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Routes-To-Market: A Flexible Approach To Technology Transfer

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A pragmatic approach to transferring technology, but one with an added pinch of entrepreneurialism: Andy Chilton, Marketing & Communications Director of Floralis, the technology transfer subsidiary of the Université Joseph Fourier, Grenoble talks about the highly commercial and somewhat atypical model employed by the company.

So you've identified the next blockbuster technology of the future. Due-diligence has been carried out and the intellectual property that concerns the technology has been protected. What next?

The typical model followed by many TTOs (technology transfer offices), and, indeed, Floralis, sees the Technology Transfer Manager identify potential prospects interested in a license agreement, negotiate, and draw up agreements which will see revenues shared between the inventive source, developer and sometimes the technology transfer intermediary.

Licensing is a key part of the Floralis model; indeed it is an essential part of the classic technology transfer process that sees innovations transferred from the laboratory bench to the business world. But although Floralis clearly sees the value in licensing, the company has sought, throughout its eight year history to add depth to its model via a range of spin-off programmes aimed at fast-tracking technology to the market, minimizing commercial risk and adding value to intellectual property.

Picture the following scenario: your technology transfer managers have identified a truly innovative technology with huge market potential. It's got great potential, all the team agrees. Budget is acquired to fund costly market research studies; but low and behold, these marketing reports do not really give you the tangible information you need concerning the product's market value (it is after all *highly* innovative, so it is not necessarily surprising that marketing data is difficult to obtain). Your business manager starts to negotiate with his private sector counterpart; who, being the trained negotiator that he or she is, will seek to undermine all the weaknesses visible in the patent, or potential pitfalls linked to the future of the unknown development of the technology. By their very nature, intellectual property and know-how are intangible and difficult propositions to sell-in. But what if you have a working prototype, something tangible that will help you sell-in your proposition to the client, a physical entity that backs-up the abstract potential of the patent? Similarly, instead of spending a small fortune on marketing information, could you not better spend this budget on test-marketing activities that would give you a firsthand indication of the relevance of your proposition, barriers to entry, or future revenue earning potential?

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Floralis's very entrepreneurial and somewhat atypical technology transfer model is based very much on answering these questions via a series of marketing and technology transfer activities that focus on reducing time-to-market and assessing a technology's potential *in-situ*.

Business Units: A TTO Funded Start-Up Factory

Such an example is evident in Floralis's Business Unit Programme. Business Units are virtual companies that are set up by the company in order to test potential products or services. The programme is based around a pro-active approach to developing and testing future start-ups; whilst they remain financially and legally protected by the technology transfer company as it develops. Ten Business Units are currently passing through Floralis's pipeline covering technological domains as diverse as gas analyzer development and production, venom peptide manufacturing (for use as molecular research tools) as well as a future data-mining start-up. Floralis's Business Unit programme centres on a clear strategy designed to facilitate the creation of the start-up whilst minimizing the risks associated with company creation. A key objective of the programme is, in fact, to minimize or postpone

VC or other third party investment at the early or development stages of the start-up. A practical example is Floralis's first start-up, Alpao, which develops and markets adaptive optics instruments positioned towards astronomical and ophthalmic segments; a start-up that has demonstrated year-on-year growth of over 1500 percent since its creation in 2008, without any further third-party investment.

Once a future Business Unit has been evaluated and validated, a Business Unit Manager is selected to lead and build the future team. This Business Unit Manager is the central figure in the development of the project, and, very often will leave Floralis to run the company once it has been spun-off from the TTO. The inventive source within academia will generally play an important role as Technical Director within the Business Unit with responsibility for ensuring that the technology meets all necessary developmental milestones. The Business Unit Manager plays a central role, in coordinating all aspects of the business, including: human resources, product development, management and finance. He or she will be expected to develop a business plan and regularly report back to senior management with regards to the financial development of the business.

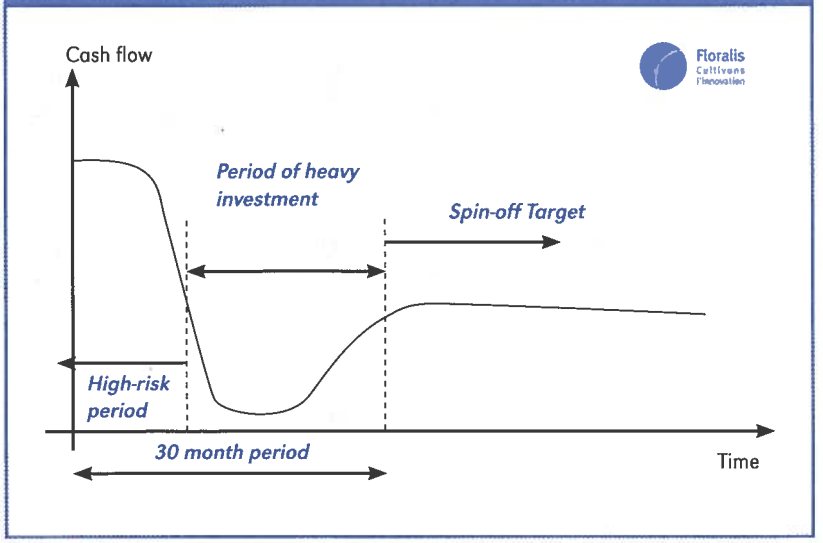
The Business Unit manager will then work with Floralis's Marketing and Communications department to start building a corporate identity for the future start-up as well as work on the preparation of key marketing support materials such as corporate brochures, websites etc. The communications department will work closely with the Business Unit as it moves through the developmental pipeline and will put in place a marketing & communications plan that will see it raise the profile of the Business Unit via integrated public relations activities and help target new customers via targeted direct marketing and business development campaigns (commercial specialists, will work on the definition of a strategic marketing plan for the business unit and follow this up with prospection activity). A small bilingual marketing team (one native English speaker and one French national) ensures that international campaigns can be carried out to market products at home and abroad (by way of an example, Smartox, one of Floralis's Business Units has a client base of 60 international customers in only its second year of trading).

Additional support is available from Floralis's legal, IP, project management and finance departments, ensuring that support is available for the development of contracts, applications for regional, national and European grants or the development and implementation of licence agreements or other legal requirements.

In a nutshell, the Project Manager finds himself surrounded by all the support services that one would expect to find within a much larger organization. He or she can then tap into these resources to help drive the project forward and meet objectives whether they be linked to an eventual spin-off of the activity or a strategy based on generating revenue creation via licensing.

Four start-ups have been created so far by Floralis, with three created in 2011, and a further four scheduled for spin-off in 2012. Although not impressive by North American standards where the process of company creation is simpler, faster and easier to implement, the programme has very much demonstrated its value within the context of the French market, where a combination of employer contributions and tax come close to doubling a company's overheads. Additionally, Floralis has been involved in the creation of over 25 start-ups via more traditional means, outside of the Business Unit Model, over the last 8 years.

Risk Management With Floralis's Business Unit Model



Start-Up Costs And Financial Planning– Making the Most of What You've Got

The money required to get a Business Unit off the ground is procured from Floralis's own capital (the company was set up in 2004 with 1.5M€ of capital investment via a mixture of public and private sector funding). An initial budget of around 50K€ is initially set, at the start of project, with the proviso that these start-up costs will almost certainly be modified during the course of the project, and very often, several times. Working capital requirements differ with some projects requiring little up-front budget and some requiring much more. These figures can range from as little as 50K€ to 300K€ and importantly the launch of new Business Units is staggered, ensuring that any drain on Floralis's financial resources is minimized. Start-up costs can go up, but due to the entrepreneurial nature of the model, they can also go down, as revenues from sales start to kick-in. Importantly, those projects that are able to generate significant revenue during incubation in Floralis's Business Unit program are also able to increase their borrowing power at the time they spin-off, having already validated the potential of their business model to future investors. In the case of two of our Business Units, annual sales figures have surpassed 400K€ opening up their borrowing potential exponentially.

In financial terms, Floralis would be the first to admit that the number of projects that can pass through its pipeline is limited. But we would also say that the Business Unit Programme is more about quality than quantity. However, it is also fair to say that the limited throughput of projects through the pipeline also plays an important part in ensuring that the evaluation phase is fully respected (making the most of what you've got), further optimizing the efficacy of the overall incubation process. Furthermore, fresh injections of capital could increase the number of projects that flow down the pipeline, if scale-up of activity was envisaged.

In tangible terms, Floralis expects that the first *significant* waves of revenue, generated via licenses with its Business Units, will be received in 2013. These licenses will represent a magnitude of several hundred thousand euros.

Proof of Concept/Commercialization and Business Units: Turning the Intangible Into the Tangible

In its simplest form, proof of concept could be a small piece of developmental work designed to reinforce perceived weak links in a patent. However, at the other end of the scale, proof of concept can extend to proof of commercialization, an example of which can be seen in Floralis's Sara Gas Analyser project. In 2007 Floralis applied for a patent for an innovation which identifies gas particles via an optical technology. Different internal market studies were then carried out in order to ascertain the commercial potential of the patent with the results of this exercise identifying three key segments: the Environment, Industry and Healthcare. After a subsequent study to understand in detail these three markets, a strategic decision was made to pursue a proof of commercialization strategy that would demonstrate the real potential of the product to Industry. A Business Unit was created to implement this strategy and produce a range of BETA test products that could be sold to the market.

Over a period of four years, ten prototypes were produced to validate the gas analyser's efficacy with regards to different gas types, and feedback from end-users relating to potential improvements of the device was constantly fed into the product development cycle; resulting in a virtuous circle which saw the product's performance evolve while different bespoke versions of the product were taken to the market.

A licensing strategy was then put in place with a major French manufacturer/distributor for an off-the-shelf version of the product which identifies several gas types, with Floralis retaining control of the licence for specialized products targeting specific gas types. This flexible approach to licensing has enabled the company to exploit a relationship with a major industrial client resulting in significant revenues whilst also maintaining its own direct sales channel in-house.

So What Does All This Mean to the Business Unit? And How Does It Affect the Start-Up?

In practical terms it means that the brand development process has well and truly started the day that the start-up is created. Synthelis (*www.synthelis.fr*), the second of Floralis's Business Units to roll off its production line, was launched in January 2011 with a turnover of 170K€, its own press book, a client base of 11 companies (of whom five were big pharma), a licence already in place and a known presence in the market. This commercial head start in marketing is vital for the start-up, and ensures that it hits the ground running in from day one of its official existence. The

relationship between Floralis and the start-up will then very often continue, post spin-off, with the start-ups' CEOs, keen to continue exploiting the experience of Floralis's internal teams whether they be focused on IP, marketing, licensing or other functions.

The development of Business Units and Technology Platforms (detailed further on in this article) have had a radical impact on Floralis's bottom-line, with revenues growing from one percent of annual turnover in 2004 to 20 percent in 2011. Furthermore, the originality of the model as well as their success has led to Floralis winning three important international awards. Floralis was the only technology transfer company to be selected for the Deloitte Fast 500 EMEA technology awards in both 2009 and 2010 and the company was also selected to stand alongside such corporate giants as Airbus and Thales when selected to represent France as one of the top 25 French companies in the HSBC European Business Awards in Autumn, 2010. These accolades have helped further strengthen the profile of Floralis internationally and have helped validate the Business Unit model at a national and worldwide level.

Licensing: A Mixed-Bag Approach

As stated earlier on in this article, licensing remains a vital part of our overall model, as one would expect, however it is not necessarily surprising that the idiosyncrasies of Floralis's technology transfer model are carried across to a non-conventional licensing model.

Floralis's licensing model centres around three key approaches:

1. Floralis as a Licensee: The Standard Business Unit Approach

Unusually, Floralis often takes a licence from its parent company, the University Joseph Fourier (UJF) in order to exploit the products or services originating from their technologies. Floralis will then sub-license the innovation in question to start-ups when they spin-off and then share royalties with the UJF. The flexibility of this approach is appreciated by Floralis's academic partners, who may not have the financial resource to invest in the development of a Business Unit or start-up. This model is also a real stimulant for innovation as it enables Floralis and its academic partners to push projects with high potential through the Business Unit Programme without the University taking any risk (all risk is assumed by Floralis, its commercial subsidiary). In practical terms this opens up the technology pipeline and helps facilitate the transfer of technology and company creation. Examples of such projects that have followed this model are: Alpao (adaptive optics *www.alpao.fr*); Synthelis (membrane protein production *www.synthelis.fr*) and Resolution Spectra Systems (Compact spectrometer developer).

2. The Cascade Approach: High Risk TTO, Low Risk Inventive Source

The second model sees Floralis first take out an exclusive licence from the UJF and/or other inventive sources before carrying out marketing activities to identify potential licensees. In this model Floralis works on a "success fee" basis, working without payment to identify and negotiate sub-licences with industrial partners. Should the project be successful, Floralis can expect to earn a more profitable upside payment. A flexible solution based on the concept of the "success fee" the cascade licensing model minimizes risk for the inventive source, increases revenue earning potential for the TTO and accounts for 20 percent of all licence agreements put in place by Floralis.

It may be of interest to know that it is this model that has been chosen by the French government for their SATT (Societies d'acceleration de Transfert de Technologies) which are currently being put in place. The planned 13 regional tech-transfer superstructures have been funded to the tune of 900M€ by the French government and are expected to become self-financing within ten years. The French government's intention with these SATTs is to homogenize technology transfer practices across the whole of the country, and it is by no means of an exaggeration to say that they will have a profound effect on the technology transfer industry in France.

3. The Technology-Centric Approach

The final model is effectively a mixture of the two models above. Floralis obtains an exclusive license to directly exploit the technology in the form of either product or service-based offerings. However, the technology transfer company has the right, for certain specific markets, to issue sub-licenses to third parties wishing to exploit the technology.

This "best-of-both-worlds" approach enables the tech transfer organization or TTO to exploit a direct sales channel and benefit from the associated beneficial margins, whilst ensuring that a sub-licensing route is made available for companies who would

prefer to license-in the technology themselves. The best example of this can be seen in the SARA, gas analyzer technology described above, which enables the team to out-license the use of the technology as an off-the-shelf product, whilst continuing to commercialize bespoke versions to the market in-house.

Technology Platforms

The final route-to-market is again one that is not widely implemented by TTOs or technology transfer subsidiaries in France. Technology platforms are service-based offerings that have been developed by Floralis in response to the very clear needs of industry.

Most major universities have at their disposal both an enviable technological infrastructure and a network of scientific experts that surpasses those of their private sector counterparts. National and European financing enables highly expensive equipment to be made available for both applied and fundamental public-sector research. But it is not always possible to fully exploit this infrastructure purely within the public sector.

The ethos of Floralis's Technology Platform programme is therefore to maximize the exploitation of the university's technological infrastructure, but also the highly-trained researchers that are employed to operate them via the creation of targeted marketing offerings to Industry. To do this, Floralis first works with industry to identify business needs before starting work on the definition of a service offering. Once the business offering has been put in place, the platform model then replicates much of the Business Unit Model stated above, with the marketing team working on communications and business development activities to professionalize the image of the business, and the Platform Manager working to develop its strategic direction. There is one significant difference, however, with the management of such activities, Floralis does not seek to spin-off the technology platform but rather retain it within its own internal portfolio of products with the objective of rendering it profitable within a time frame of around two years.

Floralis started the programme in 2004 with Multicom (*http://www.multicom-ergonomie.com*), an ergonomics platform, which has continued to flourish since its launch. The company now operates 15 technology platforms which generate an increasingly important part of the company's overall revenues. The diversity of service offerings made available to industry via technology platforms, is, similar to the Business Unit model, highly diverse, with activities ranging from electromagnetic studies to rheology and genetic engineering.

Conclusion: The Benefits of a Portfolio Approach

Floralis's business model is highly diverse and unusually entrepreneurial when compared to other technology transfer subsidiaries or technology transfer offices. However, the risk associated with starting these new commercial ventures, whether they concern proof of concept, technology platform or business unit based activities is always managed via what is essentially a portfolio approach to technology transfer. Licensing remains a key part of our business model, and always will, but the addition of new forms of revenue via Business Units, platforms or other "untraditional" activities, we believe, adds a depth to our model that has a special value in times of financial or political crisis. The aforementioned changes being implemented by the French government to the national technology transfer industry risk having a profound effect on a large number of French TTOs or equivalents who are unsure of their medium-term, or long-term future and, as such, are an example.

Floralis's portfolio approach can also help cash-strapped TTOs or technology transfer subsidiaries in times of financial crisis. With budgetary cuts an ever-present danger, does it not make sense to minimize financial risk by maximizing the number of revenue streams that flow towards the technology transfer organisation's coffers, rather than adhering to more traditional models? ■