What Top Managers Should Know About The State Of R&D Measurement

By
Bradford L. Goldense, CMfgE, CPIM, CCP
Goldense Group, Inc., Needham, MA

Over the past eighty years, since the advent of Taylor-based management principles in the 1920's, most business functions have devoted a great deal of time and effort to determine and implement measurement systems. Today, functions such as Finance, Sales, Manufacturing, and Distribution have stable, mature measurements and systems that provide value-added information to management. Marketing and R&D are perhaps the remaining two business areas where the opportunities for "management science" are still great. This article will focus on R&D's opportunities for improved management science in measurement.

The February 2000 issue of CFO Magazine published an article entitled "A P&L for R&D" which focused on the state of management science in R&D. The CFO article featured the work of several companies in this area, including the newly published results of Goldense Group, Inc.'s [Needham, Massachusetts] 1998 Product Development Metrics Survey.

GGI's work brought to light the fact that "corporate-level measurements" in R&D have remained essentially unchanged for the past eighty years. Most all efforts to date have focused on improving management science for projects and functions within R&D and not on overall R&D results. Specifically, GGI identified that there are only a handful of measures that are consistently tracked by a majority of companies. In GGI's 1998 survey of 190 companies, six measures were reported as being used by more than 50% of respondents. These findings caught the attention of CFO Magazine. In 2000, GGI resurveyed this question and obtained essentially the same results.

GGI 1998 Product Development Metrics Survey Results*

R&D Spending As A % of Sales	[78%]
New Products Released	[68%]
Number Of Projects In Backlog	[61%]
Total Products Released/Supported	[54%]
Total Patents Filed/Pending/Awarded	[51%]
Sales Due To New Products	[48%]

[* Private companies, approximately 33% of industry and 33% of survey respondents, have less reporting requirements than do public companies. One should not expect to find 100% usage of any metric in a sample population that includes private companies.]

If one examines these six metrics, one finds that they originate from several sources. Surprisingly, only one of the sources is R&D. Essentially, R&D managers have exported the responsibility to measure R&D to other business functions. The primary sources of R&D measures are the Finance, Sales, and Legal functions. The Finance function drives the measurement of R&D Spending and Sales Due To New Products. The Sales function drives the measurement of New Products Released and Total Products Released/Supported. The Legal or Administrative functions drive the measurement of Total Patents Filed/Pending/Awarded. The single widely-used metric driven by R&D is Number of Projects In Backlog.

GGI concluded several things from the 1998 survey results. First, technical professionals have deep-seated value systems that emphasize innovation and technology so highly that bandwidth for systematic management and measurement is essentially excluded. Second, corporate management generally understands so little about innovation and technology development that R&D has escaped measurement for decades. Third and relative to other functions, R&D is not as deterministic as other functions. Non-deterministic functions like R&D and Marketing challenge one's ability to measure. Fourth, there was only one new metric to rise to general usage in the 1900s – Sales Due To New Products. This metric was invented and popularized by 3M circa 1988 and has risen to industry prominence in the past ten to twelve years.

In 2000, GGI's next biannual survey sought to shed further light on these rather surprising results. Companies were asked to describe the "set of metrics" that were used to manage R&D and to identify how many of these R&D metrics that were also part of the set of metrics used by the corporation to measure the business as a whole. Through metrics, GGI sought to understand the degree to which R&D is linked to corporate strategy and results.

The survey findings indicated that approximately 20% of companies do not have a set of measures for either the corporation or for the R&D function. Of the companies that did have measures, about half had clearly defined metrics for both the corporation and the R&D function. The other half responded that while there was not a specific approved set of measures, that they felt they could derive the set of metrics based on what was commonly and repeatedly used at management and staff meetings at their companies. The companies that did have a clearly defined set of measures reported about 16 corporate measures and about 6 R&D measures. Interestingly, the respondents that derived their set from "what was commonly used" reported almost exactly double the number of measures – 20 and 12 respectively. GGI surmised from this that unless a company has taken the time to specifically define a set of measures for either corporate or R&D performance, that almost twice as many measures are consuming resources to calculate them than the company would approve if it brought focus to this subject area.

Finally, to establish linkage between R&D strategy and the corporation, GGI asked companies how many measures in the R&D set were also part of the corporate set of measures. The answer was that approximately 3 of the 16 measures were from R&D, or about 19%. Given that R&D spending seldom

exceeds 19% of sales, R&D measures seem to be more than adequately linked to the corporate level based on corporate spending. But, when one looks at the specific measures that are widely used as identified in the 1998 survey, it is not clear that there is any real linkage. Industry R&D organizations should seriously reconsider the long standing approach of exporting the responsibility for the measurement of R&D to non-R&D functions.

For further information on either GGI's 1998 or 2000 Product Development Metrics Survey please visit GGI's Market Research Reading Room at http://www.goldensegroupinc.com/readrooms.shtml or GGI's iStore at http://www.goldensegroupinc.com/iStore/store.html.

Author: Bradford L. Goldense, President of GGI, has consulted to over 150 of the Fortune 1000 in over 300 sites across North America, South America, Europe, and the Middle East. GGI is a fifteen-year old strategy, R&D, and product development consultancy and market research firm based in Needham, Massachusetts, USA. Please feel free to contact Mr. Goldense directly at 781-444-5400 or email Brad at blg@goldensegroupinc.com.

For More Information Please Contact:

Goldense Group, Inc.
1346 South Street
Needham, MA 02492 USA

WPh 781-444-5400 WFx 781-444-5475

URL www.goldensegroupinc.com