Harvesting External Innovation

Managing External Relationships and Intellectual Property

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Preface

It starts with the will of an archbishop, includes threatening the sheriff with a pickaxe and is perhaps best known for its tick-follows-tock commercial with horses as waves; the Guinness story spans the past three centuries and 2009 saw the celebration of its 250th anniversary. The Guinness empire has been built on the foundations of ‘quality, enterprise and innovation’. The company’s accolades include being the first major brewery to be incorporated as a public company on the London Stock Exchange, specifically commissioning the first bulk liquid carrier in the form of the M.V. Miranda Guinness and winning the Queen’s Award for Technological Achievement for the Invention of the first ‘widget’ beer. From the end of the nineteenth century, Guinness was aware of the need to rely on external innovation. In 1893 T.B. Case became the first university science graduate to be appointed at the Guinness brewery marking the beginning of ‘scientific brewing’. This was followed in 1901 with the establishment of the first Guinness research laboratory under the chemist Alexander Forbes-Watson, and was soon followed by an experimental brewhouse and experimental maltings. Furthermore, in 1936 William Sealy Gossett, labelled the ‘father of modern statistics’, was appointed head brewer of the first overseas Guinness brewery in London. The progression of the company from humble beginnings to one which sells almost two billion pints a year can almost certainly be attributed to its willingness to embrace innovation. The recent development of the first ‘widget beer’ is demonstrative of this.

The challenge faced by Guinness’ Technology and Development team was to find a way to provide Guinness draught in a can. The problem being that Guinness is known for two distinct characteristics, namely its unique bubbles and its liquid swirl which culminates in a creamy black body and a smooth creamy head. It was preserving the latter which proved the greatest challenge when Guinness was poured from a can as opposed to a draught tap. A successful solution was found with the introduction of a widget, essentially a plastic ping-pong ball with a tiny hole in, which fills with gas and liquid when a can is poured, subsequently creating a creamy head.

Guinness recognised the need to forge relationships with other companies in different industries in order to turn the idea into reality as they themselves did not possess certain skills and competencies essential to the widget’s success. Guinness went out to designers with expertise in plastics, with knowledge and insight of mechanical design using various plastic materials. Various technologies were examined to produce the widget itself from blow moulding to injection moulding. The mass scale of the production of the widget required collaboration with toolmakers and moulders familiar with multiple cavity tools and with the quality systems and processes to meet Guinness’ requirements.

Further to the creation of the widget itself, Guinness also had to reach out to other external innovative companies and organisations. New production machinery was needed capable of inserting widgets into cans correctly in large volumes. The actual can itself had to be redesigned to better accommodate the widget within.
Guinness also faced the challenge of ensuring that the levels of oxygen in the can remained the same after the widget had been inserted. Beer requires that only small amounts of oxygen are allowed in the can. The challenge with a ping-pong ball with a hollow cavity at its centre is that it must be inserted in such a way that no oxygen gets in at the same time.

While Guinness were conducting tests of the widget, they were contacted by customs at Dublin airport concerned they were detecting some foreign objects in cans of Guinness with their X-ray equipment. This led to Guinness working with customs as well as medical equipment suppliers to better understand and utilise X-ray technology to ensure widgets were correctly fitted within the cans in their production process.

The complexity in turning the concept into reality was immense as much of the science involved was relatively new. Guinness partnered with the National Engineering Laboratory in the UK and with their physicists and mathematicians in order to conduct modelling work to really ensure Guinness understood all aspects of the technologies involved and their applications. This enabled Guinness to create the know-how to continuously monitor its drinks quality and the production process.

As far as the intellectual property (IP) is concerned, Guinness put all the basic legal foundations in place with all external collaborative parties such as Non-Disclosure Agreements and cooperation agreements initially. A number of patented inventions were created, some relating to the core technology, others to new applications for existing technology. Whilst most were created by Guinness inventors, some were created by external collaboration partners, thus demonstrating the importance of forging relationships with other companies in different industries.

Frank Lynch, the Technology and Development Director at Guinness, holds the opinion that the IP environment was more supportive when the widget was first conceived compared to the environment in existence today. He cites, in particular the unrealistic IP expectations and valuations of some parties and the lack of understanding by some parties of the reality of converting an idea into a mass-production technology within a product. In any collaborative innovation project, it is most important for each party in the process to ‘win’ in some form.

It is therefore clear that the success of a business depends on its ability to think beyond the provision of a product and instead be constantly on the lookout for improvements. The invention of the widget by Guinness is just one example of an innovation which enables a company to consolidate its market dominance; however, for a smaller company, such an innovation may help turn a basic product into a household name and elevate the company’s brand to substantial heights. The fact that Guinness had to look outside the company to rely on expertise to physically create the widget re-emphasises the philosophy that ‘not all the best people work for you’ and that often your company may be ill-equipped or not enjoy the same economies of scale as other companies. Finally, when a company is willing to rely on external collaboration, it is important to clearly agree the IP underlying the invention to ensure there are no misunderstandings and arguments and that a true partnership is in place.