretations.

Furthermore, some quantitative analyses are based on the latest data base of the Ministry of Science and Technology (MOST), which is available online and updated annually, to reveal the overall characteristics of the Chinese incubation.

Five SOE incubators were studied in greater detail. These incubators were all part of large Beijing-based SOEs: Beihua, Beinei, Shoute, Nuofei and Beixin. Even though the sample of our case research is quite limited in size, it is representative of top line SOE incubators, with the inclusion of the oldest SOE incubator as well as some of the most reputed SOE incubators in China. Furthermore, the processes and set-ups of SOE incubators are guided by the Chinese government and are therefore more or less the same in most SOEs.

are trying to incubate as a source of additional financial income and profitability. Our research question thus focused on the organization and management of SOE incubators. Specifically, we sought to answer how SOEs establish and run internal incubators, how their directors deal with the managerial problems resulting both from external and internal challenges, and how SOEs could benefit - in the mid and long term - from their internal incubators.

SOE incubators in China

While the history of incubation by SOEs in China is a relatively recent one, the trend towards SOE incubators has become - like so many other phenomena in China - quite prominent in a short time.

As an element of China's economic and technological development initiative, incubators have been established in all major cities as well as in most provinces. Other organizations, such as "software parks" and "high-tech parks" also contribute to China's innovativeness. Under the guidance of the TORCH programme, led by the Ministry of Science and Technology (MOST), China has founded more than 430 high-tech business incubators since opening its first in 1987.¹⁶ The growth of a number of incubators accelerated significantly since 2000 (Table 1).

China's incubators were modelled after Western incubators developed in the 1980s and 90s. In the US, some 25 per cent of incubators are for-profit,¹⁷

while most Chinese incubators (organized under MOST's umbrella Torch Program) are not-for-profit. Only a handful of Chinese incubators are privately owned, while most incubated start-up US companies are in private hands. Indeed, Chinese incubators face the difficult task of assisting and guiding private entrepreneurs in a society that until a decade ago looked with great suspicion on those trying to build their own companies.

- Some university incubators have received international acclaim as world-class incubators (e.g., at Tsinghua University or Fudan University) and are a major outlet of technology invented in academic settings.
- Incubators for international business support foreign companies to enter the Chinese market and promote international economic and technological exchange and representation.
- Incubators for returned overseas scholars focus on Chinese scientists and engineers who wish to return to their homeland after an education and career abroad. These incubators provide them with an environment in which to start ventures merging Western and Chinese management principles and technologies.

Most incubators in China are sponsored by the government; in the case of SOE incubators, this sponsorship is deferred to the state-owned parent company. According to Fengling Ma, an executive director of the Chinese

Incubator Association, most incubators in China are state-owned in one way or other. In our investigation, however, we used a sharper definition: an SOE incubator had to be majority-owned by a state-owned enterprise and organizationally a part of the SOE parent. As such, they are comparable to internal incubators in the Western sense.

According to the annual report on High-tech business incubator industry (2003), there were 27 Chinese SOE incubators by late 2002, which is only 5 per cent of all incubators and science parks in China. The average incubation space of the SOE incubators is under average as well as the number of tenants. According to Lin Bai, an officer of the Beijing Business Incubator Association (BBIA, interview data), the performance of SOE incubators (measured in metric system by the BBIA and a consulting company) is relatively low compared to other incubators and science parks in Beijing. The situation is more or less the same in other provinces in China.

The business model of SOE incubation

SOE incubators are mandated and established by their parent company, and they pursue a mission handed down to them by the top management of the corporation. As such, they compare best with corporate-internal in-

Table 1: Growth of incubators in China, 1994-2002

	1994	1995	1996	1997	1998	1999	2000	2001	2002
Number of incubators in China	73	73	80	80	77	110	131	280	436
Incubation space (10,000 sq.m)	n/a	40.2	56.6	77.4	88.4	188.8	272.1	509.0	776.1
Number of tenant companies	1390	1854	2476	2670	4138	5293	7693	12821	23373
Number of new tenant companies	n/a	n/a	703	807	1244	1711	2389	5048	8502
Total employees in tenant companies	n/a	n/a	37810	45600	68975	91600	128776	263596	414995
Accumulated number of graduated companies	n/a	364	648	825	1316	1934	2770	3994	6927

Source: MOST, 2003

Box 2: The Beinei incubator as an example of SOE incubation

Beinei, a state-owned company headquartered in Beijing, is the largest Chinese internal combustion engine manufacturer. When production receded in the 1990s, plant and office space, machinery equipment, workers and other employees became (like in many other SOEs) redundant.

In the early 1998, before the concept of incubation had been introduced to China, Mr. Zhu tried to use the redundant resource to solve the problem. The first tenant (as they would be called today) was a start-up based on lock-making technology. Mr. Zhu offered the tenant free working space, with the requirement of hiring 50 workers from Beinei. Since this scheme worked to mutual satisfaction, Mr. Zhu continued to use internal start-ups to absorb redundant people and assets, and also began to work with external technology-based start-ups as an additional outlet for the experienced manufacturing, factory and machine workers in Beinei. It was only then that he was told that offering help to start-ups is something called incubation.

On 2 August 1999 the Beijing Beinei Manufacturing High-tech Incubator Co. Ltd was established with the sponsorship of the Beinei Group, the Beijing Industrial University and the Beijing Hi-Tech Entrepreneur Service Centre (a government funded organization). Most of the incubated enterprises (making medical equipment or automated road-toll collection machines) are well suited for the buildings formerly used by abandoned Beinei production lines. In late 2003, of the 600 individuals employed in the incubator, about 300 were former Beinei employees. It hosted some 15 companies, and occupied nearly 20 per cent of Beinei's old internal combustion engine plant.

At the end of 2003, the net income of the Beinei incubator ranked first among all the SOE incubators in Beijing as well as among the accumulated graduated companies. According to the BBIA annual report on Beijing high-tech business incubation, Beinei Group's incubator had become accepted as a model of sorts for other SOE incubators.

incubators as they are known in Western countries, although they do exhibit some characteristics not typically found in the West as explained further below. Clearly, SOE incubators are not regional incubation centres (there is a strong profit intention in SOE incubators), and they are dependent on their SOE parent (and thus are not independent incubators).

Internal incubators have been established in order to provide another outlet for technology developed in corporate R&D labs that would otherwise not find business development support by divisions (due to, e.g., political or financial disincentives). As such, start-ups in internal incubators hardly com-

pete head-on with the businesses of the parent company's business units. Staffed usually by corporate managers and a mix of corporate R&D and marketing employees, the internal incubator leverages the parent's weight to the advantage of the fledgling start-up. The incubator may benefit also from the brand image of the parent. Although external VCs or internal corporate venture funds are known to co-invest in internal incubators, the parent company usually retains a majority stake and the rights to reintegrate the start-up, if successful. Internal incubators enjoy some flexibility from the constraints of the bureaucratic machinery of the parent, but are still part of the

whole and expected to deliver results as specified in their mission statement.

We now compare the Western concept of internal incubators with SOE incubation in China (Table 2). First of all, the original motivation for the establishment of the incubator in Chinese SOEs is different from Western internal incubators inasmuch as that the mission has a clear political connotation. Chinese SOEs have a societal function to play, and employment security ranks high. Western internal incubators, in contrast, only want to retain their best employees and have no incentive to hold on to less productive employees. Given our small case base, SOE incubators do seem to fulfil this

Table 2: A comparative analysis of Western internal and Chinese SOE incubators

Dimension	Western internal incubator	Chinese SOE incubator
Strategic objective	To commercialize internal technology for profit	To generate profits and to provide employment to SOE employees
Reason for establishment	Strategic intent to enhance innovation	Often politically motivated
Competitive focus	Corporate employees and some industry advantage through parent's connections; however, start-ups usually diverge from espoused technology and market strategy	Industry connections and sometimes parent's brand name; focus on technologies consistent with parent's technology strategy
Management	Internal and external R&D or business development manager	Internal management
Source of funding	Internal corporate venture fund and R&D	Some internal but eventually government funded through various supporting state foundations
Source of technology	Internal R&D	Externally developed technology
Internal organizational coherence	Medium to strong: some freedom but adherence to corporate processes along clearly defined interfaces	Few incubation processes defined, little integration, incubator director is key manager
Origin of start-ups	Internal	External
Service mix	Infrastructure and office administration often provided, some coaching and mentoring, with consulting often outsourced and IPR/legal provided internally, internal and mixed funding, internal and external network access	Infrastructure, office space are the two prominent SOE contributions, as well as access to industry-internal and governmental connections

Source: Own analysis and description of internal incubators based on an incubator concept developed by Zedtwitz (2003)

mission with some success, generating jobs both for internal as well as external employees. However, the effect of the overall economical progress on SOE job creation is difficult to gauge.

Another interesting contrast emerges in the form of the flow of technology. In the West, unused technology is commercialized. In Chinese SOEs, technology tends to come from outside the company and is intended to be absorbed internally through integration in SOE start-ups. Theoretically, the SOE is well prepared as it tends to position the incubator within its own technological domain and has much experience in the technological and industrial field. However, we have found little evidence that this scheme of external technology integration has successfully worked so far. For instance, the Beihua incubator set up by Beijing Chemical Company focuses on new technologies of chemical agents, while the Beixin incubator run by the Beijing New Building Material Group concen-

trates on emerging technologies in new building materials.

There are at least three possible explanations for this failure of absorption:

First, The scope of the innovated technology by the start-up is usually very focused and can thus be easily handled by the start-up itself. There is little reason why the start-up should outsource some of the value-adding stages of the new technology to the parent SOE.

Second, the bureaucratic and unresponsive behaviour of the parent SOE results in a lack of sensitivity for market opportunities and entrepreneurial necessities. Finally, even though the parent SOE is well familiar with the new technology, it may cost too much to upgrade the technology systems in place to adapt to the new technologies. Since the very existence of an incubator is often to put otherwise redundant infrastructure to use, there is very little incentive by the SOE to embrace radical change that would endanger this exploitation.

SOE incubators are also mostly recipients of government funding, either through government mandated innovation funds (such as the Innovation Development Centre or a municipal Hi-Tech Entrepreneur Service Centre) or through the SOE, which is also a government-controlled institution itself (Figure 1). As a result, any strategic business objectives become intermingled with political and societal ones, as observed above. This has significant consequences on performance measurement and management techniques in the incubator, as well as start-up selection criteria and start-up performance.

Unlike most Western internal incubators, most of the tenants in SOE incubators are external. One of the most important reasons is the lack of a technological innovation culture inside the SOE, perhaps still entrenched in a command rather than in a market economy. True entrepreneurship seems to be missing in the old system of SOEs.

For instance, only two out of all the 15 Beinei incubator tenants were set up by former Beinei Group employees.

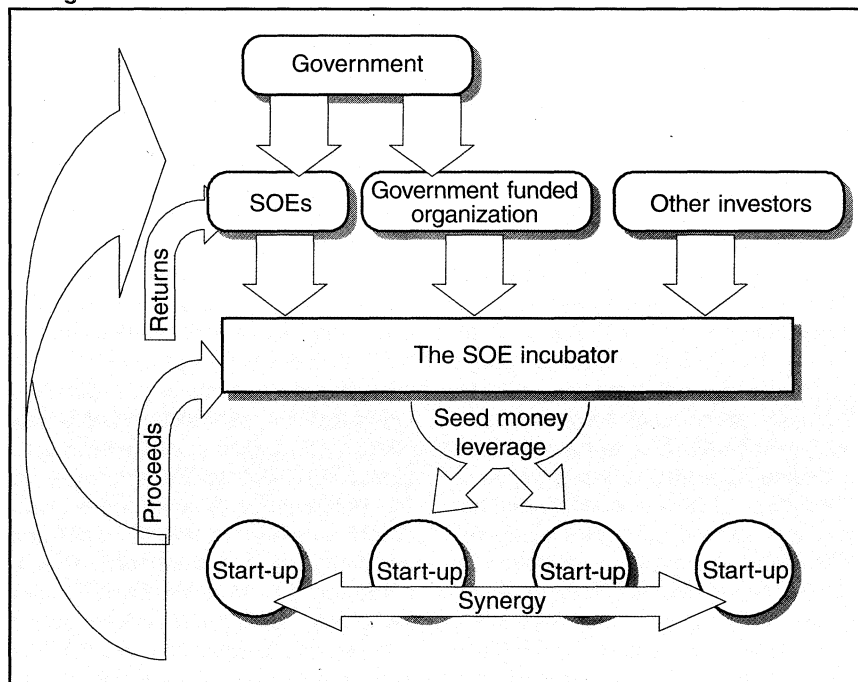
There are also a few dimensions in which SOE incubators are very similar to Western internal incubators. Both provide physical assets and office support. Both have internal sources of funding and leverage some external funding, although the amount of the venture capital heavily depends on the financial condition of the parent SOE. Since many SOEs are in poor condition themselves, the amount of VC from the SOEs is not sufficient for its start-ups.

Most of the management is internally groomed. All the directors, as well as most members of the managing teams of the SOE incubators are from the parent SOEs. Experienced workers from the SOEs are available for the start-ups. Since the incubators are manufacturing focused, the commercialization of the new technology emerging from the start-ups benefits from these experienced workers in the subsequent production and manufacturing process.

Even though most of the tenant start-ups are based on external technologies, most of the start-up and incubator employees are recruited internally. This is in part due to the SOE's explicit mission of solving employment redundancy in SOEs when establishing the incubators. Since former SOE employees are also more experienced with available infrastructure and machinery, training costs are lower and costs of hiring internally are lower as well. Overall, nearly 60 per cent of the employees in the incubators and start-ups are from the parent SOEs.

In the case of Beinei, hiring workers, especially the redundant ones, from its parent SOE Beinei Group, is a requirement to join in the incubator and benefit from lower rents. With this incentive, most tenants in the Beinei incubator group mostly hire former workers from the Beinei Group. These workers are very familiar with the machines in the plants that once belonged to the Beinei Group, even though they now manufacture products for the start-ups in the incubator. Less training is required by the workers before operating the machines. As a result, around 300 of the total 600 employees in all the Beinei incubator start-ups are originally from the Beinei Group.

Figure 1: A business model of Chinese SOE incubators



Both SOE and Western internal incubators provide access to industry networks, invaluable during the early cooperation phase and later in product marketing. However, the SOE also provides governmental connections, so important in China: An SOEs' long-term relationship with the government is a crucial part of the network shared with the incubators and its start-ups.

Both SOE and Western incubators expect a financial kick-back from their start-ups, although the Chinese SOE seems to focus more on short-term financial performance, compared with the long-term business building objective in Western companies. Most Chinese SOEs are in a difficult financial situation, and "cash is king." In some cases, lab equipment and machines were directly sold to SOE incubators. Rental income from start-up tenants form another substantial part of SOE incubator income.

In conclusion, Chinese SOE incubators are a special form of internal incubators shaped by a specific set of strategic objectives given through the political and societal mandate of their SOE parents, and the SOE's general decision to focus on technology complementary to their traditional business and expertise rather than pursuing truly innovative ways.

Performance of SOE incubators

Although our analysis is based on a small number of cases, they have been very illuminating in terms of developing in-depth understanding of some leading SOE incubators in China. The following discussion is based on two important management perspectives: performance and strategic competence development.

Performance

The measurement of performance is connected to the ability and willingness to reach preset business objectives. These business objectives include, as we have summarized above, the generation of profits and the absorption of external technologies.

At the same time, literature on China holds that the absence of transparent management and reward structures in SOEs and the relative disqualification of many SOE managers to operate in market-oriented organizations reduce the likelihood of SOEs to succeed (in business terms). (It may be interesting to note that in December 2003 China announced that they would hold their SOE top management accountable for performance of their com-

panies and - for the first time! - tie remuneration to achievement of business objectives and financial performance.)

Two of the incubators we studied, Beinei and Beihua, did relatively well in terms of business performance: they expanded their start-up base, increased the number of technologies exposed to their parent SOE, and they turned profitable, albeit mostly on a short-term case-basis. We noticed that these incubators were only loosely attached to their parent SOEs, thus allowing more operational and strategic freedom of its management, and that their SOE parents were in a comparatively poor financial condition. Whether this latter observation was a cause or effect of poor management eluded our analysis. In our interviews incubator managers placed great importance on independence from SOE management for the achievement of their objectives, complaining that restrictions imposed by their parent SOE negatively affected the performance of their incubators. Based on these observations, we conjecture that the worse the financial condition of the parent SOE, the greater the performance of the associated incubator. Also, it appears that the greater the managerial and strategic independence of the incubator from its parent SOE, the greater its performance.

Strategic competence development

In China, incubators are perceived as a symbol of organized high-tech entrepreneurship and modern management. The establishment of internal incubators thus sends a signal of open-mindedness and encourages further development of internal entrepreneurship, both positive messages for the brand-building of SOEs. At the same time (and fully in line with Schumpeter¹), SOEs expect new products and technologies to emerge from the innovative activity of their incubated entrepreneurs. Based on this objective, this innovative technology would mostly be integrated from outside of the SOE. However, our observations so far show little support for the reverse flow of technology to the SOE.

Given greater independence of the SOE and its incubator, we can ex-

pect that the respective business objectives and strategies of SOE parent and SOE internal incubator begin to diverge. At least, it may not be unreasonable to assume that the incubator's core contribution to the SOEs business plan may be differently perceived by the managers of the SOE and the incubator. This divergence in perception was noted in our interviews and may also have led to a negative assessment of overall incubator performance. We are trying to capture the actual contributions at the strategic level with the following two statements, which would imply that the technology transfer between SOE and its environment would go counter to its intended direction. First, the SOE incubator contributes comparatively more to SOE brand-building and profitability than it does to SOE technology and product innovation. And second, the SOE parent contributes to the incubator's success more with the provision of technological resources, infrastructure and distribution network, and less with the provision of a superior industry brand.

The modernization of SOE management and organizations has become a priority discussion in China. Incubators (both in China and the West) are facilitating start-ups that (besides the commercial value of new technologies) also test new organizational and management models. Given our observations of the better performing SOE incubators, this seems to hold true in principle also for SOE-internal incubators.

However, SOEs intend to renew their organizations as a whole, and not just by piecemeal introduction of small profitable and potentially competing start-ups. For instance, in 2002 Beihua group undertook a significant reorganization of its organization about two years after the successful establishment and operation of its internal incubator. Can this reorganization, at least in part, be attributed to the lessons learned from incubation? It would not be a too distant conjecture to assume that internal incubators provide a platform for organizational experimentation for SOE parent companies, where the damage of failed experiments is limited to the demise of the incubator and perhaps the associated start-ups,

but spares the overall organization from turmoil. On the other hand, systematic experimentation and organizational learning presupposed a strong strategic integration between SOE and incubator, i.e., a relatively strong dependence of the incubator on the parent SOE. This, in turn, may be detrimental to the performance of the SOE-internal incubator. As a conclusion, we can summarize that the potential for SOE organizational learning and renewal is greater in tightly integrated incubators, and lower in relatively independent incubators. Also, we find that the potential for start-up organizational learning is lower in tightly integrated incubators, and higher in relatively independent incubators.

In effect, those last two statements constitute a catch-22 situation for SOE-internal incubators: They are effective learners only if tightly integrated, but tight integration effectively prevents them from implementing organizational change.

Conclusion

We sought to explore how internal incubators contribute to the development of innovative capabilities in Chinese state-owned enterprises (SOEs). We studied history, managerial practices and organization in a small sample of Beijing-based SOE incubators. Chinese SOEs as well as their incubators are currently in a state of transition, hence they may be interested in both learning from incubation insights gained in the West as well as their own experiences. Our discussion of some important incubation determinants indicate that there may be a fundamental conflict between the strategic and organizational set-up and the learning potential.

Further research must explore those dilemmas further, possibly formulating them for scientific treatise. It is hoped that after analysis of the results, implications for both strategic management and policy-making can be drawn to the benefit of the organizational transformation of SOEs in China and elsewhere.

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The InfoDev Incubator Initiative

The InfoDev Incubator Initiative plays a meaningful role in experimenting and promoting new development patterns and methodologies specifically targeting business/technology incubators in the developing world. The Initiative is dedicated to strengthen business incubators and similar programmes, and through them, stimulate the emergence and growth of innovative, highly competitive and ICT-enabled small enterprises in developing countries.

The initiative also fosters international dissemination of successful practices on business incubation, and in particular on the effective use of ICT and e-services as vehicles to achieve greater efficiencies and higher productivity in business incubation programmes and across small enterprise development cycles.

The Initiative promotes economic growth by fostering private sector development through:

- Improving performance in existing Incubators in developing countries, achieving higher 'survival rates' of incubated companies, growth and sustainability;
- Promoting a synergetic approach focused on the needs of Incubators in developing countries, based on improved knowledge, networking and capacity building;
- Seizing new opportunities offered by the more advanced use of ICTs within incubators, assessing incubators' strategies and processes;
- Capacity building within enterprises and enhancing their competitiveness, including trade competitiveness in the global business environment; and
- Fostering entrepreneurship in developing countries, supporting the analysis, planning and testing of new incubator approaches within challenging private sector environments.

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