



Western Australian Innovation Strategy



November 2016

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Foreword



Hon Bill Marmion BE MBA MLA

Minister for State Development; Transport; Innovation

Western Australia has a proud history of making the most of what we have and seizing opportunities, but the opportunity now presented to this State is potentially greater than any that has gone before. Western Australian innovators have repeatedly shown that they are among the best in the world, and the State itself is increasingly renowned for its innovation, development and capital investment opportunities.

To make the most of the innovation opportunity Western Australia needs a plan to attract the best and brightest talent – and that is exactly what this document has been designed to provide. This four year State Innovation Strategy provides a framework and a platform from which Western Australia can build its innovative future. It will allow the State to showcase and commercialise its transformational technologies, attract the best and brightest talent and investment from across the globe, and introduce the world to life-changing ideas.

The role of Government in the State's innovation evolution is clear: it must be a facilitator and an enabler. Through targeted investment, streamlined regulation and the ability to bring everyone together in one room, Government can set the conditions for success. It can ensure that Western Australia possesses the right infrastructure, capital,

information, institutions, skills and connections – so that every great Western Australian idea has the opportunity to reach commercialisation.

This Strategy is designed to ignite innovation and position Western Australia as a launching pad for the entire Asian region. It will attract investors with the capital and experience to make Western Australia an innovation destination. Working together with the initiatives of the Commonwealth government, and building upon past success, the Strategy maps a strong path, grounded in mutual benefit, strategic alignment and collaborative vision.

This spirit reflected in this strategy helped form a path forward to capitalise on our State's innovation opportunities. Its core structures and ideas were formulated using input drawn from the very people it is designed to support. A diverse community of start-ups, businesses, universities, researchers, entrepreneurs, and Government itself, have helped to form a rich picture of the State's innovation opportunities.

This Strategy will bring our ideas and our talent together in the right environment, so we can build success from a base of operations in this State.

Vision:

- ▶ **Australia's West – a great place to live and innovate.**

Goal:

- ▶ **To pave the way for Western Australians to take ideas from discovery to commercialisation;**
- ▶ **To increase investment in Western Australian innovation;**
- ▶ **To increase the number of scaled innovations; and**
- ▶ **To reduce the time and cost of doing so.**

Executive Summary

The Western Australian Innovation Strategy outlines the State Government's plans to foster and expand WA's already thriving innovation scene.

In May 2016 the State Government announced a \$20 million innovation fund. Following this, the State's leading innovators met to offer ideas about accelerating Western Australia's level of innovation. A reference group was formed, and a summit held, bringing more people and more ideas into the discussion. The Western Australian Innovation Strategy draws on that collective wisdom and wealth of ideas. It is the next step in determining how Western Australia will build on its natural advantages and experience to benefit from emerging global trends. It shows how Government will work with entrepreneurs, business, universities and the research sector to showcase Western Australia's talent and enhance investment in local ideas.

Accelerating innovation will grow the Western Australian economy and increase employment; it will enable Western Australian residents to capture and solve opportunities and problems that benefit the community, business and society on a locally-developed, but globally-relevant, scale.

The strategy highlights the four pillars on which Western Australia's innovation future will be built:

- ▶ Talent and skills
- ▶ Investment and infrastructure
- ▶ Culture and collaboration
- ▶ Marketing and promotion

The Innovation Strategy focuses on delivering programs that enable Western Australians to capture opportunities and solve problems that benefit innovation. It aims to:

- ▶ Create an environment where innovation, entrepreneurship and commercialisation are the norm
- ▶ Engage local business and industry partners to expand existing and future capabilities
- ▶ Make Western Australia a regional innovation hub by investing in local talent and providing the right opportunities to keep that talent here
- ▶ Encourage Western Australians who have achieved success elsewhere to bring their skills, expertise and experience home to help increase innovation locally
- ▶ Attract the world's best innovators to relocate to Western Australia by emphasising our natural and geographic advantages and globally-acknowledged excellence.

The Innovation Strategy should be considered in addition to the initiatives already in progress through other Government commitments and the existing vibrant Western Australian innovation ecosystem. We will publish detailed plans on activities and progress each year. The strategy will evolve over time, building on successes and learning from mistakes.

Western Australia sits in the same timezone as 60% of the world's population in the emerging Asian economies.

About this strategy



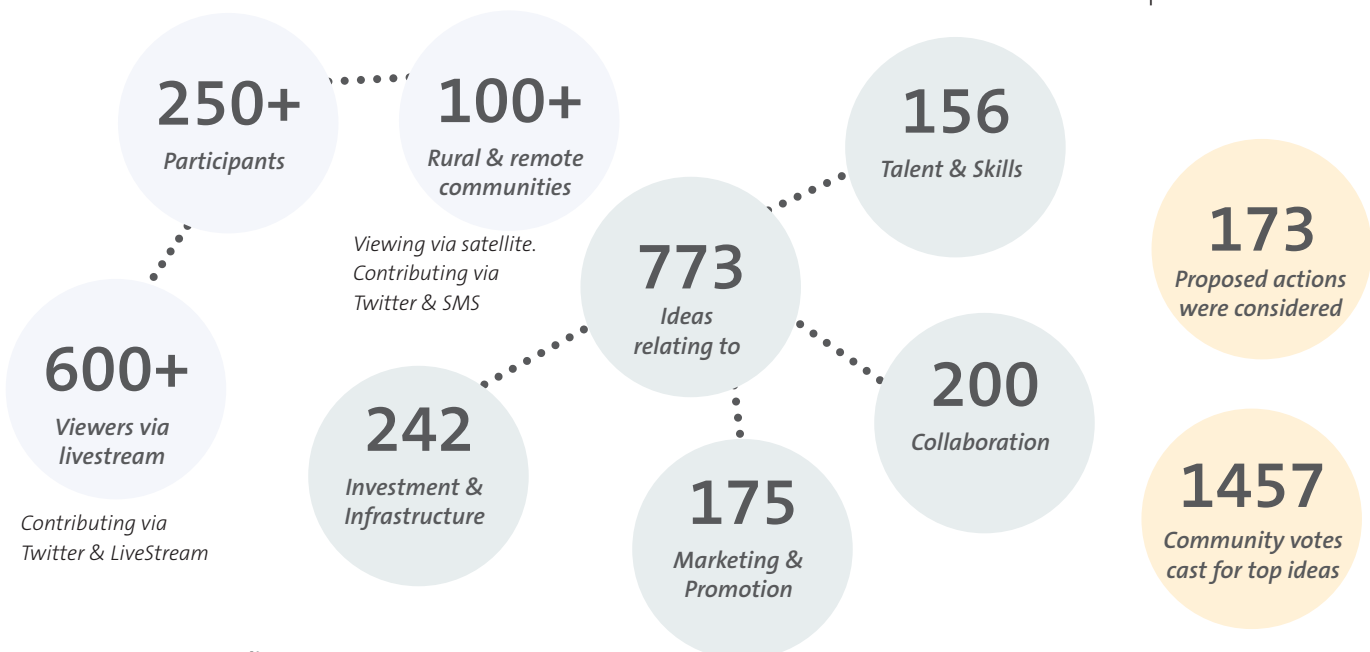
Optika Solutions Pty Ltd (West Perth) – Steve Hannah, CEO, Troy Levisianos, CTO and Matthew Schneider, MD. Akumen: A cloud-based decision support environment and analytics framework that enables the integration of real-time, time series, transactional data and historical information to make future based decisions

In May 2016 the State Government announced a \$20 million innovation package. The Minister for Innovation, Bill Marmion, brought together Western Australia’s innovation leaders from across industry, business, academia, and the start-up communities to discuss the role innovation could play in shaping the State’s future and to contribute to developing an innovation strategy for Western Australia. This document outlines the Western Australian Government Innovation Strategy and prioritises the allocated innovation package over four years, from October 2016-October 2020.

The strategy is consistent and synergistic with the ambitions and focus of the Australian National Innovation Agenda, the *Science Statement for Western Australia* (April 2015) and a range of talent and STEM (science, technology, engineering and mathematics) related initiatives.

It was prepared in consultation with the community, including an innovation summit (where 770 ideas were submitted), an innovation advisory group, and the government, and draws on Australian and international innovation research and experience.

Innovation Summit: Event at a Glance



“By focussing on innovation, WA could transform itself. We have a real opportunity to develop as a centre of innovation and a hub of creativity.”

Professor Peter Klinken,
Chief Scientist of Western Australia

Introduction

Key points

- ▶ People are at the core of a successful innovation ecosystem — developing, networking, mentoring, collaborating, and thinking. Diversity of thought, gender, culture and skillset is essential.
- ▶ Innovation drives economic growth and quality of life, as evident from studies of international markets (including Israel, Canada, US, Singapore, UK).
- ▶ Western Australia has an activated innovation system and has enjoyed a range of successes in innovation. In order to unleash, uplift and scale this ecosystem and enjoy further success a new level of focus is required.
- ▶ Government has a role to play, including uniting Western Australia in vision, accelerating the ecosystem, optimising policy to stimulate entrepreneurship, increasing international visibility and as an exemplar. Government’s role should be to drive but not interfere.
- ▶ A \$20 million State Government innovation fund has been allocated and this strategy developed.
- ▶ Western Australian innovators should have their sights on growth and aim high by commercialising to, collaborating with, and attracting talent from a global market.



Professor Peter Klinken, Chief Scientist of Western Australia, Western Australian Innovation Summit 2016

Innovation is often associated with technology but primarily innovation is about people. As such, this strategy is unashamedly people focused. It takes the view that by developing people – by providing opportunities for learning, networking, mentoring and collaborating – and by fostering an environment in which creativity can flow and even wild ideas can be pursued, innovation can flourish.

Innovation drives economic growth. This is consistently shown in macroeconomic studies and it is no different in Western Australia. Around the world, countries making the transition to knowledge and technology based economies are leading the innovation race. The countries leading innovation have a combination of skilled workforce, available capital, infrastructure and a track record of success that is well recognised and acknowledged. Western Australia already has a thriving innovation system. However, the speed of change, competition, technology and societal trends present a new level of opportunity to accelerate. We must not be complacent about our performance and impact. Igniting and fuelling the current momentum is necessary to ensure our future economic security and prosperity.

Landgate leading the way

Western Australia's land information authority, Landgate, established an innovation program in 2008. Through this program over 1,000 innovative concepts have been raised by Landgate staff, and more than 1 00 projects funded that have improved the efficiency of the business.

In 2016 the Landgate Innovation Program was incorporated into Spur, Western Australia's Location and Innovation Hub. Spur is also leveraging the implementation of the WA Whole-of-Government Open Data Policy to assist start-ups, established businesses and the public sector to maximise the value of the State's data assets.

Landgate was recently ranked as the 22nd most innovative company in Australia, from over 1,000 entries, in the Australian Financial Review's 2016 Most Innovative Companies list.

www.spur.wa.gov.au

The Western Australian Innovation Strategy is a strategy for all Western Australians. Innovation will best be fostered by providing opportunities and encouragement to people from all walks of life and all backgrounds. Diversity is essential – innovation needs men and women, young and mature, and people from all backgrounds and experiences.

The strategy outlines how the State Government will encourage Western Australian innovators and how opportunities will be provided for people to participate in programs, educate themselves and find support for ventures. Government's role is as an enabler and facilitator; as an ecosystem engineer. We will work with industry to optimise relationships with the Australian Government and to obtain appropriate funding and support to grow Western Australian innovation.

While we do not see it as Government's role to bankroll innovation, appropriate funding will be made available to catalyse action. The \$20 million innovation fund, announced in the 2016-17 State Budget, will be used to leverage action as described in this strategy. This \$20 million is on top of money Government is already investing in defence industries, shipbuilding and science, and does not include the tens of millions being spent in health research such as at the Harry Perkins Institute of Medical Research, the Telethon Kids Institute and the Sarich Neuroscience Research Institute. These initiatives are detailed in A Science Statement for Western Australia – Growing Western Australia. The Science Statement, released in April 2015, articulated science priorities that would exploit Western Australia's natural advantages and resources and build on existing expertise to broaden the State's economy.

It focuses on mining and energy, medicine and health, agriculture and food, biodiversity and marine science, and radio astronomy. This Innovation Strategy complements the Science Statement, while taking a broad view of the possibilities for innovation in the State.

“We must lift our gaze and look outwards, look longer into the future and further abroad.”

Andrew Outhwaite, Co-Founder, Pollinators Inc

This strategy is about the State Government working with industry and the commercial sector to provide opportunities; sometimes it is about Government getting out of the way and allowing entrepreneurs to pursue ideas. The State Government’s commitment to reducing red tape is part of this, making it easier for innovators to follow passions. Government will, of course, continue to play its pivotal role in upholding the regulatory framework that makes Western Australia a safe, fair and sustainable place in which to live, work and innovate.

For too long, the public sector has lagged behind the private sector in innovation. It is time for Government to step up to be an exemplar of innovation, not a follower. We are shifting the agenda and conversation within Government towards a focus on innovation. We have already made significant steps in this direction and will continue on that path. Public sector agencies will support innovation by creating their own programs and participating in the programs outlined in this strategy.

Government will be an exemplar of innovation.

Government will:

- ▶ **Be a first customer to innovators**
- ▶ **Incubate innovations that address government problems**
- ▶ **Have innovation programs in all public sector agencies**

Many talented people move away from Western Australia to pursue opportunities that are not seen to be available here. While this is recognised as a loss to the state, and is something that this strategy aims to change, it also provides an opportunity. International experience can help lift the sights of local innovators. We will bring successful expatriates home to share their experiences. We will also work to attract major companies to set up offices in Western Australia by focusing on our regional, climatic and lifestyle assets. This international presence in Western Australia will increase the opportunities for talented people to pursue their ambitions without leaving, and will increase the likelihood of expatriates being able to return home without sacrificing their career aspirations.

Western Australia is well-positioned geographically and culturally to become an internationally renowned centre of innovation. We are not starting from scratch in creating this future; we already have substantial kudos and experience. We have great natural assets and lifestyle appeal. Perth is one of the most liveable cities in the world with an enviable climate, excellent infrastructure, superb educational institutions and offers a safe family environment. Put simply, it’s a great place to live and work.

The aim now is to position the State as a regional and global centre of innovation. It’s time everyone knew that Western Australia is a great place in which to live and innovate.

Case study: SharkSmart

Seven fatal shark attacks in three years leading up to 2013 cast a long shadow on Western Australia’s beautiful beaches and left some people feeling anxious about venturing into the water. Over two years, the Government committed \$1.7 million to fisheries research and \$1.9 million to science grants, including shark shields and detection. SharkSmart.com.au was created as part of the Government’s response to helping make people feel safe again, providing real time data on shark whereabouts. Even though shark attacks are rare, people’s enjoyment of the beach required an innovative approach to allay safety concerns.

www.sharksmart.com.au

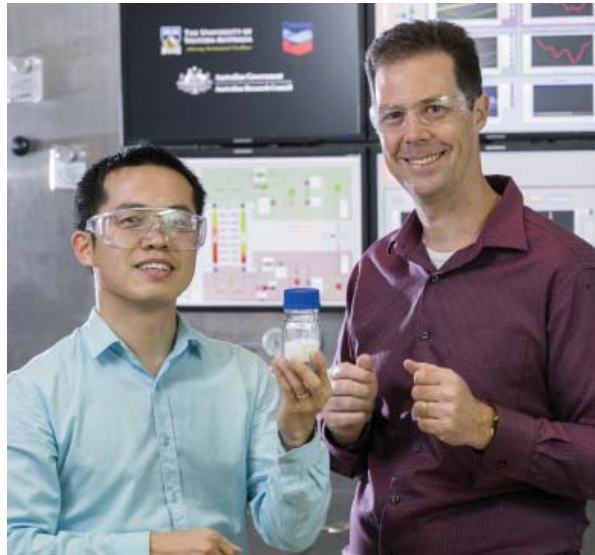
Building on our natural advantages

Western Australia's geography and history have endowed us with abundant natural advantages and allowed us to develop as tenacious people. Our extensive natural resources and vast land mass have made us international leaders in working in remote areas. We have created innovative technological answers to the problems we have encountered. We have built economic strength through the resources, agricultural and medical sectors.

Western Australia's gross state product (GSP) for 2014-15 was \$249 billion, contributing 15% of Australia's gross domestic product (GDP)¹. The mining industry makes a very important contribution to Western Australia's GSP (\$63.6 billion), but services accounted for \$8.7 billion more over the 2014-15 period².

Innovation strongly correlates with human and social capital. This strategy focuses on investing in capabilities that are at the core of innovation in the digital age such as automation, data analytics, digital technology, remote operations and robotics. These skills, forged in areas we have long understood and know deeply, are transferable across many sectors. In the future economic growth will come from technology extending into industries such as science (e.g. medicine, agriculture, and astronomy), resources, education and the arts. We will create a mobile workforce, easily transferable across sectors, so as employment opportunities diminish in one sector, skills can be used to grow and develop other sectors in the Western Australian economy. The flexibility inherent in this approach will make our economy more resilient and give individuals greater employment security.

The Western Australian innovation strategy will focus investment on capabilities that are at the core of innovation in the digital age, such as automation, data analytics, digital technology, remote operations and robotics.



University of Western Australia's Dr Kevin Li and Prof Eric May. Separating nitrogen from natural gas sources. A novel method of separating natural gases (eg methane) from nitrogen, a process necessary for all forms of natural gas production prior to use and distribution.

We are a Western society sitting on the doorstep of Asia, with 60% of the world's emerging middle class located in the same time zone as Western Australia. China, now striving to be the world's number one economy, sits close by and Western Australia is already well positioned to trade into the Chinese market.

This combination of experience, expertise and location could enable Perth to become a go-to place for Western companies wanting exposure to China and other Asian markets from a more culturally familiar base – for Westerners heading East, Western Australia is a good place to start. Uncertainty in Europe in the aftermath of Brexit makes Asia look appealing for international companies seeking new markets.

¹ Department of State Development. WA Economic Profile. August 2016. <http://www.dsd.wa.gov.au/docs/default-source/default-document-library/wa-economic-profile---august-2016.pdf>

² DSD WA Economic Profile. August 2016.

Start in the West to make it in the East

Perth has appeared every year for the last decade in the Economic Intelligence Unit's list of the top ten most liveable cities in the world. Smart investors and operators can establish a base in Perth and do business in the high growth Asian and Pacific regions.

Western Australia is a world-leading minerals, energy and agricultural economy as well as a global science and innovation research and knowledge hub. We are in the same time zone as 60% of the world's population, which in turn is responsible for 40% of world GDP. We share the same business hours as key international markets throughout the Asia Pacific region and its geographical position on the Indian Ocean Rim gives the State a strategic advantage for those wanting a gateway to the thriving orient.

There are significant business advantages to investing and working in Western Australia. The recent Fraser Institute Survey ranks it as the top jurisdiction in the world for investment in mining based on its Investment Attractiveness Index.

Case study: SEQTA

Founded by teachers Grant and Sharon Grosser in 2006, SEQTA has grown from a humble kitchen table start-up into a multi-award winning software company with clients throughout Australia and South East Asia. SEQTA provides software that enables teachers to manage day-to-day workflows, planning, assessments and interactions. It is an 'all-in-one teaching and learning ecosystem' that enables teachers, students, and parents to work together in an interactive and supportive online community. Early investment from various seed-rounds up to 2012 was followed by additional capital raisings in 2013 and 2015.

The company now employs more than 70 staff who develop the product and support 455 clients across Australia and South East Asia

<http://seqta.com.au/>

- ▶ **China is Western Australia's largest export market, accounting for 52.7% of the state's total merchandise exports in 2015.**
- ▶ **The Singaporean market was the state's second largest tourism market in terms of visitor numbers and the fourth largest market in terms of visitor expenditure in 2015.**
- ▶ **Singapore is Western Australia's fourth largest export market, accounting for 3.5% of the state's total merchandise exports in 2015.**

Western Australian Innovation Ecosystem

Key Points:

- ▶ The Western Australian Innovation Strategy will operate in the market place with a range of existing levers and players.
- ▶ The Innovation Strategy does not address all aspects of the innovation ecosystem. It recognises that a range of levers and players already exist, and will continue to operate, in a complex web of interaction (as shown in the illustration opposite). These players have vital roles in bringing to life the vision of Western Australia as a regional and global leader of innovation.

A vibrant Western Australian innovation ecosystem demonstrates itself as:

- ▶ Open minded and curious
- ▶ Collaborative and united by the greater opportunity and vision
- ▶ Diverse in thought, skill, gender, culture and experience
- ▶ Characterised by experimentation, iteration and constant learning
- ▶ Focused on problems worth solving in society
- ▶ Driven by purpose, courage, passion, lifestyle and a merging of art, science and business

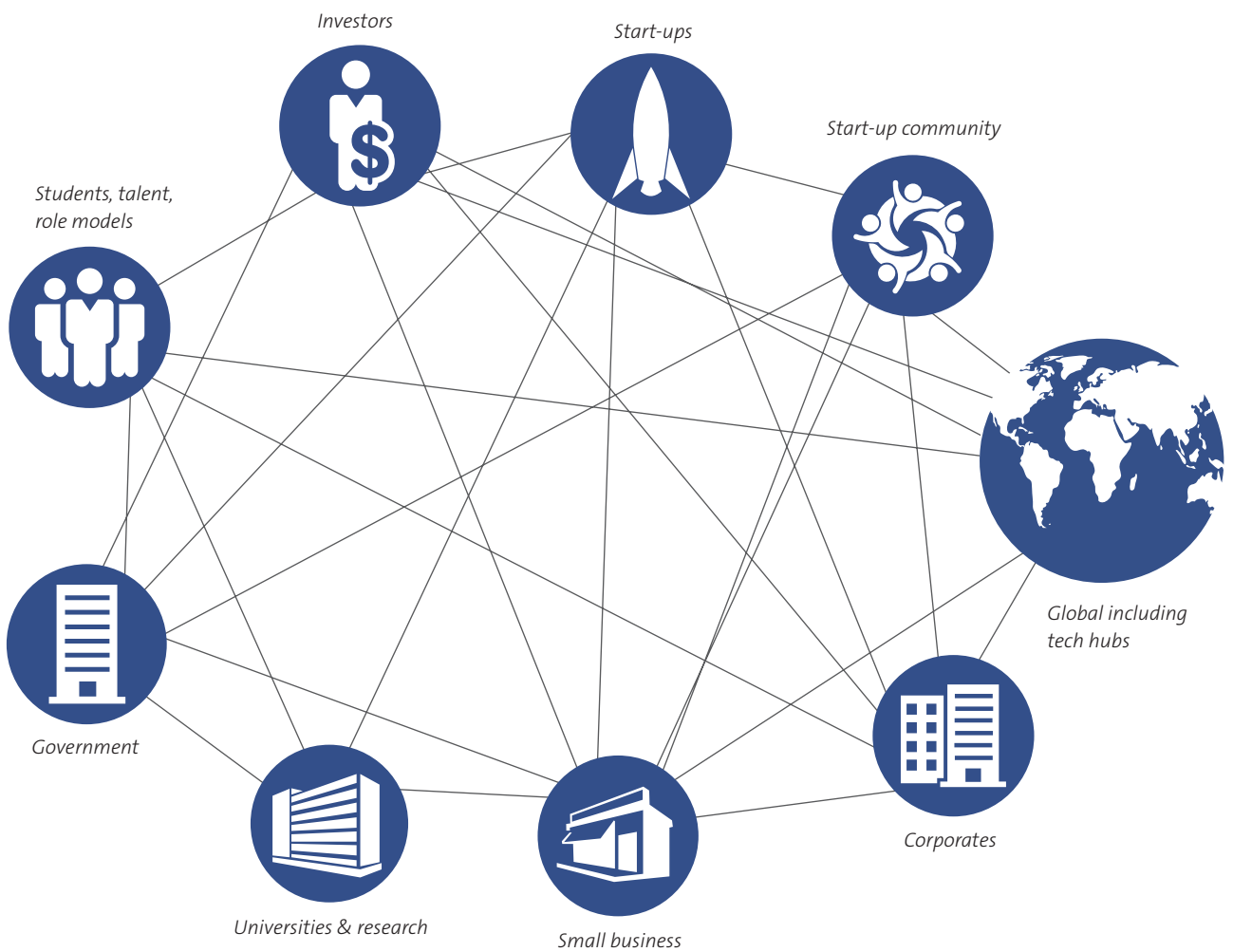
The skills required to accelerate innovation include critical thinking, design thinking, science, engineering, technology and maths, agile ways of working, lean start-up to prepare for commercialisation, and acumen in commercialisation and financing.



*We must:
Pave the way for Western Australians to take their ideas
from discovery to commercialisation.*

“I’ve just returned from the Silicon Valley and my reflections are this: there is no difference in WA capability to the US. We have the same if not better talent right here. Money is not a problem as we can get it from places around the world. Our problem is that we don’t think globally about our opportunities”.

Zane Prickett, Co-Founder, Unearthed



Key players	Role in bringing the vision to life
Western Australian community (people)	 <p>Will celebrate entrepreneurship, adopt new services early, be open minded and welcoming to international talent and cultural diversity.</p> <p>This strategy paints a unifying vision and mandate that each of us has a unique opportunity to innovate and encourage innovation in others.</p>
Students, talent, role models	 <p>Will have curious mindsets with confidence and skills in entrepreneurship and a belief that they are supported.</p> <p>Strive for increasing successes, role models and employment opportunities and diverse participation.</p> <p>This strategy stimulates the ecosystem successes as role models and university funding opportunities for skills growth.</p>
Investors	 <p>Will have the confidence and education to invest in innovative and leading edge opportunities and emerging models.</p> <p>Together across Western Australia we can build confidence, mentoring and guidance in commercial skills and stimulation of a range of funding from grants, seed, angel, series A and beyond to listings.</p> <p>This strategy contributes co-funding and confidence in Western Australian innovation capability and need.</p>
Start-ups and small business	 <p>See opportunities they want to pursue and have the confidence, collaboration spaces, process and infrastructure to accelerate them.</p> <p>This strategy plays a role in the overall small business and start up ecosystem growth in a variety of ways.</p>
Start-up community	 <p>Consists of leading, inspiring and enabling co-working spaces, incubators, accelerators and hubs.</p>
Universities and researchers	 <p>Must provide leading edge, relevant skills development – extending from programs for students from STEM to entrepreneurship, to encouraging the collaboration and commercialisation of research to be applied to marketplace problems.</p>
Corporates and private enterprise	 <p>Will mentor innovators; establish corporate venture funds; procure from and collaborate with small businesses and researchers to validate concepts in market early.</p> <p>Corporations can serve as a critical testing ground for Western Australia’s reputation as providing innovative services and in influencing the real world problems that need addressing.</p>
Government	 <p>Inspires and unifies Western Australia toward a common vision; stimulates collaboration across sectors; promotes WA’s innovation ecosystem; is an exemplar in engaging and experimenting, and advocating for structural change.</p>
International	 <p>Attract talent and researchers; visit and collaborate through trade missions and opportunities; provide commercial opportunities, where our innovations have relevance to their markets and society.</p>

Innovation Strategy initiatives

The Innovation Strategy focuses on four areas:



Talent and skills:

Addressed in this strategy with awards, recognition, hackathons, prize money, entrepreneurial program funding and a government agency innovation program (funded from agency budgets).



Investment and infrastructure:

Addressed in this strategy with the WA Start-up Program co-funding, streaming commercialisation progress including assistance with IP, marketing, procurement, Innovation Centre of WA review, university commercialisation fund, and Western Australia's global trading offices for innovators to access international markets.



Culture and collaboration:

Addressed in this strategy by establishing a Western Australian innovation collaboration portal and annual Innovation Summit.



Marketing and promotion:

Addressed in this strategy by creating a brand campaign consistent with tourism, brand video for Western Australian innovation, trade packs, trade missions, international programs.

Talent & skills

Innovation is about people. It is driven by ideas and requires an ecosystem that enables people to turn ideas into reality. Ideas do not discriminate and nor does this strategy; ideas can come from anywhere and anyone. Innovation is best fostered by encouraging a wide diversity of people to pursue excellence.

This strategy aims to retain, attract and develop innovative and entrepreneurial talent and skills through activities and programs developed to engage the brightest minds. We have a wealth of talent already working here, as the annual Innovator of the Year program illustrates. We plan to capitalise on this and provide opportunities for people from all walks of life to reach their potential. We also plan to leverage the talents and skills of innovative expatriate Western Australians by bringing them home for specific events and interactions. Perhaps more importantly, by positioning ourselves as a regional and global leader in innovation, we will encourage our world-class innovators to stay here or to return after stints overseas bringing their skills back with them.

Case study: AgWorld

Agworld illustrates how talent and skills can combine to optimise digital technology to transform agriculture. Agworld is an example of what can happen when digital technology is used to transform agriculture. The AgWorld story began in 2008, when Doug Fitch and Chris Ramsey started discussing the idea of a platform enabling farmers and agricultural suppliers to connect and share data. After developing a basic model, they met with Matthew Powell, who introduced them to digital pen technology, which provided a way forward. By April 2009 the initial model was developed. Trials were run during the year and Agworld was launched in December 2009.

It's already happening...

The State's mining history has created unprecedented opportunities to address multiple needs in the resources sector. As a result of innovative responses to these multiple needs about 60% of global mining software is now produced in Perth³. The development of much of this software started in West Perth 15 – 20 years ago.

Exceptional ideas, and the implementation of those ideas, exist in all sectors. Each year, the Innovator of the Year (IOTY) program showcases the wealth of talent that lives and innovates in Western Australia.

As a collaborative farming solution, Agworld now enables approximately 70% of agronomists in Australia to work as one with over 17,000 of their connected farmers to create, share and collect information important to their business operations. Whether working online or offline, farmers and agronomists can now access information wherever they are, whenever they need it.

<http://www.agworld.com.au>

“WA is a great place to live, study, invest – let’s attract the world’s best and brightest to be part of this great state and the lifestyle that we have right here.”

Deidre Willmot, CEO
Chamber of Commerce & Industry of Western Australia

Case study: Track ’em

Track'em Pty Ltd won the Western Australian 2015 Innovator of the Year award. Developed by Kashif Saleem, Track'em is a disruptive and hardware agnostic software, which enables businesses to track and manage assets, people and productivity. The idea behind Track'em came to Mr Saleem while he was working as a fly-in-fly-out IT specialist on FMG's Cloudbreak site. He built this solution when he became aware that it can cost millions of dollars in downtime when the right equipment isn't ready in the right place at the right time.

www.trackem.com.au



Hasib Sarvari, Shivlal Rajendren, Catherine Resnick, Hon Bill Marmion, Susanne Bahn, Gry Stene and Philippa Vojnovic

Start IT Up

The Start IT Up WA Challenge aims to nurture innovative, technology-based solutions to Government problems and build capability within the Western Australian startup community. Successful applicants get the opportunity to develop, beta test and demonstrate the commercial viability of their project in collaboration with a Western Australian Government agency. The challenge offers \$100,000 in prize money.

Start IT Up will add momentum and support to projects at or approaching beta stage, thereby increasing the number of innovative solutions that make it to market. It will use Government data to solve problems in innovative ways and also cut red tape across the Western Australian public sector.

<http://gcio.wa.gov.au/2016/04/11/start-it-up-wa-challenge-announced>

- 3 Knowledge Society Pty Ltd and the University of Western Australia. 2015. State of Mind: Western Australia’s new landscape of innovation and opportunity. West Perth. p30 <http://www.emi.uwa.edu.au/sites/default/files/UWA%20State%20of%20Mind%20Report.pdf>
- 4 Knowledge Society and the University of Western Australia. State of Mind. p56.
- 5 Australian Private Equity and Venture Capital Associated Limited. 2016. Venture Capital Fact Sheet. <https://www.avcal.com.au/documents/item/860>
- 6 Australia’s Digital Pulse 2016 – Developing the digital workforce to drive growth in the future. <https://www2.deloitte.com/au/en/pages/economics/articles/australias-digital-pulse.html>



Newton Laboratories Alex Guglielmino, Michael Del Borrello, Simon Vincent and Her Excellency the Honourable Kerry Sanderson AO, Governor of Western Australia

Innovator of the Year program

For ten years, the State Government has been celebrating local talent through the Innovator of the Year (IOTY) program (known as the Inventor of the Year when it began in 2006). Many of the awards' winners have gone on to commercialise new products and services, win new markets and disrupt old ones.

The Western Australian Innovator of the Year program:

- ▶ promotes and acknowledges the success of Western Australian innovators
- ▶ encourages co-support from industry for promotional activities
- ▶ activates and strengthens industry-government research collaborations
- ▶ engages communities throughout Western Australian regions

The IOTY recognises the efforts of those who take on the challenge of finding better ways of doing things, be it in the resources sector, health, food and agriculture, information technology or any other area of human endeavour. IOTY has greater potential than is currently being realised and will be expanded in coming years.

<http://gcio.wa.gov.au/initiatives/wa-ioty/>

Mitsubishi Australia Ltd

Mitsubishi Australia Ltd has been supporting innovation in Western Australia for nearly 60 years. Mitsubishi was involved in the establishment of both the iron ore and LNG industries in Western Australia and has contributed to the formation of the very special relationship that exists between Western Australia and Japan. For most of the past decade, the company has sought to support the development of the State's innovation ecosystem through its principal sponsorship of the Western Australian Innovator of the Year program. Mitsubishi looks forward to assisting Western Australian innovators and working with them to develop global markets.

But there are more opportunities...

While Western Australia has the highest percentage of higher education enrolments by (Australian) state in science, technology, engineering and mathematics (STEM) as a proportion of total enrolments, our universities only produce 12% of Australia's STEM graduates⁴. There is a lack of professional and tertiary training and education for entrepreneurs.

There are huge opportunities in the tech and digital technologies sectors, so it is important for us to position ourselves to take advantage of predicted growth in these sectors. For example, by 2023, Australian tech start-ups are expected to contribute 1.1% of Australia's GDP and create over 100,000 jobs⁵. The contribution of digital technologies to the Australian economy is due to grow from \$79 billion in 2014 to \$139 billion in 2020⁶. We need to build Western Australia's capacity to capitalise on these sectors.

While there are bright spots of innovation within the public sector – Landgate, listed as 22nd most innovative company in Australia, is a leading light – more can be done to make Government an exemplar of innovation.

Opportunities for innovation could be expanded by exposing innovators to international markets and providing them with opportunities to penetrate existing networks in the innovation system and supply chains. Western Australia could do this by leveraging existing government infrastructure either through its own trade offices or through the Commonwealth Government's landing pads.

“Education enhances innovation, and both provide the keys to the long term combatting of poverty. In so doing, we won’t just help the impoverished, but raise the universal standard of living.”

Andrew and Nicola Forrest

So we will...

	When*	How much (per annum)? (indicative)
Continue to fund the Innovator of the Year (IOTY), but review and expand the program, making it bigger, bolder, brighter and more inclusive.	Ongoing Reviewed in Year 1	\$150,000
Support relevant peak bodies aligned with the strategy and sponsor events that grow and showcase Western Australia’s innovation capability.	Years 1-4	\$50,000
Provide incentives for innovations to be progressed to commercialisation, by providing prize money to competitions such as the Start IT Up WA Challenge.	Years 1-4	\$100,000
Hold an annual Innovation Summit, which will include keynote addresses by innovative expatriate Western Australians.	Years 1-4	\$100,000
Require all Government agencies to have an innovation program consistent with the objectives of the strategy.	Years 1-4	Funded from specific agencies’ budgets.
Provide funds to teach entrepreneurship.	Years 1-4	\$500,000 (cap of \$100,000 per program)

* Years 1-4 = October 2016 to October 2020

Case study: Admedus

Western Australia’s Admedus Ltd is an exemplar of how the right talent and skills can transform a start-up into a global company with interests in tissue engineering, immunotherapies, biomanufacturing and sales. It was created by the amalgamation of Allied Health (a spin-out from the Fortescue Metals Group) and BioMD (which developed the regenerative tissue engineering company Celxcel). CardioCel® is the first of Admedus’ tissue products being developed using its propriety tissue engineering processes. It is a ‘bio-scaffold’ used to repair congenital heart deformities and more complex heart defects. In the future, it may also be used to reconstruct dysfunctional heart valves and valve leaflet.

<http://www.admedus.com/au/>

Forrest Foundation

The Forrest Research Foundation was established in 2014 following the donation of \$65 million over 10 years by Andrew and Nicola Forrest through the Minderoo Foundation. The foundation drives world-class research and innovation in Western Australia by awarding Forrest Scholarships and Fellowships to outstanding intellects and upcoming research leaders undertaking research at a Western Australian university. Scholars can be Australian or international and applications in all disciplines are considered.

www.forrestfoundation.org.au

Investment & Infrastructure

The mining boom that greatly benefited Western Australia recently is often purported to be over and investment in resource sector infrastructure has declined. However, the infrastructure that was built during the boom is now coming into production, and the income stream generated from mining is continuing to grow⁷. Western Australia will continue to benefit from funds invested during the mining boom; our task now is to create as much excitement in other industries and in new resource opportunities, as mining has previously generated.

Western Australia has the benefit of longstanding business links with China, India, Japan, Korea and South East Asia along with a transparent regulatory framework and simplified investment procedures⁸. International banks and financial institutions, from Asia and Europe, are established in Perth. We can build on this foundation to create greater investment in emergent technologies and disruptive enterprises.

Large multi-nationals (such as Chevron, Deloitte, and Mitsubishi) have set up in Western Australia in response to our strong economy. We can take this opportunity to work in partnership on programs that will move the State's innovation agenda forward, creating further economic prosperity for all. It is also within the interests of these businesses for Western Australia to have a strong economy.

Physical space is important to innovation; space and programs are coupled, as has been demonstrated in the Innovation Centre of WA and various collaborative spaces that have sprung up in the commercial arena. Physical space enables collaboration to occur, and is particularly important for SME spin-outs. For new businesses coming into WA, landing pads provide a paved way into the local culture and markets; for local businesses looking to expand and grow, launching pads provide a platform from which to begin.

Case study: Minnovare

Minnovare Mining and Civil, another successful company incubated at the Innovation Centre of WA, was founded in late 2012 to develop and market the Azimuth Aligner®, an alignment tool that automates what is traditionally a manual, labour-intensive and inefficient process. The Azimuth Aligner® is innovative and transformative, rendering past underground drilling alignment practices obsolete – no need for GPS, compass, foresight/back-sight markers, pegs or flagging tape. It provides operators with significantly reduced costs through improvements in productivity and safety in underground mining and civil drill rig alignment. Minnovare is focused on delivering technologies and drilling products that provide greater efficiencies, safety, control and productivity for the mining, civil, and oil and gas industries. It has been independently acknowledged with industry awards in the mining and civil engineering sectors, and is increasingly at work on major mining and civil projects in Australia, Europe and North America. Minnovare is one of the emerging companies that has incubated at the Innovation Centre.

<http://minnovare.com/>

“If 60% of the world’s current mining and resources technology started out in West Perth around 15 years ago, there’s no reason why we can’t apply that same ingenuity to mining the abundant resources that exist in space.”

Giles Nunis, Chief Executive & Government CIO,
Office of the Government Chief Information Officer

Case Study: Cisco and the impact of Digital Disruption

Digitisation of Enterprises is a \$US19 trillion global phenomenon and part of it is happening right here in Perth. The Cisco Internet of Everything Innovation Centre (CIIC) was established by Cisco in 2015, with local project partners Curtin University and Woodside Energy. The Centre will include a state-of-the-art laboratory, a technological collaboration area, and a dedicated space to show the impact of digital disruption in action. With over 80 researchers and links to advanced facilities and a global industry network, the Centre brings together start-ups, small to medium enterprises, industry experts, developers and researchers in an open environment to create ground-breaking and innovative solutions that foster growth, provide jobs and help build sustainable economies. The CIIC is focused on accelerating innovation in Australia’s resources, agriculture and astronomy sectors, and more broadly around big data.

<http://research.curtin.edu.au/institutes-centres/cisco/>

Case study: iCetana

iCetana, one of the many success stories incubated at the Innovation Centre of WA, has developed a breakthrough system for automatically monitoring large scale video surveillance networks (+200 cameras). The system applies computer vision and machine learning technologies to only show surveillance operators those cameras in which something abnormal is occurring. Operators are then able to immediately assess and respond to any abnormal security, safety, and operational events, before these escalate. iCetana’s system detects a wide variety of events including suspicious behaviour, precursor events, irregular vehicle movements, assaults and fighting. It is being utilised globally in public transportation hubs, city surveillance, university campuses, and shopping malls.

<http://www.icetana.com>

Mining in Space

Mining in space is attractive because some elements used in various high-tech devices are exceedingly rare on Earth but abundant in space. It has been talked about for years but now with advancing technologies and space exploration the mining of asteroids and the moon could become a reality within the next decade.

It is likely that commercial interests will drive space mining. In October last year the Federal government announced it would review legislation on Australia’s civil space activities. The US has passed the *Space Act of 2015*, which allows its space firms to own and sell natural resources mined in space, and Luxembourg has announced plans to legalise the commercial exploitation of asteroids.

Western Australia’s mining companies are already at the forefront of using automation, and with the most likely means of space mining being automated robotic mines we could lead the way from Earth to space.

Although there are still many challenges to overcome, Western Australia has the mining industry experience, remote test sites and scientific expertise to become a major player.



Innovation Centre of Western Australia

It's already happening...

On a per capita basis, venture capital and private equity funding of tech start-ups in Western Australia is \$6.61, well above the national average of \$4.14⁹.

The number of patent applications in Western Australia increased 18% in 2015¹⁰.

The Innovation Centre of WA provides infrastructure and services to support emerging innovative enterprises, bridges the gap between idea and enterprise, and helps existing businesses identify commercialisation opportunities. In August 2016, the Innovation Centre of WA was hosting 11 incubatees, with business interests in renewable energy, engineering, food science and venture capital, among others¹¹.

Australia's \$2.6 trillion funds management industry is one of the largest and fastest growing in the world¹². The financial and insurance services sector is the seventh largest industry in Western Australia¹³.

WASUP

The WA Start Up Program (WASUP) is a co-funding program that would see the WA Government co-fund with angel investors to provide innovators with opportunities to scale their business ventures. Co-funding could only be successful if a private investor was committed. Investment decisions would align with pre-determined guidelines and would not involve Government 'picking winners'. WASUP will help innovators get-up.

But there are more opportunities...

While it is recognised that Australia currently has the world's third largest pool of investable funds, Venture Capital firm fundraising was 21% lower in 2014 compared to 2013¹⁴.

Bringing investors and innovators together can catalyse action and bring great ideas to fruition. While there are examples of this happening, we can deliberately nurture these outcomes.

There is an acknowledged 'valley of death' in developing an idea to a scaled enterprise, where embryonic companies fail to get traction to attract sufficient capital to launch and expand. The market is failing to fulfil this niche.

Difficulties in accessing and using Intellectual Property (IP) can slow down progress from idea to commercial reality.

Case study: The Curtin spin-off company that became a world leader

Western Australia's Scanalyse was initially an incubatee of the Innovation Centre of WA then as it grew became a commercial tenant. CEO Peter Clarke believed from the first time he saw the product that it would be successful, even though the way forward wasn't always clear. Scanalyse's revolutionary software and laser scanning processing has become the global benchmark in maintaining key mineral processing equipment such as crushers and grinding mills.

In just a few years, it won customers in every mining region in the world and has since been bought by the Finnish mining services company Outotec. By the time of the sale, it had captured a large share of the Australian market and had operations in Chile, Bolivia, Brazil, and was starting in Peru. It was also in the USA, Canada, South Africa, east and west Africa, and in Europe, Finland and Sweden.

The company's first product, a service using 3-D laser scanner data called MillMapper, was the result of a collaboration with Curtin University and the Cooperative Research Centre for Spatial Information. Scanalyse then went on to develop another world-first product, CrusherMapper, which uses 3-D modelling to forecast the wear rates of crushers.

Culture & Collaboration

For innovation to flourish, it needs to occur in a supportive environment. The prevailing culture must value and encourage new ideas, even those that at first seem outlandish, and recognise that not all ideas will work; we can learn as much, often more, from ideas that fail as we can from those that succeed. Of those innovators who have tried and not succeeded, some give up yet others *get up...and try again*. We want to create a culture where lack of success is not equated with insurmountable failure but rather is seen as providing a chance to have another go.

While Government is not solely responsible for culture it has a pivotal role to play – by creating the regulatory framework in which society operates, by the programs it runs and supports, and by the way it does business. Continuing our efforts to cut red tape to make it easier for business to thrive and changing our mode of operation so we become an exemplar of innovation will underscore our efforts in this area. We will continue to search and find new ways for Government to do its business better and all public sector agencies will be involved in innovation.

Government will offer itself as a ‘first customer’; we will make the most of opportunities for Government to take on board innovative solutions developed in the private sector that can solve public sector problems. In this way, Government will provide a platform to demonstrate Western Australian innovation to the world and provide a springboard for local innovators to take their ideas to the marketplace.

Perth is a relatively small place, but we can step up to occupy a big space in the world of innovation. It is important that the best Western Australian innovators are exposed to international markets so we can continue to claim a place on the world stage. There is no reason why international success stories can’t begin here – indeed there are many examples of just that happening.



Credit: Ben Daure

Award winning Arcadia Australia will perform in Perth where the “landing show” the first of a trilogy, will combine with a traditional dance invoking the sacred Whadjuk spider of Gargatup, or Kings Park. The event is supported by the Metropolitan Redevelopment Authority and delivered by The Event Agency.

“Entrepreneurs are more backable after they have experienced a failed startup and decided they still want to have a go again.”

Matt Mcfarlane, Investment Director, Yuuwa Capital

Case study: Giants in the Streets

Innovation isn't just about science and technology; it's also about the arts. The 2015 Perth International Arts Festival's sensational opening event Royal de Luxe's The Incredible and Phenomenal Journey of The Giants to the Streets of Perth, showed innovation in the arts on a grand scale. Of Perth's 1.7 million people, 1.4 million turned out to watch The Giants at some time during their three day walk through the streets, with audiences of up to 400,000 watching at any one time. This is the buzz and excitement innovation can generate.

This unique event appears in a country only once so won't be repeated in any other city in Australia. The Giants walking Perth streets was the result of a massive logistical exercise involving the cooperation and dedication of a wide range of Government agencies, organisations, businesses, volunteers and others. The production's outstanding success is testament to what creativity, ingenuity and a common goal can achieve.



Credit: Tori Wilkinson

Case study: Canva and Fusion

The idea for Canva came about when Melanie Perkins was teaching graphic design programs at the University of Western Australia and realised students struggled to learn the basics. Partnering with co-founder Cliff Obrecht, the pair launched Fusion Books, an online design tool that made it easy for students and teachers to create their own yearbooks. They soon realised that the technology they'd developed could be used much more broadly.

After searching far and wide, they secured tech co-founder Cameron Adams and together they launched Canva, a simple-to-use online collaborative design platform. Canva

is now a global multimillion dollar business with more than 10 million subscribers. Melanie, Cliff and Cameron have attracted a stellar cast of international investors to Canva, and are proving you can launch a truly global company from Perth. Meanwhile, Fusion Books is still going strong.

www.canva.com

It's already happening...

The Western Australian Department of Health Data Linkage Unit is an international leader in medical research, with longitudinal datasets going back over 30 years¹⁵.

The iPrep program, launched in 2015 by Edith Cowan University, supports research collaboration between universities and industry.

A critical component of the international collaborative space project, the Square Kilometre Array (SKA) is located in the mid-west of Western Australia.

But there are more opportunities...

Australia's rate of collaboration between research and industry sectors is the lowest in the OECD¹⁶.

Work in innovation is at present ad hoc and the ecosystem can be difficult for new players to navigate. Greater coordination, transparency and access to information, within the limits of appropriate protection of Intellectual Property (IP), would improve this.

Enhancing opportunities, both formal and informal, for networking and education would help foster a culture of innovation and improve opportunities. Government, the corporate sector and SMEs all have roles in this.

Case study: Square Kilometre Array

What collaboration on a global scale can achieve is clearly evident in the Square Kilometre Array (SKA), which is destined to be the largest and most capable radio telescope ever constructed. It is being built by an international collaborative team, involving institutions from over 20 countries, including the International Centre for Radio Astronomy Research which is an equal joint venture between Curtin University and The University of Western Australia.
www.icrar.org

One of its components is being hosted by Australia at the purpose-established Murchison Radio-astronomy Observatory (MRO) in Western Australia. The observatory houses the facilities necessary to operate telescope hardware in this remote region. The MRO lies at the centre of a Radio Quiet Zone that protects telescopes from radio interference that may degrade the quality of observations. The other component of the SKA will be in southern Africa. During its 50+ year lifetime, SKA will expand our understanding of the universe and drive technological development worldwide.
www.ska.gov.au



“Absolutely no one person can take their product to market by themselves. Collaboration is definitely the critical success factor to innovation.”

Kath Giles, Investment Manager,
Brandon Capital

So we will...

	When*	How much? (indicative)
Create an Innovation Portal.	Created in Year 1 but ongoing	\$100,000 (initial setup) \$20,000 (ongoing maintenance per annum)
Hold an annual Innovation Summit.	Years 1-4	\$100,000

* Years 1-4 = October 2016 to October 2020

Case study: iPREPWA

The iPrep program, launched in 2015 by Edith Cowan University, supports research collaboration between universities and industry. iPREPWA involves interdisciplinary teams of PhD candidates working on a six-week project with an industry partner during their thesis examination period. Industry partners may be from business, Government or community settings and their projects focus on solving authentic workplace problems. The State Government is committed to funding iPREPWA for three years, after which time it is expected to become self-funding.

<http://www.waresearch.com/iprepwa>

Innovation Portal

The Innovation Portal is also part of the State Government’s \$20 million commitment to supporting innovation in Western Australia, announced in the 2016-17 State Budget. Work on developing the portal began immediately following the announcement and its launch will coincide with the release of this strategy.

The portal is more than a directory, although it is also that. It enables anyone to look at what is going on in innovation in WA. Any organisation – be it large and well-established, a small startup, or anything in between – will be able to access opportunities to collaborate and to find co-working spaces.

15 <http://www.datalinkage-wa.org.au/>

16 Australian Government. National Innovation and Science Agenda Report, 2015. <http://www.innovation.gov.au/page/national-innovation-and-science-agenda-report>

Marketing & Promotion

Western Australia is a great place in which to live and innovate. Those already living and working here know this. Our challenge is to take that message out to the world. We have a lot to tell. For too long Perth has been seen as an isolated city, without recognising the huge benefits of our location and how well we are connected with the region. Perth is serviced by 18 international and 12 domestic and regional airlines connecting travellers to over 110 destinations globally and Australia-wide¹⁷. Perth shares a time zone (of plus or minus two hours) with 60% of the world's population in the emerging economies of Asia¹⁸.

Our warm climate and wondrous natural environment make Western Australia the ideal place to pursue healthy outdoor lifestyles. We have excellent educational institutions and health facilities. All of these factors combine to make Perth, and Western Australia generally, a great, family-friendly place – it's not just a place to fly through on a business trip, it's a place to settle; to raise a family and live life.



17 Department of State Development, 2016. Invest in the West. http://www.dsd.wa.gov.au/docs/default-source/default-document-library/164186_oil-amp-gas-capabilities-in-western-australia-low-res?sfvrsn=4

18 Department of State Development. 2016. Invest in the West.

19 The Economist. 2016. The world's most "liveable" cities. www.economist.com/blogs/graphicdetail/2016/08/daily-chart-14

20 Knowledge Society and the University of Western Australia. State of Mind. p60. <http://www.emi.uwa.edu.au/sites/default/files/UWA%20State%20of%20Mind%20Report.pdf>

21 <http://www.abs.gov.au/websitedbs/censushome.nsf/home/data?opendocument&navpos=200>

“Innovation is not separate; it’s part of life. It’s part of what we do every day. Breathing, sleeping, innovating. As a society, we need to work out how to push boundaries to make the world a better place for everybody.”

Winthrop Professor Fiona Wood FRACS AM,
Director of the Burns Service of Western Australia.

It’s already happening...

In 2016 the Economist Intelligence Unit once again named Perth as one of the world’s top ten most liveable cities¹⁹.

Many people are attracted to Western Australia – 37% of people living in Perth were born overseas and 61.5% of people have at least one parent born overseas²⁰. Between 2006 and 2011, WA’s population increased by 14.3%, the highest growth rate of any Australian state for that period²¹.

But there are more opportunities...

There is always more to tell. Innovation has become a buzzword in many sectors and governments the world over are vying for attention as they seek to attract the best and brightest. We need to stand up and stand out.

Our geography gives us a natural advantage and promoting it can give us an edge.

We have international trade offices, programs and existing networks that are not currently well known and that could play a far bigger role.

So we will...

	When*	How much (per annum)? (indicative)
Create a consistent brand and promote Western Australian innovations domestically and internationally. Promotion will include:		\$400,000 (initial setup) \$200,000 per annum thereafter
▶ Creating Western Australia’s innovation brand	Year 1	
▶ Videos showcasing Western Australia’s innovations	Years 1-4	
▶ A trade pack for delegations, missions and trade offices.	Year 1	
▶ Trade missions	Ongoing	
▶ International programs.	Ongoing	
Use the activities listed above to develop strong links and networks in key countries (e.g. Singapore, United Kingdom) and to assist innovators in reaching new global markets.	Ongoing	

* Years 1-4 = October 2016 to October 2020

Measuring our success

The Western Australian Innovation Strategy provides an overall statement on the direction the State Government plans to steer innovation in Western Australia. Detailed initiatives will be developed over time, with programs being reviewed and adapted to build on successes and learn from mistakes. We're not claiming to have it all perfect at this stage; innovation doesn't work like that.

Metrics will be tracked and data utilised to measure performance and effectiveness of Western Australia's innovation success and momentum, both at a general state level and more specifically in effectiveness of the funded initiatives where possible.

So, to turn talk into action, and action into outcomes, metrics that will provide insight, direction and impact include:

Metric Area	Why	How
Western Australian innovation brand sentiment	Western Australia has a reputation for attracting talent, ideas, conferences and visitors.	Social sentiment measure, international visits, conferences and press mentions.
Small business and start-up innovation activity	Number of start-ups and businesses registering through the pipeline.	Including new business registrations, meet ups, incubators, accelerators, requests for funding and grants.
Commercial successes and growth	An emerging portfolio of successes progressing to commercial readiness, maturity and success.	Funding metrics seed, angel, series A, series B, commercial ventures formed, IPOs and employment.
Education, skills development	Programs funded, attendance and enrolments.	New programs funded and enrolments.
Flagship Initiatives	Exemplifying successes to increase confidence.	Flagship government services launched, corporate-academic partnerships and ventures.

Later this year, we will release a detailed plan of what we hope to achieve in the remainder of the first year of the strategy's four year life. Each year after that, we will review and report on our progress, publishing details of how much has been spent, what it has been spent on and what has been achieved as a result.

We don't expect that the results will always be immediately obvious. As we said at the start of this strategy, people often learn a lot from their mistakes. Failures can be a springboard to later success that would not have occurred otherwise. We're not setting out to fail; quite the reverse. But we do accept at the beginning that not everything will work as expected. Some things may not work at all. Some things may work far better than expected – who predicted The Giants to be the raging success they were? Yes, we all thought it would be amazing and great, but that so many people would be captivated was a delightful surprise. It shows what can be achieved with thinking big. We encourage all Western Australians to think big about innovation.



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