



2014 Product Development Survey Findings & Conclusions

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Six times since 1998, Goldense Group, Inc. [GGI] has surveyed industry on **current R&D and product development practices and trends; and the metrics currently being used by CEOs, VPs, and CTOs to measure the performance and productivity of R&D and Product Development.**

Questionnaires were sent to a wide distribution of top-level product development professionals in industries ranging from industrial, computer, and medical products to aerospace, defense, electronics, software, and chemicals in North America, inclusive of Canada and Mexico. Many companies, whose headquarters were outside North America but who did R&D and/or product development in North America, responded for their North American operations. GGI researchers sought a representative cross-section of industry in North America.

The study was conducted by GGI via a combination of phone screening followed by an e-mail with either an attached pdf questionnaire or a link to a web-based version of the questionnaire. A small amount of handouts given out at public seminars in a non-targeted manner and invalid responses were discarded. We also received and screened a small number of incoming calls from companies requesting to participate. To further randomize the sample population, some 23 firms or organizations agreed to help our research team by screening their contacts for appropriateness and extending an invitation to those that qualified. In total, 3099 questionnaires were distributed to appropriate participants. A total of 219 responses were received yielding a response rate of 7.1%. Subsequently, fifteen (15) surveys were determined to be incomplete or otherwise invalid and were eliminated. Three companies had duplicate or triplicate responses, and four (4) responses were rationalized and eliminated. The result was 200 net good responses yielding a net response rate of 6.5%.

GGI's 2014 Product Development Metrics Survey is **primary research that focuses on five areas where there is significant industry activity.** Respondents completed a 10-page questionnaire covering their demographic information and the following five areas: (1) the overall innovation environment of a company, (2) the innovation processes used by companies, (3) the degree to which the importance of OI is increasing or decreasing and the current techniques being utilized, (4) the degree to which the importance of IP is increasing or decreasing and the current techniques being utilized, and (5) the current rankings of top corporate metrics used in RD&E with comparisons to the metrics usage from our past surveys in 2008, 2004 and 1998.

Over 90% of respondents are from top management, marketing, business development, R&D, and Engineering. Over 65% of respondents hold a title of Director or above. Over 85% of all respondents hold a title of Manager or above.

Results of this ground breaking primary research are offered in **three reports having increasingly detailed views of survey observations, analysis and key findings, with insights into new developments and trends.** These reports are a text only **Highlights Report (MR51)**, a text plus a graph of each question **Summary Report (MR52)**, and a **Results Report (MR54)** which is the Summary Report plus five additional cross-sectional "cuts" of the 200 survey population. This last and most complex report is still TBA at this time.

DESCRIPTION OF THE 2014 RESEARCH

GGI's 2014 research questionnaire contained six sections, each comprised of a number of questions. The purpose of Section A is to be able to categorize the respondents into logical analysis groups. The remaining five sections are the focus of the 2014 research.



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Section A: Respondent Profile: The basic questions asked are title and functions performed of the person completing the survey, the type/scope of the reporting organization within the company, the company's industry or service, and places in the world the company does sales, R&D and manufacturing. Also asked are questions that categorize each company within the population of companies that responded to this survey. This provides the ability to do "cross-sections" of the entire survey population, such as public vs. private, smaller vs. larger sales, more vs. fewer employees, high tech vs. low tech, and manufacturing environment.

Section B: R&D Operating Environment: This section focuses on employee perceptions of the innovation environment in their workplace. Four areas are investigated. The first is the type of R&D strategy being utilized. The second is the change in the importance of innovation over the past five years. The third is the degree to which R&D has become more or less centralized in the past five years. The final area is the degree to which physical facilities have consolidated or become more dispersed in the past five years.

Section C: Organic Innovation: This section focuses on innovation that emanates from within the company. Three areas are investigated. The first seeks to understand the range of innovative activities performed by the company, across the spectrum of probabilistic Research to deterministic Product Development. The second and third seek to categorize the degree to which formal process documentation exists for the identified activities, pre-product development and product development respectively.

Section D: Open Innovation [OI]: This section focuses on innovation that emanates from outside the company. Five areas are investigated. The first explores the degree to which the rapidly growing OI marketplace this past decade, that now better enables developers to buy vs. make, is being utilized. The second explores the current degree of financial tracking and control of OI results. The third explores perceptions of OI's financial impact. The fourth explores techniques used to acquire invention and/or innovation from the outside; and techniques used to provide invention and/or innovation to the outside.

Section E: Intellectual Property [IP]: This section focuses on the degree to which, and the ways in which, IP is becoming an increasingly important consideration in R&D and product development activities. Eight areas are investigated. The first queries changes in importance. The second queries the current degree of financial tracking and control. The third explores perceptions of IP's financial impact. The fourth queries the types of IP protection and registration that are employed. The fifth queries the degree to which IP is being monetized as an asset other than through sales of products. The sixth queries the decision process that precedes a go/no decision to protect and/or register individual IP assets. The seventh queries the level to which the function of IP management is formalized within a company; and the use of external counsel. The eighth is the only question that explores the impact of the "First-To-File" legislation that became effective on March 16, 2013. Has your company modified its Trade Secret processes now that First-To-Invent is no longer?

Section F: R&D Metrics Used In Industry: This section focuses on the metrics that companies use to measure their R&D productivity and overall business results. Only CXO-level metrics are researched. This section has been consistent in all six GGI research efforts since 1998. Respondents are asked to identify the R&D metrics that are "in use" at their company. The four qualifications for "in use" are: that they are measured at least annually, be visible to all members of top management as active/ongoing tools, numerous people in the organization have easy access to the results, and that there is consistency in the method used to calculate these metrics from year to year. If all four criteria are met, the metric is "in use." Enabled by computing power, the cost to produce a metric is lowering and so the number of metrics are increasing. The growth of pre-product development activities, open innovation, IP, lean, and other areas also increases the number of metrics being watched. In 1998 we researched 33 metrics. In 2014 we researched 101 metrics.

2014 Biennial Survey Of Industry

Published Reports For Product Development Practitioners

2014 SURVEY REPORTS AVAILABLE

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MR51: 2014 Metrics Survey Highlights [Text]	91 pages	\$ 637.00	\$ 637.00
MR52: 2014 Metrics Survey Summary [Text & Graphics]	138 pages	\$ 966.00	\$ 966.00
MR54: 2014 Metrics Survey Results [Text & Graphics]	TBD pages	<i>This Report Is Not Available Yet</i>	

MR54 includes five cross-sections of the survey population: Public vs. Private, Hi Tech vs. Lo Tech, Many vs. Few Employees, Large vs. Small Revenues, and Job Shop vs. Discrete vs. Repetitive vs. Process Operations.

* Hardcopy & Electronic Versions are available at GGI's website in The Wisdom iStore at www.goldensegroupinc.com.



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AUTHOR

Bradford L. Goldense, NPDP, CMfgE, CPIM, CCP, is founder and president of Goldense Group, Inc. [GGI], a twenty-eight year old Needham, Massachusetts consulting, market research, and executive education firm concentrating in advanced business and technology management practices for product strategy, development, and commercialization. Mr. Goldense has consulted to over 200 of the Fortune 1000 and has worked on productivity improvement and automation projects in over 500 manufacturing locations across North America, South America, Europe, Asia, and the Middle East. Abbott Laboratories, Bayer, S.C. Johnson, Ford, General Motors, John Deere, Philips, United Technologies, Carrier, Molex, Monsanto, Bose, and Shure are among GGI's clients.

Mr. Goldense is a retired member of the graduate engineering school adjunct faculty at the Gordon Institute of Tufts University in Medford, MA, after lecturing and teaching for twenty years.

Brad is a certified New Product Development Professional [NPDP] by the Product Development and Management Association [PDMA], a Certified Manufacturing Engineer [CMfgE] by the Society of Manufacturing Engineers [SME], a Certified Computer Professional [CCP] by the Institute for Certification of Computer Professionals [ICCP], and is Certified in Production and Inventory Management [CPIM] by the American Production and Inventory Control Society [APICS]. He holds a BS in Civil Engineering from Brown University and an MBA focused in Cost Accounting and Operations from Cornell University.

He is founder and past worldwide president of the Society of Concurrent Product Development [SCPD], which is now at 3M. He served on Cornell University's Executive Council and its Technology Transfer Committee. Brad is a past member of the Board of Directors of the American Society for Engineering Management [ASEM]. He led chapters and served in regional officer positions for the Society of Manufacturing Engineers [SME].

Mr. Goldense was an invited guest on Alexander Haig's World Business Review and has appeared on Public Television, PBS The Business & Technology Network, and CNBC. Brad has authored or been quoted in over 130 articles on competitive product development and manufacturing with known industry publications such as Business Week, CFO, Design News, Machine Design, Purchasing. GGI holds registered copyrights on an additional 70 technical papers and 17 primary research reports. He is an internationally recognized expert in rapid product development and pipeline processes, innovation practices, and in R&D metrics.

Prior to founding GGI in 1986, Mr. Goldense held positions at Computer Sciences Corporation's Index Group, Price Waterhouse, Lester B. Knight & Associates, and Texas Instruments.

NPD INSIGHT

The Product Development Metrics Survey reports for 2014 describe the range and differences in practices across a number of aspects of "tangible" innovation processes, practices, and tools; and ranks the metrics used to measure R&D in 2014 with comparisons to prior research conducted by GGI over the past decade.

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