What Makes the Implementation of Innovation Management in Asia Different?
by
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Abstract

Macro-economic analysts have recently made the case that South and East Asian countries will have to invest more than in the past in innovation in order to preserve a high level of growth in total factor productivity. For companies in these countries, this implies that they will have to become more performing in managing the innovation process. Often one hears comments from practitioners that the prevailing lessons about innovation management as they have been developed over the last 30 years in the U.S.A., Europe and Japan may not fully apply in South East and East Asia. Through a combination of a series of exploratory case studies and a survey of senior managers in South East Asia we are indeed able to define a number of differences in the way innovation is managed in Asia.

Keywords: innovation, Asian business, technology development
1. Introduction

East Asia, a group of countries including the ASEAN countries as well as Taiwan, South Korea and China\(^1\) have witnessed a high economic growth during the eighties and early nineties of the previous century. This growth was the consequence of adding foreign direct investment to a large pool of local, often highly skilled, labor. Since the mid nineties and definitely since the aftermath of the Asian financial crisis in 1997-1998, it has become clear that this formula has reached its limits (Lingle, 1997; Krugman, 1994). The emergence of China as a manufacturing base for the world and the recent developments in India make it improbable for most companies operating from East and South East Asia to pursue a competitive strategy exclusively based on low prices and low cost. China and in a later stage India will become the major sources of low cost production (Clarke, 1999). Most economic commentators argue thus that a macro-economic strategy based on capital injection to leverage the available workforce will not be sufficient anymore and that East and South east Asian countries and their companies will have to invest in the development of new products, services and processes (APO, 2003; Wolff and Yoshida, 2001).

Being successful with innovations requires more than originality and good luck. Since the early seventies scholars and practitioners in the U.S.A. and Europe, and since the mid eighties in Japan, have developed empirically supported lessons about how to manage innovation (Shavinina, 2003; Brown and Eisenhardt, 1995). During the many occasions we had in executive programs or lecture series for Asian audiences to discuss these lessons, we often heard Asian managers argue that the application of these lessons in Asia may well be different. Their argument was not so much that the lessons would not apply, but rather that the specific circumstances in East Asia were such that the implementation would be radically different. Some scholars have put forward similar arguments. Couchman et al (1999) argue that there is diversity in the way concepts like concurrent engineering are implemented and illustrate this with data from Australia and Indonesia. Yeo (2003) and Hsu and Chen (2003) describe some of the specifics of the innovation systems in respectively Singapore and Taiwan. Zain et al (2002) compare innovation management between the German and Malaysian subsidiaries of a European multinational and find that both subsidiaries follow similar innovation processes, but that different types of problems and critical success factors were applicable to both subsidiaries. The Malaysian subsidiary faced more behavioral problems while the German subsidiary encountered more technical problems.

In this paper we want to study to what extent the implementation of innovation management concepts is different in Asia. In order to do this we decided to carry out a research project in two steps. In the first step we explored through a series of more than 20 case studies, based on desk research and interviews with privileged observers (e.g. scholars, leaders of innovative firms and policy makers), what could be the differences in implementation of innovation management lessons between Asia and the industrialized world. You can find the list of these case files in appendix 1. The preliminary results of this study were reported in De Meyer and Garg (2004). They provide an interesting set of hypotheses about innovation management in Asia. In a

\(^{1}\) On purpose we leave Japan out of this analysis. Japan is since long an industrialized nation with a strong track record in innovation management and thus very different from the other Asian nations.
second step we developed on the basis of this exploratory study a questionnaire which was sent to a wide panel of senior managers in East and South Asia (in particular India). This paper mainly reports on the results of this questionnaire.

2. Description of the study and method of analysis

Over the period going from September 2002 till January 2004 we developed a set of case files, of which some have been published (see appendix 1 for more details). The sample was on purpose very diverse in terms of geographical location, industry and size. Since this first phase was an exploratory study, we wanted to increase the diversity in order to generate as many hypotheses as possible about innovation management in Asia. There were two major conclusions from this first phase (De Meyer and Garg, 2004) which are in line with some observations in the literature (Zain et al, 2002):

a. Most if not all of the robust lessons about innovation management, as they have been developed since the first studies in the U.S.A. during the Gemini and Apollo projects, the seminal SAPPHO studies in the U.K. (Rothwell et al, 1973), or the studies in the mid eighties on development projects management in Japan (Nonaka and Takeuchi, 1986; Fujimoto and Clark, 1991), seem to apply equally well in Asian companies that successfully carry out innovation.

b. And, yes, the implantation of these lessons is influenced by contextual factors which we summarized in five major categories:

- **Ineffective input from the market**: We observed a combination of a lack of sophisticated marketing experience, a large geographical and mental distance from the most sophisticated consumer markets, underdeveloped local markets, an insufficient number of trendsetting and lead customers, lack of reliable market data, and historical mistrust between neighboring countries leading to insufficient economies of scale.

- **A strong but perhaps obsolete role of the governments**: Governments have traditionally played an important role in the industrial development of East and South East Asian economies. This appeared to be a successful formula in a period where the basic industrial network needed to be developed. But the environment that is required to let innovation blossom requires different regulatory environments (e.g. concerning intellectual property rights or financing high technology firms and technological learning) than the ones currently in place (Carney and Gedajlovic, 2000). It requires also more risk taking by governments who often remain one of the most important economic actors through their own procurement. Finally the policies favoring local companies by protecting them from foreign competition often lead to a situation that does not render innovation a necessity for these local companies.

- **Inadequate resources and skills**: While the absolute number of engineers and scientists, or experts in general, may not be that low, in comparison to the total population, one can predict a shortage of technical skills, both in terms of quantity and quality. Furthermore we often heard a complaint about the lack of sophisticated risk capital leading to a higher capital cost...
for innovators (Carney and Gedajlović, 2000; Singh 1998). Beyond the numbers we observed also an inadequacy in skills and a mismatch in terms of attitudes. Very often the companies we studied remained almost addicted to an attitude of cost reduction rather than to one of value creation. Many times a business was still seen as a combination of access to natural resources and products, rather than a combination of process capabilities and skills that enable the company to continuously innovate.

- **Lack of appreciation for intangibles**: Most of the managers we encountered had difficulties in appreciating the value of intangibles such as brands, or intellectual property (Nakamura, 1999). The wide spread stories about counterfeiting (which is obviously not exclusive to Asia) or the limited success and commitment by Asian companies to build strong local brands illustrate this, notwithstanding a few exceptions such as Samsung or Singapore Airlines.

- **Underdog mentality leading to self fulfilling prophecies**: Many Asian companies seem to suffer from an underdog mentality leading to the self fulfilling prophecy that they cannot innovate as well as companies from Japan, the U.S.A. or Western Europe. Companies perceived themselves to be better positioned for low cost/low value production than for innovation, described themselves as authoritarian organizations with subservient and disengaged employees, or as family owned firms where the top becomes a bottleneck for decision making (Redding, 1990). They seem to suffer from the traditional stigma associated with failure, inhibiting employees to take risk. And they confuse the concept of innovative, value creating entrepreneurship with real estate development and trading that takes advantage of information asymmetries due to networking.

Faced with an abundance of hypotheses that can be formulated based on these five categories of observations, we went into a second phase of our study in order to test some of these hypotheses. Our preliminary results were translated in 32 statements about the key success factors that would affect innovation management in a positive or negative way (see appendix 2 for the full list). This was combined with a few questions about the company and the respondent as well as a set of questions about the change in the competitive environment and the evolution of the need to innovate. The questionnaire was made available through internet during the months of March and April 2004 and invitations to fill out the questionnaire were sent out through e-mail to 3,767 senior managers. The list of contacts was generated from the database of managers that had been in contact with INSEAD over the last years either through executive programs or research activities. About 600 emails bounced back, which means about 3,150 senior managers received our emails. We received 336 usable responses. This is a response rate of about 10.6 %. The composition of the sample is described in table 1.

The large majority of the questions were presented as five point Lickert scales ranging from a ‘very negative’ influence on innovation in the respondent’s company (1) to a ‘very positive’ influence (5). The questions about the changing role of innovation and the intensity of competition were also five point Lickert scales ranging from significantly higher than the past (1) to significantly lower than the past (5).
We want to highlight two shortcomings of the sample. While it is reasonably diverse in terms of geography, there seems to be an overrepresentation of respondents located in Singapore. But one should take into account that in many cases Singapore acts as a hub for the region, and many regional headquarters are located in the city state. When one has the ambition that senior managers should respond, one automatically ends up with many responses from a Singapore location.

Secondly any questionnaire suffers from self-selection by the respondents. As we will see later most if not all of the respondents are of the opinion that innovation is becoming significantly more important in the competition. This probably confirms that we received proportionally more responses from managers interested in innovation than from those for whom innovation is still irrelevant. This is in our case probably an advantage rather than a disadvantage: we may assume that these respondents are more acutely aware of the hurdles and advantages for innovation in South East Asia and thus their answers may well be more pertinent to our research question.

<table>
<thead>
<tr>
<th>Table 1: Sample Composition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Descriptor</strong></td>
</tr>
<tr>
<td><strong>Company Headquarters (n=336)</strong></td>
</tr>
<tr>
<td>Asian</td>
</tr>
<tr>
<td>Non Asian</td>
</tr>
<tr>
<td><strong>Title of respondent (n=336)</strong></td>
</tr>
<tr>
<td>President, CEO, Managing Director</td>
</tr>
<tr>
<td>General Management</td>
</tr>
<tr>
<td>Functional management</td>
</tr>
<tr>
<td>No answer</td>
</tr>
<tr>
<td><strong>Industry composition (n= 335)</strong></td>
</tr>
<tr>
<td>Industry</td>
</tr>
<tr>
<td>Services</td>
</tr>
<tr>
<td><strong>Geographical composition (n=336)</strong></td>
</tr>
<tr>
<td>(of the location of the respondent)</td>
</tr>
<tr>
<td>Singapore</td>
</tr>
<tr>
<td>Mainland China</td>
</tr>
<tr>
<td>Hong Kong</td>
</tr>
<tr>
<td>Malaysia</td>
</tr>
<tr>
<td>India</td>
</tr>
<tr>
<td>Korea</td>
</tr>
<tr>
<td>Thailand</td>
</tr>
<tr>
<td>Taiwan</td>
</tr>
<tr>
<td>Philippines</td>
</tr>
<tr>
<td>Sri Lanka</td>
</tr>
<tr>
<td>Pakistan</td>
</tr>
<tr>
<td>Others</td>
</tr>
</tbody>
</table>
3. Data Analysis

3.1. Importance of innovation to the respondents

As an introduction to the questionnaire we asked a few questions about the current importance of innovation compared to the past and about the changes in the competitive environment (table 2). There is no challenge in interpreting the results: the respondents argue that innovation is frequent in their industry, the intensity of the competition is significantly rising and innovation is currently significantly higher than it used to be.

Very few respondents score 3, 4, or 5 on intensity of competition and importance of innovation. On the frequency of innovation there is slightly less emphasis than for the two other questions, though the mode and median are still 2. This may reflect that the respondents see the need for innovation but may find it difficult.

The three indicators are actually significantly correlated (Pearson correlation of around 0.3). As we already mentioned these results may be a consequence of the self selection bias in the respondent sample: we may have a sample of respondents that wanted to respond because their competitive environment forces them to pay attention to innovation.

Table 2: Perceived Changes in the Environment Compared to 5 years Ago

<table>
<thead>
<tr>
<th>Score</th>
<th>Intensity of the competition (*) (n=339)</th>
<th>Current importance of innovation (*) (n=338)</th>
<th>Frequency of innovation in the industry (**) (n=339)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>73 %</td>
<td>56 %</td>
<td>18 %</td>
</tr>
<tr>
<td>2</td>
<td>22</td>
<td>35</td>
<td>42</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
<td>9</td>
<td>34</td>
</tr>
<tr>
<td>4</td>
<td>2</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

(*) on a scale of significantly higher (1) to significantly lower (5)
(**) on a scale of very frequently (1) to almost never (5)
### 3.2. Hurdles and success factors for innovation in Asia

**Table 3a.**: Most positive and negative factors influencing innovation based on the individual scores of each item (on a scale from 1 to 5) (n=336)

<table>
<thead>
<tr>
<th>Most positive factors (or not hindering innovation)</th>
<th>Mean</th>
<th>Most negative factors (or perceived to be a hurdle)</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality of managers</td>
<td>3.95</td>
<td>Quick imitation of innovative products by competitors</td>
<td>1.89</td>
</tr>
<tr>
<td>Quality of engineers</td>
<td>3.80</td>
<td>Inadequate protection of IPR</td>
<td>2.15</td>
</tr>
<tr>
<td>Quality of designers</td>
<td>3.75</td>
<td>Insufficient Project Management capabilities</td>
<td>2.15</td>
</tr>
<tr>
<td>Quality of competitive intelligence</td>
<td>3.65</td>
<td>Inability to reconfigure existing capabilities into new products</td>
<td>2.31</td>
</tr>
<tr>
<td>Asian customers perceive Western goods to be better than Asian ones</td>
<td>3.00</td>
<td>Unsophisticated existing customer base</td>
<td>2.35</td>
</tr>
<tr>
<td>Strong cost reduction attitude</td>
<td>2.97</td>
<td>Lack of reliable marketing data</td>
<td>2.37</td>
</tr>
</tbody>
</table>

*Table 3b.**: Most and least often cited factors as top 3 challenges for innovation (n=290) *

<table>
<thead>
<tr>
<th>Least often cited top challenges</th>
<th>Most often cited top challenges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mainstream international business media focus on negative news from Asia</td>
<td>Disengaged employees</td>
</tr>
<tr>
<td>Geographical distance with the Western Markets</td>
<td>Strong cost reduction attitude</td>
</tr>
<tr>
<td>Asian consumers perceive western goods to be better than the Asian ones</td>
<td>Insufficient Project Management capabilities</td>
</tr>
<tr>
<td>Lack of pressure from financial markets</td>
<td>Inability to reconfigure existing capabilities into new products</td>
</tr>
<tr>
<td>Western markets look down on Asian goods</td>
<td>Inadequate IPR protection</td>
</tr>
<tr>
<td></td>
<td>Inadequate risk capital</td>
</tr>
</tbody>
</table>

(*) The number of respondents is slightly lower than for the other questions. Not all respondents filled out these three challenges.

The average score for each of the 34 items that we asked the respondents to score on a scale from 1 (very negative effect on the innovation in your company) to 5 (very positive effect on the innovation in your company), gives a first indication of what respondents perceive as the most positive and most negative factors influencing innovation. We have actually two ways of looking at this: we can use the averages for each of the items. But we also asked the respondents to indicate their top three challenges. For this second question we combined the top three for all responses and
tallied the number of times the items were mentioned, without taking into account whether they were mentioned first, second or third. In table 3a and 3b one will find the top and bottom items for the two analyses.

As one would expect the two tables have some commonalities and differences. In terms of the negative influences on implementing innovation in Asian companies, insufficient project management capabilities, the inability to reconfigure existing capabilities into new products or services and inadequate IPR protection stand out in both tables. They are complemented with the negative impact of quick imitation of innovative products by competitors, weaknesses in marketing, disengagement of employees, a strong cost reduction, and insufficient risk capital.

On the positive side the respondents seem to have less problems with the intrinsic quality of the people (and score themselves as managers as a strong positive factor) and don’t seem to think that some of the underdog mentality items (reports by the press, perceptions of Asian versus western goods or distance from the markets) have a negative impact on the innovation process.

One item we cannot explain at this stage is the ambiguous impact of a strong cost reduction attitude. It does not appear to be a negative factor when one looks at the individual scores of the 34 items. But it is cited among the top three hurdles to overcome. The reason is perhaps quite simple: the score on this item is strongly bi-modal, i.e. some respondents consider it to be negligible while others see this as a very important hurdle for innovation. The same respondents who score it as an important hurdle, mention it also consistently as one of the most important challenges.

One may expect that the importance of these positive and negative key factors for innovation would be perceived differently by managers from companies with a headquarters inside or outside Asia (further described as Asian and non Asian companies). We carried out a t-test to test for the difference in means for each of the 34 items. As one would expect with a quite large sample of 336 responses, we found a few significant differences. Using a 1% confidence interval we find five items on which managers of Asian companies are significantly more positive than their counterparts from non Asian companies:

- the impact of insufficient project management capabilities
- the applicability of western management methods
- the influence of a cost reduction attitude
- the lack of reliable market data
- and the impact of inadequate IPR protection.

The managers of non Asian companies are a bit more negative about the management capabilities of their staff or of Asian management in general. The number of significant differences is not very high given the sample size. Overall there is far more agreement between the managers of companies with an Asian and non Asian origin than disagreement about the factors influencing innovation.
3.3 Data reduction

Interpreting a list of 34 items remains a laborious exercise and therefore we applied a principal component analysis with a varimax rotation to the 34 items. We found 10 factors with an eigenvalue above 1, explaining in total 58% of the variance. The first five factors explain more than 40% of the variance. Based on the rotated component matrix we have labeled the 10 factors as follows (see also table 4):

1. A first factor explaining almost 20% of the variance in the data set appears to reflect the absence of an environment in which it is easy to operate as an innovator. The lack of market data or of a trendsetting customer combined with the stigma associated with failure and the absence of adequate risk capital does not make it easy for an innovator to pursue his or her projects.

2. A second factor explains more than 8% and groups a few items that are reflecting the underdog mentality of the Asian company: it is not involved in setting international standards, lacks confidence, has no strong brand and sees the international business press as constantly negative about Asia.

3. The third factor explaining almost 5% is the one that groups the lack of some knowledge resources, e.g. quality of knowledge workers and competitive intelligence.

4. Still explaining about 4% of the variance is a fourth factor that points at the inertia that is created by the forces of tradition in Asian business: conservatism of business partners, no attention paid to details, a homogeneous workforce and a lack of appreciation for intellectual property rights are legacies of the past with respect to Asian management.

5. The next factor groups some items that have to do with the lack of basic management models and lessons about innovation management that are specific to Asia: no good role models neither from Asia nor the West, and insufficient internal capabilities in project management and technical competencies combined with an emphasis on market share rather than on value creation leading to significant profits.

6. Two factors related to the negative impact of government compose the sixth factor.

7. A seventh factor reflects the fact that for some companies there is no perceived need to innovate. Mind the fact that the item on disengaged and subservient employees scores negatively on the component, i.e. we should read this factor as a combination of no need felt to innovate in order to grow, the commitment of the workforce to what we do now and a bit of fatalism that Asian consumers anyway prefer Western designed goods.

8. The two items composing the eight factor reflect the lack of external business rewards for innovation.

9. Factor nine is related to the lack of good market understanding.

10. The last and tenth factor represents the negative impact on innovation of the traditional cost reduction attitude.
Once again we wanted to know whether the significant differences that we observed in the original 34 items between respondents from Asian and non Asian companies, could be traced in the ten factors. There was no significant difference between the factor scores for the first four factors explaining cumulatively 37% of the variance. Significant differences on a 1% confidence level appear only in factor 7 (no need perceived to innovate): for managers of non Asian companies the score on this factor is higher than for managers of Asian companies. If we use a 5% confidence level, there are also significant differences in factor 5, 9 and 10. For each of these factors the Asian managers give a higher score about their impact than non Asian managers. These results are in line with the analysis of the 34 original items.

The important observation seems to us however that on the factors that provide the highest explained variance there is no difference between Asian and non Asian managers. The differences between the two groups seem to be rather marginal.
Table 4: results of the principal components analysis

<table>
<thead>
<tr>
<th>Label of the component (explained variance)</th>
<th>Items scoring high on the component</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Absence of an environment in which it is easy to operate as an innovator (19.8%)</td>
<td>Lack of reliable marketing data Unsophisticated existing customer base Inadequate access to early adopters Stigma associated with failure Inadequate risk capital</td>
</tr>
<tr>
<td>2. Underdog mentality (8.4%)</td>
<td>Limited involvement in global standards Lack of self confidence in international business Western markets look down on Asian goods and services Lack of strong brand International press reports negatively on Asia</td>
</tr>
<tr>
<td>3. Availability of knowledge resources (4.7%)</td>
<td>Quality of designers, managers and engineers Quality of competitive intelligence</td>
</tr>
<tr>
<td>4. Inertia caused by traditional management approaches (4.3%)</td>
<td>Lack of diversity in the workforce Insufficient attention paid to details Conservative business partners Inadequate IPR protection</td>
</tr>
<tr>
<td>5. Inexistence of appropriate management models specific to innovation for Asia (4.2%)</td>
<td>Few role models of successful innovation Inapplicability of western management lessons Insufficient project management capabilities Quick imitation of innovation by competitors Inability to reconfigure existing capabilities into new products and services Greater emphasis on market share than on profitability</td>
</tr>
<tr>
<td>6. Negative government impact (3.8%)</td>
<td>Government intervention in business Conservative sector leaves few opportunities for private sector</td>
</tr>
<tr>
<td>7. No need perceived to innovate (3.6%)</td>
<td>Prospects for growth even without innovation Disengaged and subservient employees (<em>negative sign</em>) Better perception of Western goods by Asian consumers</td>
</tr>
<tr>
<td>8. Innovation is not externally rewarded (3.2%)</td>
<td>Lack of pressure from financial markets Asian markets are too small or too heterogeneous</td>
</tr>
<tr>
<td>9. Insufficient market understanding (3.0%)</td>
<td>Geographical distance from the Western markets Over-reliance on creative improvisations</td>
</tr>
<tr>
<td>10. Impact of cost reduction attitude (3.0%)</td>
<td>Strong cost reduction attitude</td>
</tr>
</tbody>
</table>
3.3. Classifying the sample into groups

Having the dataset reduced to a set of ten interesting factors we can now explore to what extent subgroups of respondents have a common attitude towards these factors. To examine this we performed a cluster analysis.

Determining the number of clusters is always a delicate exercise. After having performed a hierarchical cluster analysis and examined the dendogram it appeared to us that the optimal number of clusters was four. With a higher number of clusters we get groups with only one data point in it. With a lower number of clusters there was a difficulty to obtain convergence on the cluster centers.

Using the factor scores for the ten factors we obtained four clusters with the characteristics summarized in table 5.

<table>
<thead>
<tr>
<th>factor</th>
<th>Cluster 1 (115)</th>
<th>Cluster 2 (74)</th>
<th>Cluster 3 (74)</th>
<th>Cluster 4 (89)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-0.02</td>
<td>0.56</td>
<td>-0.02</td>
<td>-0.42</td>
</tr>
<tr>
<td>2</td>
<td>0.48</td>
<td>-0.19</td>
<td>0.07</td>
<td>-0.52</td>
</tr>
<tr>
<td>3</td>
<td>0.25</td>
<td>0.53</td>
<td>-1.43</td>
<td>-.12</td>
</tr>
<tr>
<td>4</td>
<td>0.63</td>
<td>-0.68</td>
<td>-0.16</td>
<td>-0.12</td>
</tr>
<tr>
<td>5</td>
<td>-0.34</td>
<td>-0.12</td>
<td>0.99</td>
<td>0.45</td>
</tr>
<tr>
<td>6</td>
<td>-0.05</td>
<td>-0.18</td>
<td>0.20</td>
<td>-0.76</td>
</tr>
<tr>
<td>7</td>
<td>-0.23</td>
<td>0.57</td>
<td>0.04</td>
<td>-0.21</td>
</tr>
<tr>
<td>8</td>
<td>0.45</td>
<td>0.21</td>
<td>-0.20</td>
<td>-0.59</td>
</tr>
<tr>
<td>9</td>
<td>0.14</td>
<td>-0.14</td>
<td>-0.33</td>
<td>0.21</td>
</tr>
<tr>
<td>10</td>
<td>0.07</td>
<td>-0.51</td>
<td>-0.25</td>
<td>0.54</td>
</tr>
</tbody>
</table>

* High scores mean that the subjects in this cluster consider the factor concerned to be a positive influence on innovation. Low scores mean that the subjects in the cluster consider the factor to have a negative effect on innovation.

Cluster 1 has a cluster center which scores high on factor 2, 4 and 8, but is low on 5 and 7. It combines a high score (thus seen to be less of a problem for innovation) on underdog mentality, inertia due to the traditional Asian approach and the lack of rewards for innovation, with a low score on (thus negative impact on) the existence of appropriate management methods and the need perceived to innovate. This suggests that this is a cluster of respondents that sees the major challenge for Asian innovation as the need to get incentives to innovate and that requires the development of appropriate innovation management methods. They can perhaps be seen as people who want to innovate but don’t know how and seem to be still at the beginning of the innovation journey.

Cluster 2 has a cluster center that scores high on factor 1, 3, and 7, relatively low on factor 2 and low on 4 and 10. They feel positive concerning the support that the economic environment can provide for innovation, the availability of knowledge
resources and don’t feel so much constrained by the perceived non-existing need to innovate. On the other hand they feel somewhat negative about the underdog mentality. And they feel negative about the inertia created by the traditional Asian approach to management and the traditional cost reduction attitude. They seem to believe that one can easily innovate in Asia if one can overcome some of the traditional behavioral management traditions in Asia. They may well be those managers who are already innovating but feel they are constrained by some heritage from the past.

The third cluster scores average on most items except for factor 3 where they score very low and factor 5 where they score relatively high. They seem to think that they have no problems with the appropriate management models, but they do not have the right resources available in the firm. This group perceives themselves to be poor in knowledge competencies needed for innovation.

The fourth and last cluster of respondents scores high on factor 5, 9 and 10, but low on 1, 2, 6 and 8. They seem to believe they have the resources, understand the methods, and do not suffer too much from a cost reduction attitude. But they feel they need improvement on the innovative economic environment and a reduction of the underdog mentality. They also consider that innovation is insufficiently rewarded. They feel also negative about the influence of the government. They believe they can innovate but require the general environment to improve. On some items they are the opposite of the first group. Overall these seem to be managers that feel they are stuck in between the conviction that they can innovate, but don’t have the right environment. Therefore we call this group a group that is stuck in the muck.

Once again we have analyzed whether these clusters are influenced by the composition of the sample. On the basis of a chi-square test we find there is no significant influence on the clustering of data points whether the respondent is from an Asian or non Asian company. But we find a significant influence of the perception of the intensity of the competition. When the intensity of the competition is perceived to be significantly higher than in the past, respondents tend to cluster slightly more in cluster 4 and to some extent 1. If the intensity of the competition is not felt to be that high, respondents tend to cluster relatively more in cluster 2 and to some extent cluster 3. In other words the respondents that feel more strongly the threat of the competition either withdraw in blaming the environment as the hurdle of innovation, or feel incapable to sufficiently innovate because they do not have the right incentives and methods to innovate.

4. Discussion

We set ourselves the task to study whether there are some specific influences on the implementation of innovation management in Asia. We generated through exploratory research the potential influencing factors and used a survey to understand their impact.

We would like to summarize our results of the survey under three headings: (a) we can derive a set of factors that are specific to Asia and that influence the implementation of innovation management in Asia; (b) in the interpretation of these factors there are only minor differences between managers from Asian and non Asian
companies; and (c) not all companies/respondents see the importance of the factors specific to Asia in the same way and we were able to determine four groups of companies/respondents. Let us look at each of these three observations in a bit more detail.

a. We were able to derive ten factors that influence the management of innovation in Asia. In fact five of those explain already more than 40% of the variance. These five factors specific to the Asian context are:
   1. the absence of an environment in which it is easy to operate as an innovator
   2. a typical underdog mentality leading to a self fulfilling prophecy of underperformance in innovation
   3. a lack of good knowledge resources
   4. management approaches that are traditionally associated with less well developed management practice in Asia
   5. and the inexistence of appropriate management models specific to innovation in Asia.

When we go back to table 3a and 3b, in which we gave the ranking of the most important hurdles, it becomes clear that there is a consensus that the biggest difficulty is the inability to create a sustainable competitive advantage with innovation and this due to a lack of protection against imitation (both trough IPR but also because there is quick imitation by competitors) as well as a lack of project management capabilities. The lack of resources may be an important influence on the innovative capabilities, but one that on the average counts less because it is a preoccupation of a smaller group of respondents (in particular cluster 3).

b. We did expect that managers from Asian and non-Asian companies would have a different view on management of innovation. It turns out that the differences are minimal and that is perhaps the more important result. In general, managers from Asian companies are slightly more positive about the capabilities of their staff, the availability of market data, the impact of adequate IPR protection and the applicability of western methods in Asia.

c. If the implementation of innovation management in Asia is indeed different, that does not mean these differences are similar for all respondents. In fact we are able to derive four groups with different characteristics. Labeling these four groups is a subjective exercise. But based on the characteristics of each group we propose to call them as follows:
   - cluster 1: Innovation starters
   - cluster 2: Fighters of their administrative heritage
   - cluster 3: Knowledge resource poor
   - cluster 4: Stuck in the muck

Different attitudes towards the difficulties of managing innovation require different solutions. For management educators and policy makers it may be worthwhile to understand that the four groups require different types of support. The first group does not blame the environment, but does not know
yet very well how to innovate. This group probably needs more basic management education on innovation and project management. The second group feels the burden of the traditional Asian administrative heritage. They need to be able to escape this tradition and one of the actions that can help them is the infusion of new employees coming from different environments. Developing a culture of appreciation for intellectual rights and rendering the management more professional and attentive to details may be other suggestions to this group. The third group needs access to knowledge resources. They need engineers, designers, managers and knowledge. They may benefit from initiatives by the government or private organizations that enable technology and inwards transfer of talent. The fourth group thinks they can innovate but feel the environment is not right. They are the ones that may request changes in government policies that enable innovative behavior.

We have examined whether one can associate belonging to one of these four groups with other characteristics. Being a respondent from an Asian or non-Asian company does not influence significantly the association with one of the four groups. The perceived degree of intensity of competition (and the correlated factors such as importance to innovate or the frequency of innovation) determines to some extent the clustering. When the environment is perceived to be more competitive, respondents blame the environment to be a brake on their innovative endeavors and to a lesser extent feel they do not have the right capabilities to start the innovation process. When the environment is considered to be a bit less competitive respondents see more difficulties with breaking with the heritage and to a lesser extent the lack of knowledge resources.

5. Conclusion

We started with the question whether innovation management is different in Asia. Our two phased research study led us to conclude that the principles of innovation management in Asia are the same as elsewhere, but that the implementation of these principles may differ. This is in line with some previous research (Zain et al., 2002).

The results of a survey of 336 senior managers indicate that innovation is becoming more important and that the perceived hurdles to implement enable us to classify the respondents in four clusters or groups: the innovation starters; the administrative heritage fighters, the knowledge resource poor and the people that find themselves stuck in the muck of implementation. Belonging to these four groups is associated with the perceived competitiveness in the environment. The solutions provided by managers, management educators and policy makers to help the Asian companies to become more innovative may have to be adapted to the different characteristics of each of these groups.

There is a need for further research to explore what the characteristics of these four groups of innovators are. It would also very interesting to develop a similar list of hurdles for Europe and North America and test through similar surveys the differences in perception between Asian managers and managers from other parts of the world.
Appendix 1: List of Case Studies

1. Aapico Hitech, Thailand
2. AmorePacific, South Korea
3. Asiainfo Holdings, China
4. AU Optronics, Taiwan
5. Banyan Tree Hotels and Resorts, Singapore
6. Biocon, India
7. ChoLam, Thailand
8. Dilmah Tea, Sri Lanka
9. E-Chaupal, India
10. Giordano, Hong Kong
11. Haier, China
12. Hewlett Packard, Singapore
13. Infosys, India
14. iRiver, South Korea
15. Lapid Foods, Philippines
16. Li&Fung, Hong Kong
17. Martha Tilaar, Indonesia
18. MyWeb, Malaysia, Singapore, China
19. National Library Board, Singapore
20. Neowiz, South Korea
21. Netizen Funds, South Korea
22. NIIT, India
23. Patkol, Thailand
24. Pinoy2Pinoy: SMS in the Philippines, Philippines
25. Reliance Infocomm, India
26. Samsung Electronics, South Korea
27. Samtel Group, India
28. Semiconductor industry, Taiwan
29. Shin Satellite, Thailand
30. Smart Communications, Philippines
31. Tiger Motors, Thailand
32. Tata Motors, India
33. VazBuilt, Philippines
Appendix 2: List of 32 key success factors for innovation as derived from the case research

1. Disengaged and subservient employees
2. Over-reliance on creative improvisations
3. Insufficient project management capabilities
4. Greater emphasis on market share than on profitability
5. Quality of competitive intelligence
6. Stigma associated with failure
7. Quality of
   a. Engineers
   b. Designers
   c. Managers
8. Inadequate risk capital
9. Few role models of successful innovative companies in the country or the region.
10. Quick imitation of innovative business models/products/services by competitors
11. Inapplicability of innovative management lessons from the West
12. Strong cost reduction attitude
13. Lack of pressure from financial markets
14. Unsophisticated existing customer base
15. Asian markets are either too small or too heterogeneous for profitable innovation
16. Lack of reliable marketing data
17. Inadequate access to significant number of ‘early adopter’ type of customers
18. Asian customers perceive the western goods to be better than the Asian ones
19. Prospects of good growth for the company even without innovation
20. Inability to recombine/reconfigure existing capabilities into new products/services
21. Western markets look down on Asian products and services
22. Lack of involvement of Asian companies in setting up global standards
23. Lack of self-confidence of Asian employees in international business
24. Geographical distance with the Western markets makes it difficult to understand their needs
25. Mainstream international business media reporting in English tend to focus on negative Asian business news
26. Government intervention in business in the home country of your company
27. Strong and conservative public sector leaves few opportunities for private sector
28. Inadequate protection of Intellectual Property rights
29. Lack of strong brand
30. Conservative business partners
31. Lack of diversity in the workforce
32. Insufficient attention to details
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