



# NPD RiskAssessor™

RISK ANALYSIS FOR  
NEW PRODUCT DEVELOPMENT

## Statistical Model

RiskAssessor is a software tool and statistical modeling service for managing, evaluating, and diagnosing new product development projects and portfolios. It is available for site license or through Adept Group consulting services. One version of RiskAssessor employs statistics for business-to-business products and another version employs statistics for consumer products.

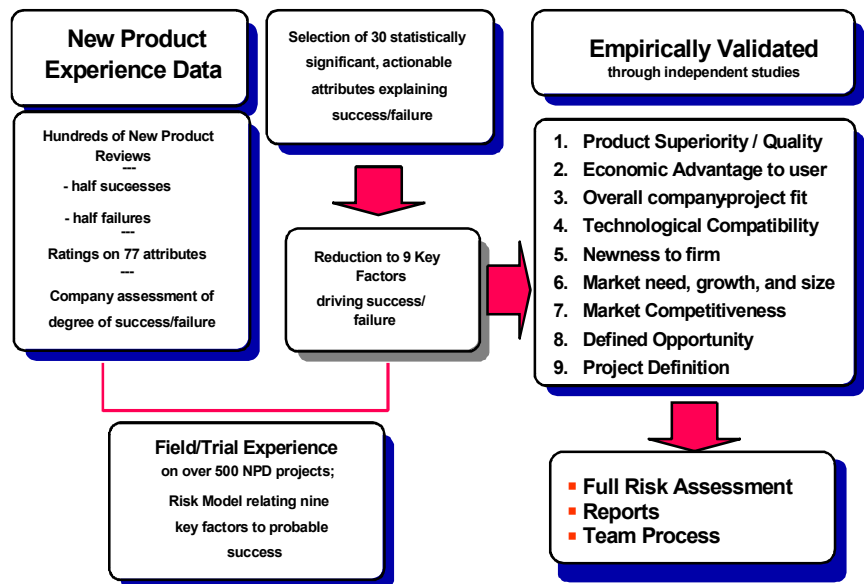
RiskAssessor delivers both textual and graphic outputs of project and portfolio analyses. It is a data management tool and powerful mathematical model of factors influencing the outcome of new product projects. The software is easily deployed and easy to use.

### The Statistical Model

The RiskAssessor statistical model is based on Dr. Robert G. Cooper's NewProd research, perhaps the most cited research in the field of new product development. The RiskAssessor model has been replicated and validated statistically within a number of companies, and in different settings, including North America, Scandinavia, and the Netherlands.

RiskAssessor has a predictive ability of about 84%. In other words, it correctly predicts winners and losers about 84% of the time. This is far superior to the nominal success rate of traditional product development practices. Consider the tremendous economic value RiskAssessor provides users: Calculate the full cost of your organization's NPD efforts and then multiplied it by the difference between RiskAssessor's 84% predictive ability and your company's success rate!

### The RiskAssessor™ Statistical Model



The in RiskAssessor leverages on the fact that the profile of a new product development project's strengths and weaknesses is also a very good predictor of the project's eventual commercial outcome. When used for individual project reviews, evaluators (often the project team members) rate the project on 30 statistically significant factors. The RiskAssessor model analyzes these inputs by comparing the factor scores against those in a large database of known outcomes of past projects. From this, RiskAssessor pinpoints the strengths and weaknesses of the new product development project, and calculates a likelihood of commercial success.

### Software and Data Storage

The RiskAssessor software engine runs on Windows and Web Server platforms. Data inputted by project evaluators or as generated as output from RiskAssessor's analyses are stored ODBC and XML formats. This enables integration with other applications for presentation graphics, spreadsheets, word processing, project tracking, and maintenance of metrics.

RiskAssessor is far more than a simple computer model or database engine. It is a *SUPPORT SYSTEM and METHOD* for more effective new product development. When properly implemented, the impact of RiskAssessor is profound:

#### **RiskAssessor Software**

- 1. Windows, and / or**
- 2. Local Area Networks, and / or**
- 3. Web Servers with**
  - MS Office Integration**
  - Open Data Structure**

### How RiskAssessor Works

RISKASSESSOR analyzes the risk of a new product development project much in the same way a bank assesses a person's ability to pay back a mortgage. The bank collects information on such items as age, credit rating, education, annual income, job history, value of a current home, and the value of the new home. The bank then places these values into an algorithm that, based on a statistically large sample of previous homebuyers, determines the likelihood that the mortgage will be paid. While the bank wants to know all of the factors, it only cares about the probability that they will be paid back.

In RISKASSESSOR, certain factors (numerical responses) are captured via an online survey or printed questionnaire. These numbers and qualitative inputs reflect each person's perceptions of the NPD project. The RISKASSESSOR model then uses an algorithm to compare the project against previous new product development projects. The output from RISKASSESSOR reveals where risk is coming from on the project, and to what degree such risk affects the likelihood of success.

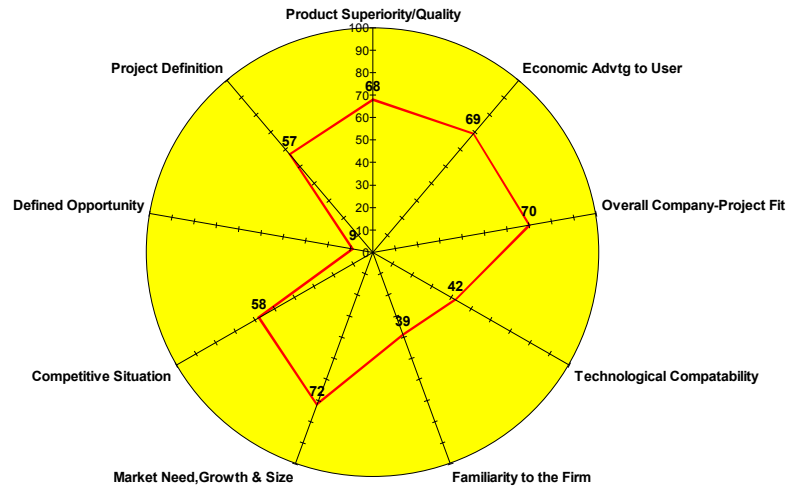
- Better, more in-depth new product evaluations;
- Improved prioritization of projects within a portfolio;
- Sharper project definitions;
- Much improved cross-functional communication; and
- Consistent measurements of projects, portfolios and process

### Gains From RiskAssessor

- 1. Enables managers to focus on the key issues in the project -- items that have been found to be key to success.**
- 2. Identifies areas needing action, better information, and a shared understanding.**
- 3. Highlights critical areas lacking insights, where more homework must be undertaken before moving ahead with a full-scale development.**
- 4. Pinpoints the project's key strengths and major weaknesses, leading to a path forward to resolve the weaknesses and exploit the strengths.**
- 5. Predicts the project's success likelihood -- quantifying the overall degree of risk**
- 6. Helps drive good Go/No-Go/Recycle and prioritization decisions.**

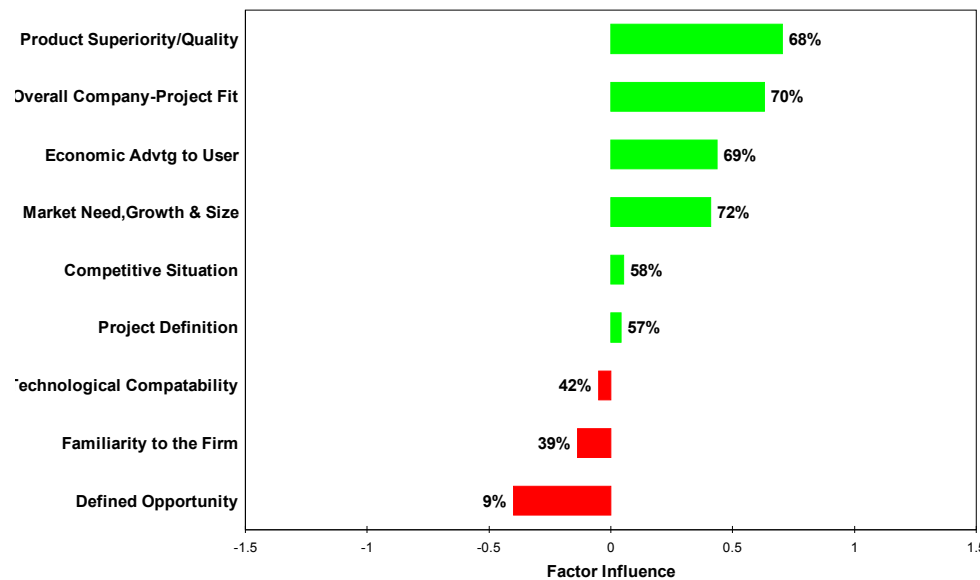
## RiskAssessor In A Project Team Process

Based on years of application by The Adept Group, RiskAssessor is also designed to facilitate a powerful, structured NPD team process. Team members assigned to a new product project use the RiskAssessor to advance their dialogue and uncover key strengths and weaknesses of their project. This enables managers to input their individual opinions and known facts, see an integrated view of the project, and finally see a full analysis and diagnosis of the project based on their own inputs. Each evaluator's score equates to a probability of success. The "mean evaluator" is the mean of all ratings for all 30 factors, weighted by the evaluator's level of confidence toward each factor rating.



**RiskAssessor creates graphical profiles of the risk being incurred by new product development projects.**

Thirty questions about a project are posed to each team member. Each question requires a subjective rating (zero-to-ten scale) and an indication of how sure or confident they are with each rating. The questions deal with strategic issues such as the nature of the marketplace; the degree of fit or synergy; and the differential advantage of the product.



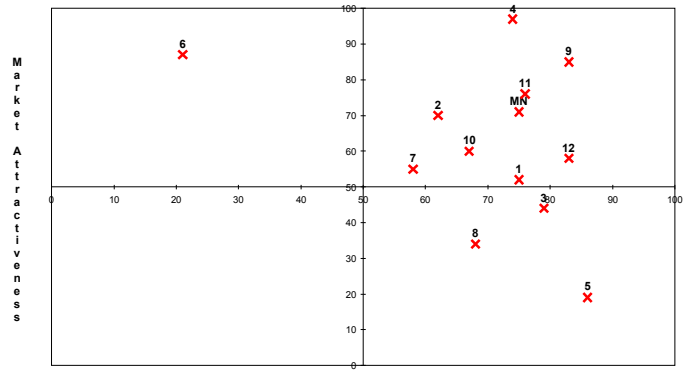
**Risk profiles show the magnitude of driving and hindering forces affecting projects.**

RiskAssessor analyzes, mathematically, the opinions and displays the composite or integrated view of the project. Areas of major disagreement and questions where confidences are low (uncertainty is high) become highlighted for easy identification. RiskAssessor then calculates nine key factors that underlie new product success. These key factors are orthogonal (mathematically independent from one another).

## Nine Key Factors

The nine key factors used in the analysis are:

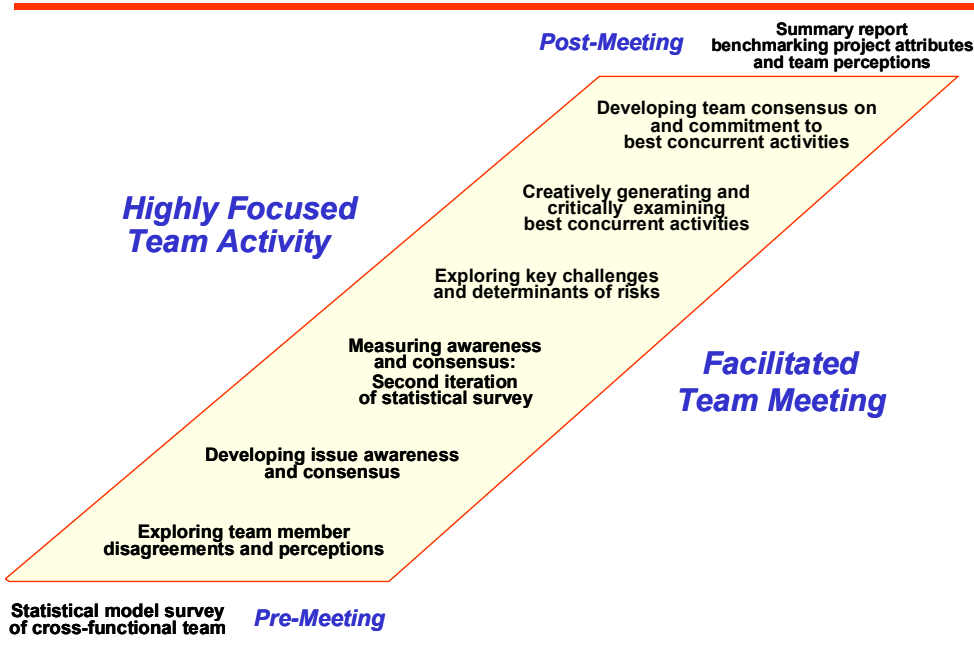
1. Product superiority/quality ... the competitive advantage the product has by virtue of features, benefits, quality, uniqueness, etc.
2. Economic advantage to the user ... the product's value for the money from the customer's perspective.
3. Overall, company/project fit ... the product's synergy with the company's resources.
4. Technological compatibility ... the synergy of the project with the company's technical resources.
5. Familiarity to the company ... how familiar or "close to home" the project is to the company (as opposed to new or "step out").
6. Market need, growth & size ... the relative magnitude and quality of the market opportunity.
7. Competitive situation ... how easy it is to penetrate the market is from a competitive standpoint (as opposed to a tough and competitive market).
8. Defined opportunity ... whether the product has a well-defined category and established market (as opposed to a true innovation and new category of products).
9. Project definition ... how well defined the project and product specification are.



Differential Advantage vs. Competitive Alternatives

**RiskAssessor enables team members to see how their perceptions differ from others.**

## NPD RiskAssessor™ Team Process



The model uses these nine key factors to identify the strengths and weaknesses projects and to calculate overall scores for likelihood of success. In addition, sensitivity analyses are performed that look at the results under "what if" scenarios. The outputs are displayed graphically for easy interpretation and understanding.

## RiskAssessor and NPD Portfolios

A summary of each project's profile, its metrics and RiskAssessor's statistical analysis are stored in a central database. RiskAssessor accesses these data to analyze a company's portfolio of projects, to diagnose sub-groups of projects and to track projects and related risks determinants.

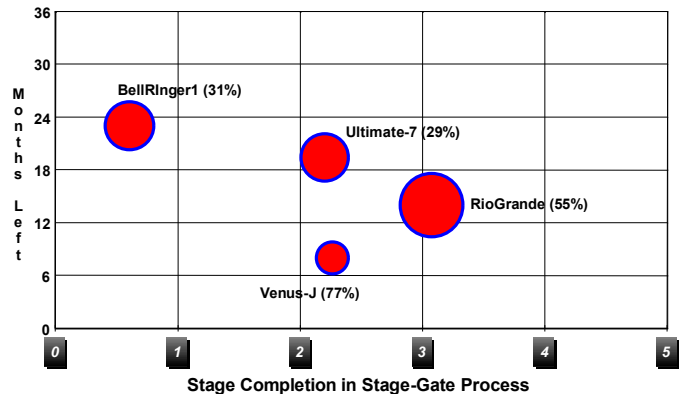
RiskAssessor constructs charts and graphs to reveal characteristics of a firm's new product portfolio. A bubble chart of Products-in-Development is shown to the

### RiskAssessor displays many different dimensions of NPD portfolios.

- ◆ Too many or too few projects
- ◆ Too small (incremental) or perhaps too large of a degree of risk
- ◆ The degree of market change versus that of technology change
- ◆ The expected economic value of the full portfolio or sub-groups
- ◆ Technology / marketing platforms and their cascading affect
- ◆ Forecasted resource requirements, and future bottlenecks
- ◆ Organizational / strategic strengths and weaknesses.

right. One project named 'RioGrande' has a 55% probability of success and \$3.5 million annual revenue potential. This project is in Stage 3 of development in a Stage-Gate process and will launch in 13 months. The size of each bubble indicates annual revenue potential.

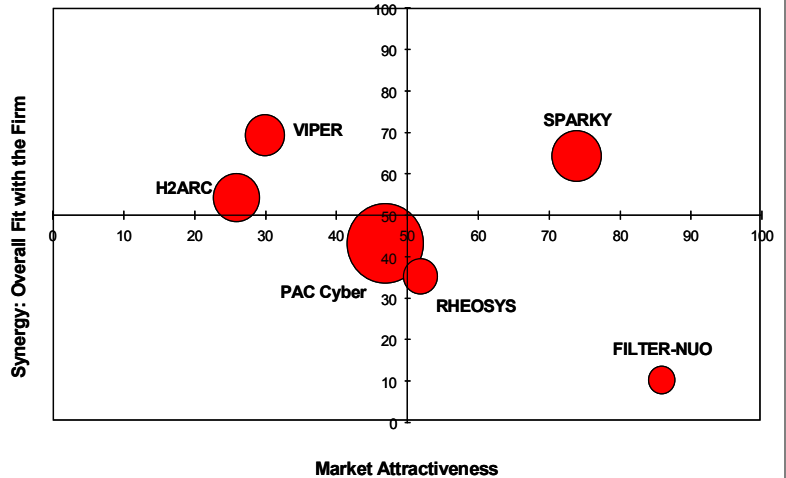
The ability to analyze multiple projects gives RiskAssessor tremendous power. For example, RiskAssessor shows common weaknesses that cut across a portfolio. Such common weaknesses (referred to as “systemic risks”) typically



**Products in Development**  
Percentages in parentheses reflect probabilities of success. Size of bubble shows revenue potential of project.

### Market Attractiveness versus Synergy of Projects in Portfolio

*Data coordinates are percentile scores.  
Bubble diameter indicates relative peak annual revenue*



This chart compares the “Market Attractiveness” against the “Fit with the Company” for 6 separate projects in a portfolio. The percentile score on each axis is derived from the RiskAssessor database.

are organizational or strategic, suggesting critical attention from top management, not from the NPD teams. RiskAssessor clearly reveals such portfolio risks to senior management.

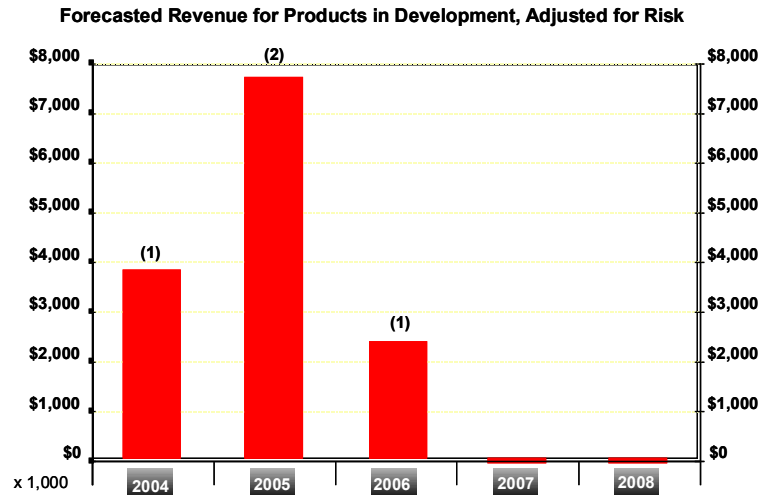
By coupling risk analysis with the revenue and timing estimates, RiskAssessor forecasts an expected cash flow value of a portfolio for future time periods. Such "expected-value" forecasts suggest whether the current portfolio is sufficient to meet an organization's stated revenue or profit objectives from new products. This enables planners to adjust strategy, resource investments and front-end activities accordingly.

## Key Benefits of RiskAssessor

Some of the many benefits that companies discover when using RiskAssessor include:

1. Universal (company-wide) and consistent project evaluation process, contributing to any NPD process;
2. Continuous organizational learning through data collection of experience and analysis;
3. A systems support tool that is flexibility in application;
4. Easily understood measures of project and portfolio risk, enhancing communication and directing actions;
5. Standardized data and metrics, readily available for benchmarking of projects, portfolios and process;
6. An ability to quantify critical success factors;
7. A robust framework for management decisions and team member actions;
8. Easy integration into existing new product development processes, e.g., Stage-Gate and phase review processes;
9. A strong foundation to new product planning and forecasting;
10. Sharper product concepts and definitions, earlier in the development cycle;
11. Increased consensus on project decisions and actions;
12. A living database of important metrics on all new product projects within an organization;

### Expected Annual Launch Value



Risk adjustment is made by multiplying forecasted annual peak revenue by statistical probability of success



Statistical Model

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## Online RiskAssessor

Inputting data and insights is fast and easy. Team members or other respondents receive an email with instructions to click on a link to a secure RiskAssessor input form. Once at the site, they merely state their name and enter their responses. This usually takes between fifteen and twenty minutes. For the thirty factors in the RiskAssessor model, respondents input a numerical rating, a numerical confidence and comments about the project as it relates to the specific factor. In addition, the online survey also gathers qualitative statements and perceptions about project issues, magnitude, training, target markets and product definitions.

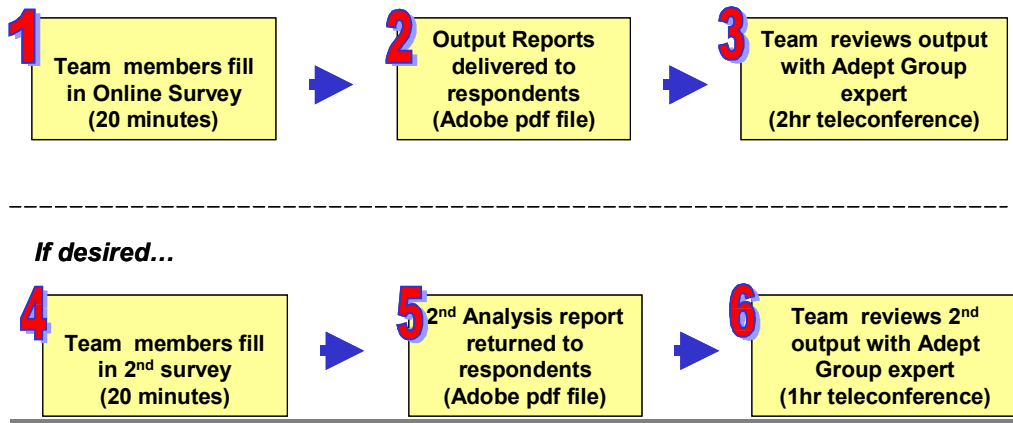
Once completed by the respondents, RiskAssessor compiles a comprehensive report for delivery to each respondent. This report, delivered as an Adobe pdf file, provides a full run of the statistical model plus a compilation of all qualitative inputs. This report is then used as input to a team review, joined through teleconference by an Adept Group expert. Such

review meetings are designed to last approximately 2 hours. During this meeting, the Adept Group expert will facilitate full review of the projects. Non-disclosure agreements are signed upon initiation of the service. Onsite team meeting facilitation is also available (see *Onsite RiskAssessor Team Process*)

After most reviews a second run of the model often occurs, taking into account those findings and shared learnings gained from the first run. Here, respondents simply update their evaluation scores and the model is “run” again. The report from the second run typically does not include qualitative comments. It too is delivered as an Adobe pdf, followed by a one hour teleconference with the Adept Group expert.

Online RiskAssessor is an easy and fast means for managers and teams to gain a full view and understanding of their projects risks

### Online Risk Assessor is Quick and Easy



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## Onsite RiskAssessor Team Process

This is a Adept Group service conducted onsite with NPD teams. Its purpose is to help cross-functional teams achieve high performance very quickly. Because time-to-market is a key contributor for increasing the strategic impact of new products, cross-functional teams must rapidly develop a shared mission and common vision of issues and actions. This may be accomplished quickly by using the validated RiskAssessor model, in conjunction with proven team building techniques.

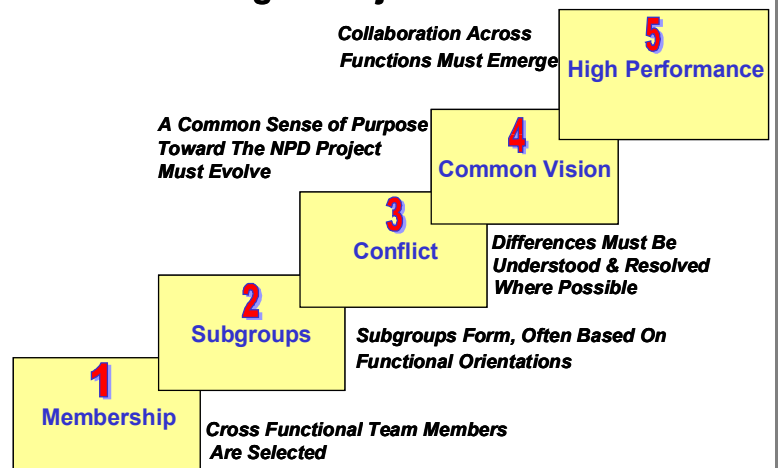
- Use the validated statistical model of new product success and failure to reach a common vision about commercialization strengths and weaknesses
- Overcome the challenge of reaching high performance when perspectives and insights differ across functions
- Leverage team building principles in the context of specific project issues
- Understand all of the key factors influencing the likelihood of commercial success or failure
- Address the critical shortcomings and exploit the strengths of a project

The central event in the **RiskAssessor Team Process** is an onsite team meeting, lead by a trained and experienced facilitator. Typically lasting six hours, the facilitator directs dialogue using the RiskAssessor report so as to “peel apart” all aspects of the project and drive the team through any conflict (level 3 in team building). During the day a second iteration of the model is conducted with new insights share in the meeting.

The output is a common understanding (level 4) of issues, risks, concerns, and specific actions that are needed. These are compiled into a written report delivered following the meeting.

If your NPD project is important, consider conducting the **RiskAssessor Team Process**.

### Team Building at Project Starts in NPD



The RiskAssessor Team Process, lead by a trained facilitator, helps drive teams through stages two through four



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