Forecastability, chaos and foresight

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Abstract Roles of leadership in coping with uncertainty are explored in this paper. Through an in-depth, empirically grounded discussion, the authors argued for the presence of a deep cultural divide between Eastern and Western leaders on coping with uncertainty. In the process, the authors devise a two-dimensional, organic versus forecastability model of strategy behavior for polarizing East-West leadership styles. Aspects of the Sun Tzu’s Art of War and 5,000 years old, I Ching are discussed with respect to foreknowledge and foresight respectively.

1. Introduction

What ought to be the roles of forecasters? One of the major roles of forecasters in developing forecasts is to render help to organizations cope with uncertainty. But, do they? Since the ensuing financial chaos across the ASEAN region, we had reflected on these issues inter alia, purposes, uses of published forecasts, contributions, roles of forecasters and most importantly, whether their cumulative efforts add value to CEOs in strategy making.

CEOs have to cope with uncertainty.

In our review of literature, we are disappointed. We could hardly find a single paper that deals with the ramifications on the community of forecasters due to the extended, extensive and destructive turbulence wrought to ASEAN economies as a consequence of the volatility of currency markets. In particular, Nobel prize winning scholar Modigliani and his co-worker Askani in reviewing a quarter century of floating exchange rates did not breathe a single word on the Asian financial crisis (Modigliani and Askani, 1998).

Yet without the float the Asian crisis would not have happened. And again it is but for the float that a new profession arose leading to refinement of forecasting tools and techniques (Brown and Guerard, 1998; Makridakis and Wheelwright, 1987). Indeed in our review of literature (Armstrong, 1986) we found an utter lack of research on a very important issue – usefulness of forecasts. For example, as in suggesting alternative strategies through the corporate strategy process (Willis, 1987, p. 3). For this reason, we bring in Foresight, some of these fundamental issues to light.

For example, one in reply to these questions:

- How predictable is the environment?
- To what extent are forecasts utilized?
- Are organizations coping with uncertainty?

These questions framed within the context of the ASEAN region had formed the basis of an earlier version of our paper. But with the unprecedented shock of the Asian financial crisis, we see there yet to be another even more interesting issue:

How do organizations cope where the environment turns chaotic?

For with financial crises hitting not just some countries but almost the whole region, it is timely to be asking not merely about the accuracy of forecasts (e.g. Llewellyn and Arai, 1984; Lai, 1990; Arts, 1998) or be limited to the extensiveness of their utilization. While empirical findings on accuracy or the extent of their use may enable forecasters to evaluate and thus sharpen their forecasting skills (Henriksson and Merton, 1981), the immediate issue has become an even more basic one:

- Are forecasts (Stekler, 1994) at all valuable?

The Asian crisis has heightened this awareness among many CEOs, businessmen, executives – and particularly...
strategists – within the ASEAN on how truly unpredictable an external environment may turn out to be. That a belief in its predictability – arguably an axiom (at least until now) within the profession of forecasters – may itself be too dangerous! As far as we are concerned the crisis had made us reflect more deeply on the issue. Especially, on what it really means to be coping with change – a concept that underpins our empirical study of the strategy processes within ASEAN corporations.

For that is one basic reason why organizations implement strategy processes: to cope with change. As taught in MBA courses it is part of the strategy process that forecasts whether internally generated or externally obtained ought to be utilized. It forms part of our empirical study of the strategy process among the major, publicly listed corporations within ASEAN region (for “Association of South East Asian Nations”). Aspects of the sample are rendered in detail elsewhere (see Foo and Grinyer, 1994) but for convenience of readers a summary, tabular profile by country and industry is shown in Table I.

The Asian financial crisis hits many of the organizations within our sample. That helps us to be more deeply focused within this paper on the issue of coping with change. For the change demanded of the ASEAN organizations are drastic for the crisis has struck so unexpectedly. Living in the context of the crisis (though less affected here in Singapore than elsewhere) forces us to sharpen our thinking about the role of forecasts as part of the strategy process in coping with change and our reflections extended to include the coping of shocking, dramatic impacts of change. Prior to the impact of the Asian crisis our thoughts for this paper are shaped somewhat differently. Then our premise is that a general environmental predictability acts to facilitate the use of forecasts. For we see predictability as one of an enabling factor that promotes the use of forecasts (see Figure 1). But as we are finishing an earlier version of this paper we come up face to face here with the Asian crisis.

An external, Asia wide change renders it nearly impossible the making of any meaningfully accurate forecasts. The

| Table I — Summary profile: sectoral composition of ASEAN and individual country samples |
|---------------------------------|-----------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                                 | ASEAN            | Singapore        | Malaysia        | Thailand        | Philippines     | Indonesia       |
|                                 | Survey (S)       | Response (R)     | S             | R             | S              | R              | S              | R              | S              | R              |
|                                | n = 442 (%)      | n = 109 (%)      | n = 98 (%)     | n = 43 (%)     | n = 170 (%)     | n = 31 (%)     | n = 83 (%)     | n = 20 (%)     | n = 74 (%)     | n = 13 (%)     | n = 17 (%)     | n = 2 (%)     |
| Finance                        |                 |                  |                |                |                |                |                |                |                |                |                |              |
| Insurance                      | 2.3             | 2.8              | 3.1 n          |                | 0.6 n          | 4.8 n          | 15.0 n         | 1.4 n          | 5.9 n          |
| Banks                          | 6.6             | 10.1             | 6.1 7.0       | 1.8 n          | 9.7 13.3       | 20.0 10.8      | 7.7 n          |                |                |                |                |              |
| Investment                     | 14.9            | 6.4              | 20.4 4.7      | 12.9 n         | 24.1 20.0      | 5.4 7.7        | n n            |                |                |                |                |              |
| Financial institutions         | 0.7             | 0.9              | 3.1 2.3       | n n            | n n            | n n            | n n            | n n            | n n            | n n            | n n            |              |
| Agriculture                    | 8.6             | 8.3              | n n           | 22.4 29.0      | n n            | n n            | n n            | n n            | n n            | n n            | n n            |              |
| Forestry                       | 1.4             | n n              | 3.5 n          | n n            | n n            | n n            | n n            | n n            | n n            | n n            | n n            | n n            |
| Mining                         |                 |                  |                |                |                |                |                |                |                |                |                |              |
| Coal                           | 0.2             | 0.9              | n n           | n n            | n n            | n n            | 1.4 7.7        | n n            |                |                |                |                |              |
| Petroleum                      | 0.9             | n n              | n n           | n n            | n n            | n n            | 5.4 n          | n n            |                |                |                |                |              |
| Metal ore                      | 6.3             | 3.7              | 1.0 n         | 6.5 6.5        | 1.2 5.0        | 20.3 7.7       | n n            |                |                |                |                |                |              |
| Others                         | 0.5             | n n              | n n           | 1.2 n          | n n            | n n            | n n            | n n            |                |                |                |                |              |
| Manufacturing                  |                 |                  |                |                |                |                |                |                |                |                |                |              |
| Food                           | 9.0             | 8.3              | 10.2 9.3      | 9.4 6.5        | 3.6 5.0        | 12.2 7.7       | 11.8 50.0      |                |                |                |                |                |              |
| Textiles                       | 5.2             | 1.8              | n n           | 3.5 n          | 14.5 5.0       | 2.7 7.7        | 17.6 n         |                |                |                |                |                |              |
| Wood                           | 1.1             | n n              | n n           | 2.4 n          | n n            | 1.4 n          | n n            |                |                |                |                |                |              |
| Paper                          | 1.8             | 1.8              | n n           | 2.9 3.2        | 1.2 n          | 2.7 7.7        | n n            |                |                |                |                |                |              |
| Chemicals                      | 8.8             | 12.8             | 6.1 7.0       | 8.2 19.4       | 10.8 10.0      | 4.1 15.4       | 41.2 50.0      |                |                |                |                |                |              |
| Minerals                       | 4.8             | 2.8              | 1.0 2.3       | 4.7 3.2        | 6.0 n          | 9.5 7.7        | n n            |                |                |                |                |                |              |
| Metals                         | 1.8             | 2.8              | 1.0 2.3       | 3.5 3.2        | 1.2 5.0        | n n            | n n            |                |                |                |                |                |              |
| Machinery                      | 7.7             | 10.1             | 11.2 18.6     | 8.8 9.7        | 6.0 n          | 2.7 n          | 5.9 n          |                |                |                |                |                |              |
| Others                         | 0.2             | 0.9              | n n           | n n            | n n            | 1.4 7.7        | n n            |                |                |                |                |                |              |

Source: Foo and Grinyer (1994, p. 567)
essence of chaos is that it simply happens. Like a tornado suddenly and devastatingly appearing, chaos has come to impact on many Asean publicly listed corporations across diverse industries. Once a thriving, bustling region of sustained economic growth, Asean is now trapped into slow, painful economic recovery – if ever we recover. The Times (2003) put it on their cover page, metaphorically as “Tigers no more.”

Such a situation puts into deep doubts on the using economic forecasts – it may even be risky. For the world economy at present is so unlike two decades ago when there forecast is performable though imperfect (Hatjoullis and Wood, 1979). Overnight the once rosy economic forecasts by experts of Asean futures are rendered largely meaningless. In other words the timing of when chaos is to strike is in essence unpredictable. Such chaos has since wreaks such havoc through the turbulence it generates. Nobody is able to forecast as to when if ever, the Asean region is likely to recover the same economic momentum.

The Asian crisis also forces us to re-think about our assumptions about the external environment in our paper. No longer do we assume the environment always to be predictable. For we now experiencing the pains of having believed in that. We also widen our conceptual boundary into organizing. In re-writing we see ever more urgently the necessity of building in flexibility as part of organizing to cope with uncertainty.

Next we explain the model we use to frame our discussion.

2. Our model

One reason for implementing processes involving strategy within large organizations is to effectively cope with external, environmental uncertainty. To be fair, nobody dreamt turbulence could be of such an unprecedented scale as the Asian crisis. The textbook approach for coping with environmental uncertainty is through the use of a wide range of ever more complex forecasting techniques. The implicit rationale is to render ever the more predictable the uncertain. Yet if one may quote Zellner: “... I cannot recall studies in which their contributions to improved forecasting performance have been seriously evaluated (Garcia-Ferrer, 1998, p. 308). With the Asian crisis, Asean organizations are likely to question ever more about forecasting – and on a fundamental basis. Or putting it bluntly:

Is it any safer to use forecast?

Over the period of writing we come to prefer the term “forecastability” (thus our title) rather than our own original usage of “predictability”. We begin to find it useful to differentiate between these two terms. Here we explain why. For “forecastability” more immediately connotes more than mere predictability. In other words the degree of uncertainty (inversely related to predictability) is a phenomenon but forecasting means for us more. Forecasting encompasses theories, concepts, procedures, models, techniques and even ideologies of rendering into forecasts what one intuitively feel to be predictable. Or in a word forecasting is an integral part of the process the making of science: studies of how to render into forecasts what may inherently be predictable.

Thus, on theory, an environment may be predictable yet no forecasts are rendered. From the perspective of knowledge, when we ask the Chief Executive Officer (CEO) to rate how predictable an particular segment of an environment is, we are tapping into his experiential, tacit knowledge (Polanyi, 1958) base. This in contrast to saying it is forecast-able which implies the ability to convert the implicitly known to an explicit realm of knowledge.

Clearly we do not here read any more into our question than that the CEO is acknowledging his tacit knowing of how predictable a given segment of an environment is. In short we do not imply by a CEO’s responses that he is involved in judgmental forecasting in the sense as understood by forecasters (Wright, Lawrence and Collopy, 1996). For judgmental forecasting though an intuitive process, necessitates the maker to render explicit his forecast. More importantly “forecastability” connotes a profession (and despite their often dismal performance) now aimed with a set of well-known practices, tools and techniques. There is too a body of practitioners (Levenbach and Cleary, 1984): International Institute of Forecasters. The goal as it is put in the International Journal of Forecasting is:

... make forecasting useful and relevant for decision and policy makers who [may] need forecasts.) [word in bracket added by authors].

In our model as illustrated (see Figure 2), we put environmental (e.g. environments of demand, competition) forecast-ability as one of an enabling condition. Clearly the greater the forecastability of a given environment the greater the likelihood of forecasts being rendered professionally by forecasters. Yet do the availability of forecasts always lead to
actual forecast usage as part of the strategy process? For that reason we look at our empirical evidence (depicted as forecast usage) on this facet of the strategy process.

On theory, Asean organizations that use forecasts ought to be better cope with environmental uncertainty. The effectiveness on a whole of how Asean organizations are able to cope with uncertainty ought to be investigated. But the Asian financial crisis has given rise to a unique situation of chaos. That is one where the external environment turns to out to be almost entirely unpredictable. Or at least at the time that the crisis strikes it appears as such. As we had argued, forecasting is premised on the environment being “forecastable”. Thus if an environment turns out to be entirely unpredictable, logically it is meaningless to attempt to forecast it. Or at least it becomes dangerous to rely or depend too much on forecasts: in particular of using forecasts that are mere extrapolations (Armstrong, 1984) even if it is judgmental (Lawrence et al., 1985). This is not to deny plausible enhanced roles for techniques as scenarios (Wack, 1985) to cope with uncharted water.

Yet despite chaos, the Asean organizations still have to perform.

Since the question of the usability of forecasts or even forecasting does not arise in such a special circumstance as in the Asian crisis, we look to the internal organization. Indeed some scholars may even argue that without forecasting there can be no planning (Makridakis, 1981). According to early, widely quoted literature (e.g. Burns and Stalker, 1961) organizations learn to cope with environmental uncertainty by staying organic in contrast to being mechanistic. Indeed later literature (e.g. Galbraith, 1973) put the case more strongly. As cited in Willis (1987) there are three possibilities:

1. Organizations cope by more forecasting,
2. Be more flexible; or
3. Suffer performance decline endangering their continuity.

Since possibility (1) i.e. more forecasting is not possible the only other alternative is to be flexible or failing that to suffer performance decline (till bankruptcy). Thus we return to our perceptual database on Asean process of strategy to see if a priori that these Asean organizations are flexible.

In our model we therefore conceptualize the Asean organisation as sharing these two characteristics: bureaucracy as well as the organic. Such a model is consistent with an Eastern conceptualization of reality: one of duality. In other words of Yang that is in our case that of bureaucracy as the “hard, formal, structured” and co-existing at the same time the Ying – “soft, informal, unstructured.” The model is reminiscent of the symbol now widely associated by the Westerners with I Ching (Wilhelm, 1967) or “Book of Change”. An ancient revered Chinese text that had evolved over 5,000 years or more. Interestingly enough the text contains a collection of 64 hexagrams (six unbroken, Yang lines and/or broken, Ying lines) used by ancient seers gaining foresight.

3. Our discussion

Much earlier studies (e.g. Strigel, 1970; Taylor and Irving, 1971; Hayashi 1978; Lindsay and Rue, 1980; Kono, 1980; Capon et al., 1984; Grinyer et al., 1980, 1986) that use similar research methodology had investigated strategic planning processes in major European, American, Australian and Japanese organizations and industries. Here we explain our approach to discuss the empirical findings as regards the ASEAN region.

First we begin our findings with the perceptions by Chief Executive Officers (CEO) on the general predictability of the environment. By themselves these results ought to interest forecasters. For the higher the predictability for a particular segment of the environment as perceived intuitively by the CEO (knowing tactics) means a likelihood that forecasts may then be professionally rendered by forecasters.

In other words forecasts are the explicit rendering of what is predictable within a domain using tools of science. Yet it is possible for a certain segment of an environment to be perceived as predictable (e.g. by CEOs) yet no forecast may be rendered. Since these results are of substantial interest to forecasters we render the findings in Web-like charts. The purpose is to provide an immediate visual, one for each environmental segment so that its level of perceived predictability may be displayed across all industries simultaneously.

Second we then present our findings on the extent of the usage of forecasts, using typical Likert-type scales: none, little, some (as benchmark), large and very large. While there are many kinds of forecast that may empirically be investigated we focus on those where forecasts are likely to be prepared externally by professional forecasters – and to be utilized as part of the process of strategy.

In other words here we do not look into in-house forecasting per se.

Some of these expert forecasts are likely to be widely publicized in national newspapers across ASEAN. The world economy growth rate is one example that is prepared by professional forecasters within global institutions e.g. World Bank (e.g. World Development Report) or the International Monetary Fund IMF (e.g. World Economic Outlook). Some forecasts may only be available on a subscriber-basis (often prohibitively high) to forecasting service organizations: for example when forecast of a specific foreign exchange rate is requested for in a given time horizon.

Since US dollar is the main trading/transactional currency of Asean organizations -and root cause of their Asian crisis – there is every possibility of an Asean organization incorporating the dollar exchange rate forecast in formulating strategy. The forecasts of US dollar exchange rates are often reported in the press. As such Asean organizations may
without being a subscriber incorporate these forecasts in strategy formulation.

There are other forecasts (e.g. forecast on rate of growth within a given industry) made by specialist forecasters that may be circulated to members and to the press as well. These are often the work of staff members working within industry-based, member-oriented, global organizations.

There are other forecasting interests that are more the concerns of national, often governmental bodies, like Ministry of Manpower or Labour, trade unions and employers’ organizations. For example, wage rates and local, national rates of inflation. These may too be widely publicized when made. Asean organizations have the alternative of subscribing for other sources of forecast such as Economic Outlook by The Economist. Here there is a remote possibility that some Asean organizations may generate their own internal forecast drawing on UN statistical sources. Thus there is every possibility of Asean organizations incorporating these forecasts as part of the strategy process.

Third, we present our findings on how well Asean organizations as a whole are coping with environmental changes. One perspective is to cast this as an interactive outcome of forecasting-strategy process (Dino et al., 1982; Hogarth and Makridakis, 1981). Here we define forecasting broadly to include the usage of forecasts. These are outcomes in the given context of Asean with the kind of uncertainty that CEOs perceive to be prevailing as well as the level of forecast usage. These perceptions are of the period prior to the Asian financial crisis when ASEAN region as a whole is still experiencing sustained growth. In rounding up the paper we discuss these issues in an environment of crisis.

We argue that when as the environment turns to be chaotic the Asean organizations turn to rely on their own resources for the wherewithal to cope with radical, adverse changes. Those fail to do so simply suffer the fate of being no longer viable as Galbraith had posited. We attribute the continuing performance of these Asean publicly listed organizations (with 43.9 percent Singaporean organizations dominate in the Asean sample) to the simultaneous presence of both the bureaucratic as well as organic. That is by being internally flexible in their strategy processes. From the evidence we argue that these qualities to be already inherent within Asean organizations prior to the crisis.

We begin with the environment.

4. Environment

In this study the extent of predictability across a wide range of environmental segments are being investigated. We cover both the manufacturing and services sectors of economy. The environmental segments include the immediate task environment consuming resources (i.e. these environments of materials, manpower and funds; see Figure 3) in the process of catering to anticipated demand – another environmental segment. Then we also investigate predictability within such environmental segments as technology, competition and regulations.

These more generic environmental segments (demand, technology, competition and regulations) are shown collectively in Figure 4). Logically the more predictable an environment the more likely the tendency for more application of quantitative and qualitative techniques. This may explain why Asean organizations claim for greater future use of both the quantitative and qualitative techniques across many industries (Foo and Foo, 2001).

What are the findings of the perceived environment?

Some interesting, general comments may be made given our analyses of the empirical results. This despite the many different segments of the environment being investigated across many, widely different industries:

- On the whole the environment is predictable. This is so for all the industries across the many different segments of the environment. There is rather consistent pattern: of more than some (i.e. >3.00; as benchmark in all diagrams) level of predictability.

Given this finding of largely predictable environment it becomes interesting to the few exceptions.

- The exceptions from the observed pattern: hotels and technological environment (2.25); retail and wholesale trading with regulatory environment (2.89); agriculture and material resource availability (2.78).

Our conclusion is that these results are sporadic. They do not significantly detract from our observation of a general predictability as encountered by the large, publicly listed Asean corporations.

Next we turn to look at those results where the environment segment is perceived to be highly predictable. One possible explanation for high predictability (operationalised as “largely” [i.e. >4.00] predictable) may lie in the maturity of the industry. Another related explanation is the long operating experience.
These are the results:

Chief Executive Officers within the food, textile and paper industries found their “task environment” to be “largely” predictable (materials, manpower and funds: 4.17, 4.17 and 4.25 respectively). This is also the case for coal and metal ore mining industry (materials, 4.00; manpower 4.25 and funds 4.25). Such a finding lends some evidential support for our conjectures of maturing industry and long operating experience as possible explanatory factors.

Given these findings we therefore anticipate a wide usage of forecasts by Asean corporations as part of their strategy process. Also with the high cost and sophistication required to prepare these kinds of forecasts (e.g. growth rate of world economy) internally, we expect on logic that Asean organizations tend to use what are externally available.

If formulated in a style reminiscent of a hypothesis:

The more predictable the external environment as perceived by the Chief Executive Office the greater the likelihood within his organization, the usage of forecasts as part of the process of strategy. In particular in the usage of forecasts prepared and rendered available (in the manner as discussed earlier) by professional forecasters. This is our anticipation.

5. Use of forecasts

Given our anticipation the results are on a whole rather disappointing.

Yet the pattern and nature of forecast usage (see Figures 5 and 6) seems to make intuitive sense. We split the presentation of forecasts into two main types: quantifiable, as in interest rates, foreign exchange rates, wage rates, inflation rates, industry growth rates and world growth rates and the mainly based on qualitative assessments and opinions as in the case of the risk of political changes (Nagy, 1984).

We review each specific type of forecast usage in turn.

Interest rates

We have anticipated wide and high usage of this forecast. Yet there are industries where the scores are even below some (”3.00”) such as agriculture, coal and metal ore mining and chemical. On reflection these results begin to make sense. For these results may reflect the level of borrowings that may be necessary due to the heavy use of new machines. Arguably unlike an industry like metals, minerals and others (most highly at 4.17), agriculture probably is less in need to be heavy, long-term borrowers of funds.
Foreign exchange rates

Our initial response is to expect findings for the usage of foreign exchange rates to be consistent with those of interest rates since these pertain to the financial. On the whole the findings are intuitively appealing. There are possible explanations.

Wage rates and inflation

In contrast with interest rates and foreign exchange rates the usage of both wage rates and inflation forecasts are by far, more narrow (i.e. counting cases for scores >3.00) across the industries. Even in the supposedly more intensive labour intensive industries within manufacturing there seems to be less of a concern over wage rates than of interest rates, foreign exchange rates or even inflation.

There is perhaps one explanation for this observation: wage rates are easily controllable within firms – they may retrench off staff with high wage rates. But adverse movements in interest, foreign exchange or inflationary rates are almost entirely outside of corporate control. Since real wage rates are often decided after considering the inflationary factor, we map the usage of these two forecasts together for ease of comparisons.

Industry and world growth rates

Now we turn to usage of forecast industry growth rate as part of the strategy process.

This is the most heartening of all. For as we anticipated there is an almost consistent wide and rather high usage of industry rate forecast. The exception of agriculture (2.80) is easily explained away – there are just too many agricultural products for industry forecast to make sense. In place of industry forecast, firms in agriculture are more likely to look to forecasts of commodity prices. The other remaining exception of construction, transport, real estate and recreation (2.71) is even more intriguing and deserves to be independently discussed.
One of the main causes or for some symptoms of the Asian financial crisis is in the overheating of this industry. Our finding here suggests a plausible reason why – and in it a good lesson. That even these major, publicly listed organizations choose to ignore industry forecasts prepared by professional forecasters. In other words the evidence is suggestive that if there are any warnings of overheating in the real estate sector these are likely to be ignored in their process of strategy. Those involved seem to pin hopes on an ever, rising market. The bubble burst when the ASEAN region is hit by the Asian financial crisis. Dwindling of property prices happen even for Singapore.

Political changes
Here the results are interesting.

One, there seems to be a clear divide between manufacturing and services. Asean organizations within the manufacturing sector (3 out of 4 industries >3.00, some) tend to be more prepared to weave in forecasts of political changes as part of strategy process. But these are not scored highly (i.e. 4.00 or more).

Surprisingly within the chemical industries there too is a low (<3.00) use of external political forecasts. Perhaps the publicly listed organizations in the chemical industry are so long established that they are able to read the political situation for themselves.

We turn to industries in the services sector. Out of the seven industries only in one (agriculture, 3.40) is there some (i.e. >3.00) use of forecasts of political changes. Indeed some are so low as to border on little (at 2.00, little) use (e.g. retail and wholesale trading, 2.11).

Two, overall the results are still consistent with the broader picture of a low usage of forecasts as part of the process of strategy. There is a plausible explanation for these results. That political changes are better anticipated by those who live in the country than by any outside, professional party.

We review these results from an industry perspective.

Only in some industries are there widespread “some” (>3.00) use of forecasts. Indeed it is only within the machineries industry that we find a consistent use of all types of forecasts as mentioned in the survey. That is for the manufacturing sector. Within the services sector it is only inside the retail and wholesale trading that there is such a comparable consistency of the usage of forecasts (except for “political changes” 2.11; see earlier discussion).

What surfaces as most interesting is that the results tell us what kinds of forecast matter more within each industry. For example in the insurance, investment and the financial institutions: the uses of forecasts are narrowly and deeply focused onto interest rates (3.56), industry growth (3.88) and world economy growth (3.11). These results are intuitively appealing.

Still there are surprises.

An almost counter-intuitive result is of the chemical industry. Here the use of forecasts turn out to be so restrictive emphasizing only foreign exchange rates (3.17), industry growth (3.25) and world economy growth (3.08) – in other words in their usage of forecasts during the strategy process these Asean chemical organizations behave almost like the finance institutions!

Such is the picture of the usage of forecasts within the sample of Asean, publicly listed corporations from our database. It is intriguing to ask about outcomes given such a scenario of predictable environment and the less than expected usage of forecast. That is in how well these Asean organizations are coping with changes in the environment.

6. Outcomes
What then are the outcomes in coping with changes through the Asean strategy process across the many different industries? Briefly the results suggest that despite the rather low use of forecast Asean organizations are capable of coping with change from the external environment.

That is before the onset of the Asian crisis.

Indeed three out of the four industries inside the manufacturing sector (exception: metal, minerals and others with 2.80 for both the “regulatory” and “funds” environments) have scored more than 3.00 (often more and as high as 4.08). These are CEO’s own assessments of the effectiveness of the strategy process in coping with the environmental changes.

Within the services sector of the ASEAN economy a majority of the industries consistently scored more than 3.00 (often more and as high as 4.25) across almost all the different segments of the environment. These are insurance, investment and the financial institutions (except for materials 2.88 which in any case did not matter in services industry); banking; agriculture (except also for materials 2.78; which again do not matter within agriculture); and coal and metal ore mining.

Also across some segments of the environment, the scores obtained are for almost all the industries consistently 3.00 (often more). These environmental segments being demand, competition, manpower (except for construction, transport, real estate and recreation), technological (except for construction, transport, real estate and recreation and hotels) and funds (except for metals, minerals and others).

Relatively, Asean organizations have marginally more difficulties in coping along with changes in the materials environment: (four out of eleven industries and all in services scored less than 3.00). This may be explained: ASEAN is during the period of the survey experiencing fast growth. Thus this is likely to generate resource scarcity (Barnett and Morse, 1953) and thus difficulties of coping.

Clearly in such an industry as construction and real estate (where it is lowest at 2.67) a boom period will turn essential raw materials (e.g. cement) into an ultimate resource (Simon, 1981) in the competition. This may be less pressing problem during a period of sharp economic decline. This is the case
now for the ASEAN economy generally – and for Singapore especially following a series of crises: the Asian financial crisis, September 9/11 in New York and then the SARS virus – and what may be next?

The regulatory environment is another where Asean organizations find it relatively somewhat more difficult to cope (three out of eleven industries below 3.00; and interestingly with the lowest obtained score of 2.44 for trading industry). Arguably one approach to coping with a changing regulatory environment is for the Asean organisation to stay flexible. Next we turn to the other possibility: keeping the internal organization flexible (see Figure 7).

7. Process of strategy
Burns and Stalker once dichotomized the organization of their firms as organic or mechanistic. They explained the presence of these organic qualities as necessary to cope with the environmental uncertainty. Here we backtrack into our database to generate statistics to explore if explanations for coping with uncertainty may lie not in forecasting per se but more in the nature of Asean strategy process.

What we find is most interesting.

In our sample all the Asean scores across the many different industries are consistently on the high for free exchange of insights and experiences. It is worth highlighting that all the scores on free exchange in the Asean industries are more than 3.50 (column (a) in Table II). This is suggestive of a certain internal flexibility or of these organizations being organic. This may be why Asean organizations are able to be creative through the process of strategy: “generation of innovative ideas” too is highly scored (> 3.00; often above 3.50) though less consistently so than for free exchanges.

In other words there is a certain quality of fluidity in the Asean model of the strategy process. Thus unlike Western experiences, it thus seems possible at least within Asean organizations to generate not just merely plans but also innovative ideas. Here is where it is most intriguing: simultaneously there is a presence of bureaucracy!

Aspects of bureaucracy are manifested by high formality of the process of strategy as in record keeping; “record-keeping of agreed plans” (column (e)). Indeed in manufacturing sector too other features of bureaucracy are present too as in the highly organized and structured processes: “planning in distinct phases” and “planning is mainly top-down”. Innovative insights are generated despite the planning process being seen as largely a top-down process, itself an aspect of bureaucracy (mostly above 3.00) with limited room for bargaining on targets (mostly below 3.00).

Yet interestingly another typical device of bureaucracy to realize efficiency in planning is widely absent (except in “insurance, investment and the financial institutions” and “food, textile and paper”): the “use of standard planning forms”. This may be seen as a deliberate effort on the part of these Asean organizations to avoid limitations of bureaucracy.

These findings thus imply a readiness on the part of top management to explore new, yet to be confronted issues through the process of strategy. Such findings also suggest a deep involvement by the top management so as to cope with surprising or even shocking issues (as for example, Asian financial crisis) as part of the process of strategy. These results reinforce our argument of a more freely flowing, de-structured (except for planning in phases) nature of the Asean process of strategy.

A picture thus emerges.

Bureaucracy thus facilitates rather than hamper free and innovative exchanges of ideas. This happens as integral to the process of strategy. This suggests also why there will still be emphasis on the process of strategy across Asean organizations even if crises are made in the for strategic planning to be abandoned. For the presence of organic features in the Asean model of strategy process enables them to cope with uncertainty.

8. Forecasting, strategy and crisis
Here we will summarize some of our broader insights into forecasting, strategy and the crisis. That there are possibly differences in the nature of the process of strategy between the East and West.

First, an explanation may lie in culture. That Eastern approaches to management are inherently the more organic, “natural”, less “forced” or “assumed” and even as empirically seen less goal, strategy-driven than the West (Foo, 1992). So arguably an Eastern business organization is apt to emphasis a readiness on adapting to current changes thus there is lesser need to rely on forecasts.

One symbolism revered by the Chinese is water for its adaptability. Put water into any container and it assumes its shape. Thus many of the Asean, ethnic Chinese owners who own and control these Asean publicly listed organizations in confronting the Asian crisis are likely to see in it an opportunity for sharpening their adaptive powers.

Second, practices of strategy may be derived from one’s own reading and learning of how to manage. Since these Chinese owners are likely to be followers of Sun Tzu in reading and following his _Art of War_ for applications in business it will be instructive to re-discover what Sun Tzu had written on the use of forecasting. In Lionel Gile’s classic translation of the _Art of War_, Sun Thu emphasises not exactly forecasting but foreknowledge. For Sun Thu however he is emphatic that such a casting of the future must be derived from other men and not through the process of any deductive calculation.

Third, another explanation may be situational.

Western strategic planning in the early 1970s when these practices really first takes off is undertaken in a situation that
favours forecasting. The period of late 1960s, 1970s and early 1980s is also an era relatively more stable and thus forecast-able. In such an environment forecasting is likely to be perceived to have a role and becomes rapidly incorporated into strategic planning. Also many MBA courses (originally US educational product) emphasis courses like strategic planning involving forecasting. It is no wonder that for many in the West see forecasting as the essence of strategic planning.

Finally one onslaught on Western strategic planning (Mintzberg, 1994) is in their perceived lack of flexibility. Ironically one’s deep beliefs in forecast-ability may unconsciously induce one to become inflexible: i.e. of one sticking to a plan based on a predicted future. For if an environment is indeed forecastable, it makes sense to adhere rigidly to plans. But if subsequently and repeatedly these forecasts turn out to be so much in variance with actual, future outcomes, then it is inevitable for Western managers to grow to be disillusioned and frustrated with the process of strategic planning.

The anti-strategic planning scholars are only giving vent to these feelings about the inadequacy in the Western, typically forecast-grounded approaches to strategic planning. For as we have just seen for some leading scholars (e.g. Makridakis...
1981) strategic planning is even impossible without forecasting! Therein may lie at least another explanation for Western strategic planning being less organic than the Eastern (see Figure 8).

We map out East-West differences two likely dimensions. One in the attribute of being organic and the other of forecastability. We position Asean process of strategy as being in the quadrant of high on being organic and low on usage of what have been professionally rendered as forecastable. Relative to this Asean strategy we then map out the status of Western-style strategic planning as low on being organic and high on reliance on what is forecastable. The crisis in our view is likely to reinforce (thus the arrow) to be even more deeply oriented towards being higher on the dimension of organic and lower dependence on the forecastable.

9. Forecasting, chaos and foresight
To conclude, we argue for these propositions on the impacts of chaos on the future roles of forecasters:

- The roles of forecasters in predicting accurately, the future trends of exchange rates are much reduced. The Asian financial crisis had awakened the consciousness of many Asian CEOs to one reality: our world is largely chaotic and forecasts, most difficult if not impossible.

- While absolute, quantifiable reduction in uncertainty (e.g. exchange rates) through forecasts may be unrealizable, there still remains a role for forecasters. A role almost
reminiscent of I Ching: ancient Chinese tribal chiefs (equivalent to CEOs) learned to consult this five thousand years old oracle to explore the future. The I-Ching does not tell you what the future exchange rate will be but through divination paints a probable, alternative future scenario. In a cryptic language, I Ching tells the inquirer what had to be observed to bring about the new situation. The main purpose of I Ching is to provide the inquirer with deeper insights into his current dilemma and if not some deeper foresight. Interestingly, Sun Tzu did not believe in any form of forecasting but only on the gaining of foreknowledge through reliable sources – spies!

Ultimately how well the corporation or organization is able to cope with uncertainty depends not on forecasting per se but on whether the CEOs possess the foresight. In the Asian context, popular beliefs are that only the wise, long experienced and seasoned CEOs may anticipate and peer into the future.

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