Production Development within China: Cultural Difference within International Joint Ventures

Abstract
Many Western & East Asian countries have found a 'haven' for those manufacturing industries losing their competitive edge. However, sources indicate that many western companies have lost millions & wasted years of management time dealing with Chinese bureaucracy & the Chinese partners imposed on them.

This paper examines the underlying nature of production development, its relationship to industry & markets within China, & its implications for Western collaboration. A substantive literature review is supported by a case illustration, selected from a random sample of low technology manufacturing companies.

Introduction
Western approaches at breaking into the Chinese marketplace during the 80s & 90s have, in many cases, resulted in disappointed expectations [Blackman, 00]:

• Many Western companies believed that the booming Chinese economy would provide a growing market. Strategic plans proved overly-optimistic when tested in the reality of the Chinese market.

• Many firms were surprised that technology, plant upgrades & employee training in joint ventures were disseminated to outside enterprises, & consequently used to compete against them.

• The lack of a shared interpretation of 'contract' led many Chinese partners to 'default', illustrating the differing perceptions as to whether contract variation is acceptable as economic opportunity changes.

• Return on investment (ROI) periods were lengthy; Nokia, despite securing a large portion of the handset & transmission market, anticipates a 20 year ROI in the telecoms sector [Neupert, 99]

• Many under-estimated the extent to which the Chinese Government protects its key industries.

Issues addressed within this paper are therefore how & why approaches to production development differ between China & the West, & what partners in joint ventures may realistically anticipate.

Western Experiences
Some western investors have sought to tap into China’s pool of cheap labour to make goods for export; others have attempted to supply the Chinese themselves. China’s development is, however, predominantly modelled on the experiences of South Korea, Taiwan & Japan, all of
which did their best to keep foreigners out. The extent to which China seeks foreign direct investment (FDI) at all is therefore more as a source of technology.

Sources indicate that many western companies have lost millions & wasted years of management time dealing with Chinese bureaucracy & the Chinese partners imposed on them [Economist, 99b]. What had seemed to many investors like a market of infinite possibility appears to many to have become more like a black hole. Corruption is commonly cited [Luo, 99], although use of the term can be somewhat misleading.

Yet the Economist notes that for every company publicly withdrawing from China, hundreds are running successful if inconspicuous businesses, based on basic if mundane products. It notes that the constant in China’s recent dealings with western business is misunderstanding: first, of the magnitude of China’s problems, & now of the significance of its reforms [Economist, 99a]. The real task for firms is not to decide either to spend more or to withdraw, but simply how to collaborate with their Chinese partners. What China needs is not so much more investment, as greater understanding.

**China's Economy**

China represents a two tier economy. It's manufacturing activity is concentrated on its south-east coast, creating a wide disparity between the productivity & income in these regions, & the rest of the country. Much investment has been concentrated in real estate & ailing state industries (SOEs) rather than high tech industries, which have been forced to seek joint ventures.

Experience has shown that size of population alone doesn't guarantee economic development. A number of Asian economies - including India, Pakistan & Indonesia - have had the opportunity to acquire foreign technologies but have failed to develop [Dzever & Jassaud, 99].

[Arayama et al, 99] identify two necessary conditions for development to take place:

- An infinite market for products & a finite domestic labour market. The first allows a country to expand exports without price falls. The finite labour market creates a need for labour-saving techniques which raise productivity & living standards, & thus stimulate innovation.

- The capability to pursue strategic innovation, & the creation of new generations of products & industries, requiring three conditions of its own:
  - the development of entrepreneurial businesses which exploit new opportunities
  - the development of management & production control systems to improve quality & effectiveness
  - government policies which supplement (rather than substitute) markets, protecting economic rights & providing investment.

China is, however, currently missing sufficient conditions for export-led industrialisation, confining her role in the world economy to that of manufacturing, on a massive scale, commodities innovated elsewhere.

**Industrial Culture**

Many Western enterprises fail in countries whose culture is located in the lower regions of a 'culture-space' (figure 1). The assumption is that globalisation is a world in which Western methods are better than & hence replace existing traditions. [Boisot, 00] suggests that societal development & modernisation in the West has moved culture diagonally up the C-space to a market region in which information is highly codified & rapidly diffused. It has generally been assumed that development elsewhere will follow this path, & that a prerequisite for economic take-off is a rule-based society & the freedom to compete in open markets.
Fifty years of a command (centrally planned) economy have left a legacy in which Chinese firms are wary of the unknown. Many Chinese enterprises are disinclined to move up the C-space, lacking both the physical & institutional infrastructure, & fearing the loss of tacit context & the ability to cope with uncertainty. Despite China's movement towards a market economy & one of the highest growth rates since the mid 80s, Boisot notes that the country remains predominantly 'feudal' [Boisot, 00], migrating from fief to clan order, the latter operating as a form of network capitalism. With its basis in guanxi connections & interpersonal trust, it is far removed from a market order.

Whilst the Western focus is on collaborating with a network of partners, Chinese firms are concerned with gaining critical mass & engendering organisational rather than transformational strategies. Manufacturing strength provides entry to the world business system & the ability to compete for larger markets & orders. The vast majority of companies lack logistics networks & distributors, & as such are dependent either on the large numbers of import-export companies that have emerged or on localised clusters of related industries. By letting others worry about branding, outlets, market risk & design, single companies can grow to manufacture in the world market, such that China now accounts for 60-70% of Western high-street fashion [China Business, 95][Economist, 98b].

However, the majority of Chinese enterprises - town & village, privately owned & joint venture (TVEs, POEs & JVEs) - are comparatively immature, the earliest dating from 1978. Applying [Abernathy et al, 78]'s definition of the three states of the Western business lifecycle - fluid, transitional & specific - to state enterprises (table 1), it is apparent that SOEs tend to span the phases, exhibiting a variety of management behaviours inconsistent with their Western counterparts. This creates a series of growth dilemmas essentially revolving around five factors:

- Increased competition & static markets
- Increased organisational complexity
- Reliance on external resource providers
- Technology transfer, &
- The ability to innovate

### Table 1

<table>
<thead>
<tr>
<th>Management Issues</th>
<th>Phase</th>
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<tr>
<td>Innovation</td>
<td>incremental product improvement</td>
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<td>Sources</td>
<td>joint venture partners</td>
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<tr>
<td>Products</td>
<td>undifferentiated standard products</td>
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<tr>
<td>Production</td>
<td>rigid with change requiring major steps</td>
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<tr>
<td>R&amp;D</td>
<td>lacks focus, technical uncertainty</td>
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<tr>
<td>Equipment</td>
<td>general purpose, skilled labour with islands of automation</td>
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<tr>
<td>Plant</td>
<td>predominantly, general purpose, some specialisation; high tech joint ventures invest in specialised lines</td>
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<tr>
<td>Cost of change</td>
<td>moderate to high</td>
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<tr>
<td>Competitors</td>
<td>unprotected sectors face many, declining after dominant design; command economy sectors face few, classic oligopoly</td>
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<tr>
<td>Competitive basis</td>
<td>price</td>
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<tr>
<td>Organisational control</td>
<td>administrative structure, rules &amp; goals</td>
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<tr>
<td>Vulnerability</td>
<td>imitators, product breakthroughs</td>
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(adapted from metrics identified by [Abernathy et al, 78])
Innovative Entry

Innovative entry (entrepreneurship) is dependent on the nature of the knowledge base, & the manner in which opportunities correspond to organisational set-up & production systems. Exposure to such knowledge takes place through a variety of mechanisms/activities: research & production activities carried out by public institutions, competitors & horizontally related industries, users in downstream industries & suppliers of knowledge capital [Winter, 97]. Ideally such innovation flourishes under regimes of well defined intellectual property rights, contract law & government regulation, typically conforming to a 'Schumpeterian' world of 'constructive destruction' in which inefficient industries are abandoned for new ones, especially where rapidly changing market conditions necessitate speed, response & flexibility [Marsili, 00].

Stratagems - akin to niche-ing, opportunism, alliances & acquisitions - typify a consensus of approaches prevalent in China. These tactics include the manipulation of schedule & location, the gaining of concession & attrition [China Business, 95], & are understandable, given the location of Chinese companies within 'culture space'. Commerce is viewed as a ‘zero-sum’ activity in which ‘win-win’ scenarios are counter-intuitive & relationships follow stratagems based on mutual interdependence [Backman, 99]. This behaviour can best be described as a fierce sense that someone else's gain is your loss, an unstable equilibrium based on conflicting forces. Its manifestation is, however, consistent with reactive & proactive development strategies as described in [Urban & Hauser, 93].

Whilst not all forms of alliance are international joint ventures (IJVs), few domestic R&D consortia have emerged. Unlike Japanese organisations which involve their suppliers in product development from the outset, Chinese enterprises generally lack the contextual knowledge needed; this is compounded by the lack of IPR protection, which would prevent suppliers from exploiting such knowledge.

As may be expected, innovation varies according to the reliance on differing areas of knowledge. Science-based regimes - pharmaceutical & electronics industries - may be characterised by a high level of technological opportunity, technological entry barriers, especially in the specificity of the knowledge base & highly cumulative nature of innovation (Table 2). In contrast, product-engineering domains are distinguished by moderate levels of opportunity, low entry barriers & low persistence of innovation; they do, however, provide high diversity of trajectories, sustaining disparate product markets. Chinese partners in joint ventures have therefore sought two distinct types of international associate:

- those capable of transferring scientific &/or process knowledge, &
- those with established global export markets.

| Table 2 |
|---------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| **Science-based**               | **High**        | **High**        | **High**        | **Low**         | **Public institutions** | **Strong & direct** | **Product**    |
| **Fundamental processes**       | **Medium**      | **High**        | **High**        | **Low**         | **Affiliated firms**  | **Significant & direct** | **Process**    |
| **Complex systems**             | **Medium**      | **Medium-high** | **High (in techn'gy) Low (in products) Medium** | **High (upstream)** | **Complex sources** | **Significant but indirect** | **Product**    |
| **Product engineering**         | **Medium-high** | **Low**         | **Medium-Low**  | **High** (horiz & downstream) | **Users** | **Insignificant** | **Product** |
| **Continuous processes**        | **Low**         | **Low**         | **High (in techn'gy) Low (in products) High** | **High (upstream) Low in food** | **Suppliers** | **Insignificant** | **Process** |
Whilst product technologies enable only focused industries to generate streams of new products, the development of production/process technologies may be applied widely across ranges of industries & are likely to facilitate multiple entries. It is therefore rational for an emergent economy to seek specific forms of technology transfer, & protect those fundamental to its developing infrastructure - such as defence, telecoms & banking - given that entry to the World Trade Organisation (WTO) threatens to effectively expose China's high technology industries to foreign competition in her domestic markets for the first time.

New Growth Theory
Technology transfer is at the centre of any discussion of the dynamics of economic development. General equilibrium models of 'North-South' development, such as [Grossman & Helpman, 91] suggest that imitation & its application to production in lower-waged regions increase the specialisation of the two hemispheres. Displaced workers in the North become absorbed in R&D activities, shortening product lifecycle, & leading to an increase in the global rate of technological progress [Borkakoti, 98].

It is assumed that competitors will rapidly learn enough of a new technique to work around it, & that an innovation can effectively be retrieved by reverse engineering. This is certainly true in the technologically & industrially advanced West, but understates the considerable problems facing the inter-organisational transfer of complex technologies. In reality, stronger intellectual property (IP) invites monopoly pricing, rights holders attempting to extend their scope of protection through restrictive licensing, discouraging the widespread utilisation/diffusion of new knowledge. Whilst the trade gap models consider the effect of weak IP to be an increase in the rate of knowledge flow, lowering the cost of imitation, the converse is true. The dilemma lies in the nature of the knowledge which underpins expertise. The implementation of production processes without access to tacit understanding typically fails to deliver outputs of anticipated quality. The more complex the process or product, the greater the problem. Differences in the availability of components, achievable tolerances & material properties, & adaptations to achieve local manufacture, frustrate attempts to implement innovations. [Stuttard, 00] notes the difference in modes of thought, typically characterised as 'digital' & 'analogue'; in attempting to imitate a model, the imitator often misunderstands why an operation is undertaken in a particular manner. The corollary of this is that whilst continuing macroeconomic changes make China an attractive destination for technology transfer, much of the potential for mutually beneficial transfer remains unrealised.

Technology Transfer
Technological innovation is now imperative across much of the economy, but this is both costly & difficult to implement. The magnitude & nature of the effort required has prompted the government to actively seek foreign sources of technology [Ding, 97]. Significantly, those technologies to be transferred have had to fit specific situations rather than be state-of-the-art.

Since the 1980s over 50% of large & medium state owned industries have imported technology & equipment to improve technical & managerial skills. As a result, the quality of products has improved, leading to an expansion of both the share of the domestic market & the capacity to export, typically in engineered products [Feinstein & Howe, 97].

However, problems still exist in importing technology. Weak macro-control & poor administration have allowed excessive duplication. There are many underlying causes, particularly enterprises who sought to import projects with high economic returns. One obvious example cited in [Xu, 97] is the hundreds of TV production lines imported in the late 1980s, which led to oversupply, overstocking & significant levels of waste.
There has also been an over-emphasis on the importance of hardware forms of technology. Chinese management teams, & state officials, have been determined to acquire particular new technologies, often to promote capability, even where these do not contribute to productivity gains. This has led to poor assimilation & has borne no improvement in China's self-sufficiency rates. Whilst the short term direct import of technology achieves rapid economic results, this enhances productivity rather than technology transfer, & makes China a consumer of foreign high-technology products rather than proprietors. Experience in Japan & Korea has shown that assimilation to technology purchase costs should be in the region of 3:1, whilst Chinese enterprises have typically expended in the ratio 1:1. This emphasis on productivity is partly explained by managers' terms of office, which were often too short to plan for assimilation, & enterprises neglecting the marketability of products, with technologies failing to meet set targets [Xu, 97].

**Management**

Experience of industrialisation in other countries has shown that the acceleration of industrial development depends not only on advanced production technology, but also on improved management [Qiu Xu-Yao et al, 87], which can account for up to 75% of gains in productivity. Whilst advanced technology & equipment can be imported within a short period, improvements in management take considerably longer. Chinese approaches to management are the opposite of Japanese practices in almost all respects. Such differences represent one of the principal difficulties facing companies attempting to transfer Japanese-style management to China [Fukuda, 97].

Chinese business units, owned & controlled by differing levels of government, are subject to constraints that limit their ability to respond to rapidly changing market conditions & new technologies:

- In SOEs & TVEs managers come from the ranks of party members & bureaucrats, clouding their ability & willingness to manage efficiently & effectively, & to innovate. As a result, Chinese managers tend to be conformist, adhering to procedures rather than personal judgements [Smith et al, 96].
- Managers are also constrained in adjusting their inputs, especially labour, to changing market conditions, even in the face of declining output. Even management within POEs & foreign joint ventures is dependent on good Party relations to obtain proper licenses, limiting their ability to pursue ideas & businesses that may compete with vested interests.
- Since contracts are not well defined or binding, & hence dependent on *guanxi* or relationship-based networks, management is under constant uncertainty as to which resources are under its control & for how long.
- The shortage of professionally qualified managers is acute. This is especially evident in foreign joint ventures, where management, marketing & quality personnel are in least supply [Asiaweek, 97], [Rohwer, 95].

Japanese management experts emphasise the use of managerial practices, such as teamwork, job rotation & direct communication between workers enabling them to develop knowledge of the entire production process. Such practices are often credited for the ability to innovate, especially in complex products, & to exploit ideas to their full commercial potential. Whilst this is also evident in the 'Bamboo Network' organisations operated by the overseas Chinese, this is unlikely to happen in China, as long as managers are bureaucratically appointed & constrained from adjusting strategy, output & employment to changing market conditions.
This lack of professional management has other implications. Managers generally lack the experience & expertise to run an enterprise efficiently, particularly in anticipating market demands & developing new products to satisfy them. Management decisions tend to be made vertically, adhering to bureaucratic hierarchies. This reinforces conformity, stifling different approaches & innovation, & is often misinterpreted as indifference.

Other services, such as market research, may be dispensed with where they cannot be provided in-house. Typically, a Western company sets up in a new country or market sector after first commissioning research to demonstrate a market gap & profit potential. In contrast, a Chinese company will typically invest in a new market not because of research but on the basis of local connections (guanxi) [Backman, 99].

The Structure of Chinese Industry

Japanese & Taiwanese enterprise is both collective & individual, pursued within keiretsu relations (corporate alliances) that allow members to share risks & expertise. Both forms are associated with strategic innovation, especially the development of complex products such as semiconductors, consumer electronics, machine tools & vehicles. [Arayama et al, 99] note that in spite of the reforms of the post liberalisation era, Chinese enterprises have neither the freedom nor the incentive to develop new products, as they effectively remain units within a central plan rather than firms within a market economy. As Arayama observes, these units 'put the cart before the horse', constructing production facilities & assigning resources before searching for business opportunities. Such units typically search for foreign partners to contribute capital equipment & technology. Such an approach is entirely rational from an economic planning perspective, but is irrational from that of a fast moving global market, where consumers dictate which production methods are adopted & which products succeed.

Under the 'iron bowl' policy, such units are also used to enhance the welfare of workers, local & provincial communities, & the Party, rather than the creation of market rents & the funding of strategic innovations. As such, they remain under the indirect control of bureaucracy.

Following the introduction of profit-sharing schemes in 1993 & stock offerings to workers in 1997, SOEs have experienced productivity gains & have been relieved of the burden of social responsibility. Yet 50% of corporations remain in deficit. Studies [Liu & Liu, 96] reveal that Chinese multinationals are competing on the basis of cost rather than quality or new product development, & that, as noted earlier, such enterprises are susceptible to competition should protectionism cease.

TVEs were predominantly set-up to create local employment opportunities, & as such are largely controlled by local government, & operate as subcontractors to SOEs & foreign multinationals. The regional goals pursued by such administrations promotes a localism pushing enterprises to local sourcing & marketing, thus undermining competition. However, as cooperatives embracing capitalist enterprise, they have made substantial productivity gains, similar to small enterprises in other developing economies. Whilst, as newer & smaller enterprises this should be easier to achieve than with SOEs, [Woo, 97] is cautious, noting that the rapid growth in TVEs may have been initial expansion to fill gaps in the planning system.

Compared to SOEs, peasant entrepreneurs are significantly more market oriented, motivated by business success, enjoy higher autonomy & take initiatives. However, Aryama et al believe that they cannot pursue strategic innovation for a number of reasons: collective ownership results in lack of individual entrepreneurial control & an unwillingness to assume responsibility. Moreover, management is typically bureaucratic rather than professional.
Further, located as they are in rural areas, TVEs have neither the market information nor resources to develop new products for the domestic market. As such, their role is limited to that of subcontractor, making intermediate products for SOEs, which typically provide the capital equipment & technology required to manufacture such products. Whilst this approach is similar to Japan's system of subcontracting, there are distinct differences:

- Japanese manufacturers co-operate with a number of subcontractors, not one, thus stimulating competition
- Unlike Chinese SOEs, Japanese manufacturers involve their suppliers in product design from the outset, enabling them to develop comprehensive knowledge of products & processes. Chinese suppliers thus lack the contextual knowledge to develop new & sophisticated products, & are confined to simple standardised components. Innovation for such products originates from demand rather than production.
- Japanese suppliers are administered by career managers
- Japanese corporations have always been exposed to domestic & international competition

POEs are small enterprises predominantly engaged in the service sector. Owned & controlled by individuals, they possess the freedom & incentives to pursue new business ventures, yet lack professional management & market orientation. Lacking the government connections possessed by SOEs & TVEs, & being outside of the allocation plan, they are unable to obtain new technology & low-cost finance. Leasing land rather than buying it from local government, the maintenance of guanxi relations are critical to survival [Tsang, 94]. Consequently, with the exception of labour intensive industries, POEs have flocked into the service sector rather than enter manufacturing.

Figure 2: Typical structure of a joint-venture company:
Whilst OECG companies (Overseas Ethnic Chinese Groups based predominantly in Hong Kong & Taiwan) have set up wholly owned subsidiaries, Western organisations may only assume a maximum stake of 49% in any venture. Foreign joint ventures (JVEs) are therefore typically formed between subsidiaries of SOEs or TVEs with a foreign partner, the latter typically responsible for technology transfer to the Chinese partner. This is, however, a complex enterprise. Permissions & licenses are required, & the legal setting poorly defined. This creates some uncertainty, especially in manufacturing, which requires a sizeable long-term commitment of finance. As [Aryama et al, 99] note, subsidiaries are often set up well in advance, before foreign partners have the opportunity to express their preferences for facilities or personnel. As such a joint venture agreement is more akin to a lease agreement rather than a sharing of assets, creating a bias towards imitation rather than innovation, & removing the incentive for foreign partners to pursue anything other than the standard manufacturing of products developed outside of China. Whilst, the aforementioned OEC groups have been the primary vehicle for marketing Chinese products overseas & providing foreign direct investment (FDI) [Watanabe, 97], they too have resorted to the manufacture of labour-intensive products developed elsewhere, rather than investing in China's NPD capability [Arayama et al, 99].

**Working Practices**

The Chinese concept of socialism is considerably more pragmatic than the East European model. Accordingly, economic development is placed at the forefront of policy, with China's prevailing Taoist value system forming the basis for the organisation of work, companies & the division of labour between networks of companies. This system is principally based on relationships between groups & informal co-operative arrangements oriented towards the 'clan'. The individual is thus defined in terms of his/her relationship to the group.

Both society & company models are influenced by the same value system, often exerting a greater effect than Western technical models of organisation, & share common elements with the Toyotaist model, which emphasises: mutual obligation, material dependency, consensus decision-making & small incremental change. Informal processes remain determinant factors. Guanxi relations play a crucial role in work, & individuals are united in 'Danwei' (neighbourhood associations) which organise education, job prospects & housing.

As [Kiefer, 98] notes, the first wave of Western businesses introduced Taylorist production concepts & a significant emphasis on technology in their Chinese investments. Required changes in attitude threatened group orientation; attempts to assimilate Western patterns of behaviour, which excluded social areas from within factories, have undermined the performance of the Danwei structure. Chinese managers have complained that one of the greatest impediments to their work has been the technocratic approach common to the majority of foreign experts. The abandonment of Western Taylorism in the early period of economic reform gave rise to a preference for multi-purpose machinery & broad skill bases. Yet worker-led experiments failed because expert competencies & specialist skills were negated. Relatively short periods of transformation have hampered the adaptation of concepts. With three year contracts common, short-term successes have been stressed, & strategic planning largely neglected.

Western understanding of group dynamics originates from an entirely different view to that of the Chinese. In state industries, negative behaviour has been assumed & goals have been obtained through sanctions, principally due to a lack of individual incentives & inducements. However, recent liberalisation has given a new significance to those SOEs undergoing modernisation. This often relies less on clear-cut rationalisation strategies than on creativity & responsibility on the part of employees at plant level. Both technical innovation & the introduction of performance-based pay have led to a substantial drop in production costs. The
notion of worker responsibility has more recently been linked with the expansion of technical competence & profit-sharing. However, non-technical ideas - such as organisational concepts - have proved more difficult to transfer, as have problem solving skills, where this has required a degree of independence & creativity [Kiefer, 98].

**Supply Chains**

Until the mid 1990s Localisation Co-ordination Committees were the sole means of organising the supplier industry & primarily concentrated on increasing local content at the expense of production from other regions. Where use of non-local suppliers has been possible, just-in-time deliveries have proved unfeasible due to the congested traffic conditions in city areas. Logistical problems are compounded by a low degree of vertical integration, leading to the exploitation of the supplier clusters described earlier [Economist, 00].

Whilst many supplier management practices follow Japanese models, inventory management & operational research practices are less successful. Owing to a strong socio-cultural drive to be seen to succeed, the collection of data tends to be embellished to reflect targets [Kiefer, 98].

To date, joint ventures have tended to operate as foreign bodies, with little integration into the wider Chinese economy. IJVs have tended to focus on their own first-tier supplier companies (responsible for only 20-30% of production); with future supply-chain requirements, this neglect has led to major problems with downstream suppliers. A completely new supply-chain structure is, however, being developed in China. In contrast to Japan & Korea, these new chains are largely independent of OEMs (own equipment manufacturers) & work predominantly with foreign joint ventures, such that traditional guanxi connections have become less important. The onus is, however, on foreign partners within JVEs to modernise & improve efficiency within second & third tier suppliers.

**The Case Study**

Nowhere is business transformation more evident than in China’s consumer product sector; the study provides an alternative perspective on other studies, in which a Taiwanese JVE is subject to considerable domestic imitative competition.

*Company X*, one of the largest watch companies in China, comprises five smaller companies, each independent within the group, & responsible for the production of faces, bezels, straps, mechanisms & final assembly. Although distributed across Shenzhen, each site has modern factory premises less than 10 years old, set in landscaped gardens & surrounded by clusters of suppliers, with the headquarters housed in a 12 storey steel & glass edifice more akin to Silicon Valley. Each factory is a hive of ordered activity with some 3-400 uniformed workers, typically migrants, actively engaged in work. For all the apparent automation, each unit requires surprising amounts of hand-work. The 1500 workers share dormitories with cafeterias, karaoke & sports facilities. Each employee typically works a 10 hour shift, & earns some 700 RMB pcm. This figure, lower than average for the region, perhaps explains the rapid turnover in workforce, typically less than 2 years, mostly returning to their villages in rural China. In contrast the team of 5 designers earn some 4000 RMB pcm. Each is expected to generate some ten concepts per week, from which 20-30 will be developed into new models per year. CNC milling machines continuously turn 3D computer concepts into metal & resin prototypes, which are used to create dies & press tools. These will join the existing range of 200 products; a figure which includes variations, gift sets & short runs for the military.

The company group, a government collective, started in 1990, is not a conventional protected SOE, & as such is subject to market conditions. Initially profit making, the company achieved
record sales in 1993, returning a 20 000 RMB bonus per employee. Subsequently its profitability slumped in the 1997 East Asian crisis, only achieving parity again in 2000. Its largest export market is Taiwan, which accounts for 30% of its production, the group's Taiwanese partner assuming responsibility for the brand; the remainder is destined for the domestic market, with, until recently, 10% of sales going to the military. The brand is advertised heavily on national television, & in newspaper media, given the highly competitive nature of the market. Yet, despite being the largest company in this sector & market leader, it suffers heavily from imitation, with an estimated 50% of 'brand' sales being illegal copies.

Despite its relative youth, the group plans to consolidate its activities on a single green field site within the next two years. Given the strength of the competition, & its inability to compete on price with inferior products, the manufacturing arm of the group is shrinking. Its strategy is now one of design differentiation, & it is attempting to stay ahead by continuously redefining the brand, cutting popular models to deter imitators. The capability for products to become 'cash cows' has essentially been undermined, & the group have unusually chosen to take a Western approach vis-a-vie accelerated product cycles. Interestingly, in an attempt to re-brand itself, the group has chosen to focus on the higher end of the market, competing directly against famous name imported Western brands. The problem it faces is compounded by speculative designs which have achieved only limited success; the sector has proved difficult to break into, & the brand has achieved lower than anticipated margins in an already low volume market. Consequently, the company has set its future on the development of a new generation of watches for which it has appropriated sole rights to 'state-of-the-art' quartz movements, to be imported from the EU under a second joint venture agreement. Its only viable alternative strategy is the closure of its premises & diversification into real estate.

The Challenges Ahead

Company X faces a number of key issues, particularly challenging to the new generation of profitable joint ventures:

- Short product cycle: Given that incomes are rising, infrastructure improving & competition increasing, the rule appears to be that what happens over decades elsewhere, happens in China within months. New ideas are consumed, digested & replaced overnight. Most importantly, China's consumers have the shortest attention span & least patience.
- Significant regional differences, caused by disparities in infrastructure, income & resources lead to a fragmented market
- The rapid polarisation of consumer purchasing power: The gap between the rich & poor is growing; as this widens it will polarise the markets for high-priced consumer items & low-priced goods. As a result, market entry will depend on targeting specific consumer niches, which is a high risk strategy dependent on strong brand identity [Li, 98]
- The rapid spread of economic development which creates opportunities for fluid competition in low technology industries
- The impact of RMB appreciation: Li believes the RMB to be significantly undervalued; the World Bank estimates its purchasing power to be 4 times as high as the official exchange rate suggests. The Chinese Government has purposefully kept the rate low to boost its exports. With entry to the WTO, the RMB may be forced to appreciate, increasing the purchasing power of Chinese consumers significantly, whilst reducing export potential [Li, 98].

Conclusion

In the race for survival, a competitive production structure is necessary, but is not in itself sufficient. China's socialist market economy is still largely a state-planned economy, & China has no desire to become dependent on foreign multinationals.
The Chinese official bureaucracy seems to regard technology, & corresponding management methods, as neutral & value-free. Thus, they seek to adopt/adapt them without jeopardising anything which they regard as essentially Chinese. Meanwhile, Western & Asian management generally ignores Chinese social behaviour & attitudes in its Taylorist approach. Whilst the Chinese are prepared to sacrifice elements of their cultural heritage (including guanxi & danwei) in the cause of modernity, these may prove useful building blocks for a post Taylorist (or Toyotais) mode of work. As Kiefer notes, in China employment & contextual/economic effects are significantly more important determinants of the shape of modernisation than the issue of production concepts [Kiefer, 98]. Effective policies would therefore have to take into account employment, environment & macroeconomic policy effects as well as Western lean-production oriented concepts. While the latter may be readily transferred, problems inherent in the former have yet to be seriously addressed.

China has missed a number of opportunities for self-advancement. Government regulations have limited competition & the diffusion of new technology throughout the economy; a generation of entrepreneurs & managers had been removed during the Cultural Revolution, which preceded the 1978 liberalisation. Chinese SOEs & TVEs possess neither the incentive nor freedom to innovate. Yet innovation is vital to sustaining growth in a post-WTO entry China.

To contend, Chinese companies must compete against themselves, eliminating market rents & creating the incentive to assume risks in pursuing strategic innovation. China's abundant low-cost labour force, which attracts so many labour-intensive technologies, poses a significant disadvantage to her further development.

Findings disagree with some commentators who have described a lack of reward system & staff initiative. Although the majority of SOEs as yet lack the prerequisites for effective innovation, emphasis has clearly been placed on developing vertical integration within the organisation. Inasmuch as Western manufacturing is embracing agility & collaborative horizontal structures, autocracy & longer time horizons may well offer significant benefits in managing the uncertainty of guanxi relations during this phase of economic reform.

For its part, the West has been guilty of attempting to exploit the Chinese market with obsolete products & technology. The Chinese consumer is increasingly discerning & informed, as disposable income increases. Western partners should plan for long-term returns, & should be adaptive to changes in circumstance, given the uncertainty of the economy. Technology transfer should therefore be an evolving strategy, linked to first-world development. Long term buy-in is essential, given that a company's greatest competition may come from its own Chinese partner.

Organisation for collaborative ventures therefore requires the development of a complex multi-tiered protocol for partner selection, which outlines areas of expertise transfer & mutual development, including:

- the identification of joint business strategies
- the establishment of shared procedures
- the development of mutual product & process expertise
- sales & production protocols for the communication of key information
- impact on the product development cycle

The importance of intra-company team approaches cannot be over-emphasised in developing an effective working relationship. There are three key stages in achieving this:

- understanding each party's core expertise & capabilities
- assessing manufacturing & R&D operations
implementing a protocol for communication & collaboration

A Chinese partner's profitability is often a good indicator of its organisation & operation, & of its competitive advantage, market power, distribution channels & guanxi within the business community. Local partner liquidity is critical to joint ventures as it reflects the venture's ability to pay off short term financial obligations. However, liquidity is low in most Chinese firms, particularly state-owned enterprises. Unlike the West, retained earnings account for only a small proportion of capital required for investment, & most Chinese firms are therefore dependent on loans, & vulnerable to changes in monetary policy [Luo, 00]. Investors should therefore be wary of choosing those in weaker leverage positions.

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