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Building Blocks

"You cannot solve the problem with the same kind of thinking that has created the problem."
Albert Einstein

Credit Suisse First Boston's Thought Leader Forum is designed to introduce new information and new models to leading investors. These new models come from a variety of disciplines - sociology, evolutionary biology, complex adaptive systems, and organizational dynamics. These models help investors understand companies and markets through new lenses, and this new understanding can yield new insights and ideally better investment performance. This article presents several techniques for investors to use to explore and apply these new models to reshape the mental models they use to make investment decisions.

Metaphor and Innovation

To understand the problems in any discipline, it is necessary to have deep knowledge in that discipline. To resolve those problems, it is often necessary to look at the problem through the filters of a different and often distant discipline. The simplest analogy to the phenomenon is simply perspective. It is very difficult to understand, say, the traffic patterns of a city if you are stuck in your car at rush hour. With the distance provided by a traffic helicopter, however, it is much easier to see the major thoroughfares, the bottlenecks and the overall dynamics of the traffic system. The shift in vantage point offers better understanding and new insights for your strategy.

For more abstract challenges, the use of metaphor serves the same purpose as distance in the traffic example. If we are stuck on the challenge of distribution in a global manufacturing company, for example, it may be useful to apply models from other disciplines as metaphors. The model that we have developed and used for our distribution system has been quite effective over the years, but we just cannot seem to resolve some particular challenge. Perhaps we can learn something from other kinds of distribution systems. How does an ant colony collect and distribute its resources? How does the human body manage its circulation and processing of nutrients and wastes?

There are three keys to effectively applying metaphors to achieve insight and innovation. First, you must develop a deep understanding of the metaphorical system. You will gain no new insights if you look at the human circulatory system and say, "Aha! The brain tells the rest of the body where to send things!" If you draw conclusions too quickly, then more than likely you have only recreated your existing model of distribution systems - you are seeing the human body's circulation system as if it were the distribution system of a global manufacturing firm. If you invest the time and effort to understand this complex new system on its own merits, then you might discover something interesting about your own discipline. For instance, the human circulatory system is one of several overlapping hierarchical systems that allow the human body to grow, heal, change and yet maintain homeostatic balance. How do those systems overlap? How are the priorities of those different systems balanced? What overlapping systems exist in our global manufacturing firm, and how do they interact? An in-depth study of a new complex system should force you to ask new questions about your own, seemingly familiar system.

The second key to applying metaphors is to recognize the value of the cognitive leap. As you map the models

from one system onto another, the fit will never be perfect. Our global manufacturing firm is not a human body. Therefore the solution to our challenge will not lie in our suddenly believing this to be true. Instead, the solution will lie one or two steps away. As we look at the human circulatory system, we will encounter questions and tangential thoughts. "What performs the function of 'hormones' in our organization?" We will not, of course, implement a system of complex chemical exchanges in our organization, but this might lead us to think about our communication systems or decision-making metrics in a new way.

The final key is often the most frustrating for managers - only a very few of the ideas that this process produces will be highly valuable. Some of the ideas will be useless. Many of the ideas will be interesting but impractical or irrelevant. Other ideas will serve as useful, incremental improvements to your system. But only a rare few of these ideas will be truly revolutionary. The secret is the same in any game of statistics - you have to try large numbers of these metaphors for the big ideas to hit. These ideas are the outliers, not the norm, and while metaphor can push your thinking towards the innovative, no process can guarantee that your new ideas will be both different and effective. Many managers are willing to try this approach once or twice, and give up when it does not immediately return impressive results. Richard Fairbank of CapitalOne summed up this approach nicely at the 2000 Thought Leader Forum - see Concept Cards #048, "Massively Parallel Testing" and #047 "IBS (Information-Based Strategies)". In order to discover great innovations, you must engage regularly in the search and recognize that most of your discoveries will have either marginal or moderate value. Creative combination is a process that increases your odds of discovering breakthrough innovations, but it cannot guarantee success. This is a tool, not a silver bullet.

Thought Leader Concept Cards

After the 2000 Thought Leader Forum and during the 2002 Thought Leader Forum, Sente Corporation identified the "big ideas" from each of the speakers and created Concept Cards. Concept Cards include a title for each idea, some text from the speaker's presentation, and a diagram of the idea.

These cards are intended to serve as a proxy for John Holland's "building block" concept from the 2000 Forum. Holland talked about innovation as the creative combination of familiar building blocks. For example, you can divide a human face into, say, ten components - eyes, nose, lips, chin, cheeks, etc. For each of those components, you can then create a variety of options, or "building blocks". Eyes, for example can be blue, brown, wide, narrow, heavy, etc. You can then assemble just about any face through different combinations of a relatively small number of building blocks.

The great innovations, according to Holland, are rarely entirely new creations. Normally the great advances in technology and science are the unique and creative combinations between technologies or disciplines that are already quite familiar to us. The "digitization" of the world in the last ten years, according to economist Brian Arthur, is the result of the combination of communications technologies and computational technologies. Advances in either discipline are interesting, but mapping one onto the other created the opportunity for vast networks of computing power and emergent behavior in these complex networks.

The Thought Leader Forum has done a tremendous job of bringing investors together with thought leaders from a variety of disciplines to explore new models and new "building blocks" that might be relevant for investing. The narrative record of the event (the transcriptions of the presentations) serves as an interesting resource, but it does not quite serve the function of a useful tool. The speakers weave their ideas together into a compelling narrative for their presentations, but the ideas might be more functional for our purposes if they were presented as individual, discrete concepts. It is important to keep the context of each of the Concept Cards in mind, but it is the individual concepts that we hope to combine and apply metaphorically. The structure of this site is intended to accomplish both goals - to present the concepts in context, and to present them as discrete ideas that are useful for creative combination.

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