

A*STAR tech-transfer arm managed 3,500 patents

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Academicians have started to realize that research taking place in the lab should not stay only inside scientific journals but need to be translated into technology for the benefit of mankind and should also act as source for generating revenue for further research. Thus, renowned universities and research institutes have now started separate arms that can help in technology transfer of the research being done at the institutes. One such example is Exploit Technologies in Singapore.

Exploit Technologies (ETPL) is the technology transfer arm of the Agency of Science, Technology and Research (A*STAR) in Singapore. ETPL was formed to commercialize the outcome of A*STAR research institutes and consolidate the patent portfolio of the institutes under A*STAR's ownership. BioSpectrum connects with Mr Philip Lim, CEO, ETPL to know more about ETPL, their recent announcements and future plans.

Please tell us about how ETPL was formed?

ETPL had its beginnings as the National Science and Technology Board (NSTB). It was officially named Exploit Technologies as a wholly-owned subsidiary A*STAR in 2002, when NSTB became A*STAR. Today, we're called ETPL. As the commercialization arm of A*STAR, we translate A*STAR's inventions into marketable products.

ETPL is a one-stop resource that bridges the gap between research and market. Our officers work very closely with their A*STAR counterparts to identify market opportunities and promising research as well-as-work with scientists and industry players to create licensing and spin-off opportunities.

In addition, we manage A*STAR's patent portfolio, provide gap funding for scientists to develop and productise their work,

engage the ecosystem through outreach including conferences, forums and other forms of outreach, and we link scientists with industry.

Please share with us the various milestones that ETPL has achieved since its inception?

ETPL has had a busy decade. We manage more than 3,500 active patents and applications. We have granted more than 400 licences for A*STAR technologies, with realized imputed commercial value (RICV) of more than \$500 million since inception. RICV is defined as the value the licensee is expected to have generated from incorporating the technology. ETPL has spun off more than 40 start-ups including biotechnology, ICT, manufacturing, shipping, and more. ETPL has contributed to the economy by closing six times the number of licensing agreements since its inception in 2002.

ETPL now processes two technology disclosures and manages prosecution of about eight patents applications a day; it closes about two licensing deals a week, and establishes one start-up each month. Funds raised by start-ups are about five times the amount invested in them. Five A*STAR start-ups won accolades in 2011 and six in 2012.

Do you provide technology to MNCs or to start-ups as well?

Seventy percent of our licensing goes to SMEs, which also includes start-ups. MNCs tend to have direct links with A*STAR and they have their own R&D departments. SMEs don't and we're here to provide that link to them.

What do you look at prior to selecting a company for technology transfer?

Ours is a multi-pronged process. As a tech-transfer organization, we keep a close eye on what scientists are developing in the labs as well as on the various scientific development around the world. At the same time, we study what is happening in the industry, we look at market needs, how businesses in Singapore are developing, global trends, as well as which areas our scientists and businesses are leading. There's no point developing something if you don't have a very clear leadership position or a differentiator, otherwise you'll just be a "me-too" with no value proposition.

When we identify a promising technology, we work with the scientists to productize it in a direction that would give it commercial viability and place it in a leadership position. We also provide the gap funding, which will support work like proof-of-concept and prototyping among others.

Concurrently, we work with potential customers or companies to commercialize this in their products or processes. By working with them at this stage, we make sure we're tracking right. Companies usually come in only when they feel the technology is almost ready for market use.

What benefits do you provide to the companies post the technology transfer?

We work on the basis of building ecosystems. We share market intelligence with our SMEs and start-ups, we do outreach via speaker events like the Distinguished Technopreneur Speaker Forum, and we organise Forums and Conferences that involve different players in the ecosystem.

For example, at Media Exploits, a recent forum focusing on digital media and infocomm technology, we brought together 300 people including scientists, start-ups, SMEs, VCs and customers of the start-ups that have licensed our technology. We continue working with our licensees long after and grow together after the first contract is signed as the relationship should be a long term one.

How many projects are with ETPL at the moment for tech transfer in the life sciences, medical technology, diagnostics and pharmaceuticals?

About one-fourth of our licenses between FY 2009-11 were in the area of medical technology, biologics and biotechnology.

Please tell us about one-of-the-major success stories that has been commercialized and is now giving revenues to the company in the life sciences, pharma, medical devices, diagnostics segment?

Curiox Biosystems is a Singapore-based bioinstrumentation company that aims to accelerate the progress of research in life sciences, diagnostics and drug discovery through its innovative "wall-less" DropArray platform. Curiox is currently the only company that is able to provide a miniaturized, simple, accurate, inexpensive and convenient platform for conducting bioassays. This innovation improves the quality of healthcare as clinicians can now prescribe proper treatment on the spot, enhancing the quality of medical service considerably. The company was incubated by ETPL and spun off from A*STAR's Institute of Bioengineering and Nanotechnology (IBN) in 2008.

AIT Biotech, a business division of Advance Interactive Technologies (AIT) group, a quality industrial IT hardware to solutions in Australia and the South Pacific region, licensed five different diagnostic assay technologies (TB, HIV, flu, chikungunya,

dengue) through ETPL, of which three have generated sales. Tan Tock Seng Hospital and the Ministry of Health are currently using the diagnostic kits to screen and diagnose all chikungunya and dengue cases in Singapore due to the high specificity, sensitivity and multiplexing capability of A*STAR's technology. The technology was developed at the Institute of Molecular and Cell Biology (IMBC) and later on, at the Experimental Therapeutics Centre (ETC).

In a recent announcement, ETPL earmarked five innovation clusters. What are these clusters and how is ETPL planning to boost these clusters?

Essentially, we will look to build ecosystems around these areas (diagnostics, anti-microbials, bio-imaging, printed electronics and business analytics) by having teams of people focused on these thematic areas. We will still continue to work on other technologies. By clustering technologies thematically, we're able to bring together complementary skills and know-how, integrate capabilities and create synergy and efficiencies.

What are the future plans for ETPL?

ETPL's role includes being a catalyst for new jobs, transforming industry and giving Singapore businesses a competitive edge. The world beyond 2012 will rely increasingly on ecosystems of partnership for success. It is a world of collaborative business models in which marketing savvy and IP prowess go hand in hand. ETPL will continue to build on our results and partnerships to grow these ecosystems, not only in Singapore but also in the region.