



Using NeuraTool[®] to Assess the Effectiveness of Your New Product Development Process

Introduction

Not long ago, I was approached by a large company to reinvigorate their new product development process. Here was the situation:

1. The company had implemented a “New Product Development” process,
2. Many of the employees had gone through “some training”
3. It had been nine months since the training and nobody was using the process. It was status quo and nothing had changed.

The question was – What was wrong with the current New Product Development process and how could the situation change so that the company could launch quality, differentiated new products to the market place with an effective new product development process? Could a simple cost effective tool be used to identify areas for improvement? In order to answer this we need to first look at how successful companies operate.

In today’s competitive, global environment, new products and innovation are critical to a company’s growth and sustainability. Many companies today focus only on cost reduction. Generating revenue via new, differentiated products should also be part of the corporate strategy. Product development must be done within a strategic context that takes into account emerging market trends, environmental and regulatory rulings and trends, customer and employee needs and wants, and financial considerations.

The development and launching of new products is perceived as a risk due to uncertainties of success after significant investments. In addition, the product development process is not well understood by most firms. Finding, developing, and exploiting new product growth can help corporations to maximize latent value in their new innovative products and growing markets, while diversifying risk. It also allows corporations to focus on evolving macro and micro markets and to enhance customer satisfaction and competitive advantage.

Over the past 50 years, several studies have been conducted to understand and benchmark how successful companies operate. The best practices can be summarized as:

1. Management championship, commitment, buy-in, support and involvement in the process,
2. A standardized, flexible, effective product development process across the organization,
3. A market focus with clearly defined customer/product needs right up-front,
4. A well executed product launch and commercialization,
5. Engaged, cross-functional development teams from concept to commercialization,

6. Effective communication,
7. Clear metrics and data driven decisions,
8. Use of effective risk management, and
9. Continuous improvement.

Using the above best practices, Winovia LLC has developed a cost-effective, web-based New Product Development / Design for Six Sigma Assessment tool along with Neurametrics Inc. using NeuraTool[®]. The objective of this tool is to:

- Assess the sustainability and effectiveness of a company's new product development process,
- Highlight what is working well, and,
- Identify areas that need improvement.

An overall New Product Development Effectiveness Index (NPD Index) provides a high level assessment of the organization's current product development process (Figure 1). The NPD Index is further broken down to the 4 major best practices:

1. Management
2. Infrastructure
3. Teams and Resources
4. Metrics

Figure 1 details the major aspects of the tool. A rating scale is also used to classify each level.

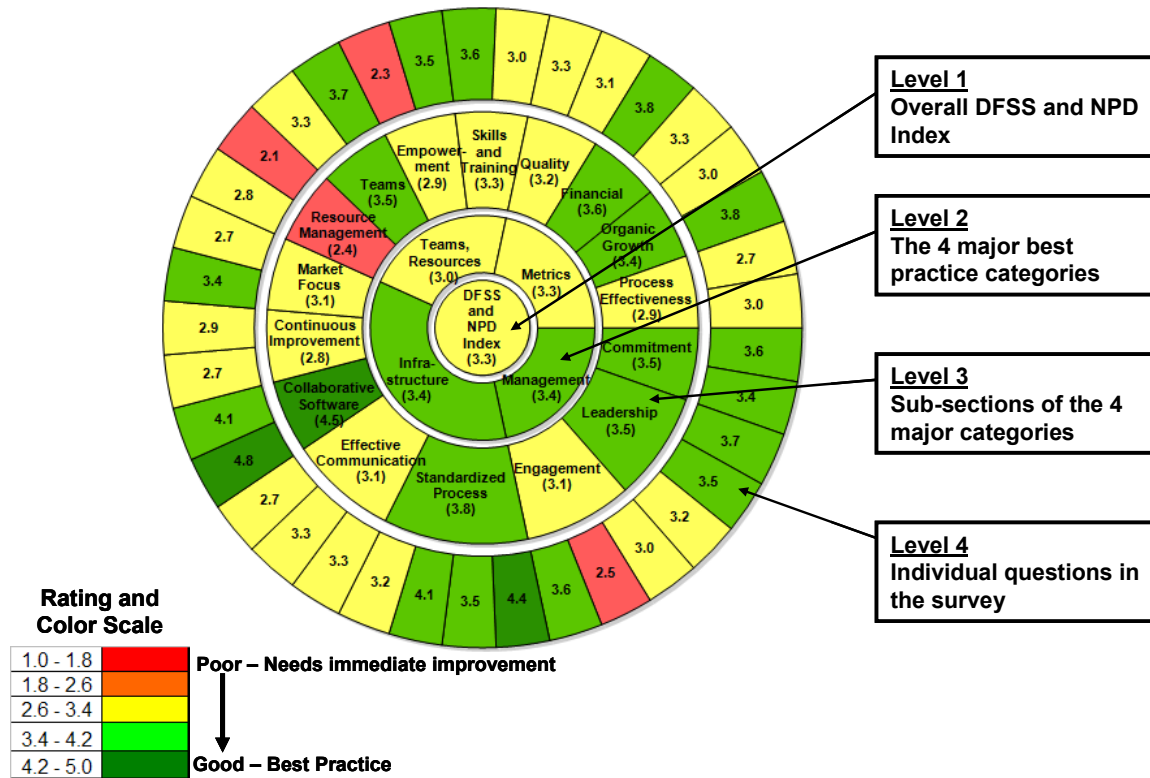


Figure 1 – The New Product Development Assessment Tool Description

Survey respondents can be selected from:

- Business Units
- Regions
- Product Lines
- Across all functions (business, marketing, technology, manufacturing, sales, quality, legal, purchasing, distribution, finance, safety, other support services etc.)
- Across all levels (C-level, directors, managers, exempts, non-exempts etc.)
- Customers, and
- Suppliers

For the New Product Development Assessment Tool it is critical that *all* functions involved in product development are selected for this survey to get the most value out of the effort. Results can be sliced and diced for evaluation and comparison by all the different types of respondents described above.

Example Case Study

A company sent the survey to three of its business units across all the various functions involved in the product development process to evaluate the effectiveness of their new product development process.

Overall Company Results

The overall company had an NPD Index of 3.3 – showing room for some improvement especially in the areas of teams and resources and metrics.

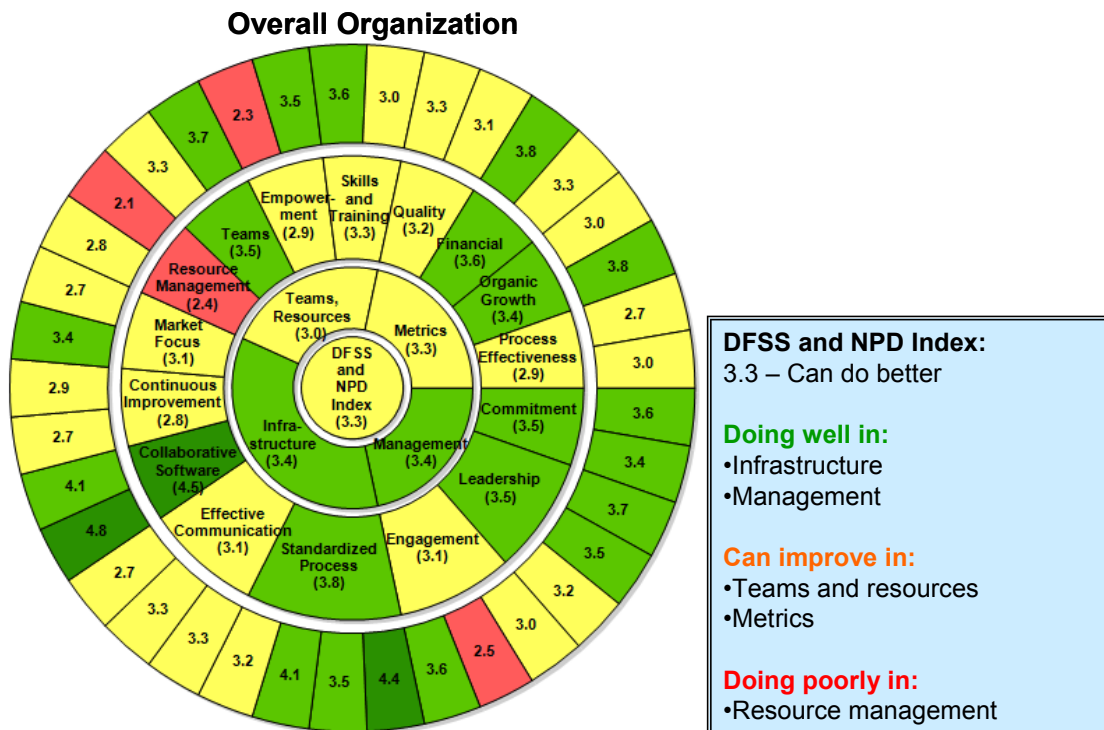


Figure 2- Case Study: Overall Organization

The situation however is very different – and more revealing when each of the business units are evaluated separately.

1. Business Unit 1 had an NPD Index of 3.7 - doing well in most areas.
2. Business Unit 2 had an NPD Index of 3.2. There is room for improvement especially in the areas of management, metrics and teams and resources.
3. Business Unit 3 has an NPD Index of 2.9. It needs major change in most areas.

Thus even though the overall organization appeared to be doing well, a further analysis of each business unit clearly showed areas of best practices and areas for improvement. Resource management appeared to be a major area that needed improvement for *all* business units.

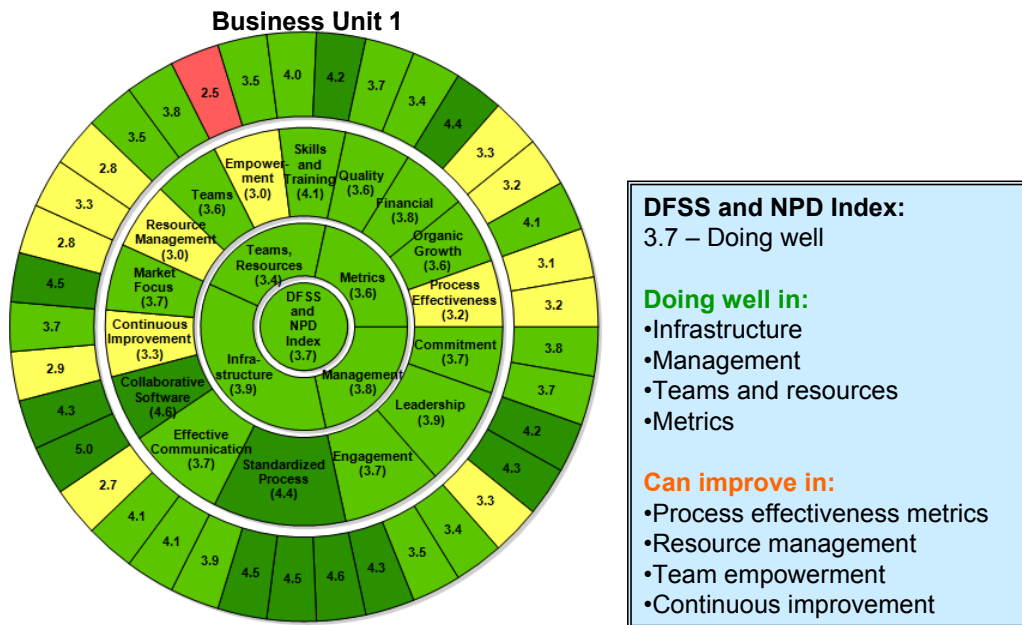


Figure 3a – Case Study: Business Unit 1

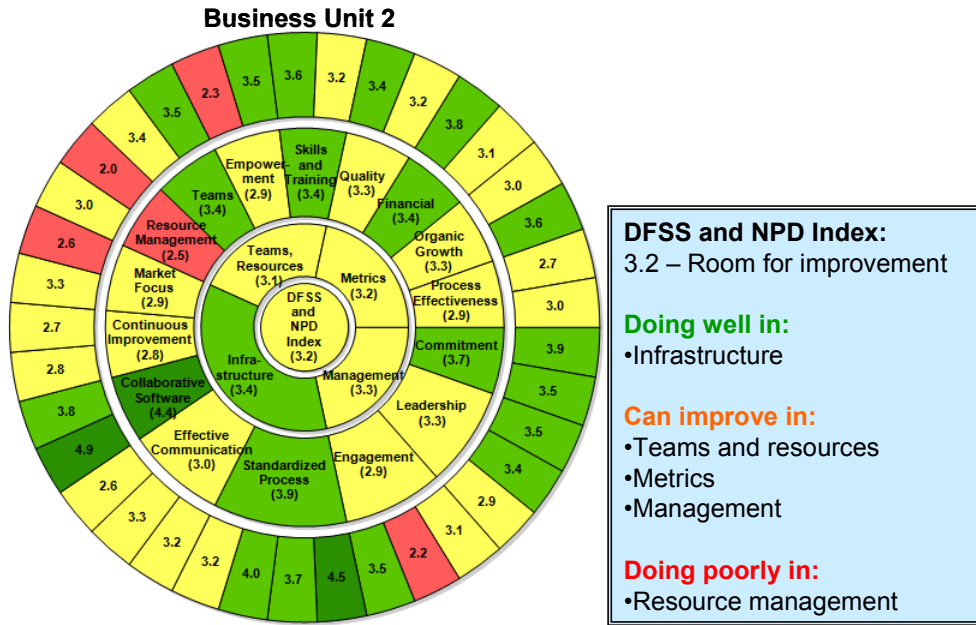


Figure 3b – Case Study: Business Unit 2

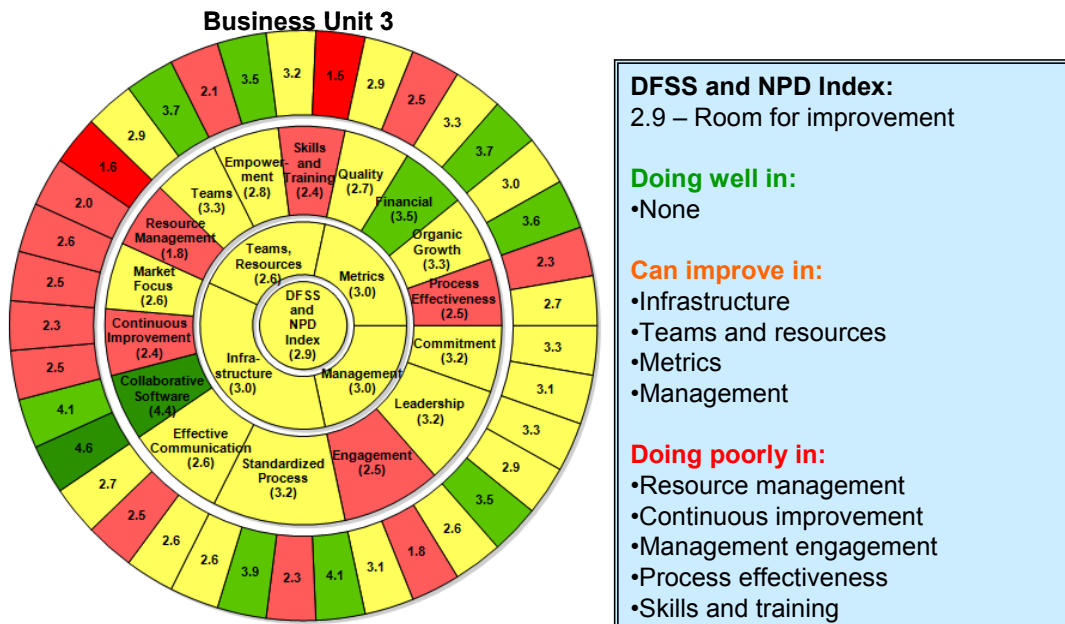


Figure 3c – Case Study: Business Unit 3

Similarly, the survey was analyzed based on the functions (marketing, R&D, manufacturing etc.). Open ended questions provided a rich source of information on the true perceptions of the employees with respect to all the different areas of the process. It can provide valuable information that may not necessarily come out of a survey.

Summary

- Even though overall business results look good, Business Unit 3 is lacking in the knowledge and implementation of the organization's new product development process.
- The overall Organization needs to improve in the management of resources for the new product development projects.
- Business Unit 3 – Need to understand why management is not engaged; management of resources for NPD projects is poor; relevant skills and training are lacking.
- Manufacturing – Identify and correct root cause as to why manufacturing feels that the NPD process is not effective. Resource management, continuous improvement processes and process effectiveness metrics are not working.

Opportunity Matrix

The opportunity matrix evaluates six key outcomes of an effective new product development process. These outcomes are listed below.

- **Sustainability** of the process over time
- **Customer Satisfaction** of products and services
- **Quality** of products and services
- **Growth and revenue** from the new products
- **Profitability** of the new products
- **Speed and flexibility** of the NPD process

The importance or priority of each outcome can be determined by the organization. Each question is assigned an importance score from 1.0 – 5.0 for each of the 6 outcomes. Each outcome category is plotted using the importance score of each question against its individual score/rating from the survey. This opportunity matrix plot identifies what the organization, business unit, region or function is doing well and areas that need improvement

Figures 4a, 4b and 4c highlight how the company is faring in terms of the NPD process sustainability, quality and growth/revenue respectively. The company decided that sustainability of the process was of prime importance. To this end management needed

to be more involved both in the process and providing the right resources for major projects. Quality was next and implementing a rigorous data driven design for six sigma process by providing training and the formulating effective quality metrics across the entire organization was a major action item. To obtain significant growth and revenue from its new products, the company needed to make sure it improved its commercialization process and instituted the right growth metrics that truly measured growth and revenue form its new products.

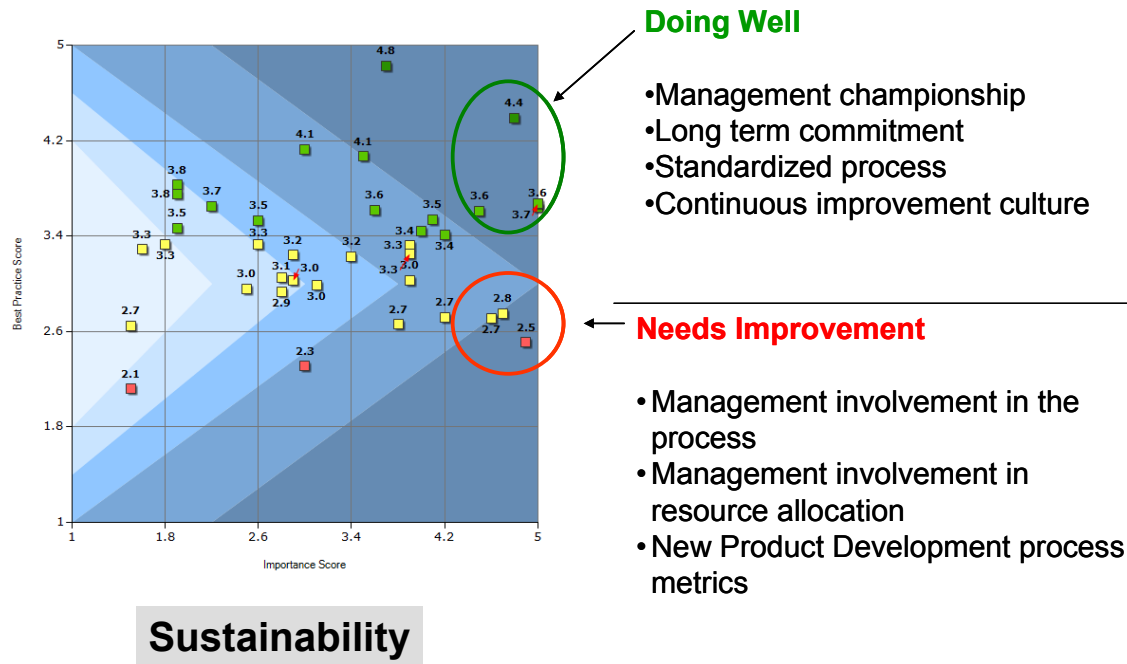


Figure 4a – Case Study: Key Outcome – Sustainability of the NPD Process

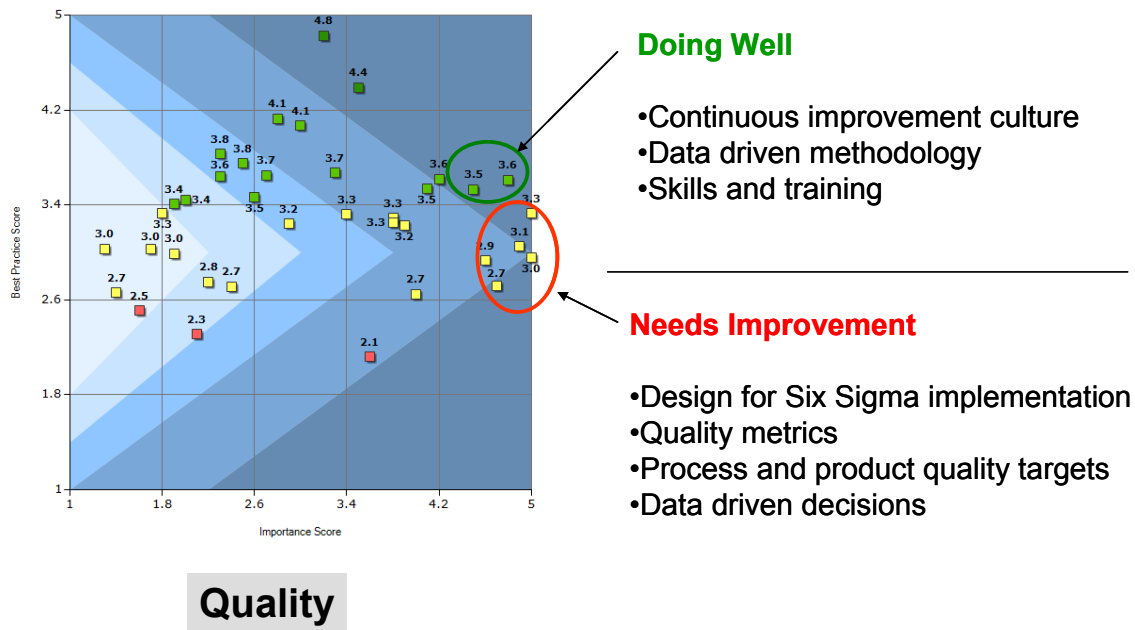


Figure 4b – Case Study: Key Outcome – Quality of New Products

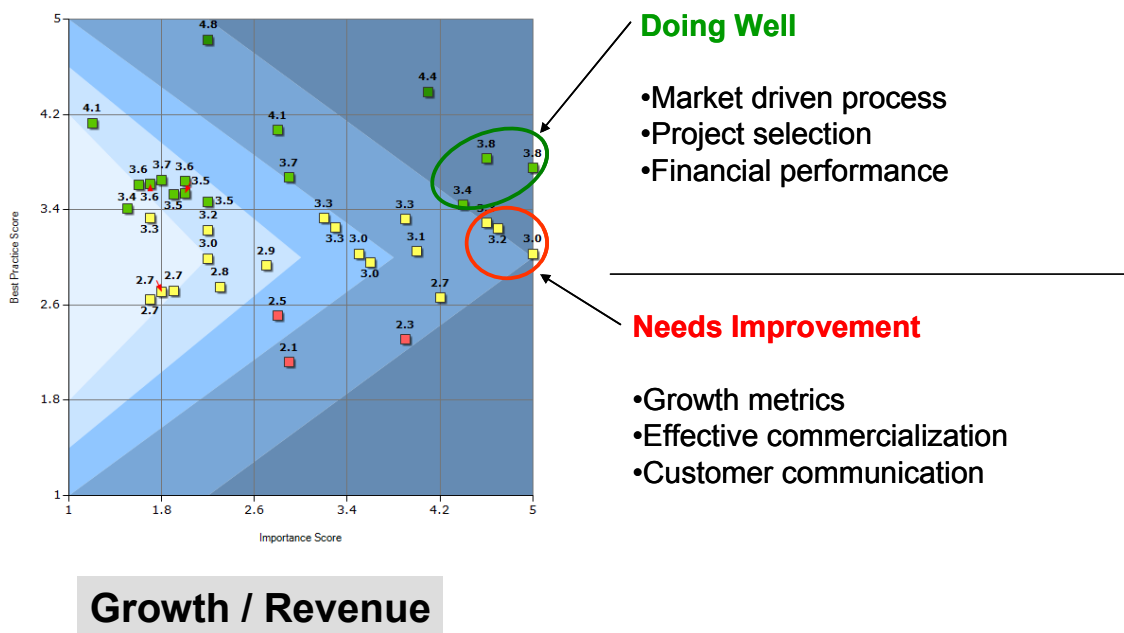


Figure 4b – Case Study: Key Outcome – Growth/Revenue from New Products

The NPD Effectiveness Tool can also be used as a benchmark against other companies, once enough companies have taken the survey. The results will be an overall composite on the NPD Index and the 4 major best practice categories provided in the form of a box plot identifying the range, medians and quartiles anonymously.

Conclusion

In conclusion, the New Product Development Assessment Tool can be used as a cost effective way to evaluate a company's existing processes and identify actionable areas of improvement. The results can be evaluated by product lines, business units, geographic regions, and functions. It can be used as a continuous improvement tool with periodic (annual) assessments to track and trend progress and effectiveness. Finally companies see how they compare to other companies and use the tool as an external benchmark or barometer of their product development process.

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