

When top managers describe reality – what they perceive as reality – with an air of certainty and authority, they create an incredible mantle of ineffectiveness, because everyone then looks up to them to solve the problems, to do the thinking.

-Peter Senge

Embracing Uncertainty: The Hidden Dimension of Growth¹

Cultivating meaningful business growth may well be the single most elusive activity that executives must master. We believe that effective management of uncertainty is one critical dimension of growth that has been often overlooked. Even after the computer models have been tweaked, the experts consulted, and the strategic plans finalized, uncertainty remains. What should executives do? Some suppress the uncertainty while others ignore it. Those who choose either path create “an incredible mantle of ineffectiveness” because the strategic plans, experts and computer models may actually suppress uncertainty, hindering growth. In fact, our research program revealed that wise executives learn to create organizations that embrace rather than suppress uncertainty. The model discussed below provides the conceptual backdrop for cultivating an uncertainty-embracing organization. The last two sections of the article focus on how to foster an uncertainty-embracing mindset and the competencies organizations need to cultivate this mindset.

The Model

Figure 1 provides a way to visualize the tensions that top managers must manage. A wave-like rhythm of crests of uncertainty and troughs of certainty suggests a way to continually progress and meet ever-changing challenges. Wise executives understand

how the relationship between the crests and troughs provides the essential tension for meaningful progress; in a dynamic climate, the seas are seldom flat.

Two basic activities govern whether organizations are moving toward certainty or uncertainty. *Exploring* increases uncertainty as the company reaches out for new possibilities. Explorers are masters of discovery and observation. Exploring skills increase uncertainty and involve a number of important activities:

- ? Networking – Making useful connections with other people or ideas
- ? Dreaming – Imagining the possibilities
- ? Scanning – Quickly, systematically and strategically surveying the situation
- ? Brainstorming – Developing a lot of ideas to solve problems
- ? Experimenting – Systematically testing ideas or plans

Refining increases certainty by further developing an existing idea, endeavor or approach. Refining skills increase certainty and include planning, organizing, delegating, project managing, scheduling, financial forecasting and a host of others.

A *platform* represents a relatively stable bundle of notions, activities or decisions that provides a foundation or springboard from which to act. It is, in effect, a temporary resting spot for knowledge. Some examples:

- ? A first draft of a proposal
- ? A phase of a building project
- ? A computer chip design

Platforms provide order, direct attention and mold responses. Different versions emerge through further refinements, which we represent with a series of trailing circles (1.1, 1.2, 1.3, etc.). Consider a software package (1.1), for example. Subsequent *versions* (1.2, 1.3,

etc.) of the software represent incremental improvements of the platform and a move toward greater certainty. A new platform (2.1) indicates a radical or quantum leap forward, which almost always means a jump into greater uncertainty.

Progress occurs as the organization moves from left to right and may happen in either the refining or exploring modes. The diagram doesn't picture it, but it is possible that a new version or platform does not result in progress. Yet, as a general rule, movement from one platform to another fosters greater progress than merely refining an existing platform. However the decision to further develop an existing platform or build a new one is not always an easy one to make.

Fostering the right mindset

Utilizing uncertainty for the organization's benefit requires the proper mindset.

Executives can develop this cognitive and emotional orientation by considering the following guidelines:

Recognize that there is an optimum point of uncertainty. To continue to explore without a point of consolidation indicates an unwillingness or inability to make critical judgments and arrive at any sense of closure. When Thomas Edison was conducting experiments to find the perfect filament for a light bulb, he periodically took stock of the general class of materials that worked and those that did not. The folklore surrounding Edison's amazing discovery usually focuses on his persistence at testing hundreds of materials. But, that is only half the story. Persistence without reflection *may* eventually yield results, but persistence coupled with contemplation *hastens* the speed of innovation. Edison's genius lies in his ability to use his exploratory failures to learn about the next step. William James explained it this way: "To be fertile in hypothesis is the first

requisite, and to be willing to throw them away the moment experience contradicts them is the next.”

Recognize that there is an optimum point of certainty. The optimal amount of certainty also proves difficult to specify, yet the danger signs are somewhat easier to detect. A mad rush toward perfection, such as trying to nail down every detail for an impending organizational change, should send up a red flag. Similarly, a concerted drive toward a single solution can signal that the organization is crossing the line. Resistance to further exploration may also act as warning sign. The opposition to further inquiry sometimes is vocalized using this delightfully, circular reasoning:

Person A: We’ve got to stick to the plan because it’s the plan.

Person B: Why don’t we change the plan?

Person A: It’s the plan; you can’t change it.

This loopy logic instills a sense a certainty amidst the pressures imposed by rapidly changing events. The artificial certainty dissipates in the face of clear failure, but unclear thinking often abides: “I don’t know what went wrong ... I followed the plan.” Sadly, employees caught in this trap rarely appreciate that their own needs for certainty lie at the root of their failure.

Remember that progress does not necessarily equate with the amount of time spent refining a platform. To paraphrase Picasso, “Every act of creation is first of all an act of destruction of existing platforms.” Constructing the perfect Mercury space capsule would not have put a man on the moon. On May 25, 1961 President John F. Kennedy challenged the United States to put a man on the moon and return him safely to earth

“before the decade is out.” On July 16, 1969 Neil Armstrong stood on lunar soil. This was one of the most spectacular success stories of the modern era. How did it happen?

At the heart of the process lies the adroit management of uncertainty by establishing viable platforms from which to explore and refine. With the Mercury program, NASA refined techniques that allowed men to function while weightless. The Mercury platform set the stage for the Gemini program, which in turn was transformed into the platform for the Apollo program. After six Mercury flights, ten Gemini flights and four Apollo flights, the mission was accomplished: “one small step for a man, one giant leap for mankind.” This is a quintessential example of how uncertainty can be safely embraced. It reminds us of philosopher Robert Grudin’s thought-provoking maxim, “... the only thing forbidden should be to stand still and say, ‘This is it.’”² Successful organizations look beyond today’s platform and envision the possibilities.

On a similar note, Will Rogers once observed, “Even if you are on the right track, you’ll get run over if you sit still.” His witty remark subtly suggests some profound questions: How long does the organization stay with a platform that is working? When has the organization learned enough to build a new platform? What should be the relationship between the old platform and the new one? Answering these questions requires a supple mindset built on an atypical view that excellence occurs by moving from one less-than-perfect platform to a better one. The price of excellence, then, is an abiding sense of incompleteness.

Developing the Competencies

Since most organizations are fairly adept at refining existing platforms, we instead focused our research on mastering the exploring side of the equation. We found that

organizations must master three basic competencies in order embrace uncertainty 1) cultivating an awareness of uncertainty, 2) communicating about the uncertainty, and 3) catalyzing action during uncertain times. Below we discuss how to develop these competencies.

Cultivating awareness

Map organizational positions on the model. Almost any organizational endeavor or project can be mapped out on the model. Executives can use the map as a tool to start meaningful discussion. After all, the key players may not agree on the cartographic characteristics of the initiative. A variety of issues often emerge in such a debate:

- ? Is the organization refining an existing platform or building a new one?
- ? Should we be exploring or refining right now?

Debating these questions creates a powerful visual reminder of the inherent uncertainty pervading organizational life.

Expose the inadequacies of existing platforms. Some people do not view platforms as temporary resting spots for knowledge. They find security on the platform and often resist leaving it. When does an organization stop making improvements to a product line and decide to create an entirely new line? These decisions are always tough ones, and organizations may, therefore, stay on the platform too long. As Tim Mannon, an executive with Hewlett Packard said, "The biggest single threat to our business today is staying with a previously successful business model one year too long."³

Ask the right questions. Executives often probe for details, proof and counter-arguments by asking questions such as, "What evidence do you have to support that idea?" These are often ways to increase certainty. When creating uncertainty, probes

should be directed at different targets. The right question can unmask artificial certainty.

Consider some of the following:

- ✍ What certainty level should we attach to that fact, projection or idea?
- ✍ Is it really possible to find an answer to that question?
- ✍ Do we really need to know all this before proceeding?
- ✍ Can we draw another map of the same situation?
- ✍ Is there another way to organize the ideas?
- ✍ Are we rushing to a decision?

Answers to these questions have a way of introducing more doubt into conversations. It may even foment some temporary confusion, which is another way of increasing awareness of uncertainty.

Communicating about the Uncertainty

Consistently frame challenges, not specific solutions. A frame provides the lens through which employees view organizational events, highlighting certain attributes of the situation, while deflecting attention from others. When leaders consistently frame uncertainty, they create a viewpoint that implicitly focuses employee energy, helping them make sense of the chaos and confusion. A proper frame allows employees to see the "big picture" amidst the day-to-day complexities. It spotlights the grand challenge, while diverting gaze from specific solutions.

Consider the frame one executive used when his plant decided to change production patterns. In order to remain competitive, the plant had to switch from long runs of a few products to shorter runs of many products. Such a massive transformation required procedural modifications, a significant investment in new equipment, and most difficult

of all, changes in the employees' mindset. And they had to absorb all this tumultuous complexity while they continued to produce their traditional product lines. The plant manager decided to frame the situation with a consistent theme during the transition. He explained, "our challenge is to continue performing while we transform the plant."

"Performing while transforming" became the plant mantra for several years. It provided a sense of motivation by legitimizing the efforts of those who kept the old equipment "performing" while others installed the new "transforming" machines. It also helped make sense of confusing events, such as using resources to purchase new equipment instead of upgrading existing machines. In fact, despite all the change, production levels continued to rise during this time period.

This frame was effective for a number of reasons. The words rhyme. They are simple. And they are easy to remember. The use of verbs directs attention to action, both in the present and the future. But "transforming while performing" was more than a clever slogan; the frame addressed a deep underlying organizational issue that resonated with employees and focused attention on the plant's future.

Discuss different models of the situation. Such discussions have a way of generating dialogue based on different perspectives. Why? Because models use different assumptions. Consequently they provide various explanations and yield unique predictions. At the very least, debating those differences creates an awareness of viable alternatives. Most individuals make appropriate as well as inappropriate assumptions that lie hidden beyond their awareness. Ridding an organization of inappropriate but latent assumptions presents leaders with a devilish problem. It resembles the challenge of separating salt from seawater but can prove as life-altering as a cold drink for a thirsty

survivor. But once the assumptions are identified, they can be easily reexamined. Over time, as some assumptions prove more appropriate than others, some responses become more appropriate than others.

Create dialogue about the certainty levels associated with critical facts.

Charting certainty levels associated with underlying facts provides a useful way to promote meaningful dialogue. For instance, many factors could influence an organization's decision to launch a new venture. No one can be 100% sure that a customer base will continue to expand, since that involves accurately predicting the future. By labeling certainty levels, the organization can clearly see the true risks that are inherent to any decision. If the decision turns out to be a poor one, executives can always point to the risky nature of the decision-making process. This beats the alternatives such as becoming mired in self-doubt, avoiding future opportunities, or searching for scapegoats. It also creates a specific opportunity to learn from a mistake. For instance, executives may learn that they put too much faith in the findings of marketing studies. All too often executives only think about the known without the context of the unknown. Therefore, charting both the certainties and uncertainties can be helpful in providing more realistic views of an organization's environment.

Catalyzing Action

Experiment. Experiments are a useful alternative when faced with uncertainty because they provide an opportunity for meaningful learning. Consider how a minor league hockey team, the Utah Grizzlies, managed a decision about the purchase of a high-speed digital color copier to print up brochures, posters, and other promotional items. At first blush the idea seemed like a pleasant convenience, allowing the staff to avoid the

hassle of outsourcing arrangements. They decided to try out several of these machines on a trial basis. The experimental results: not only did the machine make life easier for employees, it also provided a means to increase customer satisfaction and profitability.⁴ In short, experiments can allow companies to continually reproduce their success on many levels.

Use intuitions to guide complex decision-making. One study of managers found that two-thirds of them felt that using intuition led to better decisions.⁵ Intuition expedites decision-making, promotes the synthesis of information and provides a check on data-driven analyses. Some critics have called the reliance on intuition irrational. (But what about irrational numbers? There was a time when they were not accepted by the mathematical community. Now rational and irrational numbers are collectively known as real numbers. Perhaps there is a lesson here.) A cautionary note: We are not talking about some kind of whimsical hunch that provides a convenient excuse to avoid contradictory evidence. Intuition works best when grounded in experience; clearly the intuition of an expert is more reliable than that of a non-expert. That's why effective leaders hone their intuitions by discerning patterns in their experiences.

Foster focused flexibility. In the Book of Proverbs King Solomon admonishes, "Go to the ant, you lazybones; consider its ways, and be wise". (Proverbs 6.6) It's not just the ant's work ethic; it is the way they work together that proves illuminating. Some scientists call it, "swarm smarts" or "swarm intelligence". It emerges from their collective behavior, allowing them to solve complex logistics issues like finding the shortest distance to good food sources. As two scientists observed, "By maintaining pheromone trails and continuously exploring new paths, the ants serendipitously set up a backup plan and thus

are prepared to respond to changes in their environment.”⁶ Ants have a remarkable ability to quickly forget old pathways and switch roles as needs of the swarm change. In other words, ants practice "focused flexibility"; they *focus* on present needs while maintaining the *flexibility* to meet future ones.

Some companies are now beginning to recognize the wisdom of such an approach when responding to environmental uncertainty. Two strategy scholars observed:

Managers of (successful) companies know that the greatest opportunities for competitive advantage lie in market confusion, so they jump into chaotic markets, probe for opportunities, build on successful forays, and shift flexibly among opportunities as circumstances dictate. But they recognize the need for a few key strategic processes and a few simple rules to guide them through the chaos.⁷

Sounds just like the ants! Focus provides the motivation, resources and direction needed to accomplish ever-changing goals. Flexibility allows companies to more quickly respond to marketplace changes while decreasing development costs. For example, designers who use flexible strategies, on average, can complete their projects in half the time of those using more conventional design processes.⁸ “Focused flexibility” may sound like an oxymoron but it actually provides a powerful tool for catalyzing action during uncertain times.

Newspaper headlines more often link uncertainty to fear than to opportunity.

Unfortunately, such associations reflect a shallow understanding of the potential benefits of embracing uncertainty. Wise organizational leaders intuitively know this. They creatively manage the exploring and refining tendencies of their organizations by

fostering the proper mindset, while developing the appropriate uncertainty-embracing competencies. They do these challenging tasks because they believe uncertainty must be linked to growth rather than anxiety.

Notes

1. This article is based on a book by P. Clampitt and R. DeKoch, *Embracing Uncertainty: The Essence of Leadership* (Armonk, NY: M.E. Sharpe, Inc., 2001).
2. R. Grudin, *Time and the Art of Living* (New York: Ticknor & Fields, 1982) , p. 2.
3. R. Hoff, “Hewlett Packard,” *Business Week*, 13 February 1995, p. 67.
4. M. Lee and J.H. Maxwell, “Local Color,” *Inc. Tech* no. 4 (2000): 151-157.
5. L.A. Burke and M.K. Miller, “Taking the Mystery Out of Intuitive Decision Making,” *Academy of Management Executive* 13, no. 4 (1999): 91-99.
6. E. Bonabeau and G. Théraulaz, “Swarm Smarts,” *Scientific American*, March 2000, 73-79, p. 76.
7. K.M. Eisenhardt and D.N. Sull, “Strategy as Simple Rules,” *Harvard Business Review* 79, no. 1 (2001): 106-119.
8. S. Thomke and D. Reinertsen, “Agile Product Development: Managing Development Flexibility in Uncertain Environments,” *California Management Review* 41, no. 1 (1998): 8-30.

Figure 1: **Uncertainty Management Model**

