



Prototyping

JOHN BESSANT
Managing Innovation

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Innovation is about creating something new – and a big question lies in whether or not other people will accept the idea. Adoption of innovation isn't automatic and there are many factors which affect the process of deciding to take on something new. (See accelerating diffusion for more on this).

One useful approach is to create working models – prototypes – which are not the finished idea but a stepping stone on the journey towards it. They give an idea of shape, size, function, etc. – but they also allow for changes to be made. They help the innovator see his or her idea more clearly but their real value is as a 'boundary object' which can draw others into the process of creating something new. When people can try out an idea, give their reactions, voice their concerns and make suggestions for improvement they are likely to become more favourably disposed towards it. And their ideas provide valuable input to the development process, highlighting new direction, features to be modified, things to add or subtract.

Prototyping is used extensively in all areas of innovation. In the lean start-up approach for new ventures it is a cornerstone; the principle is to create a 'minimum viable product' and then offer this to the market place as a prototype to generate learning. It is a controlled experiment and the purpose is to get fast feedback to help refine the idea. Beta testing of software involves the same principle – offer people something which is part-finished and invite them to share their experiences and reactions so that you can improve it.

We can see the same process at work with concept models like those for new cars or aircraft – working models which allow technical features to be tested and consumer reactions to be captured and built in. And prototyping is not confined to physical products – it works just as well in services where once again the idea is to create a boundary object around which some degree of 'co-creation' can take place.

The toolkit supporting prototyping has expanded enormously in recent years so that it is now possible to create prototypes quickly – for examples using computer simulation. 3-D printing technologies have revolutionized the world of product design since it is now possible to produce models cheaply and quickly and make them available for testing. (See Chris Anderson on the 'maker revolution' for more on this)

Bernhard Doll developed a useful map on which a wide range of prototyping approaches can be positioned.

Linked to this is the idea of user-led innovation; arguably engaging users early in the process and building their ideas into the developing innovation model will strengthen its compatibility with their world and accelerate adoption. REFs. This moves the focus towards the use of prototypes as boundary objects around which this process of user engagement can take place. REFs Thomke, Doll, etc in contrast to 'traditional' ways of gaining feedback from customers, like market research, where a lot of time and resources need to be spent to convince potential customers to give feedback, the use of prototypes stimulates external actors to participate immediately in a further development of the idea (see also, Schrage, 1999).

