Managing uncertainty through staged reviews – 'stage gate' models

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Managing Innovation

Logo
Name

Managing risk – the role of strategic gateways

(stage gate models)

Why and when is it used?

Developing new products, processes or services is about creating something new - and with it comes risk. Clearly incremental improvement of an existing idea will be a much safer bet than development of a radically new product, but in all cases there will be uncertainty and the chance of something going wrong. For this reason a key principle in successful product innovation management is to try and manage the risk, and the value of a process model is that it provides milestones along the journey where these risks can be assessed.
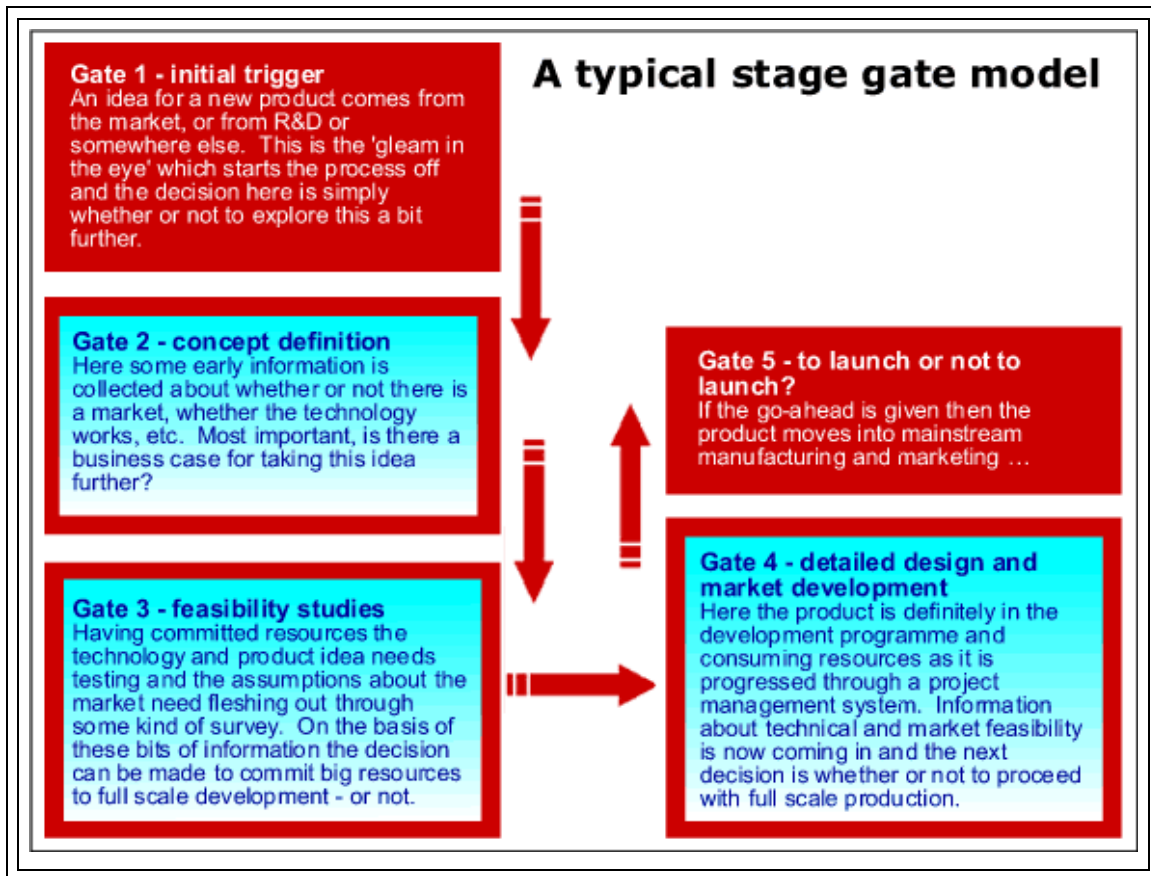
How does it work?

Robert Cooper, one of the foremost writers on product innovation, introduced the concept of 'stage gates' at these milestones - essentially points at which strategic assessment can be made and where progress, passing through the gate, only takes place when key technical and market questions can be answered (Cooper 2000).

The issue is not one of implementing a standard set of stage gates, because the number and position of these will vary with the kind of business, but rather one of managing the inevitable uncertainty in the process. It moves product innovation from being a gamble to a managed set of risks.

By separating the key stages in the process, the management aspects can be more easily understood. At the end of each stage, considerable activity will have occurred to

ensure that the proposed design can be resourced within the business plan and implemented. Marketing, production, purchasing, corporate planning all need to feed into the product innovation process to assess its viability at each stage and you should be prepared to abort the project if it does not meet business objectives.

A typical stage gate model

Gate 1 - initial trigger
An idea for a new product comes from the market, or from R&D or somewhere else. This is the 'gleam in the eye' which starts the process off and the decision here is simply whether or not to explore this a bit further.

Gate 2 - concept definition
Here some early information is collected about whether or not there is a market, whether the technology works, etc. Most important, is there a business case for taking this idea further?

Gate 3 - feasibility studies
Having committed resources the technology and product idea needs testing and the assumptions about the market need fleshing out through some kind of survey. On the basis of these bits of information the decision can be made to commit big resources to full scale development - or not.

Gate 5 - to launch or not to launch?
If the go-ahead is given then the product moves into mainstream manufacturing and marketing ...

Gate 4 - detailed design and market development
Here the product is definitely in the development programme and consuming resources as it is progressed through a project management system. Information about technical and market feasibility is now coming in and the next decision is whether or not to proceed with full scale production.

Stage gate approaches can also be used in process innovation projects – the same principles of checking progress and emerging information apply but the 'market' data is much more associated with internal potential users of the new process.

Further information:

[ABC Electronics case study](#)

[Robert Cooper's webpage](#)

[A good description of the core approach](#)