# Conference Challenge 2022

Institute for Competitive Intelligence

## Musk's Hostile Take-offer Bid for Twitter

### Analysis of Competing Hypotheses (ACH)

*How often have I said to you that when*
*you have eliminated the impossible, what remains,*
*however improbable, must be the truth?*

*Sherlock Holmes*
*Literary Character of Scottish Author A.C. Doyle (1859-1930)*

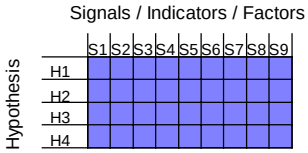
## Basics and Definition "ACH"

Definition

- At the end of the data processing phase, the analyst must often verify his/her conclusions (hypotheses) relating to forthcoming competitor activities, for example.
- In doing so, he/she incorrectly confirms a probable hypothesis prematurely due to subjective and fundamentally interpreted circumstantial evidence
  - The ACH evaluates the conclusions (hypotheses) that are based on detected signals or indicators
  - The ACH represents a link between data collection and the actual intelligence
  - Intelligence customers are often not able (or are unwilling) to understand in detail the interim steps from data processing through to analysis. Even for these customers, credibility, acceptance, understanding and usability of the intelligence rely heavily on the ACH

## Analysis Objectives

- Evaluation and selection of hypotheses, based on available indicators and evidence.
- Filling in of intelligence gaps (missing evidence for or against a hypothesis).
- Identification of the most probable and plausible hypotheses.




General Structure of ACH Matrix




## Step 1: Identify all possible hypotheses

- Key intelligence topics (KITs) are usually the starting point for CI research. As a prerequisite for collecting the KITs, hypotheses are formulated on the competitive environment.
- Danger of ignoring hypotheses that can lead to serious bias
  - Ignorance ("I could not surmise...")
  - Fixation on set themes ("competitor X has already done this many times in the past...")
  - Intelligence experience and inter-disciplinary brainstorming help to reduce such bias
- All hypotheses are included in a preliminary list, regardless of how "unlikely" or how difficult to prove they might seem.
- The processing of checklist has proved useful in ACH meetings
- Identify unobvious hypotheses
  - familiarize with the competitor and management personality profiles so you can understand the thinking on the other side.

## Step 2: List important evidence (indicators) and arguments

- All information, intelligence, arguments (with and without evidence), assumptions and indicators are collated for the hypotheses from step 1. It is important that they are not pre-filtered based on seemingly "credible" or "proven" facts. In the collection of evidence, it is helpful to create a storyline that uses all the (generic) indicators that are to be anticipated should a particular hypothesis prove to be true.
- The unavailability of anticipated indicators is often the starting point for further CI research
  - Indicator undiscovered because it did not apply to the associated hypothesis?
  - Or has something been overlooked?
  - Or did a competitor carry out an activity discreetly (missing indicator)?
- Just because no indicators (evidence) were found for a hypothesis, this does not mean that this hypothesis should be rejected (and therefore proven to be impossible!).
- There are only experience values for the "correct" number of indicators to be selected.




## Step 3: Create a matrix using hypotheses as rows and evidence as columns

- The most significant evidence and arguments can be filtered out by visualizing them in a matrix. The existence of each piece of evidence/indicator is assessed as being consistent, inconsistent or irrelevant to the respective hypothesis. For each cell the question is asked as to how likely the occurrence of the indicator would be if the respective hypothesis were true, and then a comment or symbol is entered next to this assessment
  - "++" for high consistency
  - "--" for high inconsistency
  - "0" for no relevance
- All the cells within the matrix are filled in by the end of the third step. The more a piece of evidence contributes towards the assessment of the hypothesis' plausibility, then the more useful it is for the analysis. If a piece of evidence is rated the same for all hypotheses, then it is unsuitable for ACH (and can be rejected)

## Step 4:
## Refine the matrix

- Refine the matrix by deleting and adding hypotheses and/or indicators/arguments!
- Hypotheses
  - Can hypotheses be grouped together (similar information and same indicators)?
  - Do new hypotheses need to be formulated because none of the hypotheses are plausible with all indicators, for example?
  - Should existing hypotheses be split into sub-hypotheses as this seems to make sense for the competitor analysis and allows existing evidence to be considered from a different angle?
- Evidence
  - Which evidence is of no diagnostic value or is irrelevant, therefore should be rejected?
  - Which of the generic indicators have no supporting evidence?
  - Why not? Has raw information, which has been used to assess an indicator, been incorrectly processed and should be looked at again under consideration of the newly created hypotheses?




## Step 5:
## Draw tentative conclusions

- Hypotheses are now analyzed
  - Which hypothesis can be confirmed due to greater consistency of evidence in relation to the other hypotheses?
  - Which hypotheses can be rejected? Obviously it is possible that a hypothesis will be rejected, even though numerous indicators are consistent with it, as once a “stronger” indicator shows an inconsistency, the hypothesis is no longer justifiable. An indicator is all the more unsustainable the more indicators are inconsistent with it.
  - However, the reverse does not apply in that a hypothesis is probable because it has many consistent indicators.
- During this step the analyst must often challenge his/her intuitive conclusions or those of third parties
  - Group meetings have proved to be a productive environment for thinking out of the box and questioning standard assumptions.
  - Once a hypothesis has been “publicly” rejected, this leaves the way open for new perspectives and constructive contributions.

## Step 6: Conduct a sensitivity analysis of robustness of remaining hypotheses

- How would misinterpretation of the evidence (indicators) affect the assessment of the hypotheses?
- In step 6, the critical indicators - that were ultimately the decisive factor for the preliminary selection of hypotheses - are checked. It is advisable to completely drill down into the source documents and marginal conditions that led to selection of the indicator. Could they be based on deception or manipulation of the sources? How reliable and credible are the HUMINT results? Are there any outdated assumptions in the industry rules of the game? Was the perception of competitor perspectives relating to market segmentation and/or attractiveness misinterpreted?
- To ensure the quality of an ACH analysis, it is important that the underlying assumptions and sources of the conclusion are documented. Once these assumptions no longer apply, the ACH conclusions must be revised, which is not an easy undertaking if these were drawn in an unstructured and incomprehensible manner.
- In case of doubt, targeted post-research can be necessary for critical themes. If necessary, existing sources must be contacted again in order to confirm statements and to rule out bias in the transferal of information.




## Step 7: Assess the occurrence probabilities of all hypotheses

- Assess the occurrence probabilities of all hypotheses based on existing experience and evidence
- When presenting the ACH results, the entire derivation should be explained and the effects upon the company must be highlighted.
- It should be noted that not just the selected (i.e. most probable) hypotheses should be presented, but rather the exclusion of other hypotheses or the rejection of evidence should also be justified.
- Based on this discussion, a decision maker can really assess the quality of the analysis and accept the results as a defendable basis for making decisions.

## Step 8: Identify future events that can serve as indicators

- This step involves defining which indicators are to be monitored, which presumably can act as early warning indicator to confirm the accuracy of the hypotheses
- It has proved worthwhile to report new ACH analysis results (with regard to confirmation or rejection of a hypothesis) at periodic intelligence meetings.
  - On the one hand the sensitivity of the intelligence recipient can increase for a changing environment, on the other hand “stealth“ changes can be detected early on.
  - Ultimately it is difficult to accept the result of an ACH analysis if the fundamentals of the analysis have turned out to be unfounded point by point.