

## **University of Dundee Response for the Lambert Review**

The University of Dundee has developed a three-pronged strategy to facilitate good practice at the Business/University interface.

The commercialisation activities which have been identified as producing best value for the University and the Tayside region are:

- consortium arrangements between the University and large pharma;
- licensing agreements;
- the creation of new spin-out and start-up companies utilising University intellectual property.

### **Examples of Best Practice**

#### **1. Consortium Arrangements:**

The first major industrial consortium established by the University of Dundee was in the field of Drug Metabolism. With the assistance of DTI LINK funding a consortium of 15 major pharmaceutical companies and the University of Dundee was established. This successful 5 year collaboration has produced a range of outcomes which could not have been planned or predicted at the time of the formation of the consortium.

These include:

- a second wave of 3 new consortium agreements with an aggregate value of over £6m
- a start-up company (Cypex) formed by two Post Doctoral Scientists working on the programme to whom the University licensed technology arising from the programme;
- further funded collaborations including studentships collaborative research programmes and consultancies;
- a further spin out company (CXR Biosciences) based on the work of one of the 'second wave consortia';
- a joint venture licence agreement with BTG.

#### **Division of Signal Transduction Therapy (DSTT)**

One of the University of Dundee's highest profile industrial collaborations is the Division of Signal Transduction Therapy (DSTT). This started as an £8m Drug Discovery consortium between the University of Dundee and 5 major pharmaceutical companies in the field of signal transduction therapy. The DSTT is acclaimed by the member companies as a model for collaboration between university biosciences and the biopharma industry. Phase II of the

consortium has just been announced. Phase II will involve 6 major pharmaceutical companies and has a value of over £17m.

The model provides a fast track licensing route for the University. In addition the close working relationship with the companies is generating additional research collaboration, studentships and licenses with other research groups at the University.

The DSTT now employs 28 staff and will see further expansion in Phase II. The model provides genuine two way technology transfer between academia and industry with both parties benefiting from the transfer of skills and knowledge.

### **IPR Arrangements**

IPR ownership is often cited as a major issue in discussions and surveys relating to the commercialisation of university research. It is often said that the company must own the IPR. In fact in the majority of cases ownership is not the major issue and it is exploitation rights which are key.

In both of the examples cited creative IPR arrangements have been agreed which demonstrate that it is possible for all parties to benefit and generate a variety of commercialisation outcomes if the University retains IPR ownership.

In the first example it would not have been possible for the Spin-out company Cypex to be formed or for the joint venture licence to be signed with BTG if the University had not retained ownership and the right to exploit the IPR in applications not required by the companies.

In the second example the University retains ownership and the consortium members have first option to IPR developed under the agreement and from certain key research groups. The option is semi exclusive and must be taken up within a set time period. If one or more of the consortium companies takes a licence to a piece of technology the University can not offer that technology outside the consortium. However if the option is not exercised by any of the member companies the university is free to licence the technology outwith the consortium.

### **Key Ingredients of Successful Consortia**

- A track record of excellence in the research field and a critical mass;
- Pre competitive technology/research;
- Networks with the industry sector;
- Technology Transfer skills and resources for pre and post award management including deal structuring, contract negotiation and IPR management.
- Government funding schemes are extremely useful when setting up new consortia but are not essential once a relationship has been established with the industrial partners.

## **2. Licences**

Scientists at the University of Dundee through their own use and requests from third party collaborators recognised a requirement for the production of high quality research reagents in the field of signal transduction.

An umbrella licence agreement was signed between the University and Upstate Biotechnology (UBI), a US company which supplies research reagents to Research Institutes and companies around the world. Over the years the list of products supplied by the University of Dundee has increased and now accounts for around 25% of the UBI product listing. Through this mechanism Dundee-derived reagents have been made available to researchers worldwide. The funding generated from this licence has been reinvested in research infrastructure in the University. In addition to the funding generated and the 'transfer' of reagents, a close working

relationship has been developed with Upstate. Based on this relationship and a further licence agreement from the University, Upstate established a subsidiary in the City of Dundee which generates and supplies research reagents for High Throughput Screening (HTS) and provides an outlet for University of Dundee reagents for commercial rather than research use.

### **3. Start-up Companies**

A collaboration between senior staff within the University's departments of Physics and Chemistry resulted in the filing of a series of patent applications covering novel materials for use in the semi-conductor and catalysis industries. The work attracted funding from the SHEFC RDG initiative and attracted the attention of large industrial players from overseas. It became clear that by adding further value to the technology in-house, it would have a much greater impact on the market and this would result in greater economic benefit to the University and Scotland.

Scottish Enterprise (Tayside and National) were approached with the proposition of forming a joint-venture company to develop novel applications for the technology and this resulted in the formation of the AMCET company in which Scottish Enterprise invested £2.4m.

AMCET is based at the University, has employed 9 members of staff, has developed the technology to working prototype stage and has already facilitated the formation of a further company, Aktina. After 3 years of operation AMCET is now re-focusing and is concentrating its efforts on the catalysis elements of the original portfolio. Other elements of the patent portfolio which have benefited from the added value of AMCET input will revert to the University which will use its best efforts to attract industrial licensees. Scottish Enterprise and the University will continue to hold stock in the company but it is envisaged that the future development of the company will be funded through the attraction of VC funding.

### **Summary**

The above examples are provided to illustrate the range of collaborations with industry and the potential outcomes. The University of Dundee has a wide spectrum of interactions with industry at a local, national and international level. These interactions include studentships consultancies, research collaborations, clinical trials and licence agreements. Geography and size are not limiting factors. The University currently works with the top 10 Pharmaceutical companies but also with the local Biotech cluster including University spin-outs such as Cyclacel, CXR, Cypex, DDS Medicine and Axis Shield and Kinasource and a similar picture applies to the non bio sector. Flexibility, creativity, trust and patience from each party are the key factors in building successful relationships between academia and industry. Dundee has established such relationships and this is evidenced by 'repeat business' and increased commitment by satisfied industrial sponsors. However there is always room for improvement and not all relationships work well. Research collaborations and licenses with SMEs can be problematic. This is often due to the SME having insufficient resources in manpower, skills and funding to develop technologies offered by Universities which are inevitably at a very early stage of development. Schemes such as Proof of Concept will assist in reducing the development gap but many SMEs still face a resource problem which inhibits their ability to take on new technologies which require development.

