briefing

Creating an environment for open innovation

Manufacturers are increasingly turning towards Open Innovation (OI) as a means of enhancing their innovation capability. As manufacturing processes and technology grow in complexity and global markets become more competitive, few companies can rely on in-house research departments alone. In the light of this trend, researchers at the Institute for Manufacturing (IfM) have been studying a number of companies that have tried to introduce more open approaches to innovation, with the aim of providing guidance for others who are considering implementing OI in their own businesses.

What is open innovation?

Open innovation is a process designed to accelerate innovation through collaboration. Under this approach a company works with external partners on new ideas in a bid to generate business opportunities. Traditionally companies develop products and technologies internally. OI breaks down company boundaries and allows companies to share and integrate resources with partner organisations and internal business units. It involves companies becoming less reliant on internal ideas and being prepared to work with other firms to facilitate innovation.

OI is characterised by the involvement of a firm's major functions – from research and development to commercialisation – throughout the innovation process. Although many elements have been around for sometime, as an integrated concept OI is a relatively new phenomenon – it was only formally defined in 2003. OI has already been utilised across a range of business sectors including electronics and telecoms; energy; aerospace and defence; fast moving consumer goods (FMCG); and software and media.

The IfM was interested to discover what motivated firms to pursue OI and whether, once committed to adopting this approach to innovation, it was possible to develop a framework or guidelines to support its successful implementation. This briefing highlights some of the findings.

Reasons for adopting OI

The research carried out by the IfM's Centre for Technology Management looked at 36 companies who formed the Cambridge Open Innovation Network – an IfM-hosted forum funded by Unilever and the Cambridge Integrated Knowledge Centre.

The study found more than one major motivation for moving towards a more open approach to innovation. The most popular reasons for adopting OI included:

- **Shorter time to market** – the OI approach allows companies to reduce the time to market for new products. This seemed to be particularly important for FMCG and electronics companies where faster cycles of innovation were required to keep pace with commercial rivals.
- **Find new technologies** – working in a partnership offers the chance for companies to use technologies developed elsewhere.
- **Access to additional competence** – where firms have a stable workforce it enables access to requisite skills needed for innovation.
- **Find new ideas** – a large multinational might seek to work with smaller organisations to increase the number of ideas it has access to.
- **Cost reduction** – working in partnership enables costs to be shared.
- **Access to new markets** – accessing channels to new markets by exploiting links with innovation partners.

So, once the business benefits for adopting OI have been identified – how do companies go about introducing it?

The research team found four key issues that companies must tackle if they want to successfully implement OI. These were:

- creating an appropriate **culture**
- introducing **procedures**
- accessing the right **skills**
- **motivating** employees

How to build an open innovation culture

Most companies have an ingrained culture – a set of values or beliefs by which they operate and which the employees adhere to. The study found that creating a culture that was accepting of OI was an important step towards successful implementation.

Culture is 'informed' by everything from leadership example and company structure to the systems used to incentivise staff and the methods of control. The researchers found no single factor that can create an open innovation culture. However, they suggest the following can help:

- create an OI implementation team within the company – set up on open principles the team can be the focal point for OI culture. It can help forge links between different business functions and provides a pool of relevant skills.
- accept that not all business units will share the same culture. Within one organisation many sub-cultures can exist.
- look for sub-cultures which lean towards some aspect of OI and try to encourage their growth.

Research | **Development** | **Commercialisation**

IP in-licensing
Products in-sourced (e.g. Co-branding)
Company Boundaries
Core Market Focus
Company Boundaries
Technology Spin-outs
IP out-licensing
Ideas & Technologies

How to set up open innovation procedures

OI teams perform a vital role linking different business functions – for example, facilitating the involvement of R&D, top management and procurement in the innovation process. But there are a number of other important activities which these teams carry out, including establishing partnerships with external collaborators.

The researchers found an example of this in the energy giant BP. Science and technology forms a core part of BP's business activities, in exploration and production, refining and marketing and investigating alternative energy options. The company seeks to generate measurable value as soon as possible and so has been carrying out research in collaborative networks for some time.

The OI team at BP has helped create a network of innovators which bring in complementary skills and resources to help fast-track research activities. This 'innovation ecosystem' will typically involve commercial partners, universities, government institutes and other experts from within the energy sector.

A typical project may involve different project partners at different points in the innovation process, but the company will also spend time forging long-term partnerships with leading universities in order to access the latest research and to stimulate business thinking.

The OI team also helps tackle resistance to implementation. In the case of BP there was some opposition to working with non-traditional partners which the OI team helped to overcome. The team can also be used as the relationship managers for new partnerships, built through OI. BP found it had to acquire this new skillset when working with technology start ups outside the oil and gas industry.

Finally OI teams can play an important part in providing access to new tools and for the creation of new functions. Consumer electronics company Philips took this approach when it moved to a more market-oriented business model – moving away from making electronic products towards looking at products for lifestyle, healthcare and technology markets.
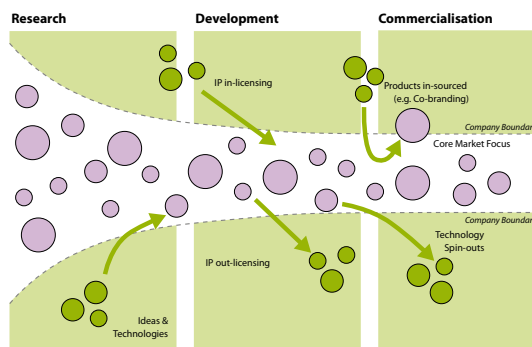
Philips created incubation centres to carry out research into ideas which do not fit within existing business units. These 'ideas' can then seek venture funding from the centres. The company has established a series of criteria which the prospective business has to meet if it is to successfully gain funding, such as the product must create a unique technology or it must have a substantial attainable market.

This procedure has provided the company with a steady string of new innovative products coming to market. The approach accounted for significant proportion of the firm's growth in 2006.

How to acquire open innovation skills

The research team found that certain skills are needed for OI to be implemented successfully. They compiled a set of skills which fell into four key categories:

Introspective skills – these skills focus on the internal discussions facing the organisation, such as what area the business should innovate in and what innovation processes it should use. Key skills would be around legal and IP issues, including the ability to draw up contracts.

Extrospective skills – these are externally-focused and include such things as analysing market trends or taking a strategic view of potential collaborations.

Interactive skills – are communication skills which help the innovation process by enabling the organisation to get its ideas across to external collaborative partners. Core skills here centre on the ability to communicate concepts and ideas, to negotiate and build networks

Technical skills – a more technical oriented approach, fusing business analysis with project management. The skills here involve the ability to understand the basic principles of any technology being exploited as well as financial and analytical skills.

The team concluded that it would be extremely rare to find an individual who could exhibit all the skills necessary. The OI team's role would therefore be to act as a repository and signpost for all the skills needed for successful OI.

How to motivate employees

Not-invented-here (NIH) syndrome is one of the greatest obstacles to the implementation of OI. NIH is a phenomenon when members of an organisation are resistant to ideas, technologies and knowledge coming from outside the business.

This resistance often related to the motivation methods used within the company. Firms tend to employ two main methods to motivate staff, 'regulative' – where the performance of staff is measured, with rewards for achieving set goals – and 'appreciative' – where staff have a high degree of accountability and autonomy.

Firms using a regulative motivational structure might find staff are more resistant to external ideas and concepts as these could impact on the internal reward structure of their organisation.

The research team found that NIH could be overcome by a shift in attitudinal responses, accomplished by:

- demonstrating the practical and potential benefits of external ideas
- involving staff in early decision-making so they have a greater understanding of the thought processes
- educating staff to think in terms of portfolio rather than project
- improving internal communications
- leading by example
- changing the motivational culture

Next steps

OI can be successfully implemented where the impetus for change is directed from the senior management and cascaded down. The creation of an OI unit will help to facilitate this change. The key points of the framework are.

- Provide access to the right skills
- Provide training and leadership to motivate staff
- Be ready to deal with the issues thrown up by working with organisations with different business cultures and value systems
- Be aware of issues on a macro level such as partnership and IP management