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Swinburne University of Technology ("Swinburne") is pleased to make this submission to the Victorian Government's Future Industries taskforce. We believe it is vital for Victorian business, industry, government and communities to have these discussions about how we grow or transition existing industries into new and emerging markets.

Swinburne believes Victoria's medtech and pharmaceutical industries are in a unique position to

## ***1.1 Growth and job creation - medtech industry***

Victoria has a vibrant clinical trial environment – we have great hospitals and strong product design capabilities; these attributes sit alongside a world-leading

state, and which would link existing industry into the global supply chain. The Victorian pharmaceutical industry has been successful in developing such a model and attracted GSK, CSL and other large pharmaceutical multinationals to the state, which means that Victorian pharmaceutical companies are well connected with the international R&D pharmaceutical sector, and significant manufacturing occurs here as a result. Yet, despite our excellent medical product design capabilities and associated infrastructure, Victoria's medtech sector has not been as successful in attracting international companies to the state.

Swinburne believes that if the government, the medtech industry and our research organisations worked together to develop better strategies that focus on attracting global medtech organisations to the state, it would have significant flow on benefits including industry growth and job creation.

Swinburne notes that Figure 7 of the Discussion Paper ignores the physical sciences and ICT research that underpins the medtech and pharmaceutical sector – fundamental research that enables the translation of research and development into manufacturing and technology. The ARC funds the major share of this research along with the CRC system. The figure also omits the significant steps needed to translate research to a product demonstrator/prototype that is required prior to any thought of commercialisation.

We note that one of the challenges to researchers joining international industry networks is the limited funding available to facilitate the relationships. This may be something as simple as money to cover travel costs to a major U.S. industry meeting, or more significant funds to match project investment opportunities (e.g. EU Horizon 2020). Like all relationships, international research is based on trust and to establish that trust there is a need to meet in person, at least to initiate and develop the connection.

### ***Recommendation One***

Swinburne believes it is critical that Victoria implements initiatives to attract international medtech organisations that can connect Victoria's existing medtech industry with the global network and supply chain. We know it is possible, Boeing has shown us how it could work, and even Ford and Holden who are withdrawing from manufacturing in Victoria, are retaining their design and innovation capabilities in the state.

### ***Recommendation Two***

That Victorian funding addresses the critical gap of support for the early stage work to initiate and form international research collaborations in the medtech arena.

## ***1.2 Growth and job creation - complementary health***

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recent article in the Weekend Australian<sup>1</sup> indicates the huge potential open to us in the Chinese market.

Swinburne has a strategic relationship with the Victorian-based, global vitamin company Swisse, and one of our lead researchers in the Swinburne CHP, Dr Andrew Pipingas, sits on their scientific advisory board. Several academics from CHP are currently negotiating Tc 0 Tw 1.57.5(s)-3.9(0.6(r))6.



At Swinburne, we believe that value realisation comes down to the talent pool and the creation of an entrepreneurial mindset that accepts that failure is a natural part of new venture creation. The government needs to accept that to develop the medtech sector there will be failure as well as success. There is need for cultural change in Victoria to accept this aspect of innovation and growth.

To increase collaboration in the medtech industry Swinburne believes Victoria needs a US-style Centre for Integration of Medicine and Innovative Technology (“CIMIT”) type of model that is inclusive of a broad range of participants across industry, universities and Medical Research Institutes (“MRIs”).

Networks are essential to the creation and maintenance of links across the value chain. Having the right mix of industry bodies comes down to continuity of the funding that supports these networks. Industry bodies and networks are the trusted independent partners for so many Victorian companies, universities and MRIs. This is because they are organisation agnostic, and only seek to build the strongest outcomes for the state.

Excellent examples in the Victorian medtech arena include STC, Bio Melbourne and Biomedical Research Victoria. Key people within all of these organisations work predominantly out in the community and they are some of the best repositories of knowledge for the Victorian capability map in medtech. Their representatives hear about the issues being faced by industry, know the new developments being planned and critically, understand the challenges faced by all of the participants and can advise government. They are the cheerleaders of the sector, and often the drivers of international partnerships, as they are able to bring the key players together, due to their position of trust. These bodies have the knowledge already; they just need to be given resources to build on it fully.

### ***Recommendation Six***

The Victorian government should provide broader resources to the medtech industry bodies and networks to help them foster growth in the sector.

Swinburne commonly finds that SMEs are often too small to make the best use of the many funds, collaboration possibilities, partnership activities and university collaborations open to them. For SMEs, people are their most valuable and least available resource. Most of the existing collaborative funding models require industry to contribute both cash and in kind, via personnel commitments. Most SMEs do not have the staff available to undertake a collaborative or non-core business project; they have no time available to interface with such a project effectively.





trialled at the University of Maryland in the U.S., which allows subject matter experts to complete an evaluation using a tablet. SSIL is involved in many other digital health projects for Australian and U.S. defence forces and for the aged care sector.

There is enormous potential to grow the ICT capability for Victoria's medtech sector. One of the key ways Swinburne sees for better supporting this sector is to streamline the support for clinical trials for software and ICT based healthcare solutions. Many SSIL projects are significantly delayed due to the current labour intensive administrative processes for clinical trials.

In particular, SSIL are looking for better streamlining of the administrative processes that accompany such trials including managing ethics and collate results as well as more efficient ways to source trial participants.

Swinburne sees that streamlining the administrative processes or creating a new specialist industry to manage clinical trials for universities and industries could assist the whole of the medtech industry.

***Recommendation Eight***

The Victorian government can look for ways to support the larger clinical trials market for ICT and biodevices, and that the framewfmm.3(2a Tc ( i)4H9(u)0.5(ppo)2.6(r)-0.6(t)4.6( 1i)-2..6(r)-0.6(t)4.6d4.6d4.6d an6.9((d)-f3.4(e)-0.4(h)-(e)-7pp( t)-5(at)1o-a b6(h)-2(an)-2.o8(ov)10..3(v)-7(i)-2(c(an)-2.(i)1s)-6omm10.5(8.uo 14fr)

innovation training, within a novel PhD Technology Innovation model (see [www.swin.edu.au/biodevices](http://www.swin.edu.au/biodevices)). This model is scalable with the support of government and industry.

In the USA, UK and EU, internships and placements are common for many graduate students. Students spend periods away from their home institution contributing to other projects with industry and other organisations. These projects generally do not link directly to the student's PhD project, but enable them to apply their skills to a new setting. The internship is a key part of the student's research development plan and is targeted to provide them with specific key skills, new expertise and widening their understanding of a specific industry sector. One of the best examples of this comes from Canada, where the Mitacs Accelerate Programme funds industry internships for PhD students. Australia's AMSI Intern model is a step in the right direction to better supporting our medtech interns however the program scope and timing is quite restrictive.

#### ***Recommendation Nine***

Use Swinburne's ARC Training Centre in Biodevices as a model to increase Victoria's workforce capabilities in the medtech sector.

#### ***Recommendation Ten***

The Victorian government could use the Canadian Mitacs Accelerate Programme as a foundation for developing a successful Victorian model for student internships and placements, to spread knowledge and understanding of how research can solve challenges for industry and encourage wider use. Likewise, the government could further develop the AMSI Intern model to be less restrictive and offer some incentives in terms of funding for industry, in particular to encourage SMEs to participate.

One of the current areas where Victoria can better leverage Federal Government funding is through the Industry Skills Fund. The \$600M fund is designed to provide industry with the training programs and skills development they need to improve their local and international positions. If the Victorian government, via its sponsored network groups i.e. BioMed Research Victoria, Biomelbourne, AusBioTech, facilitated industry wide skills development programs, the funding for these the development and implementation of the programs could be sought through the Federal Government's Skills Fund.

In the medtech area, Swinburne believes Commonwealth support for a medtech focused CRC would be highly beneficial and advance the Victorian sector.

Swinburne has two recommendations around leveraging the Commonwealth's activities as follows:

#### ***Recommendation Eleven***

Victorian medtech industry needs to find ways to maximise the opportunities offered by the Federal Government's Skills Fund.

*Recommendation Twelve*



Swinburne thanks the following for their contribution to this paper:

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