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Strategic Issue Management

H. IGOR ANSOFF
European Institute for Advanced Studies in Management, Brussels, Belgium

SUMMARY

The paper presents a systematic approach for early identification and fast response to important trends and events which impact on the firm. Two versions of such an approach are described: a *strong signal* and a *weak signal strategic issue management system.*

Strategic issue management, which responds to signals in 'real time', is compared to periodic strategic planning, and criteria for choice among the three are proposed.

EVOLUTION OF MANAGEMENT SYSTEMS

In the course of this century business firms have developed numerous systematic responses to changing environmental conditions. These *management systems*, as they are now called, typically were invented to cope with problems which were imperfectly understood. As is typical with inventions, each appeared to be independent of the preceding ones. Enthusiastic adherents of the latest system claimed that it replaced and made obsolete all of the preceding ones.

In the perspective of time and experience, there is now a clear understanding of the problems which the respective systems are best equipped to solve, as well as of the limits of their applicability. It is further clear that the respective systems are complementary, and frequently mutually supporting, approaches to solving different managerial problems.

In Table 1, we have summarized the characteristics of five modern management systems. The Table shows the different purposes which the respective systems were designed to serve. It also shows the view of the world (described by the *basic* and the *limiting assumptions*) that is assumed to exist and which determines both the strengths and the limitations of each system.

The first two systems: *long range planning* and *strategic planning* are, respectively, inventions of the 1950s and the 1960s. Long range planning is now widely used in business firms, while strategic planning, a slower starter, is now gaining wide-spread acceptance.

Strategic management and *strategic issue management* are recent newcomers, now being developed and tested by firms and by some non-profit enterprises.

As has always been the case in the past, as these new systems are gaining acceptance, the need for further developments is already perceivable. The last system of Table 1, strategic surprise management, is a likely candidate for the future.

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Table 1. Modern management systems

	Control	Long range planning	Strategic planning	Strategic management	Strategic issue management	Surprise management
Purpose	Control deviations and manage complexity	Anticipate growth and manage complexity	Change strategic thrusts	Change strategic thrusts and change strategic capability	Prevent strategic surprises and respond to threats/opportunities	Minimize surprise damage
Basic assumption	The past repeats	Past trends continue into future	New trends and discontinuities	Expect resistance. New thrusts demand new capabilities	Discontinuities faster than response	Strategic surprises will occur
Limiting assumption	Change is slower than response	The future will be 'like' the past	Past strengths apply to future thrusts. Strategic change is welcome	Future is predictable	Future trends are OK	Future trends are OK
	← Periodic →				← Real time →	

Another need, which we have now shown in Table 1, is to adapt *all* management systems to the new realities of power within the firm. This need, already strongly felt in many European countries, will modify systems, which have been historically focused on the needs of management, to include the needs of other social partners which now participate in the strategic decision making of enterprises (Ansoff and ten Dam, forthcoming).

An extensive literature is available on long range planning and on strategic planning. Modest literature is available on strategic management. [For this author's contributions, see Ansoff (1972, 1979), Ansoff, Declerck and Hayes (1976).] Less has been written on the currently urgent strategic issue management, see Ansoff (1975, 1976), Ansoff, Eppink, and Gomer (1978), Ansoff, Kirsh, and Rowenta (forthcoming).

The articles on strategic issue management have explored the strategic issue problem and the newly important phenomenon of weak signals. There is now a need to translate these explorations into a straightforward, practical 'how to do it' process. It is the purpose of this paper to describe such a process.

WHY STRATEGIC ISSUE MANAGEMENT?

As we shall describe it, a *strategic issue* is a forthcoming development, either inside or outside of the organization, which is likely to have an important impact on the ability of the enterprise to meet its objectives. An issue may be a welcome issue, an *opportunity* to be grasped in the environment, or an internal *strength* which can be exploited to advantage. Or it can be an unwelcome external *threat*, or an internal *weakness*, which imperils continuing success, even the survival of the enterprise. Frequently, external threats, because they signal significant discontinuities in the environment, can be converted into opportunities by aggressive and entrepreneurial management. In fact, such ability to convert threats into opportunities has been one of the most prized characteristics in the history of American management.

The concept of strategic issues first appeared during the evolution of strategic planning. When strategic planning was first introduced in practice, the expectation was that strategies will be revised annually. But experience quickly showed this to be both impractical and unnecessary. Impractical because strategy revision is an energy and time absorbing exercise which, if conducted annually, overloads management. Unnecessary because a strategy is a long term thrust which takes several years to implement. Unnecessary annual revisions, instead of improving a strategy, will cause vacillations in managerial behaviour and prevent a fair test of the strategy.

As this understanding grew, business firms began to space comprehensive revisions of strategies several years apart. In the beginning of each year's planning cycle a review of last year's progress focuses attention on strategies which have encountered important strategic issues. A comprehensive analysis of environmental trends and prospects identifies additional strategic issues. Resolution of these strategy and environment-derived issues becomes the central preoccupation of the annual planning process. Thus *strategic issue analysis* (analysis of impact and response to significant developments) was added to *strategy* analysis (determination of thrusts for the future development of the enterprise).

In recent years two considerations have made it desirable to separate strategic issues analysis from the annual strategic planning cycle. The first is that some enterprises

either cannot afford or do not need the cumbersome paraphenalia of annual strategic planning. The former is the case for smaller enterprises which must cope with environmental turbulence, but have neither the managerial capacity, nor the resources, for annual planning. The latter is the case for an enterprise whose basic strategic thrusts are clear and relatively stable, but whose environment is turbulent.

The second factor has been a growing incidence of 'fast' issues, caused by events which come from unexpected sources and impact quickly on the enterprise. The combination of speed and novelty of such issues may make them too fast to permit timely perception and response within the annual planning system. Some of these issues, which occur between planning cycles, may impact too quickly to be delayed until the next cycle; others, which occur during the planning cycle, may impact before the planning period is over.

When either or both of the above factors is present, it becomes desirable to separate issue resolution from the annual planning cycle.

WHAT IS A STRATEGIC ISSUE MANAGEMENT SYSTEM?

A strategic issue management system (SIM) is a systematic procedure for *early* identification and *fast* response to important trends and events both inside and outside an enterprise.

Early identification can be assured in the following ways:

(i) Unlike the first three systems of Table 1, which address issues during an annual planning period, SIM is 'real time', continuously preoccupied with strategic issues throughout the year. In practice this means a periodic (say monthly) review and updating of *key strategic issues list*.

(ii) This also means a continuous surveillance, both inside and outside the enterprise for 'fast' issues which may arise in between the reviews. When such issues arise, a 'red light signal', alerts management of the need for immediate attention.

Fast response to trends can be assured in the following complementary ways:

(i) The responsibility for managing the system is assumed by a senior management group which has the resources and the authority to initiate prompt action without unnecessary delays.

(ii) If necessary, SIM cuts across normal hierarchical organizational lines. Senior management assigns responsibility for individual issues directly to units which are best equipped to deal with the issue, even if this means reaching across several hierarchical levels. If, as is often the case, an issue is not particular to a unit, an *ad hoc* project is formed, composed of both affected and expert individuals. Resources are assigned directly to the project, and it reports directly to senior management.

(iii) The assigned responsibilities are not for planning the response but for resolving the issue. Thus SIM is a management *action* (and not only a planning) system. With several projects under way and continuous updating and revision of the strategic issue list, the usual separation between planning implementation periods is not visible in an SIM.

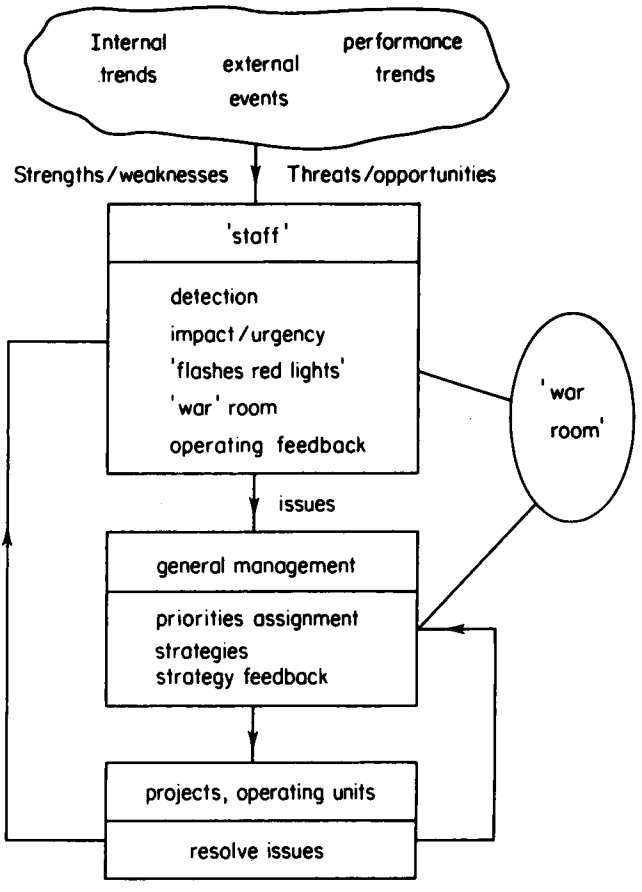

Figure 1. Responsibilities for strategic issue management

There are a number of ways in which responsibilities for the system can be assigned. One way is illustrated in Figure 1, which divides responsibilities among three groups:

(1) A '*staff*' group which is concerned with detection of trends, evaluation of their impact and timing, assessing the time required for response, and alerting decision makers about sudden and important issues. This group is also responsible for maintaining a 'war room'—an up to date display of the key issue list, their priorities and the status of the projects. As part of this function, the 'staff' group concerns itself with monitoring the progress of the various projects toward their assigned objectives.

On Figure 1, we put 'staff' in quotation marks, because this surveillance–interpretation–measurement function will be handled differently in different settings. In a large enterprise a separate staff department, probably a part of the larger planning department, would be set up for the job of issue analysis. In a small firm, two or three top managers would put on 'staff hats' for the purpose of systematizing the strategic issues, preferably with the part-time help of one of the few available assistants.

(2) The second, *general management*, group (which in a small firm may be the same as the 'staff' group) is responsible for assessing the relative importance of the issues,

selecting the key strategic issue list, deciding on how the respective issues are to be treated, assigning responsibilities for their resolution, and providing appropriate resources.

Since response to some urgent issues may be started when their ultimate significance is still unclear, a critical general management responsibility is to exercise *strategic control* over such issues. This means continual re-evaluation of the significance of issues and redefinition of both priorities and the direction of projects. This also means timely cancellation of projects dealing with issues which turn out to be false. Strategic control is a key factor in the success of an SIM, because as experience shows, once started, projects tend to acquire a life of their own and are frequently continued beyond the point of diminishing returns.

(3) The third group of participants are the 'workers'—the units or *ad hoc* groups which have been assigned the responsibility for respective issues. On occasion, when the strategy of response to an issue is not clear, these groups may be asked to act as planners and to submit action recommendations. But the success of SIM depends on making the projects *resolvers*, and not planners, of issues. Again, experience shows that, unless this role is clearly established, SIM may degenerate into 'paralysis by repeated analysis'.

ASSESSMENT OF IMPACT

The success of an SIM depends on its ability to complete the response in time to head off threats and to 'cash in' on opportunities. As we have seen above, the timeliness of response depends, on the one hand, on the anticipation of changes, and on the other hand, in using expeditiously the time provided by the advanced warning.

Early detection of strategic issues increases the time available for response. But in the case of 'fast' issues the 'resolving power' of forecasting begins to run up against limits: timely information, of a quality high enough to permit specific and well-considered responses, can no longer be obtained. To make SIM work, it becomes necessary to detect less specific 'weak signals' and to respond with correspondingly 'weak responses', which are progressively strengthened as information becomes more specific.

In an earlier paper (Ansoff, 1976), we have developed an approach for detection and use of weak signals. The concept of weak signals is summarized in Appendix 1. An SIM based on weak signals needs a trained staff and a substantial investment time. Therefore, its use should be reserved for environments in which very 'fast' changes are frequent. In environments of moderate turbulence a simpler and less sophisticated procedure to detection and evaluation of issues will suffice. In this section we shall outline the basic steps for strong signal SIM. In Appendix 1 we shall compare the conditions under which the strong and weak SIM should be used.

The principal steps in this procedure are shown in Figure 2. As the Figure shows, there are three possible sources of information about impending strategic issues: the trends in the external environment, the evolutionary trends within the enterprise, and the trends in its performance. In Tables 2, 3, and 4 we present 'starting lists' of the respective trends. Table 2 shows a list of environmental trends which today are of importance to a majority of firms in the industrialized capitalist countries. Table 3 presents a list of internal characteristics which change over time and typically give rise to issues. Table 4 is a comprehensive list of performance attributes by which enterprises measure their successes and failures.

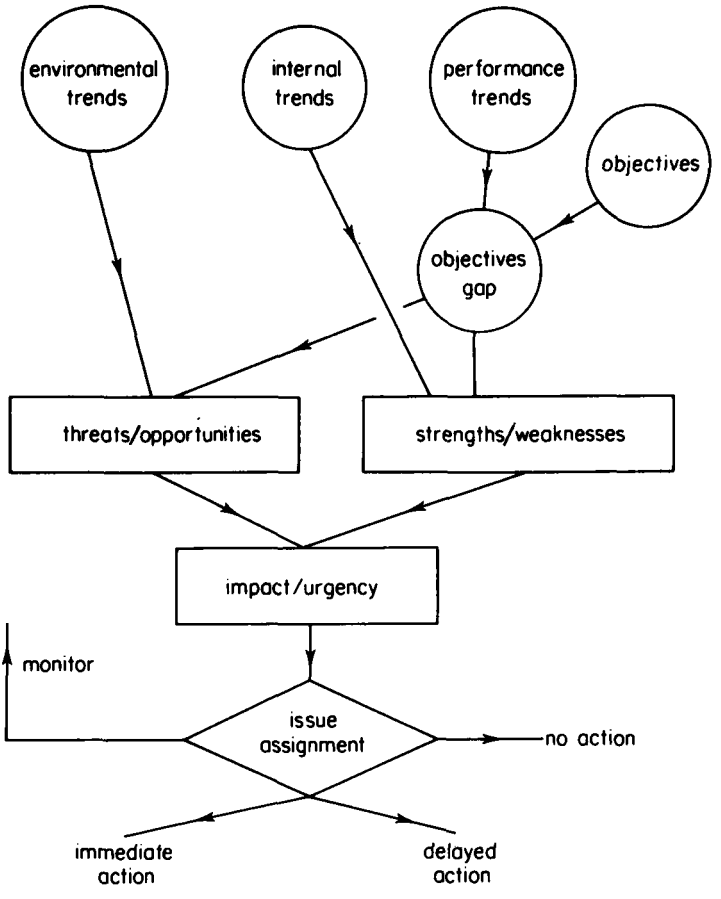

Figure 2. Strategic issue management (SIM)

The first step in the analysis is to eliminate from each list the attributes which do not apply to the particular enterprise and to identify and add additional attributes which are specific to the enterprise.

The second step for Tables 2 and 3 is to identify the potential future impact of the trends on the future performance of the enterprise. The ideal approach is to estimate impact on the performance attributes which have been identified as the applicable objectives in Table 4. But in many practical situations the information for such estimates may not be available. A practical substitute is to assign on a judgemental basis, a single impact number (say, on a scale of $+10$ to -10) to the impact of each of the trends (while keeping in mind that this number represents a summary judgement on the performance on all of the relevant objectives).

The impact of both external and internal trends may be positive, or negative, or both. The latter case may indicate either a range of uncertainty in the evaluation, or the expectation that the trend will be both beneficial and harmful to the enterprises.

In business literature, a positive environmental impact is usually described as an *opportunity*, a negative one a *threat*; positive impact of an internal development is a *strength* (with respect to this particular trend), and negative impact a *weakness*.

Table 2. A list of environmental trends

1. Trends in the global market place (protectionism *vs* free trade)
2. Growth of government as a customer
3. Development of the Common Market
4. Business with socialist countries
5. Economic and political trends in developing countries
6. Monetary trends
7. Inflationary trends
8. Emergence of the multinational firm
9. Technology as competitive tool
10. Bigness as competitive tool
11. Saturation of growth
12. Emergence of new industries
13. Technological breakthroughs
14. Growth of the service sector
15. Affluent consumers
16. Changes in age distribution of customers
17. Selling to reluctant consumers
18. Social attitudes toward business
19. Government controls
20. Consumer pressures
21. Union pressures
22. Impact of society's concern with ecology
23. Impact of 'zero-growth advocates'
24. Shrinking product life-cycles
25. Intra-European nationalism
26. Conflict between multinational firms and national interests
27. Public distrust of business
28. Shrinking of forecasting horizons
29. Strategic surprises
30. Competition from developing countries
31. Strategic resource shortages
32. Redistribution of power within the firm
33. Changing work attitudes
34. Pressures for employment maintenance

Table 3. A list of internal trends

1. Size
2. Complexity
3. Structure
4. Systems
5. Communications
6. Power structure
7. Role definitions
8. Centralization/decentralization
9. Values and norms
10. Management style
11. Management competence
12. Logistic ('work force') competence
13. Capital intensity
14. Technological intensity
15. Product diversification
16. Market diversification
17. Technology diversification
18. Other

Table 4. A list of objectives

1. Growth
2. Profitability
3. Cyclical stability
4. Flexibility
5. Invulnerability to environmental surprises
6. Solvency
7. Debt/equity
8. Invulnerability to take over
9. Competitive leadership
10. Innovativeness
11. Market share
12. Internal social climate
13. External social responsiveness
14. Good citizenship
15. Work satisfaction
16. Responsiveness to aspirations of internal constituencies (identify both constituency and aspirations):
    a.
    b.
    c.
    d.
17. Responsiveness to external constituencies
    a.
    b.
    c.
18. Other

The next step is to give substance to these codewords by identifying and describing the specific strengths/weaknesses (S/W) or threats/opportunities (T/O) presented by the trends. In Figure 3, we suggest a simple format for analysing the impact of the environment. The format for the internal impact will differ only in the labelling of the last two columns which would be labelled 'strengths' and 'weaknesses', respectively.

The need for response is to be determined not only by the *size* of the impact but also by its *urgency*. The latter is determined by comparing estimates of the *timing* of *the impact* of the trend and of the *time needed*. Thus, for example, a trend which has high impact, but will occur far enough into the future to permit a delay of the response would be assigned low urgency. In Table 4 we have provided room for estimates of timing of impact, time needed for response, and of urgency.

In the preceding discussion, the list of objectives in Table 4 has been useful as a guide

TRENDS	IMPACT	TIMING OF IMPACT	RESPONSE TIME	URGENCY	THREATS	OPPORTUNITIES

Figure 3. Impact/urgency of environmental trends

for estimating the impact of internal and external trends. Another use is for determining additional threats and weaknesses from the performance trends of the enterprise. As shown in Figure 3, this is done by comparing the objectives with the performance trends to determine the objectives gap, and the causes of the gap are traced back, either to internal weakness, or to the external threats.

This source of threats/weaknesses is easy to tap in a business firm, where accounting data typically contain a record of historical performance. It is simple to extrapolate this history into the future, which is, in fact, routinely done in many firms. Furthermore, many firms make their future goals and objectives explicit which permits a routine determination of the objectives of gap by staff.

In enterprises in which objectives are not made explicit, an examination of trends by general management, with the aid of Table 4, is required in order to establish the gap. Finally if, as in the case of many non-profits, accounting data are not in a form which permit extrapolation of performance, this source of threats/weaknesses becomes unattractive and difficult to tap.

ASSIGNMENT OF PRIORITIES

In order to assure adequate attention to both positive and negative prospects, it is next useful to list separately the opportunities/strengths and threats/weaknesses. The types of action to be taken for each list can next be determined with the aid of a matrix, such as shown in Table 5.

Table 5. Priorities for strategic issues

	Impact		
Urgency	Low	Significant	Major
Low	Drop from list	Periodic review	Monitor continuously
Significant	Drop or periodic review	Periodic review or monitoring	Plan delayed response
Pressing	Monitor	Monitor continuously	Respond immediately

Key strategic issue list

Each T/O or S/W is assigned to one of the cells. As Table 5 suggests, the entries in the low impact category will, as a maximum, be monitored and, as a minimum be dropped from further consideration. The lower right cell requires immediate action, and response to strategic issues in the cell above it should be preplanned. In firms with periodic planning these issues would be delayed until the next planning cycle. The issues in the remaining cells would be assigned to monitoring, with pressing and major impact issues receiving priority attention.

The approach of Table 5 helps solve a difficulty commonly encountered in enterprises: that the number of issues exceeds the capacity to respond. With the aid of

Table 5 issues to be acted upon can be selected commensurately with the available resources, but the larger list of issues is retained and continuously monitored.

The procedure described in this paper is comprehensive in the sense that it cross-checks S/W/T/O facing the enterprise by reference to three independent sources. A simpler procedure, called *impact analysis*, which has been used in practice, confines attention to one source only—the external environment. A somewhat more complex procedure (still confined to the environment), called *cross-impact analysis*, recognizes that the respective impacts are not independent. The cross-impact matrix assesses the likelihood of simultaneous impacts by more than one trend.

Still another approach recognizes the interdependence of threats/opportunities with strengths/weaknesses. We shall discuss this approach in Appendix 2.

There is no one 'correct' approach to all situations, and any one of them can significantly improve the responsiveness of the enterprise to external turbulence and internal complexity.

Three simple rules can be used to guide the choice for a particular enterprise. First, the approach must be responsive to the complexity of the challenges, second, the approach must be as simple as the complexity permits; third the approach must be feasible within the resources of the enterprise. The advantage of the relatively simple SIM described in this paper is that it can be used by enterprises of any size, and it requires very little prior experience with formal management systems.

PERIODIC PLANNING AND SIM

As previous remarks already suggested, SIM is emerging to fill a gap in periodic planning and not to replace it. The two types of systems are addressed to complementary purposes: periodic planning concerns itself with determining the basic thrusts of an enterprise and assuring coherence and cooperation among different parts of a complex enterprise. SIM is addressed to dealing with deviations from these thrusts which may occur as a result of new opportunities/threats strengths/weaknesses.

An enterprise which is well coordinated (or too small to have coordination problems) and which has well developed and promising strategic thrusts, may need only a simple periodic system such as financial control, or long range planning. But if the external and/or internal environments are turbulent, such enterprises will be well-advised to use SIM.

When both future thrust and turbulence present problems, then a sophisticated system (such as strategic planning or strategic management) will have to be coupled with SIM. (A dangerous approach in this case, which this author observed in a number of practical situations, is to limit the enterprise to SIM, without accompanying strategic planning. If the major prospects of such an enterprise are on a declining trend, SIM is likely to make its descent to bankruptcy more elegant than it would be without the system. But the presence of SIM would also create a false sense of security as, for example, may be created by the progress in patching holes in the hull of a leaking ship which is about to explode.)

A way to couple the two systems is illustrated in Figure 4. At the outset of the period the annual planning cycle picks up the strategic issues from SIM and includes them in the comprehensive company-wide planning. The final outputs of the planning are (i) a set of *operating programs and budgets* for ongoing operations, which are aimed at

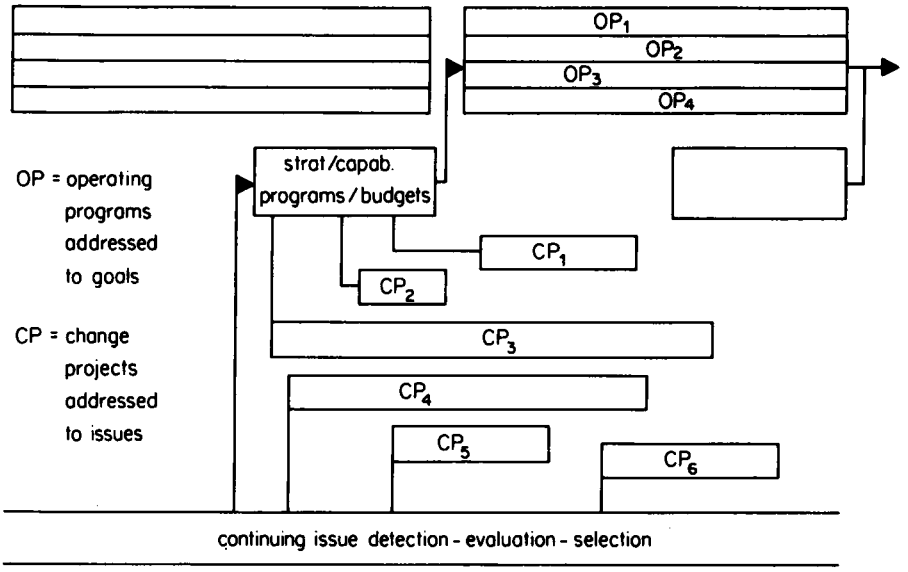

Figure 4. Periodic and real time issue management

meeting the near term performance objectives and goals; (ii) a number of strategic issues translated into *change programs and budgets*. The latter are addressed at changing either the strategic thrusts of the enterprise, or its internal configuration, and contribute to the future *performance potential* (and thus to the long term objectives).

As Figure 4 shows, the change programs and budgets generated by periodic planning became a part of a larger group of temporary projects; the other part being generated by SIM. An important conclusion suggested by the Figure is that, in addition to managing the projects generated by opportunities/threats/strengths/weaknesses, the administrative arrangement of Figure 1 can be used to manage *all* of the strategic issues (change projects) of the enterprise.

THE HUMAN FACTOR

At first glance, SIM appears to be an easy system to put in place and to manage: It is lightweight, with a minimum of apparent 'make-work' often observed in periodic systems; it addresses pressing problems; it is compatible with other systems and organizational structures, it is responsive to change and does not have many of the bureaucratizing self-perpetuating tendencies observed in periodic systems.

But experience shows that installation and acceptance of SIM is not simple. The difficulties stem from two sources.

The first is refusal of the top management group to submit itself to the discipline of SIM. Periodic planning is frequently used for organizing 'the others' in the enterprise. If top management refuses to become a part of the process, periodic planning can still make a useful contribution to the enterprise. But if top management pays lip service to SIM (and for example appoints a staff planner to 'manage' the war room) SIM will not work.

Refusal to take charge is frequently coupled with a refusal by top management to accept new and unfamiliar issues as relevant to the business of the enterprise. Thus, for example, early warnings of the emergence of the petroleum crisis were ignored in many business firms, because they were inconsistent with prior experience and image of the Arab world.

Thus acceptance of SIM by top management should not be taken for granted. A 'sales campaign' by the 'converted' subgroup of general managers, careful education, and a process of joint involvement in reality confrontation by the top group are more promising courses of action. In cases when the new realities to be confronted are drastically different from the past, the enterprise will need external help.

CONCLUSIONS—ADVANTAGES AND LIMITATIONS OF SIM

The principal limitation of the strategic issue management system discussed in the preceding pages is that while it reacts to individual departures from the historical dynamics of the organizations development, *it does not* permit the management to rethink and redefine these dynamics as is done in periodic strategic planning.

Strategic issue management offers the following advantages:

(1) Quick 'real time' response to new developments.
(2) A quick internal reaction time.
(3) Response to problems which may arise from any source, economic, political, social, technological.
(4) A 'lightweight' system, which is not affected by organizational size and complexity.
(5) It is compatible with most organizational structures and systems.

Strategic issue management cannot be made to work unless key managers in the organization accept a central role in the system. Experience shows that getting key managers to submit themselves to the relatively light discipline demanded by the system, and getting them to react to strategic issues which do not conform to historical experience are the two most difficult problems of introducing SIM into organizations.

APPENDIX 1

Choice among periodic, strong signal, and weak signal issue management

As discussed earlier in the paper, the timeliness of the response of an enterprise is dependent on the interaction between the *forecasting horizon*—the number of years into the future at which an impending change is identified, and the *response time*—the time required by an enterprise to select and implement its response. We illustrate the interaction of these two variables in Figure 5.

The vertical scale describes the *state of knowledge* about a change. The concept of the state of knowledge is different from (but complementary to) the concepts of risk and uncertainty frequently used in forecasting. Under both risk and uncertainty conditions it is implicitly assumed that enough is known about an event to permit estimation of its impact on the enterprise and also selecting a specific response. The lack of knowledge comes from uncertainty either about the occurrence of the event, or about a particular impact, or about the effect of a particular response.

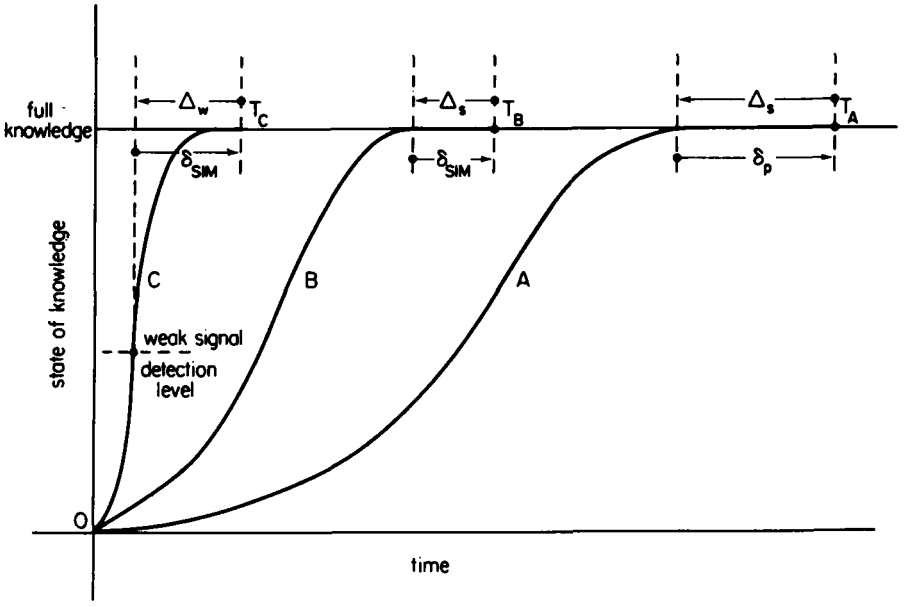

Figure 5. Interaction between forecasting horizon and response time. Δ_s = strong signal forecasting horizon, Δ_w = weak signal forecasting horizon; δ_p = periodic system response time, δ_{SIM} = SIM response time

The state of knowledge concept adds another dimension of ignorance[1] which is imperfection in knowledge about the nature, timing, or the consequences of an event. Near the zero level on our scale of ignorance there may be only a conviction that an important event will occur, but there is no further knowledge about its nature. In an earlier paper (Ansoff, 1976) we called this state of knowledge a *sense of turbulence*, for example, a conviction that an earthquake is going to occur, without any further knowledge about its strength, source, or timing. In business a sense of turbulence is found in technologically intensive industries in which there is a conviction of an impending technological breakthrough, but no further knowledge of where it will come from or what it will consist of. Near the top of the knowledge scale enough is known about the event to assess its likely impact on the enterprise, to select and implement response strategies (although there still may be residual uncertainties about strength of impact and effectiveness of response).

Every new event will pass from a sense of turbulence to the 'full knowledge' level, but the speed of evolution will differ. In Figure 5 we show three examples of the evolution pattern, ranging from a 'slow' event (curve A) to a 'fast' one (curve C).

From the point of view of an enterprise, the important moment in the history of an event is the *time of its impact*, which is the point after which it is too late to respond: either the opportunity will 'have passed by' or a threat can no longer be avoided. In Figure 5, we labelled the respective points of impact T_A, T_B and T_C.

If the response is to have a chance of being effective, it must be completed before the time of impact. Figure 5 shows that the ability to do so depends on the forecasting horizon Δ being longer than the time δ needed for response.

[1] See the concept of *partial ignorance* first introduced in Ansoff (1965).

Case A illustrates the situation for a periodic planning system. The planning horizon Δ_s is limited by the availability of 'strong signals'—which carry enough information to permit analysis of both impact and response. The response δ_p is made up of several delays:

(1) The delay between emergence of adequate knowledge (which may occur any time during the year) and the next planning cycle. In the worst case this may be as long as 8 months.
(2) The time consumed within the cycle for planning the response. This may go between 4 and 8 months in a large enterprise.
(3) The time to develop the necessary capabilities and capacities. This will vary widely depending on the applicability of the existing capacities, and capital/technological intensity of the enterprise.
(4) The time to implement the response, which will vary similarly.

In the example of change A these delays present no difficulties since $\Delta_s > \delta_p$. *In this case there is no need for a separate strategic issue management system.*

In the faster case B the strong signal forecasting horizon is not sufficient for a periodic response. But the response can be shortened by separating SIM from the periodic planning and using procedures described in the body of this paper. The procedures will shorten the response to $\delta_{SIM} < \delta_p$. In the case illustrated in the Figure, this solves the problem since the response time becomes shorter than the planning horizon $\Delta_s > \delta_{SIM}$. *In this case a separate SIM based on strong signals should be used.*

In the final case C, so long as the enterprise bases its response on strong signals, the response will be ineffective. The minimum possible response delay δ_{SIM} is longer than the time allowed by Δ_s. As described in an earlier paper (Ansoff, 1976), the enterprise can now shift to weak signal detection accompanied by appropriate weak responses. This effectively extends the planning horizon to $\Delta_w > \Delta_s$, as shown in the Figure, and thus allows adequate time for response. *When $\Delta_s < \delta_{SIM}$ a weak signal SIM should be used.*

To summarize:

(1) Strategic issues should be handled within the periodic planning system whenever the strong signal forecasting horizon is longer than the planning system response time.
(2) Strong signal SIM should be used whenever strong signal time horizon is shorter than periodic response but longer than SIM response.
(3) Weak signal SIM should be used whenever SIM response is longer than the strong signal time horizon.

APPENDIX 2

Use of the Eurequip matrix to relate threats/opportunities to strengths/weaknesses

Threats/opportunities are derived from deviations from the historical trends in the environment. Strengths/weaknesses, on the other hand, are derived from extrapolation of the historical trends. It is entirely possible, therefore, that a historical strength will turn into a weakness in the face of new challenges; it is also possible that a weakness will turn into a strength. On the other hand, if the current capabilities turn out to be highly

Table 6. Interdependence between T/O and S/W. Case I—Positive synergy: strengths and/or 'weaknesses' are applicable to responding to threats/opportunities

		Opportunities				Threats				
		(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(5)
Strengths	(4)	(i) Highest priority on opportunity (ii) Increase priority of building strength				(i) Reduce priority of threat (ii) Maintain priority of building strength				
	(3)									
	(2)									
	(1)									
Weaknesses	(3)	(i) High priority on opportunity (ii) Enhance 'weakness'				(i) Reduce priority of threat (ii) Enhance 'weakness'				
	(2)									
	(1)									

applicable to dealing with the new challenges, the attractiveness of opportunities will be enhanced and negative impact of threats will appear less serious.

Therefore, response to strategic issues can be made more effective, if the interrelationship between T/O and S/W is used to modify the estimates of impact/urgency and hence the priorities of the key issues. This interrelationship can be studied by means of the 'croisement' matrix introduced by the French Eurequip consulting firm.

This matrix, shown in Tables 6 and 7, is illustrated for two cases. In the first case, Table 6, both the strengths and weaknesses turn out to be useful for pursuing advantage of the opportunities, or minimizing the impact of the threats. The entries in the matrix indicate the kinds of shifts that are desirable in the priorities previously established by estimation of impact.

Table 7. Interdependence between T/O and S/W. Case II—Negative synergy: neither strengths nor weaknesses help deal with threats/opportunities

		Opportunities					Threats			
		(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)
Strengths	(3)	(i) Low priority on opportunity (ii) Low priority on strengths					(i) Increase priority on threats (ii) Low priority on strengths			
	(2)									
	(1)									
Weaknesses	(2)	(i) Low priority on opportunities (ii) Priority on elimination of relevant weaknesses					(i) Increase priority on threats (ii) Priority on elimination of relevant weaknesses			
	(1)									
New capabilities	(2)	(i) Assign high priority to building new strengths					(i) High priority on new new strengths			
	(1)									

For example, when a historical strength of the firm is applicable to the development of an opportunity, two consequences follow: (i) the opportunity is likely to yield better than average positive impact, (ii) the strength will appear more attractive than it did before. The result is to increase the expectations and the priorities assigned to both.

An interesting result shown in the lower left cell of the matrix is the possible discovery that capabilities which had been previously regarded as a weakness will become strengths in the perspective of new threats/opportunities. Instead of being eliminated, these 'weaknesses' should be enhanced! For example, a lack of tight cost controls and of clearly defined vertical lines of authority/responsibility, which, in the past, may have inhibited organizational efficiency, may become advantages if new opportunities demand fast organizational response and entrepreneurial risk taking. As another example, in a number of European firms the absence of a well developed controllership function, a weakness in the mass production age, made it easy to introduce more advanced forms of planning and control which are essential in the turbulent post-industrial environment.

The matrix of Table 7 illustrates the consequences of the negative cross-impact. Historical strengths become less attractive, threats must be taken more seriously than in the past, new opportunities lose appeal. A very important consequence of negative synergy is the need to identify new capabilities which must be developed in order to cope with new environmental challenges.

The Eurequip matrix analysis should be undertaken if an examination of the threats and opportunities, derived in the manner described earlier in this paper, appear to depart significantly from the historical threats/opportunities. Since the matrix analysis is time consuming, it is best reserved for medium- and high-impact T/O/S/W.

The results of the Eurequip matrix analysis can be summarized in Figure 6 (which is a modification of Figure 3). As shown, matrix analysis may change both the impact estimate and the urgency.

TRENDS	IMPACT		URGENCY		THREATS	OPPORTUNITIES	COUPLED STRENGTHS/WEAKNESSES
	BEFORE SYNERGY	AFTER SYNERGY	BEFORE SYNERGY	AFTER SYNERGY			

Figure 6. Impact/urgency of threats/opportunities after synergy analysis

Another important product of the matrix analysis is a *coupling* between threat/opportunity and strengths/weaknesses. If the positive or the negative synergy of a strength/weakness to a particular threat/opportunity is very high, the T/O should not be tackled without, at the same time, tackling the S/W. A column for identifying the coupled S/W is provided in Figure 6.

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