

A Note on Fact-Based Hypothesis-Driven Thinking

Time, by and large, has emerged as the frontline of competitive battles.

SUNY Maritime A Note on Fact-Based Hypothesis-Driven Thinking

Characteristics of problem solving in the business world.

- Time to solution is critical
 - “I believe that we’re about to witness what may turn out to be the last competitive frontier business will see. It’s going to be a war over the one priceless resource. Time. And when it comes, trust may turn out to be the best investment anyone’s made.”

Source: Jim Kelly, CEO of UPS, Remarks to the Commonwealth Club of San Francisco & Oakland Chamber of Commerce, February 23, 2000.

- **But,**
 - Problem definition can be imprecise
 - Data is not always available or relevant
- So, one needs some method of dealing with these divergent vectors

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Time draws one of the boundaries defining the space in which business decisions need to be made. In the early years of this millennium Establish/Herbert W. Davis Company said:

‘Our mission is to use our knowledge of supply chain management and information technology to help companies achieve their business goals. In these past few months, we find that the definitions of short, medium and long term now mean something completely different:

Short term used to mean within the next six months. It now means "next Monday."

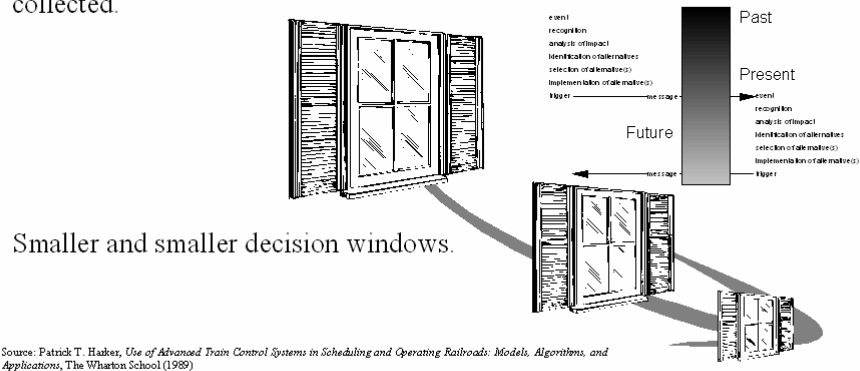
Medium term used to mean six months to a year. It now means "after next Monday."

Long term used to mean two to five years out. It now means "over the next six months."

That is to say the window available in which decisions must be made is continually becoming smaller.

Global Positioning Systems³

Sophisticated, very responsive decision support systems are required to extract value from data that is more precise, accurate and frequently collected.



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The decision window comprises:

1. The **event** that occurs.
2. The **recognition** that the event has occurred.
3. The **analysis of the impact**.
4. The **identification of alternative response** to the event.
5. The **selection of an alternative response**.
6. The **implementation of the alternative**.
7. The **trigger** the alternative generates upon implementation. This can be thought of as a message which generates another event.

Time compromises the ability to execute these steps with confidence. Therefore, a way needs to be found to reach decisions within this constraint of time.

The business person needs a solution that is quickly arrived at, understandable, acceptable, and can be acted on.

- An undisciplined gathering and analysis of data is likely not to yield a satisfactory result.
- Rather, one should postulate the end result and then plan carefully to investigate and challenge the postulation or “hypothesis”.
- Real job planning starts with hypothesis of what the answer is. Hypotheses provide:
 - A unifying concept
 - A point of departure for working backwards to establishing plans for fact gathering and analysis
 - A reference point for identifying and assessing the impact of shifts in the focus of the work
 - A basis for setting priorities

Adapted from PDN, *Consulting Problem Solving*, 1990, The Professional Development Network

One cannot simply engage in data gathering without a purpose. Too much time is wasted and too much effort is ill spent.

Start with the end in mind. Determine the critical issues that need to be investigated to reach the end. Identification of the issues will bring to mind key hypotheses.

The hypothesis

hy·poth·e·sis (hī-pŏth'ī-sīs) 
n., *pl.* **-ses** (-sēz).

1. A tentative explanation for an observation, phenomenon, or scientific problem that can be tested by further investigation.
2. Something taken to be true for the purpose of argument or investigation; an assumption.
3. The antecedent of a conditional statement.

[Latin, subject for a speech, from Greek *hupothesis*, proposal, supposition, from *hupotithenai*, *hupothe-*, to suppose : *hupo-*, *hypo-* + *lithehai*, to place.]



The American Heritage® Dictionary of the English Language, Fourth Edition Copyright © 2000 by Houghton Mifflin Company. All rights reserved.

- Test the credibility of a hypothesis with a cause-effect statement linking the hypothesis with the problem.
- Identify the questions necessary to prove/disprove the hypothesis.
- Gather the data and perform the analysis.
- The analysis leads to findings (i.e., groups of related facts), conclusions and recommendations.

It is these hypotheses that must then be investigate to resolve the issues.

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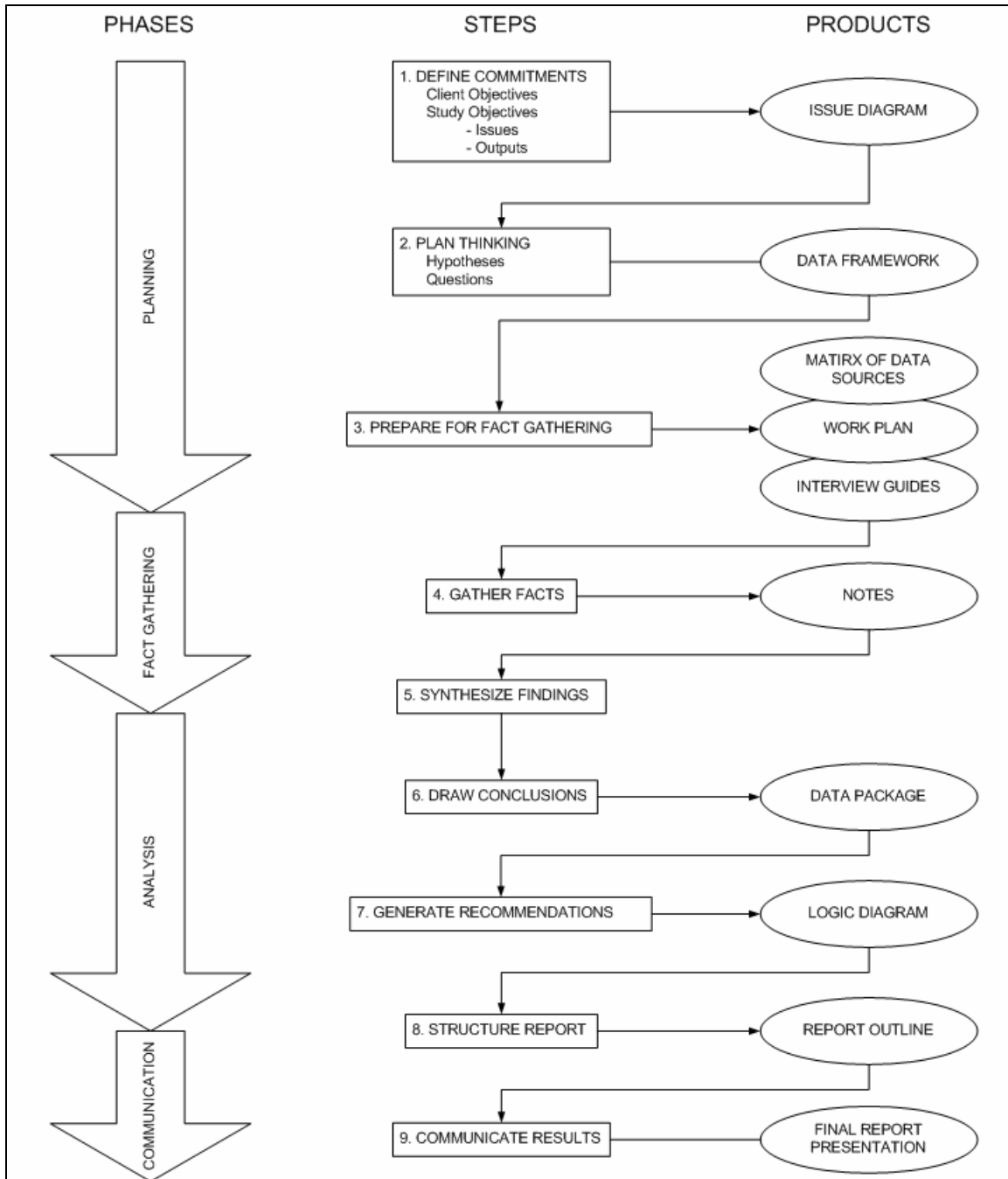
Hypotheses emerge from a disciplined thinking process.

- What are the objectives of the assignment? For example,
 - Develop information providing a deeper understanding of a situation.
 - Provide information in a structure upon which decisions may be made.
- What is the nature of the output from the assignment? For example,
 - Computer model.
 - Oral presentation.
- What are the issues that must be considered? For example,
 - 8,000 TEU container ships cannot pass through the Panama Canal.
 - Common view of data.
- Then come the hypotheses. For example,
 - Booking containers to ships that can pass through the Panama Canal will minimize our transportation costs.
 - A system for the reconciliation of various views of data will be required.

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This process I have briefly described is summarized in the following chart.¹

¹ PDN. Consulting Problem Solving: The Professional Development Network, 1990.



Searching the Internet with the phrase "fact-based hypothesis-driven" will provide links to further information and different points of view on his approach to problem solving.

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