Measuring innovation's outcomes

This paper sets forth some ideas relating to the use of measures for better understanding whether a corporation is well positioned to be innovative. Metrics for measuring the outcomes of investment in innovation are suggested.

A framework for measurement is suggested along with examples from well-known and successful companies. New software provides a new facility for measuring innovativeness!

Overview

Being innovative is not an end in itself. The goal is for the corporation to grow and be profitable, and maintain an acceptable level of risk.

Our research into innovation clearly indicates that three major elements make for success when it comes to realizing on investments in innovation.

1. **A culture** in the organization which values innovativeness and where the corporation is driven to be an outstanding competitor in their chosen field of endeavor. Companies which start off with a founder(s) who are guided by this desire have a head-start over those coming late to the idea of being innovative. 3M, GE, and, of course Apple, for example, began with this culture of innovation. Massey-Ferguson did not. RIM (Research in Motion) was pulled off track mid-way.

2. **A strategic direction** which guides the organization to the opportunities as they develop within their current-customer or potential-customer community. Strategy and the culture need to go hand in hand. Simply relying on a culture for innovation is a recipe for disaster. It is, however, often easier to modify the strategy of a company than it is to restructure its culture for innovation.

3. **A means of managing the process of innovation** within the organization. Whereas innovation can be viewed by some as a black art, i.e. that the surfacing of ideas is willy-nilly and subject to a lot of luck, more recent examinations of how corporations sustain or develop their innovativeness are revealing a more systematic management process. Software is the big enabler of this third element; even for smaller organizations.

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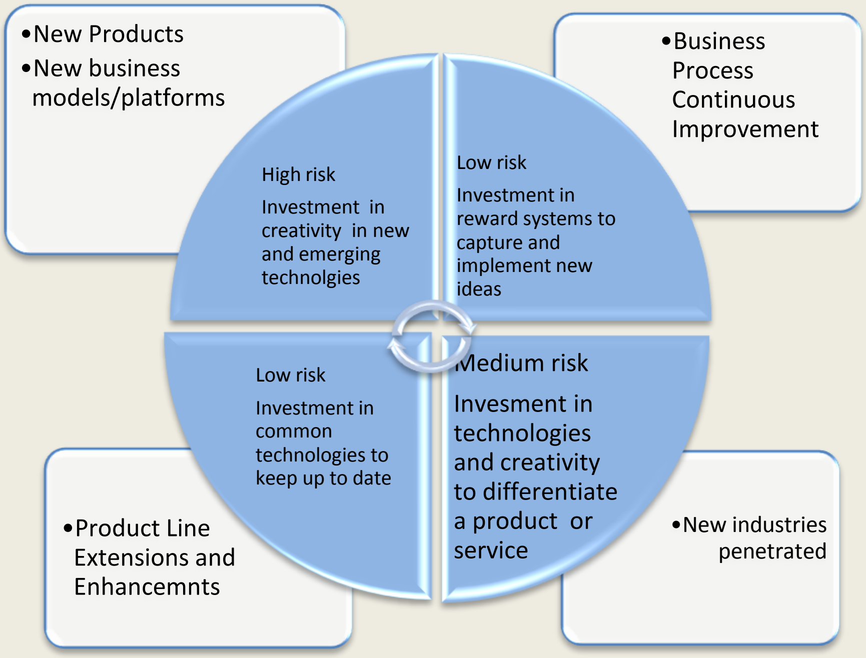
A recent study by Booz and Company[1] confirms that this latter element is now an important aspect of innovation.
" Few companies succeed at innovation without ensuring that adequate processes are in place to generate new ideas, and that those processes are followed in a disciplined fashion".

This paper deals only with the latter of these three elements and within this topic – a means of measuring the outcomes of innovativeness. Measurement is part of the discipline of innovation management.

[1] The Global Innovation 1000: Making Ideas Work

Measuring innovativeness

No one would disagree with the idea that the corporation exists to maximize returns for its shareholders having due regard for its full spectrum of stakeholders. Not every corporation chooses to be innovative and that is an acceptable strategy although fraught with potential problems over the longer term. Copying, or being by desire an imitator or follower, is an alternative to being innovative. Knowing one's own strategy is the key.



Most of the companies which we have researched want to be the leader in their chosen field. Only one company which we have researched, Massey-Ferguson, chose deliberately to be a follower (of John Deere in particular) and that was successful for about 150 years until the company succumbed and its brand bought out. RIM (Research in Motion) is, as this paper is being written, attempting to recover its innovative mojo after leading the pack during the early introduction of a new generation of phones.

Innovation, as it is used in this paper, includes the full range of ideas which percolate within a company and need to find a way to surface and be implemented. Ideas and change come with risk. The four quadrants suggest a range of low to high risk dependent upon the intended focus of the investment in technologies of one form or another. Investment, while usually thought of in monetary terms includes all resources: time, thought and even emotional energy.

Why worry about metrics of innovation?

Phil McKinney[2] perhaps summed up the situation when he stated:
If you set the right metrics, then you're going to have people doing the right actions. Consistency in producing and measuring the innovation metrics will eventually take hold. It eventually will become part of the corporate culture, but you can't give up. Because people work to metrics.

In other words, metrics play to and impact the culture in the organization. Decisions concerning metrics work to impact the culture for innovation but gaining the culture takes time and a discipline. Losing an innovative culture takes much less time.

Choosing the right metrics is key to measuring innovativeness. Anyone who has gone through an individual performance

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[2] Phil McKinney.com

review, or business unit review, knows full well the importance of metrics – whatever they may be. Metrics determine your perceived performance within the organization, the chances of being promoted and extends quickly to the determination of compensation. At the CEO level, especially in these days of short-term thinking, the focus is share appreciation and growth. Metrics matter at all levels.

Every measurement of innovative output will have its detractions, but as long as the business model remains the same from year to year, even the simplest of measurements can provide a degree of insight into the effectiveness of innovative initiatives. Take for example; revenue per employee or per asset unit.

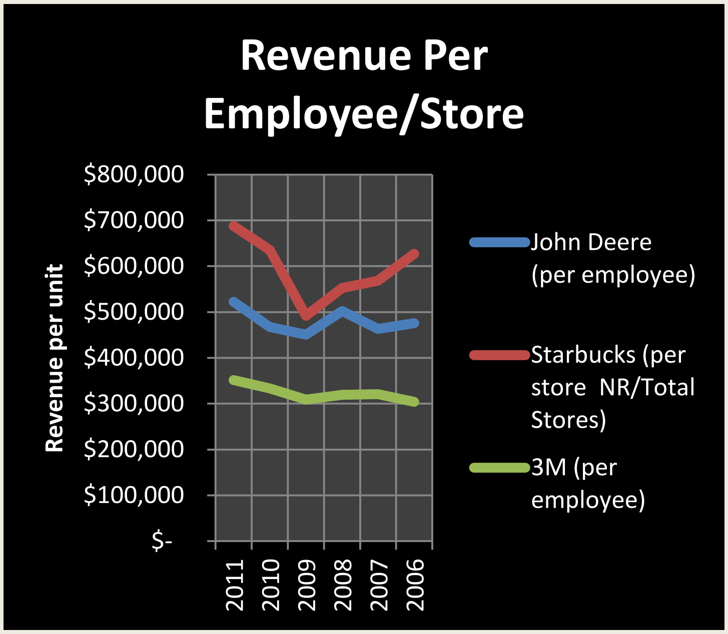
By adding revenue to an existing asset such as, in these three cases [John Deere, Starbucks and 3M], there is an indication that innovation overall is contributing to growth and profitability. Apple with its model emphasizing outsourcing much of its supply chain has a whole different level of performance per employee – currently at the rate of over $2,000,000 per employee having risen from close to $1.5 million three years ago.

Its relatively easy to measure the innovativeness of some companies but as companies grow and become more complex, the task is made much more difficult. Other measures are used, at least at the overall corporate level. No doubt simpler measures can be used in distinct divisions, business units or for individuals, but such information is seldom reported publically.

3M – Measuring Innovation

3M, a company which we have researched[3] at some length and which has, since its inception, emphasized the importance of innovation gets more complicated to analyze with simple metrics at the corporate level. The complexity has not stopped 3M from emphasizing what it believes are measures of its commitment to the outcomes of innovation.

Thus 3M emphasizes its innovativeness in terms of; patents awarded, technology platforms of which there are 46 globally, researchers employed (2,673 in the 2011 report).



The company currently publishes a report on its ‘culture of innovation’ replacing an earlier document entitled ‘A Century of Innovation which was discontinued during McNerney’s watch.

[3] See Profile of 3M at http://www.corporateinnovationonlilne.com

3M reports its awards for everything from science initiatives to business awards. For example;

3M earned a top spot on Booz & Company's list of most innovative companies for the third consecutive year, ranking No. 3 behind Apple and Google. Booz & Company, a global management consulting firm, surveyed nearly 700 innovation leaders from companies worldwide to determine which companies those leaders see as the most innovative companies in the world, in 2011.

3M was named among the top 50 of "The World's Most Attractive Employers" in a survey conducted by research firm Universum. More than 160,000 undergraduate business and engineering students worldwide participated in the survey in 2010.

3M has been selected for inclusion in the 2008/09 Dow Jones Sustainability Index that tracks the performance of sustainability-driven companies worldwide. 3M has been included in the index every year since its inception in 1999

3M chooses to report on these rewards and recognitions as evidence of its inherent innovativeness and, by implication, its sustainability.

Phil McKinney provides a full expose of 3M's use of metrics around research and development spending and its relationship to gross margin.

This is what I call the "3M Metric". 3M is famous for pushing their executives to embrace the new by putting in place a metric that reinforces the need to constantly re-invent itself. So what constitutes a new product? Rather that describe what it is, it's easier for me to describe what it isn't. It's not the next generation of an existing product (the next year's model of a car or laptop doesn't qualify) or a line extension (a new flavor of soft drink doesn't qualify).

It is hardly useful to repeat here what McKinney has already set out; except for one key metric; "% of revenue from products launched in the last XX years"; a very common measurement of innovativeness[4].

Gross margin divided by spending on research and development is a metric which has been also used by HP [5], but this is a different story.

Why gross margin? The theory is that if you build a better mouse trap, the customer will reward you with a margin premium which will show up in gross margin.

Other Measures

Picking the right metrics can be made easier by closely analyzing their use by the competition. Find a comparable company and use their choice of metrics as your starting point.

In our experience such a comparison is one of the best ways of introducing almost any kind of change; i.e. by recognizing a potential threat from the competition.

The Olympic skier Jean-Claude Killy said it best, "The best and fastest way to learn a sport is to watch and imitate a champion."

This is a starting point, not the end of the process of selecting a metric.

[4] ibid
[5] Phil McKinney.com

John Deere emphasizes its expanded product range and performance enhancements to its engines as well as rewards received from external sources.

John Deere received a number of medals presented at Europe's largest farm equipment show, eight awards from a leading U.S. agricultural-engineering group and a gold medal earned at an international competition in France. The recognized technologies pertain to advanced steering, tractor implement automation and crop harvesting logistics, among other areas. In addition, the John Deere 7280R was named tractor of the year by European farm-magazine editors.

Both John Deere and 3M make extensive use of external sources for recognizing innovativeness, at the corporate level. The complexity of their organization did not deter either of these companies from communicating the importance of innovation. Rewards are consistent with their internal reward philosophy; i.e. using non-monetary rewards is at least as significant a recognition as monetary.

Starbucks measures its innovation in a variety of ways;
- same store sales growth,
- new store openings globally,
- operating margin (implicitly referencing cost reductions per unit),
- new product offerings, specifically transitioning the packaged coffee business in-house to a direct distribution model (a new business model for supply chain control), and
- providing a light roast coffee (product enhancement), Starbucks Card Apps (new service).

Other measures – requiring surveys or extensive analysis

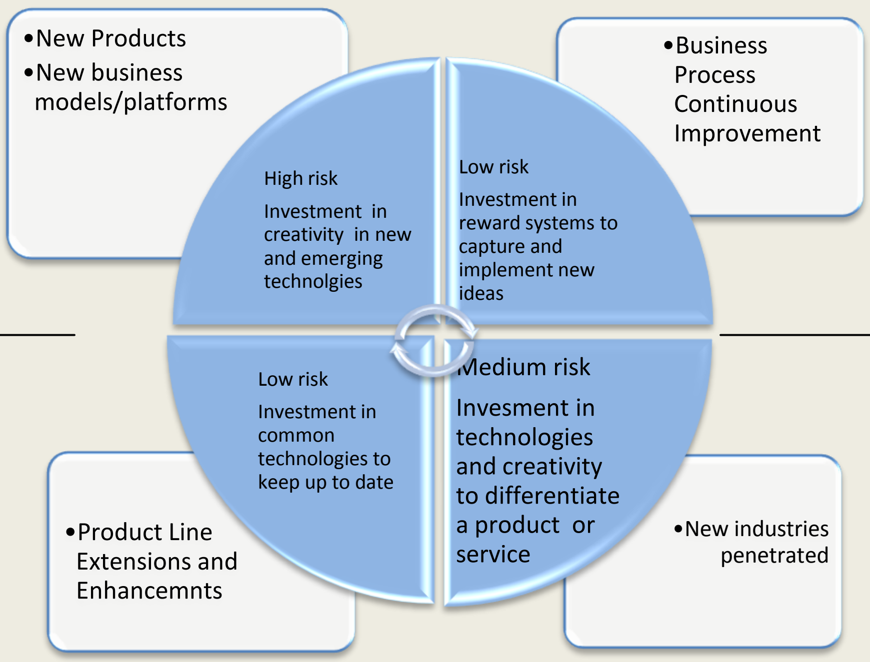
There are a variety of ways of measuring innovativeness at least as seen by stakeholders, customers and even employees. Here are a few; some better than others.

- Surveys that provide customers opinion of your company's innovativeness and its brand image – as compared to the competition
- Financial analyst rankings and feedback from investor relations broadcasts to the media.
- Stakeholders' (in this case suppliers, investors, etc.) opinions on the 'innovativeness' of your company compared with their opinion of the competition
- New sales to new customers - marks the rate of new customer acquisition reflecting the efforts to enhance the brand.
- Measurements of incidence, or rate of increase, of attractive, internally generated investment opportunities (the size of the pipe line) which come under review by senior management and the Board.
- Increase in the value of intellectual property generated from internally-sourced ideas; augmented by acquisitions of IP from other organizations. The information could be broken out by IP for existing versus new product initiatives.
- Share price premium attributed to the company's reputation for innovativeness.
- Conducting an analysis focused on employee retention and ease of attraction.
- Collaborations and partnerships reflecting the company's reputation for its innovativeness
- The percentage-of- time key executives/Board members spend on innovation as a specific topic of a meeting, seminar or workshop.

Measures of Innovativeness – Examples in 4 Quadrants

- Patent applications
- Patents achieved
- Ability to hire SMETS personnel
- Number of ‘breakthroughs’
- Rewards from external sources
- Publications in prestigious journals
- Licensing fees derived
- New products as a % of current offerings
- Dropping under- performing products

- Reduction in cost per unit
- New technologies adopted
- Service levels improved
- New customers added in existing markets
- Revenue per employee
- Revenue per units of production
- Measurable quality improvements



- Ideas generated and in the pipe-line
- Ideas generated and implemented
- New markets entered

- Number of collaboration linkages
- Stakeholder (employees, suppliers, customers) surveys
- Results of ‘exit’ interviews with innovators
- Risk profile at target level