New Product Development

There was a time when companies only needed to continue to improve to stay in business. As long as they brought out marginally different versions of their products every now and then and kept costs under control, they could maintain market share. This is no longer the case. Competitiveness in the marketplace, the rapid pace of technological development and faster product lifecycles means that companies need to be innovative just to stay in business.

Innovation needs to be applied throughout your business – in your processes, your culture, how you interact with other organisations. But nowhere is it more critical than new product or service development.

There are many variations on the NPD process. This article introduces one version, along with some tools that can be used. Many of the tools have been adapted from TRIZ, a methodology invented in Russia by Genrich Altshuller, who identified a common set of inventive principles and processes used across numerous areas of technology. TRIZ was originally conceived around physical innovation. However, the principles have been successfully applied to business and industrial processes and design, engineering and indeed to service organisations.

1 NPD Innovation Process

Our process for developing new products covers 5 stages – Research, Analyse, Create, Select and Deliver (see *Figure 1*).

Research	Analyse	Create	Select	Deliver
o Market o Customers o Technologies o Organisation	o Strategy o Objectives o Resources o Constraints	o Idea generation o Concepts	o Criteria o Project(s)	o Bottom-line results

Figure 1 - NPD Process

1.1 Research

- o Evaluate market, including trends, size, segmentation, opportunities and threats.
- o Gather Voice of the Customer feedback to understand product requirements.
- o Carry out Technology Roadmapping to understand technology drivers, alternatives and timelines.

1.2 Analyse

- o Use TRIZ tools such as Problem Hierarchy, Stakeholder Analysis, 9-Windows View, Constraints Analysis, Resources Analysis to fully understand the scope and objectives of the project.
- o Develop a business case based on findings.

1.3 Create

- o Generate new ideas using TRIZ and in-house methodologies. The tools used will depends on the product strategy (see *Figure 2*).

Product Strategy	***Tool***
Incremental	Contradiction Matrix Trimming
Next Generation	All of the above Function Analysis Trends Analysis
Breakthrough	All of the above Ideal Final Result S-Curve Analysis Systematic Inventive Thinking (SIT)

Figure 2 - Idea Generation Tools

- o Systematic Inventive Thinking (SIT) is derived from TRIZ. It has five main tools for innovative product development - Multiplication, Sub-traction, Division, Task Unification and Attribute Dependency.

1.4 Select

- o Evaluate the results of the Create stage in light of the situation analysis and strategic objectives.
- o Use criteria to evaluate the options and select the ideas that will realise the best outcome.

1.5 Deliver

- o Work with the team to deliver the results and embed the learnings in the organisation for the longer term.