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Managing Innovation

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The term innovation is one of the most misused and poorly defined terms when discussing economic growth and development. Innovation is a buzzword used by politicians hoping that by just saying “innovation” we will somehow magically break free from the mire of the current global economic downturn. There is no mystery to innovation, it is not alchemy. At the surface, it is rather simple: “people implementing ideas to create value.”¹ It is easy to understand yet vastly more challenging to do well.

Entrepreneurship

Innovation is often discussed in the context of entrepreneurship, but it is not limited to this group of individuals. Muhammad Yunus stated, “We are all entrepreneurs, only too few of us get to practice it.”² Yunus, a microfinance pioneer lender to the poor was awarded the Noble peace prize in 2006. He started by personally providing very small loans, generally in the range of \$25-\$300. These loans were approved primarily for women so they could, for example, purchase bamboo to make and sell stools. In a short time, the women were able to repay the loans while continuing to support themselves and their families. He learned that these micro-loans sparked “personal initiative and enterprise” in the bottom of the pyramid poor.³ The Grameen Bank was formed in 1983 to continue the practice of micro-loans and now provides over \$2.5 billion of micro-loans to more than two million families in rural Bangladesh.⁴

Can you become an entrepreneur? Yes, being an entrepreneur can be learned through skill development and training. Even if you work in a larger corporation, you can think and act like an entrepreneur (intrapreneur is the term used for an entrepreneur within a large firm). Len Schlesinger, President of Babson College, says the practices and principles of entrepreneurship are “documentable, codifiable, and consequently teachable to anybody.”⁵ He also has said, “Leaders must come to the realization that when casting a vision, they are trying to convince people to move from where they are comfortable (possibly) to a place they are unsure about.”⁵ Schlesinger has

developed three “rules of entrepreneurship”:

1. “Start with what you care about. Do what you want to do, or do what will get you what you want. Always think about what you will do next.
2. Do not look at the expected return (uncertainty); look at the acceptable loss (risk). Decide what you are willing to spend. Stop obsessing about what you need, use what you have.
3. Do not fear failure when taking steps. Failure does not mean game over, it means try again with experience. If you take a step, and it does not turn out the way you thought it would, you have probably learned something that no one else knows. If you are uncomfortable with failure, try looking at it as learning something that nobody else knows.”⁵

Is our educational system outdated? Are we developing people to be entrepreneurs and innovative at the core? Are we taught to be artists, risk takers, and decision-makers? Are we comfortable with high uncertainty? Are we taught to be a good cog in the wheel as Seth Godin proposes?⁶ How did we get here? Over the past four centuries there has been a shift in how we create value in our society; the shift is directly related to technology. Three ages are discussed in most management 101 books:

- *Agrarian Age* (18th century) where power resided with the landowners. Technology enabled the labor intensive jobs to use fewer workers.
- *Industrial Age* (19th century) where the power resides with the people who owned the means of production. Technology enabled greater productivity.
- *Information Age* (20th century) where power resided with the knowledge worker who gathered and processed data. Technology focused on lower cost and higher efficiency.

David Pink in *A Whole New Mind* discusses how we are moving from the Information Age to the Conceptual Age where the power resides with the idea owners.⁷ This is where being comfortable with high uncertainty is valued; where plan B, C, and D are part

of the process; and what is referred to as the “creative economy” is realized. The need for artists and uniquely indispensable people is keen. The question becomes, are we preparing the people needed for the top labor market jobs (creatives who can problem-solve, make the tough decisions, innovate, etc.)?

Gordon MacKenzie in *Orbiting the Giant Hairball* relates a story of his visit to an elementary school. He asked a class of first graders, “How many artists are there in the room?”⁸ They all eagerly raised their hands. Then, a class of third graders was asked the same question and only a third raised their hands. By the time he reached the sixth grade class, no more than one or two raised their hands.

Innovation

Innovation typically has a modifier in front to distinguish varying levels of value delivered and the impact to the market and some cases the world. Conrad Wai, CEO of Jump Ventures, defines three types of innovation:⁹

Sustaining Innovations maintain or grow market share, improve profit by gaining efficiencies and reducing costs, and often are seen as incremental improvements. Examples of these in the plastics industry would be incremental innovations to a particular class of polymers such as a 5% improvement in chemical resistance for a specific polymer grade or adding a new color for a line of ABS polymers.

Breakthrough Innovations are where the product or service is a huge success and measured, for example, by record breaking sales for an existing category. Electronic grade polycarbonate fits this category. It was a major achievement to reduce contaminants to the level acceptable in an electronic application for CDs/DVDs.

Disruptive Innovations are where the product or service propagates shock waves through market, changing producer and consumer behavior, and rendering existing solutions obsolete. Plastics as a whole are considered an example of a disruptive innovation. The markets ultimately being disturbed were metal, wood, and glass. The early plastics, such as Bakelite, did not disrupt the market because they had limited use. However, the plastics introduced to the market during the latter part of the 20th century were, in some cases, designed to be direct replacements.

The difficulty in implementing the type of innovation dramatically increases from sustaining, to breakthrough, and finally to disruptive. The opportunities for truly disruptive innovations are fewer and sometimes it is a matter of timing. Some may say luck, but luck favors the prepared.

New Rules for the New Economy

One should not be surprised that conventional wisdom is no longer effective. As mentioned earlier, we are moving from the Information Age to the Conceptual Age. From the post-information world, we enter the Creative Economy. The power now resides with the idea owners.

It has to go beyond the idea and the innovationistas; we need connectors, synthesizers, orchestrators, motivators, and doers. People who can deal with uncertainty and risk and know they are far from being the same thing.

The new economy requires new ways of thinking and doing. The trend of globalization is forcing companies to find the lowest cost of production, a race to the bottom as Seth Godin says.⁶ If you are trying to compete on price, a focus may be on driving costs down. For example, one of Wal-Mart’s strategies to be the ‘lowest price leader’ includes stimulating suppliers to lower their costs.

Value Depends on Context

The end goal for any sort of innovation pursuit is to create value. By creating something of value one hopes to attract a buyer and make a profit. Value is a two sided coin: both sides are important and each side is dependent on the other. The sides of the coin are the producer and the consumer.

The definition of value depends on whether you are the producer or the consumer. If you are the producer, you define value this way: Value = (How common a problem you are solving) / (How complex the solution). If you address a niche problem, you really need to be confident that you are applying a simple (low cost) solution so you can cover your fixed costs. If by contrast, you are addressing a very common problem (large market opportunity) then you can afford a more complex solution. However, keeping it simple could be an advantage.

The consumer’s perspective of Value = (Features and Complexity) / (Cost of Ownership). In other words, this is the bang for the buck. Often, the consumer asks how much problem solving or support do I get for the cost to purchase, maintain, and use the product?

These perspectives seem to be at odds with each other. If the supplier’s solution is lacking the complexity to adequately address the problem, the features are not enough to entice the consumer to buy that particular solution (product or service). In reality, these perspectives are not at odds, but rather they intersect at an equilibrium point within the design process.

Design Matters

The vast abundance of low cost goods for consumers has created an opportunity for design to become more important in products that we previously took for granted. Who would have imagined architect Michael Graves designing toilet bowl brushes for Target? Even trash cans are now stainless steel and can cost over \$100.

Just as architecture enhances the function of a building, so does industrial design enhance products we use every day. Don Norman (author, engineering professor, and user-centered design advocate) says, "Aesthetics matter. Attractive things work better."¹⁰ The Chief of Design at BMW, Chris Bangle, says "We don't make automobiles." BMW makes "moving works of art that express the driver's love of quality."⁷ Finally, Norio Ohga, former Sony Chairman and CEO, has been quoted as saying, "Design is the only thing that differentiates one product from another in the marketplace."⁷

Model for Innovation

How can you be successful at innovation? Start by asking an entirely different set of questions, challenge conventional wisdom, and learn by failing and taking action. Recently, the Industrial Research Institute (IRI) posted a members' community blog asking, "Do you reward failure?"¹¹ More than 50% of the individuals representing their firms in IRI responded with a no. One respondent clearly thought it would send the wrong message to the employees. Another commented on the challenge using the word "failure" which has a strong negative association. Others voiced the opinion that "lessons learned" is the appropriate path to follow. Is this an example of following conventional wisdom?

An innovation model that has been successfully implemented by the authors is shown below:



Question

Being educated to memorize facts is not good enough; we need to focus on solving interesting problems and asking different questions (What if? Why?). Be persistent and ask "Are we doing the right thing?"

On his website, Steve Blank, entrepreneur and professor, says, "No business plan survives first contact with the customer."¹² He goes on to state one of the lessons learned from his research is, "Business plans are the leading cause of startup death."¹² Consistent and frequent questioning is part of the successful implementation of this part of the innovation model. The bottom line is to question accepted paradigms.

Act

This second part of the innovation model is where experimentation, testing, and study take place.

Charles Kiefer, in *Action Trumps Everything*, suggests the following tips:¹³

- When you start a project ask, is it something you really care about?
- Don't over think the project
- Act quickly with the means you have at hand
- Don't say when I get funding, then I'll start
- Once you start, see what results you are getting
- If you like the results, take another step

Learn

In the words of the legendary artist, Salvador Dali, "No masterpiece was ever created by a lazy artist."¹⁴

Find ways to acquire new skills. Prototyping is a learning tool. It can be touched, manipulated, examined, and even physically tested. It helps bring to light problems, defects, or deficiencies that were not anticipated. Prototypes also generate excitement with your colleagues and may serve as a motivator for adding more members to the team. Also, they are an effective way to receive feedback, especially from early adopters.

Steve Blank defined the visionary early adopter (Blank coined the term earlyvangelists for this class of consumer) in the following way:¹⁵

- Has a problem
- Aware of the problem
- Actively searching for a solution
- Has cobbled together an interim solution
- Can acquire a budget for a solution to solve this problem

Evaluate

The fourth part of the innovation model is evaluate. If the innovation is not a hit, switch and be flexible. Know when to pull the plug and go onto something else. One company in the IRI blog mentioned earlier¹¹ that positively recognized non-successful projects, mentioned that one of their "failure rewards" was given to a team who pulled the plug on their project after substantial resources and time had been invested. The team and its leader were commended for taking the courage to halt and reassess options.

Conclusions

Innovation is known as a critical strategy for business because it is an effective way to facilitate the growth and sustainability of a firm. It can create new points for differentiation, be the determining factor in the market place, and significantly influence the direction of an industry. Conventional wisdom regarding innovation and the management of it is becoming obsolete as we enter the Conceptual Age. New management skills, tools, and processes such as supporting employees to be entrepreneurial (or intrapreneurial), rewarding failure to capitalize on learning, understanding the basics of innovation, selecting the appropriate innovation portfolio for the firm, and integrating innovation processes in a purposeful and pervasive way, are becoming the new wisdom.

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