
Open Innovation Readiness: a Tool

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Abstract: Innovation is vital for enterprises that are fighting back after major setbacks, surviving the current economic conditions or planning sustainable growth relative to their competitors. Tools exist to help them measure their propensity to innovate, their capability for innovation or their innovation performance. But for many SMEs there is a lack of awareness and education which causes apprehension about innovation, open innovation and intellectual property.

This paper introduces an “Innovation Readiness Tool”, designed specifically for use with companies where innovation is an infrequent or totally absent phenomenon. It outlines five steps through which the online tool will take these “newcomers”. Step one is to demystify open innovation. Step two is to identify their own existing barriers to innovation and understand their environment. Step three initiates a number of innovation related practices. Step four is project management and step five provides online coaching support for the enterprise’s nominated innovation champion.

Keywords: Innovation tool; innovation process; open innovation; learning.

1. Introduction

This paper introduces the idea of an Open Innovation Readiness Tool. The introduction outlines the concept of Open Innovation and how this is appropriate to SMEs. The majority of Open Innovation tools address performance and method but few look at starters. The objective here is for a tool to help and support SMEs who might be apprehensive about Open Innovation.

There is ample evidence to show that innovation is vital for enterprises that are fighting back after major setbacks, are surviving the current economic conditions or planning sustainable growth relative to their competitors. Providing they are aware of innovation, there are many available tools to help them measure their propensity to

innovate, their capability for innovation or their innovation performance. Amongst SMEs who have been subject to related research there is compelling evidence that innovation tends to be a domestic affair with more developments coming from existing staff than from outside sources.

A number of countries in Europe have introduced some form of "Innovation Voucher" to promote growth by innovation. The very existence of these schemes demonstrates the perceived reluctance of SMEs to talk to their local universities. A voucher scheme provides relatively modest funding to enable a business, normally an SME, to engage with a University or Research Organisation for an initial research or development activity. Research in the Netherlands has shown that 80% of the vouchers are used for technology transfer that would otherwise not have been commissioned (1). A smaller study in the UK concurred with that experience and also found that, having made the first step, there is substantial willingness to go on and either extend the collaboration or test other new ideas with partners (2).

If innovation is to be mastered and used for growth it must be managed. In its latest report, IMP3rove defines Innovation Management as:

"The Capability to Continuously
... Manage inventions/ideas for
• new products or services, processes, production methods, organizational forms
or
• elementary improvements of a business (model) system
and their successful realization" (3)

If we are to add to that the notion of Open Innovation it is sensible to start with Henry Chesbrough's definition as a

"paradigm that assumes that firms can and should use external ideas as well as internal ideas, and internal and external paths to market, as the firms look to advance their technology." (4)

Starting with the example of Proctor and Gamble, he demonstrated that in the modern interconnected environment, the best ideas don't necessarily come from a company's own staff and that a two way flow of communication can develop new products and new markets. However, adopting an open innovation approach can present numerous challenges, including how to manage intellectual property and where to look for beneficial external partnerships.

There exist a vast number of tools to help manufacturers address those challenges. These vary between sophisticated models of assistance and simple Web sites to post ideas. The players include such names as NineSigma, InnoCentive, the InnovationXchange and Planet Eureka, FellowForce, Yet2.com, YourEncore, Praxis and IMP3rove.

The initial names in this list are either high end consultancies with the declared aim of working with Fortune 500 or Global 1000 companies or focused networking tools to

match owners and exploiters of IP with investors. Even amongst these large companies, there are innovation inhibitors such as a risk-averse corporate climate, mismanagement of the innovation process or lack of competencies (5). Praxis and IMP3rove provide a variety of tools and in the case of IMP3rove, an ever increasing database of SME involvement in innovation.

Since the launch of the IMP3rove platform in spring 2007, the largest European benchmarking database on innovation management in SMEs has been built up (3). More than 3,500 SMEs have registered with the IMP3rove platform in order to start the IMP3rove process and initiate an improvement of their innovation management performance. In November 2009, there were 2,685 SME users that are registered and active on the IMP3rove platform.

IMP3rove's review of over sixty innovation tools showed that a third concentrated on idea generation; a quarter on the high level strategy and culture surrounding innovation and the remainder mostly on the practice of innovation. However, IMP3rove is only just waking up to Open Innovation. It records a recent input from an SME talking about the "synergies from cluster co-operation." As IMP3rove begins to address open innovation issues, the interaction with the cluster is part of its open innovation strategy.

It appears that SMEs predominately favour incremental innovation (6) Revisiting the challenges faced by SMEs, there seem, on reflection, to be two starting points. The first is the company that realises the need but has nothing on which to build innovation. It needs both ideas and partners. The second is the company that has arrived by whatever means into a cluster in the Michael Porter sense of a cluster (7). The cluster has by definition a purpose which will drive an innovation and the participants within the cluster or those new participants being drawn into the cluster bring the ideas and partners that will build the Open Innovation. The ensuing plan for this project is to work with a cluster development programme in the East of England. At the time of writing this programme has been delayed. Each cluster in the programme will target innovation.

2. The Aim

The aim of this project has been to develop a support programme that could be used with SMEs to encourage and support Open Innovation and that could also be presented as an online resource. From the previous review currently online tools are either direct tools for companies with a known requirement or they are focused on large enterprises. The aim here is to provide a tool that can supplement financial incentives to innovate and reach beyond the initial pool of likely SMEs. The focus within the tool is that it enables the participant SME or in particular its innovation champion to develop the SME's readiness for Open Innovation.

3. Outline of the Open Innovation Readiness Tool

The tool is divided into five sections. These are intended to take an SME or a number of SMEs in a cluster through the stages of learning about the benefits and pitfalls of Open Innovation through to moving on to the next project with confidence.

The first two stages prepare the SME for innovation. Stage 1 is about Learning - using available teaching materials this stage is to provide a simple learning environment on Open Innovation. It will cover the concept, the benefits, the pitfalls and the safeguards that the tool introduces in the later stages. Stage 2 is about Preparing. This is a self assessment stage that enables the SME to clearly understand its position in the market, the value chain and the innovation partnership. It provides the mechanism to ask the other partners in a cluster to perform a similar self assessment activity.

The later stages steer the SME and its partners through a process. Stage 3 is about initiating the ideas. As the idea of the innovation begins to take shape the Tool will assist the partners to understand visually the form of the innovation and the place of each partner within the process. Notionally this view can be seen as being orthogonal to the normal project management view that runs along a time axis. The fourth stage is about managing. In a sense the tool should revert here to a project management tool. In fact, it incorporates or interfaces with a proprietary Project Management tool. It retains this orthogonal view that enables the partners to see the interplay between their own projects.

The fifth and final stage that will be added to the tool is about Maturing. This stage looks towards succeeding projects which might lack the initial seed idea. Having experienced Open Innovation, the SMEs are now encouraged to “fish” for further ideas, IP and partnerships.

Stage 1 Learning about Open Innovation and how to innovate

Open Innovation is often seen as the preserve of large companies such as Procter and Gamble. Small to medium sized companies find the prospect daunting and risky. One of the serious barriers that prevents Small to medium sized companies, SMEs, engaging in Open Innovation is Intellectual Property, IP, – the fear of others gaining and exploiting their own ideas. They need support to understand both the benefits and how to manage the risks. The learning material presented during this stage will cover the concept of Open Innovation, the benefits, the pitfalls and the safeguards that the tool will introduce in the later stages.

The first part will be set out to answer the questions:

Why is innovation so important for SMEs and what difference could it make to me?

What is Open Innovation?

Reading about Open Innovation puts it out of our league. How can Open Innovation apply to SMEs?

What are the benefits and dangers of Open Innovation?

Secondly this stage provides some basic innovation tools that the SMEs can adopt as part of their own innovation strategy. The early exploration phase of any innovation process is often very chaotic and divergent. It essentially involves the apparently random gathering of data, opinions and trends for a variety of sources from within and beyond the direct experiences of the innovation team.

A number of tools and techniques extracted from a variety of sources are available to support SMEs that will be working in this innovation phase. The principle source is Systematic Innovation (8) the modern development of TRIZ. An underpinning philosophy of the ideas behind these tools is that innovation is more effective when it is undertaken collaboratively. Examples of the tools include the Time and Space System Operator, The Innovation Potential Analysis and Perception Mapping.

Time & Space System Operator

The Time and Space Operator or Nine Windows tool is a deceptively simple approach that ensures all aspects of the innovation challenge are explored during the process, so preventing early focus on potentially the wrong area.

Innovation Potential Analysis

Innovation Potential Analysis relies on innovation trends that have been derived through research into a large data base of past innovations that have occurred within all sectors of technology and business. Comparing these generalised trends to the specific innovation challenges presented to the team, it is possible to project beyond the current solution boundaries and obtain an insight into the next evolutionary cycle.

Perception Mapping

Divergence of opinions is often a healthy status in any exploration phase; it provides the breadth of thinking that enables tangents to be explored and radically new ideas to be implemented. Perception mapping is a technique derived by the Flow Scaping work of DeBono that helps teams appreciate divergence of views and similarly enables them to focus on specific issues through a process that can be seen by everyone to be unbiased and without agenda.

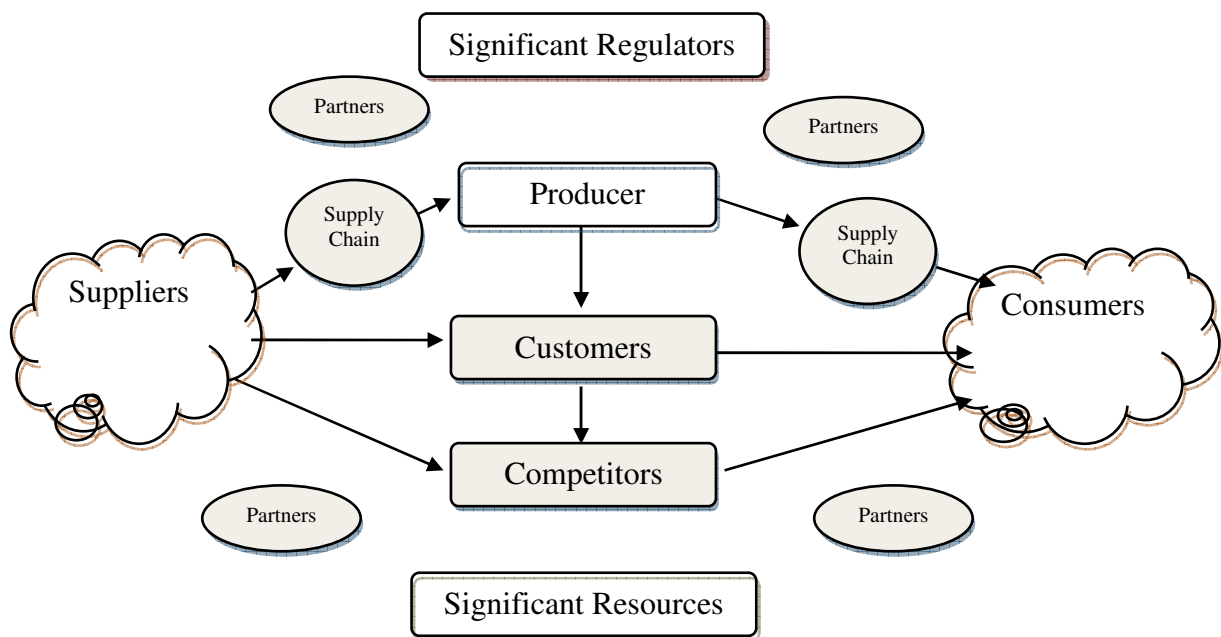
Stage 2 Preparing for Open Innovation

This is a self assessment stage that enables the SME to clearly understand its position in the market, the value chain and the innovation partnership. It develops the notion of a visual commercial landscape. As other partners begin to populate that landscape, it provides the mechanism to ask the other partners in a cluster to perform a similar self assessment activity.

The starting point is a generalised landscape set out as in figure 1. This shows all the likely players in a commercial venture, e.g. the market for the prime actor's major product. The actual information that is needed to describe each actor may vary from case

to case. The role of the tool is to set out the key parameters and let the user decide on priority and relevance.

Figure 1 The generalised commercial landscape



For each actor the following could be considered:

The Company

What are its products, services and later what IP does it have available?
Who are its key players and their direct contact details?

The Business

What is the market, its size, the trends and the company's market share?
What method or type of operation is the business? Is it a design agency, a volume producer, a small batch producer? Is it primarily involved in B2B or B2C operations?

Size and Governance

How big is the company, both financially (to determine its ability to invest speculatively in new ventures) and physically – people and plant?
What form of governance is in place - owner/manager, corporate, multinational, publically funded?
What level of vertical integration exists in its operation?

Approaches to Innovation

Historically has it worked with in-house innovation mostly or has it any experience of Open Innovation?

What is its rate of new product development?
How are new developments funded?
What is its performance in terms of international marketing?

Resources available for new developments

What are the people, time, facilities, networks and other resources that the company brings?
How much of that resource is actually channelled through an Open Innovation interface?

The items in grey may well not be determined until the user moves to later part of Stage 2. Having gained a much deeper understanding of each partner, the actual commercial landscape is drawn up and each company is represented by a “company postcard” as in figure 2. This is as its name implies a very short synopsis of the company that can be used as a tag in the landscape. The company postcard is also an aide memoir for every member of a consortium, partnership or grouping of open innovators. Its aim is to remove uncertainty and develop trust.

Figure 2 The company postcard

<u>Company Name</u> Products, Services and IP
The Business: Market (size and trends) Method/type (design agency/ batch producer, B2B/B2C) Strengths and weaknesses Size Governance – owner/manager, corporate, multinational Level of vertical Integration
Approach to Innovation Open/in-house Rate of new product development Funding of development International marketing
Resources People, time, facilities, networks (open or otherwise)

In order to prepare for Open Innovation, the company, or at least its Open Innovation Champion must take self assessment to a more internal level. At this point the questions above must be answered by the company of itself. Together with come deeper questions about the attitude to Open Innovation. These cover the areas of:

Strategic View – direction of travel, respect/acknowledgement of customer view, drive and energy for change

Culture Structure – working practices and willingness to allow staff to follow leads and the willingness to embrace new ideas.

Customer and Supplier Loyalty – the perceived effect of innovation on customer retention and supplier partnerships

People – commitment to skills and teams

Openness – internal openness and communication

Risk, rewards and tolerance of failure with reference to innovation

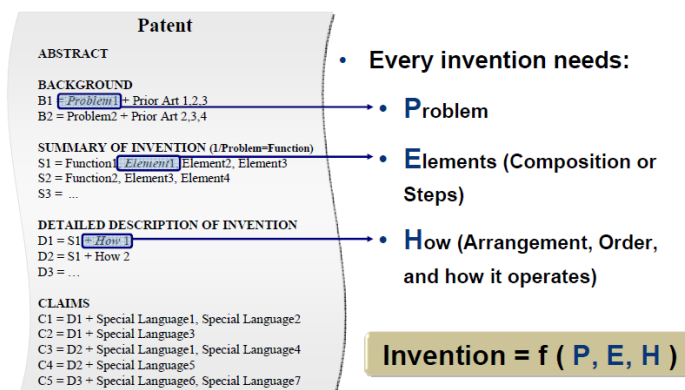
Constraints – determination to remove barriers

The questions are adapted from schemes used within FIT Corporation programmes (9).

Stage 3 Initiating an Open Innovation Project with Confidence

As the idea of the innovation begins to take shape the Tool will assist the partners to understand visually the form of the innovation and the place of each partner within the process. Notionally this view, represented as an “Innovation Map”, can be seen as being orthogonal to the normal project management view that runs along a time axis. In one sense this is like a “Bill of Materials” expressed as both a value chain and simultaneously as an Intellectual Property map. Each step in the hierarchy presents a number of problems. These are resolved by adding further elements to the design which either bear a cost as in the value chain, or are elements of IP which have a function to solve a problem at the level above. This mix of ‘Problem’, ‘Element’ and ‘How’ they work together is best represented by John Cronin’s diagram in figure 3. It is this PEH component that is being considered for managing IP, not the full structure of a Patent Application – that is for individual commercial judgement within a company.

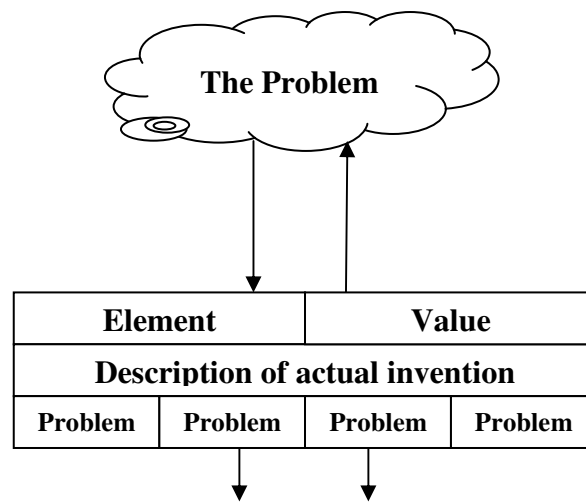
Figure 3 The PEH equation of Patent structure



Source: “Pure Insight IP Course” delivered by John Cronin and ipCapital Group Inc.

An individual element in the innovation map connects to the elements above and below it through this invention equation. The elements above cannot be realised without solving a problem. The element below is the solution expressed as a new element with the connecting “How”. Using the concept behind a Bill of Materials, the true value is made up of the successive layers of components in the diagram. The difference with this diagram is that the players can choose whether to incorporate the cost, e.g. buy the specified element as a supply, or incorporate the IP and agree some royalty. These ideas are all represented in the Innovation Map. A sample of the map elements is provided in figure 4.

Figure 4 The innovative element

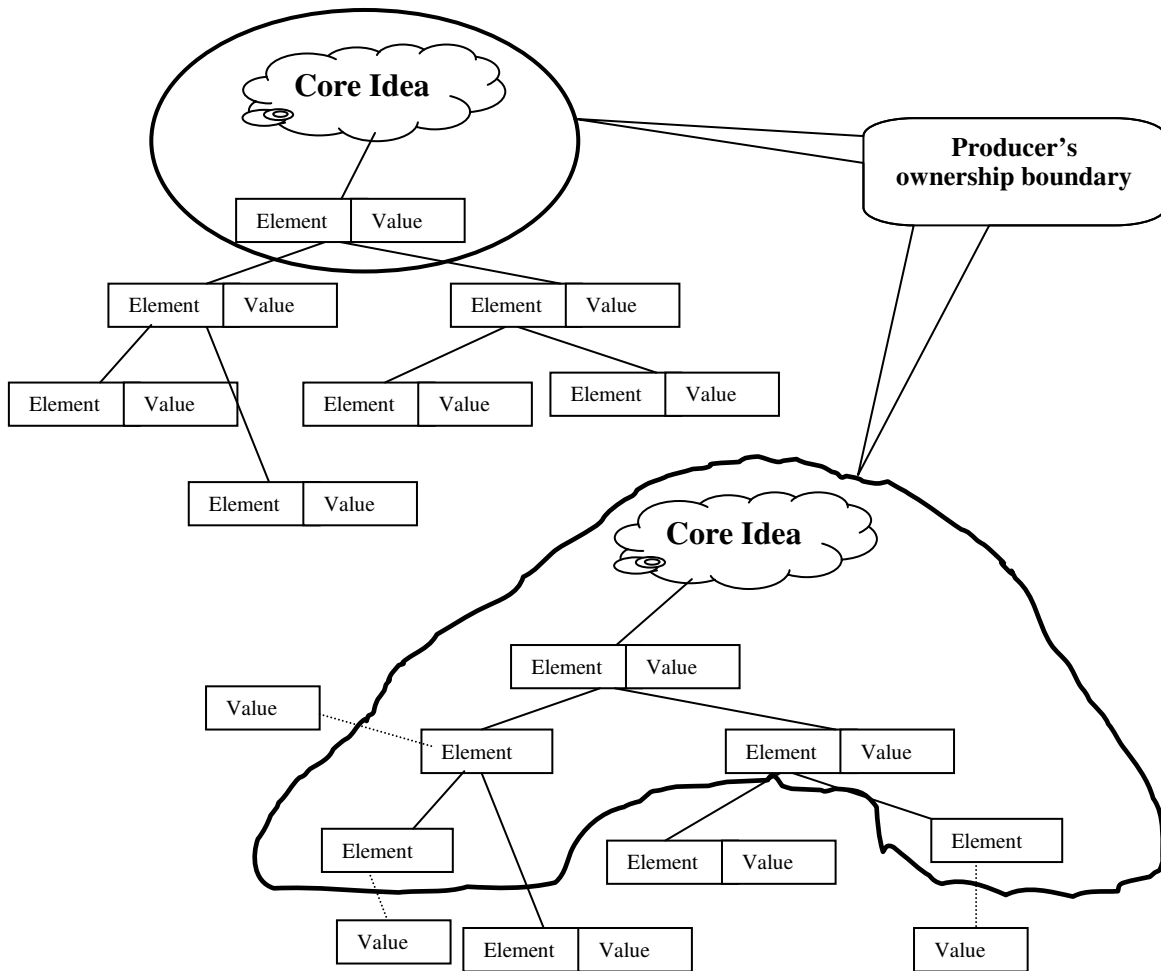


Each element of the design has its own problems that must be resolved at a deeper level with other elements that add to build up of value and simultaneously the “devolution” of potential royalty.

The higher level view is taken when considering the value of each element. Figure 5 shows each element condensed into just the two parts of elements and value. The two parts of the figure show how the boundary of producer’s ownership can be enlarged to incorporate more elements.

The boundary of one producer’s product shows where lower elements are either incorporated by agreement and the IP value stays with individual producers or they are purchased directly and their value incorporated into the product. The previously introduced “company postcards” provide additional reference points on the complete diagram and are included in the producer boundaries.

Figure 5 Innovation maps



Stage 4 Managing an Open Innovation Project

In a sense the tool should revert here to a project management tool. In fact, it may incorporate or interface with a proprietary Project Management tool. It retains this orthogonal view that enables the partners to see the interplay between their own developing projects. The fully developed tool will provide hyper links from elements on the Innovation map to the PERT or GANTT diagram for their development.

Stage 5 Maturing as an Open Innovator

This stage looks towards succeeding projects which might lack the initial seed idea. Having experienced Open Innovation, the SMEs are now encouraged to “fish” for further ideas, IP and partnerships.

1. Next Steps of Development

This project has taken the need for SMEs to engage in innovation, reviewed the available tools and initiated the development of a support tool to fill that gap of hesitation or lack of readiness that holds SMEs back. The tool helps the SME or its innovation champion to understand where it is amongst its cluster of partners, where it is in its capability to innovate. The tool provides initial training in types of innovation and an understanding of the intellectual landscape in which the innovation is taking place.

A number of significant clusters of SMEs with innovative aspirations have been identified with whom the tool can be trialled. Once their support project is underway, workshops will provide each cluster with access to the Open Innovation Readiness Tool and routes for feedback. Open access to the online tool will follow the integration of their feedback.

The next conceptual development will be to take the Innovation Map forward into an IP support stage. The map helps SMEs define the IP position, but this next step will guide them to find the route to appropriate protection, be it privacy, patent or publication.

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