EARLY WARNING SYSTEMS

FOR COMPETITIVE
YOUR LANDSCAPE

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One of the main purposes of any competitive intelligence (CI) function should be anticipating changes in the environment. Any decisions based on good intelligence should take into consideration the changes that the CI process has detected in areas such as the competitive, technological, product, consumer, or geopolitical landscape.

One way of anticipating and mapping the organization's landscape is to use a structured model to identify key actors and factors, and then connect these actors and factors to see how the entire network works (Comai and Tena, 2006). This model allows you to study, map, and monitor changes in the competitive landscape to allow your decisionmakers to take timely and relevant strategic action.

The model suggests that stakeholders (agents or organizations with a specific role or stake in the environment or in the decisions a company's management and their competitive intelligence staff are studying) are good sources for detecting changes and future events (see sidebar 1 for examples of potential sources). The model can be transformed into a competitive early warning system (CEWS), which can provide a base from which the environment can be better predicted.

An early warning system sets the framework for a systematic process of gathering and analyzing data, based on several indicators defined by the organization and prepared after reviewing the different key actors in a specific environment. These indicators can prevent a business threat or provide a new opportunity to the company. Mapping the environment as well as establishing an early warning system requires competitive intelligence professionals to perform certain creative exercises to establish the indicators tracked by the organization.

SOME DEFINITIONS

The concept of early warning has been defined in several ways:

> "*Early warning intelligence provides executives with timely, valuable information about the market and competitors that enables them to make strategic and tactical decisions more quickly*" (Wergeles, 2005, p. 44).

SIDEBAR 1: SOURCES FOR DETECTING ENVIRONMENTAL CHANGES

- competitors
- employees
- consumers
- customers (domestic and foreign)
- opinion leaders
- suppliers
- substitute providers
- complementors
- corporate allies
- media (e.g., journalists)
- universities
- foundations
- science, research, or technology centers
- standardization bodies
- banks
- political groups or parties
- international institutions
- labor or trade associations
- local communities
- special interest groups
- lobbyists

"Early Warning Systems are created in order to identify risks and uncertainties and to minimize them by continuously monitoring events that might lead to a threatening situation. By providing an early enough warning that a potentially harmful sequence of events has been evolving, it should be possible to take actions in a proactive manner and thus avoid the threat" (GIA, 2006).

"The strategic early warning process focuses on (or I should say, elevates alertness to) weak, ambiguous, early signals, sometimes years before management is due to place them on its radar screen" (Gilad, 2006).

These definitions identify two main perspectives involved in the process. In the first perspective, environmental changes are primarily perceived as a risk or a source of a potential crisis responsible for behavior conflicting with the organization's objectives. In the second, changes in the environment are considered to be business opportunities. Neither perspective is mutually exclusive, and both perspectives should be included in a competitive early warning system that looks at both risks and opportunities.

The way an organization deals with environmental changes and actors often decides the end result — a threat can become an opportunity if known well in advance and dealt with properly. Some systems do not highlight both because they are unbalanced and do not search for risks as well as opportunities — opportunities are seen as more positive than risks, because they provide a better and more desirable basis for executive rewards.

Two types of early warning systems can also be observed:

1. **Proactive** implies a two-step approach. First seek and make choices about *issues* that are relevant for the organization's future, and then introduce those issues into the system for continuous monitoring. The company makes the deliberate effort to identify relevant issues as much in advance of their impact as possible.

2. **Reactive** managers take a *radar* view of monitoring the environment, looking for unexpected changes that could generate a surprise. Once the surprise has been detected, it introduces a new element into the competitive early warning system.

ANTICIPATION: THE PURPOSE OF ANY SYSTEM

The ability to anticipate potential environmental changes is key to a good intelligence unit's operation. A recent study shows that companies do not invest sufficient resources in predictive analysis models (Sawka, 2006). If an organization is to be an "eagle," it should have the "ability to recognize significant industry shifts and assess their impact." Anticipating events that could have an immediate or potential impact on the organization is the essence of the entire process.

The time span between becoming aware of a potential threat and the event itself is frequently described in military intelligence warning terminology. The "warning lead time" is the period between the issuing of the strategic warning and the beginning of hostilities — where possible action can be taken. This period may include strategic warning pre-decision and post-decision time.

After a warning is received by or from the intelligence unit, the time before a decision is (or is not) made is the pre-decision time. Once the decision has been made, the time before the event happens is the post-decision time (see figure 1). In both time spans, the decision is made on the assumption that the event will occur, and it is always made from a future-oriented perspective.

In a hypothetical situation, this definition assumes that

- the intelligence function does not fail to detect early signals.
- these signals are well understood and there is no misperception of them.
- the analysis and the decision is made on time.

COMPETITIVE EARLY WARNING MODELS

Several models for formalizing a competitive early warning system have all included similar elements (see table 1). One of the most interesting models, suggested by Gilad (2003), pinpoints three key activity areas and three information routes.
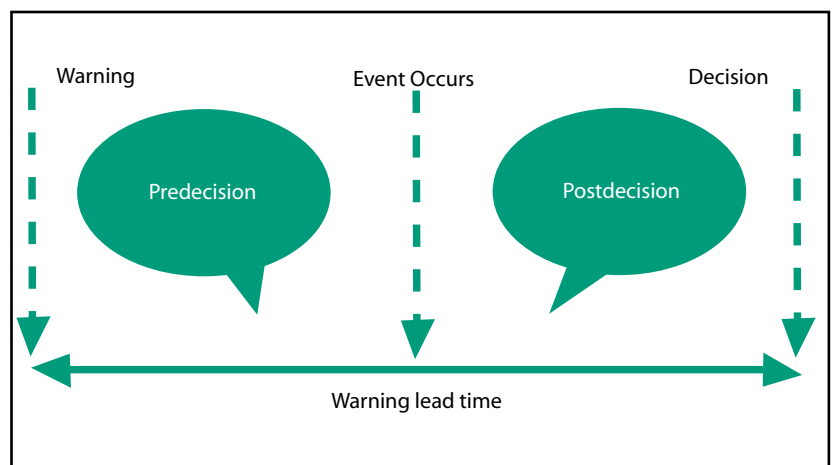

Figure 1: The warning lead time

TABLE 1: COMPARISON BETWEEN CEWS MODELS

Stage	Authors			
	Shelfer (2003)	Bernhard (2003)	Gilad (2004)	Hedin (2006)
Identifying Risk	yes	yes	yes	-
Prioritizing Risks	-	-	yes	-
Assessing Threats	yes	yes	-	-
Indicators	-	yes	yes	yes
Risk Management Plan	yes	yes	-	-
Intelligence Monitoring	-	yes	yes	-
Alerts (Gilad) / Information (Hedin)	-	-	yes	yes
Analysis	-	-	-	yes
Action	yes	-	yes	yes
Re-evaluation or Feedback	yes	-	yes	yes

An early warning system can be applied to meet strategic needs. Several analytical techniques can help identify the critical issues on which the company should focus to achieve a better understanding of the competitive landscape. Techniques that incorporate creativity and dynamism into the analysis (such as brainstorming, war-gaming, and scenarios) can contribute significantly to establishing a proactive early warning system. To define the CEWS domains, a "Competitive Landscape Map" can help identify the players (stakeholders) and the potential relationships that should be monitored (Comai and Tena, 2006).

2. Assess Critical Issues

The second task is to select and prioritize the critical issues that relate to the organization's strategic position, long-term mission, and objectives. Define key business priorities for the competitive early warning system. Once these strategic issues have been identified, the company is ready to launch an early warning process.

3. Measure Changes

An increase in the business environment's complexity affects the organization's capacity to gather and obtain information. An early warning system assesses which trends (or factors) are changing and to what degree. The ideal system allocates appropriate resources to those activities that monitor events that change on a continuous and unpredictable basis.

Another model by Hedin (2006) underlines early signals and indicators as the sources of any warning system. Here, the analysis of any information produced by an intelligence team is transmitted directly to the decisionmakers who actually take the action. Table 1 summarizes the differences and commonalities between several frameworks. (Note: This list of models is not exhaustive.)

Our competitive landscape model provides a comprehensive map through which you can establish an early warning system. Such an alert system may fall into several generic categories involving ten steps (see sidebar 2). The following section provides a step-by-step process for building a proactive CEWS.

1. Pinpoint the Key Actors

This step is a creative activity whereby the competitive intelligence specialists or managers at the corporate or strategic business level assess the environment, and the decisionmakers decide the initial focus.

- Should the early warning system be implemented for business or for strategic operations?
- Is it designed for only one or for more than one department?
- What are the organization's business priorities?

SIDEBAR 2: COMPETITIVE EARLY WARNING STEPS

1. Pinpointing the key actors
2. Assessing critical issues
3. Measuring changes
4. Evaluating potential opportunities and/or threats
5. Building indicators
6. Identifying signs of change
7. Linking sources
8. Planning the radar
9. Communicating intelligence
10. Taking strategic action

To create an effective and efficient early warning process, organizations must match resources and capabilities in a formalized process. The result is a set of specific human and other resources that can help managers make better decisions and improve the organization's response to environmental constraints and changes.

4. Evaluate Potential Impacts

When environmental changes are matched to critical issues, you can assess which changes can have a positive or negative effect on your organization's resources (opportunities and threats). A good early warning system evaluates changes to identify which ones potentially have the highest positive or negative impact on your organization.

Using the various tools or matrixes available for prioritizing threats or opportunities, you can understand which actors are the sources of behavior or trends that can have a serious impact on your organization. You can then highlight them using a competitive landscape map.

5. Build Indicators

Indicators are the specific measurable variables an organization uses to monitor and verify the extent of environmental change. They are potential sources of intelligence defined as "gateways" or "signposts." These indicators can be quantitative or qualitative. Quantitative indicators provide numerical evidence that can be reported by a statistical tool and correlated with other related sources.

On the other hand, qualitative indicators are intangible and often not easily quantifiable. An example is the new advertising campaigns of a rival hoping to strengthen its position in a specific consumer segment. They can involve several sources of information in addition to direct sources, and by combining them it is usually possible to obtain an indicator.

The environment can produce both direct and indirect indicators through the following activity:

1. Direct indicators. Each activity generates indicators. For instance, the energy consumption of a particular region can be forecasted by monitoring the growth in that region's small and medium-size companies. Tracking the size of a conventional apartment built in a country can help you understand which kind of refrigerators people are likely to buy, and therefore which components will be needed.

2. Indirect indicators. These are produced using a regression analysis of several activities. When combined, the indirect indicators are associated with the actions present at the beginning of the relationship. There can be multiple indicators, and potentially each indicator could be associated with each actor or stakeholder. These actors are the source of weak signals.

SIDEBAR 3: EXAMPLES OF WEAK SIGNALS

- Announcements in the media of future competitors' movements, such as which businesses are expanded or new markets developed.
- Interpretation or justification of the results or actions once they have been achieved or carried out, such as the results of a promotion or a particular price reduction.
- Public discussion among competitors on the subject of the industry, such as at a convention or a samples fair.
- Explanations from competitors relating to things they could have done.
- Competitive practices that are very different from those followed to date by the firm or by the whole industry.
- Competitive actions or initiatives that are damaging to the competitor or to competitors, such as vigorous retaliation with regard to pricing or brand, appeals to the restrictive practices court, and the like.

6. Identify Signs of Change

Competitive early warning systems help identify potential sources of weak signals. The use of weak signals may be the basis for predicting significant competitor changes. Some examples of signals are listed in sidebar 3.

7. Link Sources

Using intelligence to detect signals from several sources makes it more likely that decisions are taken that fulfill the mission and objectives of the organization. Decisionmakers have to be aware of all the possible sources that can help them understand and predict future outcomes. The next step is to identify sources that can provide reliable information that could be transformed into intelligence. Each source will be related to a specific actor identified as critical in the previous stage of the process.

For instance, information concerning a politician's policy (which could have a major impact on your business) can be obtained directly by monitoring all possible public speeches and meetings and from the media, radio, television, and newspapers. Such sources can provide significant information that establishes an indicator.

However, some individual sources may provide only a partial picture, so several information sources are required. For instance, the number of apartments built by the construction industry can be obtained from a national association, statistical agency, or local government permitting the construction of buildings.

8. Plan the Radar

Once the early warning system has been set up, the intelligence team must create a detailed plan for investing its own human and fiscal resources. The organization must make a formal plan for its monitoring activity. A plan may include human and print information sources and timetables. For example, in the previous case, should the intelligence team follow the politician personally or contract with a third party?

Some monitoring activity can be carried out using information technology. For instance, sources available on the internet such as blogs, Really Simple Syndication (RSS) feeds, or vertical portals can be accessed using web grabbers or crawlers. These tools perform regular comparative analysis automatically every day, enabling quick detection of changes. The intelligence group should use a combination of human and technology activity to gather weak signals from multiple sources to detect changes at an early stage.

9. Communicate Intelligence

Communicating the changes that the system has been able to track and identify is an important step. Intelligence can be communicated to decisionmakers through several media. Each key issue could have its own group of intelligence products.

10. Take Strategic Action

The process is completed when an organization makes the best action for its strategy. Many intelligence failures are not the result of the information or analysis, but rather of the failure of decisionmakers to take prompt action. A good warning system provides information and intelligence before the event occurs, thus giving decisionmakers a certain level of flexibility. The system works best when the decision is made according to the potential opportunity or threat.

CONCLUSION

Building a competitive landscape map provides the framework for establishing a competitive early warning process (Comai and Tena, 2006). Organizations can monitor the competitive landscape in different ways and with different priorities. For instance, a company can monitor the environment to detect potential changes in one or more of several areas, such as relevant technologies, products, regulation, consumer tastes, and competitor behavior. Thus, the model must be adapted to the specific landscape the company chooses to monitor.

Competitive early warning systems can be applied to the business, private, and public sectors. For example, sophisticated early warning systems can be successfully applied in public organizations that monitor bank and currency crises in emerging countries or other macro-environmental issues. Systems can also focus on a specific disruptive technology or on a particular growing market.

We believe that a competitive early warning system is a sophisticated tool that involves the management of a process of building an advanced competitive intelligence operation for the well-being of the organization.

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