Data Driven Culture

Establish an Analytics Driven Innovation Culture: A 10 Point Plan

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How to Establish an Analytics Driven Innovation Culture

Every truth passes through three stages.
First, it is ridiculed. Second, it is violently opposed. Third, it is accepted as being self-evident. —ARTHUR SCHOPENHAU

Overview

The need to build and maintain a sustainable Innovation Culture is top-of-mind of many senior executives. The development of leadership teams, creativity enhancement and Ideation efforts all have been tried to unpredictable success. Things are changing. As more companies struggle with an acceptable ROI on their innovation programs they are seeking new actionable insight into the process, into the expected outcomes and into the guarantee that revenue growth will accelerate in acceptable timeframes. This White Paper provides the reader with guidelines on how to approach a quantitative measurement of innovation progress and how to turn the resulting information loop into actionable insight.

The Need for Predictable Innovation Results

Think about how inefficient the innovation process is in both public and private endeavors. Universities try to commercialize their intellectual property. After placing enormous resources and efforts on technology transfer they are still, on average, and just for the top ten performers, delivering .06% of all patent disclosure inventions to revenue producing status. Then private capital takes over delivering less than 10% profitable status to their portfolio companies. The funnel from idea to positive revenue is, to put it mildly, a mine field of failure. Bringing this analysis to internally developed innovation within companies does little to change the picture.

Commonly reported facts point to inefficiency and costs: 1 in 3000 ideas make it to market; Only 1 in 5000 make it to profitability; Only 2% of all patents issued make significant revenue for their inventors (and this according to the Patent Office); 1000 ideas inside a company, with substantial applied resources focused on successful market introduction, may produce one or two products that get introduced to market. These numbers scream cost and inefficiency. Some say that is the price of admission to building sustainable market revenue and companies must pay the price. However, there are mitigating strategies that can make the process more predictable and efficient, even though the ratios will always remain challenging.

Enter Advanced Analytics

Measuring output is the easy part. Current innovation consultants will tell you to measure the number of ideas generated, the number of teams created, and the number of patents filed etc. But the issue goes deeper than that: the modern executive must look to operating analytics to get to the predictability of eventual success and must enlist the use of AI and machine learning tools to gain real insight into the process. More importantly, executives must consider advanced data as a function of time. Both the breadth of data collection and the depth of analysis must be leveraged to get a correct picture of operational and organizational issues. How are groups interacting today versus last week? What content is being discussed today versus yesterday?

Are the teams advancing thought or rehashing old ideas generated by an overindulging group participant? Are groups learning faster when an idea is not good and moving on to more promising ideas? All these questions must be answered continuously to become a truly data driven innovation culture. Below is a ten point plan to help you get started.

A 10 Point Plan

1. **Gather the right data to measure your culture, people, and knowledge:** Data is everywhere and, then seamlessly, nowhere. Meaning that data is abundant but insight is scarce. Finding data that matters is a function of selection and analysis. Gather data with the idea that you are going to reduce it significantly. The quicker the better. Use data in the beginning that may appear useless but may add to the overall insight to your particular situation. We use "Virtual Artifacts" of every kind to build our models on business operations. Eventually it all boils to key performance indicators that show relevance and show actionable insight. For example, we use security system data to analyze the way people move and interact in the office. This adds to our data on networking that then contributes to a measure of group interaction; all critical for innovation culture.
2. **Use the most advanced tools to sharpen your knowledge:** Simple R driven statistics are necessary but not sufficient to paint a picture of what is happening in your company. Advanced algorithms, from Bayesian analysis to content mapping, must be added to your analysis. If there is a tool and we have a dataset, we use the tools to see what connects. The system you put in place must be capable of drawing on new advanced tools.
3. **Take Human Resource driven constructs out of the Innovation Culture ROI equation:** Traditional measures of people behavior in the office have less contribution in determining a data driven analysis. Some people interaction in the form of storytelling and open ended intercourse, can add significant CONTEXT to data but the data must drive the analysis. Once changes are made to the organization it is the data that will determine if the changes produced the desired outcome.
4. **Build predictive models on processes, not just outcomes**: Models can measure outcomes. But so much of business today is on short time frames (look at the average product development lifecycle as a glaring example). Processes can be broken down and measured to provide management with a short-term view of how the organization is functioning. For example, we look at how long and what it takes to generate 1000 ideas. It does not by itself produce a significant indication on market outcomes, but it does provide apply insight into process

steps. This is a start as the company builds a predictable system of innovation effectiveness.

5. **Focus on time as a mitigating influence of all activity:** Like capital availability constrains asset utilization, time constrains innovation culture. With enough time we can do anything of course. But that is academia not business. Analysis must account for time constraints that are meaningful for your business. If your public then quarterly outcomes are critical. If you are in pharma research years matter.
6. **Inject corrective action all along the innovation process:** Innovation is agile. Many changes all along the process of innovation aggregate to big impact. Sweat the small changes and results happen. Move a critical player from one group to the next; measure changes. Add 500 ideas to a product category and measure the impact to how long it takes a development team to vet the ideas to something meaningful. Add a catalyst if it is taking too long to meet operational goals.
7. **Factor changes in processes into new models continuously:** Optimize the model that the data is building. Adapt your quantitative model to accept continuous input. We, for example, continuously monitor along a number of innovation culture dimensions and then build an aggregate model using AI optimization techniques. This gives us a continuous delta measure on how the organization is responding to changes.
8. **Compare your metrics against other similar companies:** Knowing how well your organization is doing against competitors is critical to long term sustainable achievement. It is not enough to know how many and what kinds of products get announced in the market. You now need to know the innovation culture of your competitor to determine how well you will compete over time.
9. **Build a system to manage your decision-making:** Actionable insight is a precursor to making decisions. Today's senior managers must be part data analyst in their decision making. So much of what is used today in business is quantitative. If your senior management received their MBAs at case study based schools you may suggest a statistics/calculus review. As painful as that may be for some.

10. **Optimize the entire process through more data and more model optimization:** Further the optimization process by continuously measuring and collecting new data. Optimization of your models based on new, more diverse sources of data lead to sustainable competitive advantage and a sustainable innovation culture.