



2004 Product Development Metrics Survey Product Selection, IP, and Top Corporate Metrics

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INTRODUCTION

We believe it will be worth your while to complete this Research, Development, & Engineering [RD&E] survey covering the full range of Product Development and to request a copy of the results that will be sent to all survey participants who make an honest effort to complete this survey questionnaire.

The participants in our Biennial Survey receive a forty-plus page results document complete with graphics. Our 1998, 2000, and 2002 participants were completely satisfied with the document they received and sent us only accolades for our research work. We will again provide the results to those who credibly complete responses to all questions within our required timeframes. We appreciate your commitment of time and rigorosity in the completion of this survey. We will absolutely keep responses confidential!

COMPLETED SURVEYS ARE DUE BY July 16, 2004. THANK YOU!

A special thank you to the numerous 1998, 2000, and 2002 survey participants who emailed GGI after our recent RapidNews announcement and expressed their interest in participating in the 2004 survey. Thank you! GGI will do high quality work this time too!

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This survey covers five areas relating to Product Selection and IP where there is currently significant industry activity. The sixth section, the first section of the survey, allows us to categorize your response. The results of this survey will be of significant interest to managers and decision makers.

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- B. Product Selection Process**
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SECTION A RESPONDENT PROFILE

The purpose of this section is to correctly categorize your company within the population of companies that respond to this survey. Persons who wish to compare their response to the overall results, usually want to do so with other companies of similar size and type. We are trying to achieve the end result that most people seek. Please do your best to characterize your response. The format for Section A is the exact same format as the 1998, 2000, and 2002 GGI surveys which were well received.

This is the address to which the survey results will be mailed.

A1. Person completing survey: Name: _____
 Title: _____
 Company Name: _____
 Address: _____

Phone: _____ Fax: _____ E-Mail: _____

Would you like a copy of the survey results? Yes or No



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A2. Is this a public or private company?

A3. For what type/scope of company or organization are the responses to the questions in this survey?

[Check One Box That Best Applies]

- | | |
|--|---|
| <input type="checkbox"/> Parent Corporation [A P/L Unit] | <input type="checkbox"/> Functional Org/Dept. [Cost Center] |
| <input type="checkbox"/> Strategic Business Unit/HQ [A P/L Unit] | <input type="checkbox"/> Manufacturing Plant [Cost Center] |
| <input type="checkbox"/> Division/Business Unit/Grp [A P/L Unit] | <input type="checkbox"/> Other: _____ |

A4. Identify the company's industry or service: [Check One Box That Best Applies]

| | | |
|---|--|--|
| <input type="checkbox"/> Aerospace | <input type="checkbox"/> Education | <input type="checkbox"/> Oil/Gas |
| <input type="checkbox"/> Automotive/Vehicular | <input type="checkbox"/> Electronics | <input type="checkbox"/> Paper/Publishing |
| <input type="checkbox"/> Biotechnology | <input type="checkbox"/> Engineering/Contract Design | <input type="checkbox"/> Pharmaceuticals |
| <input type="checkbox"/> Chemical | <input type="checkbox"/> Food | <input type="checkbox"/> Research/Nat'l Labs |
| <input type="checkbox"/> College/Univ. R&D | <input type="checkbox"/> Heavy Machinery | <input type="checkbox"/> Rubber/Plastic |
| <input type="checkbox"/> Computers | <input type="checkbox"/> Industrial products | <input type="checkbox"/> Semiconductors |
| <input type="checkbox"/> Construction | <input type="checkbox"/> Instrument | <input type="checkbox"/> Stone/Clay/Concrete |
| <input type="checkbox"/> Consumer Products | <input type="checkbox"/> Materials | <input type="checkbox"/> Telecommunications |
| <input type="checkbox"/> Defense | <input type="checkbox"/> Medical Products | <input type="checkbox"/> Textiles |
| <input type="checkbox"/> Durable goods | <input type="checkbox"/> Metals/Mining | <input type="checkbox"/> Other Ind. _____ |
| <input type="checkbox"/> Software-Web | <input type="checkbox"/> Software-Digital | <input type="checkbox"/> Software-Embedded |
| <input type="checkbox"/> Consulting | <input type="checkbox"/> Market Research | <input type="checkbox"/> Financial Services |
| <input type="checkbox"/> Government | <input type="checkbox"/> Utility | <input type="checkbox"/> Other Svc. _____ |

A5. Sales revenue over the last full year: [Check One Box That Best Applies]

- | | | | | |
|---------------------------------|------------------------------------|-------------------------------------|-------------------------------------|------------------------------------|
| <input type="checkbox"/> <\$25M | <input type="checkbox"/> \$25-100M | <input type="checkbox"/> \$100-250M | <input type="checkbox"/> \$250-500M | <input type="checkbox"/> \$500M-1B |
| <input type="checkbox"/> \$1-5B | <input type="checkbox"/> >\$5B | | | |

A6. Number of full-time employees: [Check One Box That Best Applies]

- | | | | |
|--|--|------------------------------------|--------------------------------------|
| <input type="checkbox"/> 1-500 | <input type="checkbox"/> 500-1000 | <input type="checkbox"/> 1000-5000 | <input type="checkbox"/> 5000-10,000 |
| <input type="checkbox"/> 10,000-25,000 | <input type="checkbox"/> 25,000-50,000 | <input type="checkbox"/> 50,000+ | |

A7. Please indicate the types of manufacturing operations covered by the metrics discussed in this survey:

[Check All Boxes That Apply]

- Process Mfg Repetitive Mfg Discrete Mfg Job Shop/Customized Mfg

| | North America | Europe | Asia | Rest of World |
|-------|--------------------------|--------------------------|--------------------------|--------------------------|
| Sales | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| R&D | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Mfg | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

A8. Places the company does business:

[Check All Boxes That Apply]

A9. What function do you personally perform in the company? [Check One Box That Best Applies]

- | | | | | | |
|----------------------------------|---|----------------------------------|--|---|---|
| <input type="checkbox"/> Mgt | <input type="checkbox"/> Sales | <input type="checkbox"/> Mktg | <input type="checkbox"/> R&D/Eng | <input type="checkbox"/> Mfg-Production | <input type="checkbox"/> Mfg-Purchasing/Materials |
| <input type="checkbox"/> Quality | <input type="checkbox"/> Environ./Safety/Regulatory | <input type="checkbox"/> Finance | <input type="checkbox"/> Information Systems | <input type="checkbox"/> HR | |

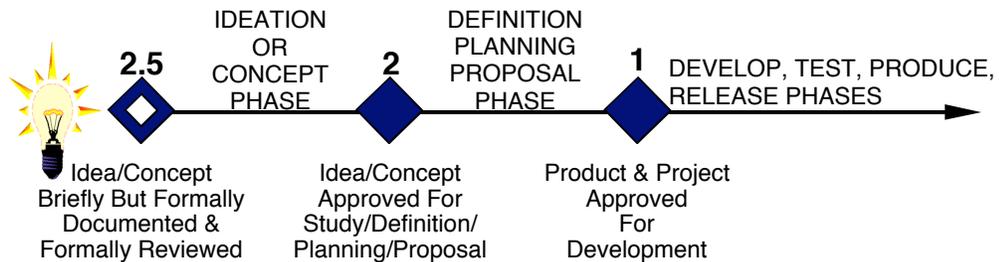


SECTION B PRODUCT SELECTION PROCESS

B1. Selection Process: How many times does the company review a given idea/concept/definition/proposal before finally making a business decision to either formally approve or formally reject a proposed RD&E product and/or investment project. [Check One Box Only]

- a. 2.5-Step First a simple short, probably one-page, description of the idea is proposed. Little work has been performed, if any. The idea is in a highly raw state. At this time, it is somehow killed, tabled, or moved forward for further analysis.
- b. 2- Step First a preliminary marketing and technical analysis is reviewed. The same top management group that makes the final decision performs this review. At this time, it is either killed, tabled, or moved forward for final estimation.
- c. 1- Step A single top management meeting is held for a go/no go or table decision. A complete comprehensive plan/analysis has been prepared for consideration. Work leading up to this meeting has been conducted in functional organizations.
- d. No-Step One person/organization determines the R&D products/projects to be done. Or, somehow it happens without any perceivable process. There is no cross-functional multi-disciplined management team that decides.
- e. Other _____

B2. Selection Process Decisionmakers & Decisionmaking: How many people are involved in the selection process referred to in the response to Question B1 above? Limit the response to include the actual decisionmakers only, not everyone consulted during the process. [If there is a “No-Step” or “1-Step Process,” fill out only “Column 1” in the box below. If there is a “2-Step or 2.5 Step Process,” fill out “Columns 1, 2, and 2.5.”]



| | COLUMN 2.5 | COLUMN 2 | COLUMN 1 |
|--|--------------------------|--------------------------|--------------------------|
| Number of People Making The Decision | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| The Decision Process is best described as: [Check One Box in Each Applicable Column] | | | |
| Formal Meeting | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Informal Meeting | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Solo Effort | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Unknown | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |



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B3. What format does the product selection and decision process take that involves company employees? [Check the One Box That Best Describes the Process]

- There are multiple formal staffed organizations reporting to a top organization that owns Product Selection. [CENTRAL, HIERARCHICAL, COMPLEX]
- There are multiple formal staffed organizations, operating independently, that own Product Selection. [DECENTRAL, COMPLEX]
- There is a single formal staffed organization that owns Product Selection. [CENTRAL]
- Multiple “councils” or “steering committees” meet regularly, reporting to a top steering committee. A full-time department is not coordinating Product Selection. [CENTRAL, COMPLEX]
- A single “council” or “steering committee” reviews and decides. [CENTRAL, SIMPLE]
- An individual manager(s) reviews and decides. [DECENTRAL, SIMPLE]
- Individuals with appropriate management assistance manage individual Product Selection directly. [DECENTRAL, LOCAL]
- None of these descriptions fits the process.

B4. Selecting Research or Advanced Development Projects: Does RD&E use the same methods referred to in questions B1, B2, and B3 above to select advanced Research and Advanced Development projects? a. Yes No

b. If No, is the R&AD process more formal or informal? Formal Informal

| | |
|------------------|--------------------------------|
| SECTION C | PRODUCT SELECTION TOOLS |
|------------------|--------------------------------|

C1. Which of the product selection Tools and/or Techniques does the company use to analyze and/or document a proposed project/product before the point of approval of a project/product for development leading to commercialization? [Check All Boxes That Apply]

| | Never | Once or Twice | Occasionally | Frequently | Almost Always |
|-----------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Concepting / Concept Engineering | <input type="checkbox"/> |
| Voice-of-the-Customer | <input type="checkbox"/> |
| Market Definition | <input type="checkbox"/> |
| Requirements Definition | <input type="checkbox"/> |
| Innovation Exercises | <input type="checkbox"/> |
| Product Specifications | <input type="checkbox"/> |
| Architectural Analysis | <input type="checkbox"/> |
| Platform Analysis | <input type="checkbox"/> |
| Technical Feasibility Analysis | <input type="checkbox"/> |
| Market Feasibility Analysis | <input type="checkbox"/> |
| DFX: DFM, DFA, DFS, DFD, DFR, DFE | <input type="checkbox"/> |
| FMEA / DFMEA / PFMEA | <input type="checkbox"/> |
| Risk Analysis/Assessment | <input type="checkbox"/> |
| Proactive Risk Mitigation | <input type="checkbox"/> |
| Target Costing | <input type="checkbox"/> |
| Intellectual Property Valuation | <input type="checkbox"/> |
| Project Scheduling – Gantt | <input type="checkbox"/> |
| PERT | <input type="checkbox"/> |
| Development Cost Estimating | <input type="checkbox"/> |
| Break Even Time / Time To Profit | <input type="checkbox"/> |
| PAYBACK/IRR/NPV/ROI/ROA/RONA | <input type="checkbox"/> |



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C2. Which of the product selection Tools and/or Techniques also helps to generate “innovative thinking and/or visible innovation” at the company? [Check All Boxes That Apply]

| | Never | Once or Twice | Occasionally | Frequently | Almost Always |
|-----------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Concepting / Concept Engineering | <input type="checkbox"/> |
| Voice-of-the-Customer | <input type="checkbox"/> |
| Market Definition | <input type="checkbox"/> |
| Requirements Definition | <input type="checkbox"/> |
| Innovation Exercises | <input type="checkbox"/> |
| Product Specifications | <input type="checkbox"/> |
| Architectural Analysis | <input type="checkbox"/> |
| Platform Analysis | <input type="checkbox"/> |
| Technical Feasibility Analysis | <input type="checkbox"/> |
| Market Feasibility Analysis | <input type="checkbox"/> |
| DFX: DFM, DFA, DFS, DFD, DFR, DFE | <input type="checkbox"/> |
| FMEA / DFMEA / PFMEA | <input type="checkbox"/> |
| Risk Analysis/Assessment | <input type="checkbox"/> |
| Proactive Risk Mitigation | <input type="checkbox"/> |
| Target Costing | <input type="checkbox"/> |
| Intellectual Property Valuation | <input type="checkbox"/> |
| Project Scheduling – Gantt | <input type="checkbox"/> |
| PERT | <input type="checkbox"/> |
| Development Cost Estimating | <input type="checkbox"/> |
| Break Even Time / Time To Profit | <input type="checkbox"/> |
| PAYBACK/IRR/NPV/ROI/ROA/RONA | <input type="checkbox"/> |

C3. Which of the product selection Tools and/or Techniques also helps to generate “copyrightable, trademarkable, or patentable IP” at the company? [Check All Boxes That Apply]

| | Never | Once or Twice | Occasionally | Frequently | Almost Always |
|-----------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Concepting / Concept Engineering | <input type="checkbox"/> |
| Voice-of-the-Customer | <input type="checkbox"/> |
| Market Definition | <input type="checkbox"/> |
| Requirements Definition | <input type="checkbox"/> |
| Innovation Exercises | <input type="checkbox"/> |
| Product Specifications | <input type="checkbox"/> |
| Architectural Analysis | <input type="checkbox"/> |
| Platform Analysis | <input type="checkbox"/> |
| Technical Feasibility Analysis | <input type="checkbox"/> |
| Market Feasibility Analysis | <input type="checkbox"/> |
| DFX: DFM, DFA, DFS, DFD, DFR, DFE | <input type="checkbox"/> |
| FMEA / DFMEA / PFMEA | <input type="checkbox"/> |
| Risk Analysis/Assessment | <input type="checkbox"/> |
| Proactive Risk Mitigation | <input type="checkbox"/> |
| Target Costing | <input type="checkbox"/> |
| Intellectual Property Valuation | <input type="checkbox"/> |
| Project Scheduling – Gantt | <input type="checkbox"/> |
| PERT | <input type="checkbox"/> |
| Development Cost Estimating | <input type="checkbox"/> |
| Break Even Time / Time To Profit | <input type="checkbox"/> |
| PAYBACK/IRR/NPV/ROI/ROA/RONA | <input type="checkbox"/> |

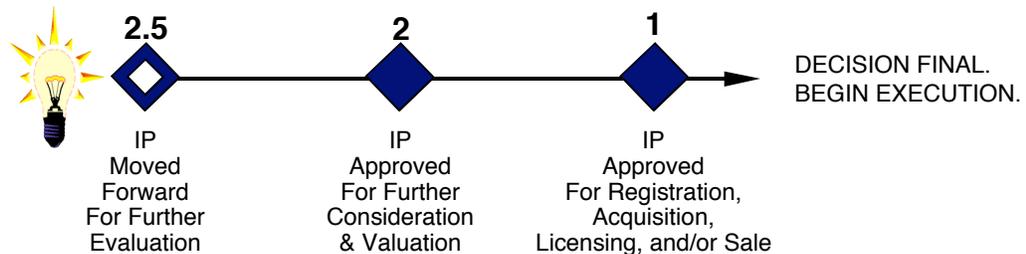


SECTION D INTELLECTUAL PROPERTY [IP] MANAGEMENT PROCESS

D1. IP Decision Process: How many times does the company review a “potential” copyrightable, trademarkable, or patentable IP proposal before finally making a business decision to either formally approve or formally reject the proposal? [Check One Box Only]

- a. 2.5-Step First a simple short, probably one-page, description of the innovation is proposed. Little work has been performed, if any. The idea is in a highly raw state. At this time, it is somehow killed, tabled, or moved forward for further analysis.
- b. 2-Step First a preliminary marketing and technical analysis is reviewed. The same top management group that makes the final decision performs this review. At this time, it is either killed, tabled, or moved forward for final estimation.
- c. 1-Step A single top management meeting is held for a go/no go decision. A complete comprehensive plan/analysis has been prepared for consideration. Work leading up to this meeting has been conducted in functional organizations.
- d. No-Step One person/organization makes the decisions. Or, somehow it happens without any perceivable process. There is no cross-functional multi-disciplined management team that decides.
- e. Other _____

D2. IP Management Process Decisionmakers & Decisionmaking: How many people are involved in the decision process referred to in the response to Question D1 above? Limit the response to include the actual decisionmakers only, not everyone consulted during the process. [If there is a “No-Step” or “1-Step Process,” fill out only “Column 1” in the box below. If there is a “2-Step or 2.5 Step Process,” fill out “Columns 1, 2, and 2.5.”]



| | COLUMN 2.5 | COLUMN 2 | COLUMN 1 |
|--|--------------------------|--------------------------|--------------------------|
| Number of People Making The Decision | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| The Decision Process is best described as: [Check One Box in Each Applicable Column] | | | |
| Formal Meeting | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Informal Meeting | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Solo Effort | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Unknown | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |



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D3a. To what degree does the company actively apply process(es) for managing Intellectual Property – at any point during the product lifecycle? [Check One Box in Each Row]

| | Never | Once or Twice | Occasionally | Frequently | Almost Always |
|-------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| To “register the company’s own IP.” | <input type="checkbox"/> |
| To “license IP from others.” | <input type="checkbox"/> |
| To “license out IP to others.” | <input type="checkbox"/> |
| To “sell IP to others.” | <input type="checkbox"/> |

D3b. To what degree does the company actively apply process(es) for managing Intellectual Property – prior to and up to the point of approval of a product for development and commercialization? [Check One Box in Each Row]

| | Never | Once or Twice | Occasionally | Frequently | Almost Always |
|-------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| To “register the company’s own IP.” | <input type="checkbox"/> |
| To “license IP from others.” | <input type="checkbox"/> |
| To “license out IP to others.” | <input type="checkbox"/> |
| To “sell IP to others.” | <input type="checkbox"/> |

D4. To what extent are the “Product Selection” and the “IP Management” decisionmaking processes mutually dependent, i.e., one decision cannot be made without the other? [Check One Box in Each Row]

| | Never Dependent | Once or Twice | Occasionally Dependent | Frequently Dependent | Almost Always Dependent |
|-------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| To “register the company’s own IP.” | <input type="checkbox"/> |
| To “license IP from others.” | <input type="checkbox"/> |
| To “license out IP to others.” | <input type="checkbox"/> |
| To “sell IP to others.” | <input type="checkbox"/> |

D5. To what extent do the people making the “Product Selection Decisions” also participate in making the “decisions for intellectual property”? [Check One Box in Each Row]

| | Never Participate | Once or Twice | Occasionally Participate | Frequently Participate | Almost Always Participate |
|-------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---------------------------|
| To “register the company’s own IP.” | <input type="checkbox"/> |
| To “license IP from others.” | <input type="checkbox"/> |
| To “license out IP to others.” | <input type="checkbox"/> |
| To “sell IP to others.” | <input type="checkbox"/> |

D6. What format does the IP management process take that involves company employees during the entire product lifecycle? [Ignore the involvement of outside counsel. Assume they engage at single/multiple points]. [Check the One Box That Best Describes the Process]

- There are multiple formal staffed organizations reporting to a top organization that owns IP management. [CENTRAL, HIERARCHICAL, COMPLEX]
- There are multiple formal staffed organizations, operating independently, that own IP management. [DECENTRAL, COMPLEX]
- There is a single formal staffed organization that owns IP management. [CENTRAL]
- Multiple “councils” or “steering committees” meet regularly, reporting to a top steering



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committee. A full-time department is not coordinating IP management. [CENTRAL, COMPLEX]

- A single “council” or “steering committee” reviews and decides. [CENTRAL, SIMPLE]
- An individual manager(s) reviews and decides. [DECENTRAL, SIMPLE]
- Individuals with appropriate management assistance manage individual IP cases directly with legal counsel. [DECENTRAL, LOCAL]
- None.

D7. What is the structure of the organization that supports the IP management process? [Check the One Box that Best Describes the Process]

Level

- 1 Internal department staffed with lawyer(s); fully sufficient, no external counsel required.
- 2 Internal department staffed with lawyer(s) aided by external counsel.
- 3 Internal department staffed with paralegal(s) aided by external counsel (i.e., no in-house lawyers.)
- 4 Internal department is informal; one or more part-time folks aided by external counsel.
- 5 All communications go directly to external counsel. No formal or part-time organization.
- 6 None.
- Other: _____

D8. Does the company believe that IP management will be more important in the next five years than it was in the past five years?

| | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Much Less | Less | Same | More | Much More |
| <input type="checkbox"/> |

| | |
|------------------|----------------------------|
| SECTION E | IP MANAGEMENT TOOLS |
|------------------|----------------------------|

E1. To what degree does the company have formal, documented processes for managing Intellectual Property? [Check One Box in Each Row]

| | Undocumented Process | Less Documented Process | Moderately Documented Process | Highly Documented Process | Actively Updated Process |
|-------------------------------------|--------------------------|--------------------------|-------------------------------|---------------------------|--------------------------|
| To “register the company’s own IP.” | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| To “license IP from others.” | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| To “license out IP to others.” | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| To “sell IP to others.” | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

E2. To the degree that the company automates its IP process, what type of system is used to manage the inventory of IP? [Check One Box Only]

- Internally-developed multi-user software tool/database designed to manage IP that was so successful that it was productized and is also sold or licensed externally to produce additional revenue.
- Purchased or licensed third-party multi-user software tool/database designed to manage IP.
- Internally-developed multi-user software tool/database designed to manage IP, but not a spreadsheet.



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- Internally-developed single-user software tool/database running either on a major piece of computer hardware or a PC, but not a spreadsheet.
- Internally-developed spreadsheet-based tool/database used by multiple persons.
- Internally-developed spreadsheet-based tool/database used by a single person.
- No formal automated tools or spreadsheets utilized. All information is managed and supplied by external counsel.
- Completely internally managed hard-copy system with MS Powerpoint and/or selected spreadsheet analyses.
- Other: _____

E3. Which of the following types of IP are in use at the company, and to what degree? [Check All Boxes That Apply]

| | Never | Once or Twice | Occasionally | Frequently | Almost Always |
|------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| ISBN/ISSN | <input type="checkbox"/> |
| Copyright | <input type="checkbox"/> |
| Trademark/Service mark | <input type="checkbox"/> |
| Patent | <input type="checkbox"/> |
| Trade Secret | <input type="checkbox"/> |
| Company Proprietary | <input type="checkbox"/> |
| Other: _____ | <input type="checkbox"/> |

SECTION F RD&E METRICS USED IN INDUSTRY

Section F consists of one single question. GGI asked this question in the 1998, 2000, and 2002 surveys. The results jumped off the page. It turned out that there are very few metrics that are commonly and widely used by R&D organizations. Nearly identical responses appeared all three times. The results of this 2004 survey will be contrasted to the 1998, 2000, and 2002 findings so first time participants in the 2004 survey will get the benefits of all four surveys. Survey participants wishing more information should refer to the February 2000 issue of CFO Magazine published by The Economist.

F1. Which of the following R&D metrics are "in use" at the company?: To qualify as "in use," these metrics should: (1) be measured at least on an annual basis; (2) be visible to *all* members of the top management group as active ongoing tools; (3) be stored in a manner that numerous people in the organization could find them easily; and (4) have some reliability in that the method used to calculate them is consistent from year to year. Please be strict in applying this definition of "in use" when responding to the measures listed for consideration below. [Check All Boxes That Apply]

Revenue Measures

- First-Year Sales of new products
- First Two Years of Sales of new products
- First Three Years of Sales of new products
- First Four Years of Sales of new products
- First Five Years of Sales of new products
- Current-year % sales due to new products released in the past N-years
- If used, what is N = year(s) (i.e., past 1, 2, 3, 4, 5 years)
- Current-year % sales due to total Non Recurring Engineering Billings
- Current-year % sales due to total technology sales



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Current-year % sales due to total technology licensing and/or royalty income

Profit Measures

First-Year Profits of new products

First Two Years of Profits of new products

First Three Years of Profits of new products

First Four Years of Profits of new products

First Five Years of Profits of new products

Current-year % profits due to new products released in the past N-years

If used, what is N = year(s) (i.e., past 1, 2, 3, 4, 5 years)

Current-year % profits due to total Non Recurring Engineering Billings

Current-year % profits due to total technology sales

Current-year % profits due to total technology licensing and/or royalty income

Throughput Measures [Assumes "Per Time Period," Usually Per Quarter or Year]

of idea/concept screened/reviewed

% of ideas/concepts accepted/rejected

of products in definition/planning/estimation stages

% of defined products/projects accepted/rejected

of products/projects approved but not started [inactive backlog]

of products/projects in active development [active backlog]

of products released

Average Time-To-Market

of products actively supported/sustained

of products retired/obsoleted

Capacity Measures

R&D capacity target level [person-months or equivalent]

% Over/under R&D capacity plan target level

Total R&D Headcount

% Increase/decrease in R&D headcount

% Resources/investment dedicated to new product development

% Resources/investment dedicated to sustaining existing products

Staffing Ratios: Internal-To-Engineering staffing ratios [Any Type]

Cross-Functional staffing ratios [Any Type]

Average # factory products supported per engineer or developer or scientist

Average # active projects/ products per engineer or developer or scientist

Productivity Measures [Assumes "Per Time Period," Usually Per Quarter or Year]

ROI - Return On Innovation [Calculated using any method/procedure.]

RDEI - Research & Development Effectiveness Index [Developed by PRTM]

Average sales per engineer or developer or scientist

Average profits per engineer or developer or scientist



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- Average products produced per engineer or developer or scientist
- Average parts produced per engineer or developer or scientist
- Average drawings produced per engineer or developer or scientist
- Average lines of code produced per engineer or developer or scientist

- Average new products released per engineer or developer or scientist
- Average new product sales per engineer or developer or scientist
- Average new product profits per engineer or developer or scientist

- Average number prototypes built [per new product]
- Average first pass design success [per new product]

Product Portfolio Measures

- Value of Product Portfolio [Any Aggregate Measure]
 - Value of Portfolio in Pipeline
 - Value of Portfolio in Backlog
- Risk of Product Portfolio [Any Aggregate Measure]
 - Risk of Portfolio in Pipeline
 - Risk of Portfolio in Backlog

Intellectual Property Portfolio Measures [Assumes "Per Time Period," Usually Per Quarter or Year]

- Total patents filed/pending/awarded
 - Average patents per development professional
 - Total value of patents filed/pending/awarded

- Total Trademarks/Service marks filed/pending/awarded [Any Combination]
 - Total value of Trademarks/Service marks filed/pending/awarded
- Total Copyrights filed/pending/awarded [Any Combination]
 - Total value of Copyrights filed/pending/awarded

- Total licenses granted and/or acquired
 - Total value of licenses granted and/or acquired

- Total grants received
 - Total value of grant revenues received

- Total industry standards planned/pending/achieved

Investment Measures

- R&D spending as a % of sales
 - [Managed as a composite number across the organization.]
- R&D spending as a % of sales
 - [Research spending reported separate from Development.]
- R&D Process spending as a % of sales
 - [Process R&D spending reported separate from R&D.]
- Average development cost per project/product
- Average capital cost per project/product
- Average cash expense cost per project/product



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**Ms. Anne Schwartz
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IF YOU HAVE QUESTIONS OR NEED CLARIFICATION

Anne Schwartz

781-444-5400 ext. 204

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**IN THE
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