

THE FOUR ANALYTICAL TECHNIQUES EVERY ANALYST MUST KNOW: PART 1 — COMPETING HYPOTHESES ANALYSIS



KENNETH SAWKA, *Deloitte Consulting*

In the last edition of The Corner, I wrote “[Analytic] methodologies are catalysts toward judgment; they do not achieve insight on their own.” In the spirit of describing further the catalyzing effect methodologies can have, here is the first of four columns that will detail what I believe to be the four analytic methodologies every competitive intelligence analyst must know.

All are superb ways of arraying, examining and evaluating data, and, when deployed properly, will help you arrive at judgments and conclusions that will stand the test of management scrutiny. As I said before, these methods will not serve as proxy for your own ability to arrive at, communicate, and defend key findings that you believe are sound.

Competing Hypotheses Analysis (CHA) is a basic analysis methodology that has relevance to a variety of competitive intelligence issues. I put it right up there with SWOT analysis and Porter’s Five Forces as one of those core techniques that can help make sense of a dizzying accumulation of industry, competitor, or other external information. It seems like it’s been around forever, first revealed to competitive intelligence analysts through Richards Heuer’s excellent book, *The Psychology of Intelligence Analysis*. (Center for the Study of Intelligence, Central Intelligence

Agency, 1999). (For an earlier look at CHA in this column, see the July/September 1999 issue of *CI Magazine*, v2 n3, 37-38).

INDUCTIVE ANALYSIS MODEL

To best understand CHA, think back to your most dreaded science class in school. If your science programs were like the ones I suffered through, you no doubt had a series of lab sessions that were intended to bring scientific principles covered in your text books to life, but which in fact only served to play to masochists’ appeal for dissecting frogs or inducing small explosions from seemingly harmless chemicals. Nonetheless, the first step in any school lab experiment was to come up with a hypothesis – a statement describing what you believed would be the likely outcome of the experiment upon which you were about to embark.

Now, for some experiments, coming up with a hypothesis was a cinch. “If I pour the yellow liquid into the blue liquid, green liquid will emerge.” For others, the hypothesis was more elusive. In any case, the scientific method asked that you logically conclude the outcome of the pending experiment before you poured the liquid from beaker A into beaker B.

Intelligence analysis follows the same scientific approach. It is inductive — it demands that you evaluate data

and information based on pre-conceived explanations for the reasons behind competitive activity. Unfortunately, most intelligence analysis programs tend to follow the deductive model, with analysts trying to derive meaning after they’ve collected terabytes of information on a particular competitive question.

While it’s oftentimes uncomfortable for analysts to envision explanations to competitive issues before they’ve begun the research process, inductive reasoning is a far more efficient way to tackle an intelligence problem than blindly gathering data and information and then trying to figure out what it all means. [See Figure 1.] The chances of completely missing the mark and delivering intelligence findings far from what management is looking for are greatly enhanced by following the deductive model.

BUILDING SIMPLE EXPLANATIONS

Unlike your school science experiments, however, competitive intelligence (CI) problems are likely to have several possible outcomes, so that arriving at just a single, inductively derived hypothesis is not enough. CHA therefore asks that we embark upon addressing an intelligence issue by developing multiple hypotheses that can explain the goings on in the competitive market. Note that CHA does not ask you to build scenarios — detailed explanations of future competitive situations — but simple explanations behind why competitive forces are behaving as they are.

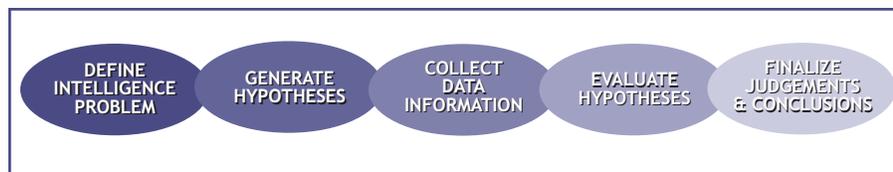


Figure 1: The competing hypothesis analysis process

	HYPOTHESIS 1	HYPOTHESIS 2	HYPOTHESIS 3	HYPOTHESIS 4
EVIDENCE 1	+	-	+	-
EVIDENCE 2	+	+	+	+
EVIDENCE 3	N/A	-	+	-
EVIDENCE 4	-	-	+	-

The CHA Matrix. Place a "+" if the evidence supports the hypothesis, a "-" if it does not, and "N/A" if the evidence has no bearing on the hypothesis. Hypothesis receiving the greatest number of "+" scores may prove to be the most credible. In this example, hypothesis number 3 has the greatest amount of evidentiary support and is the most plausible when compared with the other three. At the same time, single pieces of evidence supporting a large number of hypotheses may be of questionable quality (for example, "Evidence 4").

Table 1: The competing hypothesis analysis process

To illustrate, a pharmaceutical company I once worked with wanted to anticipate how the market might respond to a new product evolution strategy it wanted to implement. Facing patent expiration of a product important to one of its therapy areas, this company had plans to introduce improved versions of the core product that it hoped would grant it a patent extension.

FOCUSING COLLECTION EFFORTS

The CI team convened to look at the issue needed to consider competitor, consumer, payer, and regulator positions on this product extension strategy. Before starting an information collection effort, we decided to imagine the likely reaction of all these players. The CI team developed about a half dozen hypotheses that provided explanations about how these various players would act. They were simple statements, such as “insurance companies will not place our new products on their formularies, hoping instead to have generic equivalents to our core product available more quickly upon patent expiration.”

In addition to providing a valuable way to evaluate collected information, the hypotheses can also direct the intelligence research itself. Assuming that your hypothesis generation exercise was thorough, the hypotheses can point you to information sources likely to yield relevant information, and help

you avoid going down unproductive or irrelevant collection avenues.

COMPETING FOR RELEVANCE

With the information collection phase well underway or completed, it's time for the *competing* part of CHA to kick in. Even when analysts follow the inductive model and generate hypotheses ahead of information collection, most use their collected information to evaluate hypotheses sequentially. CHA demands that all hypotheses get equal and simultaneous treatment by letting each compete for relevance given the data and information that has been collected. To do so, the analyst should generate a simple table, as shown in Table 1.

With this table, the analyst can concurrently determine if individual information pieces support or refute all hypotheses. Evaluating hypotheses in this manner brings three benefits:

1) Evaluates all hypotheses

Without CHA, it is the analyst's natural tendency to stop evaluation once a considerable amount of evidence supports one hypothesis. For example, if you conclude that your second hypothesis has achieved adequate evidentiary support, you might not evaluate hypotheses three through six, and thus run the risk that any of these unevaluated hypotheses may merit as much or more support than hypothesis number two.

2) Shows intelligence consumers why other plausible explanations for market forces' behavior were eliminated

Management may have faith in an explanation that, when evaluated using CHA, fails to garner as much support as a competing hypothesis. Employing this technique allows you to illustrate logically why your chosen explanation made more sense than one management may have settled upon.

3) Checks the veracity of your collected data and information.

If the hypotheses you've generated truly are competing — that is, some hypotheses are in direct contradiction with others — it would be impossible for a single piece of information to support them all. CHA lets you look for discrepancies or deficiencies in your research process and sources, and determine whether additional data confirmation is necessary.

Generating hypotheses ahead of intensive data collection and evaluating them by using Competing Hypotheses Analysis is rigor that serves analysts well. It is often hard enough to compel management to pay attention to and use intelligence analysis, not to mention that analysts are constantly under pressure to *prove* their judgments and conclusions. CHA is a way to provide the much desired credibility and strength behind forward-looking judgments to further compel management to act on your findings.

Kenneth Sawka directs CI and sales trends analysis at Deloitte Consulting, one of the world's leading consulting firms. He has more than 15 years experience as a CI consultant, intelligence systems manager, and US government intelligence analyst. Ken is a former member of SCIP's board of directors and is the coordinator of SCIP's Boston chapter. He can be reached at 617.850.2556 or ksawka@dc.com.