VUCA Innovation

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In many companies, innovation is a critical component of strategy. These companies are finding this to be more and more challenging as their environment increases in VUCA. The acronym VUCA stands for Volatility, Uncertainty, Complexity, and Ambiguity. This concept was created and gained recognition in the strategic planning circles of the US military during the past 30 years (US Army Heritage and Education Center, 2018). The term has gained increased popularity with the transition to Industry 4.0. A body of knowledge is being developed around leadership in the VUCA world, with numerous articles and books published in the past few years.

Bob Johansen (Euchner, 2013) has proposed a leadership response to the VUCA environment. According to Johansen, volatility is countered by vision, uncertainty is countered by understanding, complexity is countered by clarity, and ambiguity is countered by agility. Let's take a look at each of the elements of VUCA and their response e as they apply to innovation management.

Volatility

Volatility is defined as changeable – and often with an explosive or fleeting connotation. Volatile situations are full of surprises. Vision is the recommended leadership response. Developing and articulating a clear vision will assist an organization through the volatility by reducing the disorientation that occurs when a volatile situation unfolds. Even though rapid changes are happening all around, the vision and direction stay constant; providing a basis for decision-making and action.

Innovation often involves new technology being applied to products or business processes. In a marketplace that is fast developing with new customers and competitors, the situation can often be volatile. The vision that is needed for the innovation management team is a clear business strategy. The strategy that has identified target markets, new business processes or systems, and the characteristics of new products will guide the innovation management team through the technology, design, and business trade-offs that must be made when volatility strikes. Without a clear business strategy, the innovation management team often stalls as they start chasing options and waiting for decisions from stakeholders.

Uncertainty

Uncertainty is defined as the state of being unpredictable and indeterminate. There are numerous significant unknowns in the business situation. The environment is novel to the point that past experience cannot be used as a prediction for what should be done now. However, in an uncertain environment, there are facts that could be discovered. The

recommended response to uncertainty is understanding. This requires investigation, fact-finding, and analysis. Rather than responding in a dogmatic manner using outdated principles, the response is to seek data and learn what is actually happening.

Within the innovation management environment for new products or processes, there will always be uncertainty. This could be with respect to customer needs, product performance, process performance, and market response. There are two approaches being used to create understanding within innovation methodologies. One approach is to do extensive upfront analysis using tools such as Voice of the Customer (VOC) and Quality Function Deployment (QFD). The other approach is to create a series of rapid prototypes of a minimally viable product or conduct Design of Experiments (DOE) studies to get "real-world" experience and feedback. I have used both approaches and there are pros and cons for each. The key takeaway is that there is work that must be done to gain understanding. And that work needs to be built into the innovation management project plan.

Complexity

Complexity is defined as intricate, often complicated, interconnected parts, processes, systems, or organizations. With complexity comes options. Some of these options are very favourable as the emergent behavior grows from the new systems developed. However, some of the options are disastrous as problems and challenges are compounded on each other. Navigating through the complexity requires numerous decisions. The recommended response to complexity is clarity. Clarity exposes the decision points and the options. Clarity will also often provide a framework for understanding the implications of decisions. Clarity exposes pathways through the complexity.

Innovation management will often involve complexity on several levels. If the innovation is a system, there will be multiple components, possibly hardware and software, that must all work together. And research shows that system integration and test is one of the most likely areas for a development project to overrun both time and money. In addition, there is often organizational complexity. Marketing is developing requirements, engineering is creating designs, quality is establishing test and inspection methodologies, operations is setting up manufacturing and logistics processes and facilities, IT is bringing new databases online and possibly new systems and applications for support. All of these functions must work together and a change in one cascades through all the rest. Establishing a stage-gate innovation management methodology with defined practices and decision points will go a long way to creating clarity in your innovation projects.

Ambiguity

Ambiguity is defined as obscure, indistinct, and with numerous possible interpretations. Unlike our definition of uncertainty where facts are available but are not yet known; in an ambiguous environment, there is normally no obvious "right" or "wrong" answer. Instead, the answer is always, "It depends." The recommended response to ambiguity is agility. This means that as the fluid situation continues to change, the

decisions are revised and updated frequently. Nothing is ever final; it is just the "current state," with the expectation that change will soon be required.

Industry 4.0 is separating companies into those that are ambiguous and those that are rigid. The highly regulated industries have a tendency to be very rigid and those that are not regulated are often dealing with ambiguity. But regardless of the industry, the innovation management environment is ambiguous. It follows that an ambiguous end market will create an ambiguous product development process. As the target for product definition and performance is constantly changing, whatever product is developed will immediately need an upgrade or pivot to a replacement product. But even in rigid companies, innovation is ambiguous. The regulatory environment is often different in different countries or regions, and these regulations are frequently changing. In addition, the regulatory agency's interpretations of regulations are often inconsistent. Regardless of the industry, a rapid pulsing process is needed to determine the current state of the market and industry environment. This must be coupled with a robust change management process for product and process development. Finally, the product development metrics must be focused on the business success or failure of the innovation, not on time and budget targets for the project.

Conclusion

If you are involved in innovation management today, you are probably experiencing VUCA. You may reminisce about the "good old days" when things were calm and simple. But don't expect those days to return. Instead embrace an approach to have vision, understanding, clarity, and agility.

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References

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