Table 4.5 Innovation management tools and methodologies

Innovation management typologies	Methodologies and tools
Knowledge and technology management	Knowledge audits Knowledge mapping Technology road maps Industry foresight panels Document management IPR management
Market intelligence	Technology watch/technology search Patents analysis Business intelligence Competitor analysis Trend analysis Focus groups Customer relationship management (CRM)
Cooperation and networking	Groupware Team-building Supply chain management Industrial clustering
Human resources management	Teleworking Corporate intranets Online recruitment e-Learning Competence management
Interface management	R&D – marketing interface management Concurrent engineering
Creativity development	Brainstorming Lateral thinking TRIZ* Scamper method Mind mapping
Process improvement	Benchmarking Workflow Business process re-engineering Just in time
Innovation project management	Project management Gannt charts Project appraisal Stage-gate processes Project portfolio management
Design and product development	CAD systems Rapid prototyping Usability approaches Quality function deployment Value analysis NPD computer decision models
Business creation	Business simulation Business plan Spin-off from research to market

* This is a Russian acronym and stands for: Теория решения изобретательских задаз (***T****eoriya* ***R****esheniya* ***I****zobretatelskikh* ***Z****adatch*), which is a problem-solving, analysis and forecasting tool. In the English language the name is typically rendered as the Theory of Inventive Problem Solving. It was developed by the Soviet inventor and science fiction author Genrich Altshuller in the 1940s.

Source: Hidalgo and Albors (2008) and Coombs et al. (1998).

Applying the tools and guidelines

Over the past 50 years, numerous models, guidelines and tools have been developed to try to help firms achieve successful product innovation. Whilst there is debate within the literature about the detailed design and content of the models, generally the literature argues that, by following a common formalised model so that projects pass through a series of phases, an organisation will improve its level of product development (Engwall et al., 2005). What is less clear is the extent to which firms' and managers' practical actions adhere to the formalised model. Indeed, there is plenty of evidence to suggest that these models are not rigidly followed (Sauer and Lau, 1997; Werr, 1999).

Other research has found that the models serve a variety of different purposes other than that originally intended: for example, creating legitimacy, attracting support for a project, disciplining the project team and providing an illusion of a sense of control (Hodgson, 2002). It seems there is a lack of studies on the actual use of models in practice. In their study of project managers, Engwall et al. (2005) found that:

- structured development models contributed to NPD;
- they were seen as guides for action but not followed rigidly;
- models need to be applied pragmatically; and
- they provided a common language.

Analysing the range of well-established management principles that can help the leaders of an organisation sustain innovativeness and even recover from a period of stagnation is clearly necessary, but we also need to recognise that the decision to implement or use one or more of these techniques may be down to the leaders themselves. Innovation leadership is discussed either by innovation management researchers in the context of top management support or by leadership scholars under the heading of 'leadership and organisational change'. Nonetheless, the key challenges in innovation for any manager or leader are (Deschamps, 2003):

- the urge to do new things;
- the obsession to redefine customer value;
- the courage to take risks;
- an ability to manage risk;
- speed in spotting opportunities and project execution;
- a shift in focus and mindset from business optimisation to business creation.

These drivers of change could equally be used to characterise entrepreneurship (long recognised as a key factor in firm innovation) and, indeed, it is the role of the entrepreneur that is often missing from many models of innovation. Even within extremely successful companies that have had many years of innovation success, top managers have to be reminded of their responsibility to support and champion innovation leaders: those people who exercise their initiative and create change. Such people will make mistakes, but many of the tools and techniques discussed in this chapter can help firms manage risks and reduce the level of mistakes.

Innovation audit

As in financial auditing, where the purpose is to determine the health of the firm, so too can firms undertake an innovation audit. The purpose of which is to uncover