

# 2018 BUSINESS MISSION TO JAPAN

## CITY OF MELBOURNE



CITY OF MELBOURNE

Image on cover:

Uppma Virdi (Chai Walli) at Hub Southern Cross.

Photo: City of Melbourne / That Startup Show

Photographer: Wren Steiner

[melbourne.vic.gov.au/melbmission](https://melbourne.vic.gov.au/melbmission)

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## Acknowledgment of Traditional Owners

City of Melbourne respectfully acknowledges the Traditional Owners of the Land, the Kulin Nation, who have continuously lived on the land for tens of thousands of years, before the first permanent European settlement in 1835. For the Woiwurrung (Wurundjeri), Boonwurrung, Taungurong, Dja Dja Wurrung and the Wathaurung groups who form the Kulin Nation, Melbourne has always been an important meeting place for events of social, educational, sporting and cultural significance.

Today we are proud to say that Melbourne is a significant gathering place for all Aboriginal and Torres Strait Islander people.

# MESSAGE FROM THE ACTING LORD MAYOR OF MELBOURNE



City of Melbourne is proud to lead another business mission to Japan to strengthen our close ties. Cities share many challenges and Melbourne is advancing global knowledge in health and life sciences and sustainable urban design.

Connecting leading Melbourne firms and research institutes with partners in Japan creates many opportunities. We build on 40 years of friendship with Osaka. In 1978 Melbourne's first sister city relationship was formed with Osaka and exchanges and collaborations have continued to thrive.

As both nations strive to build healthy communities, researchers are collaborating on world-leading discoveries. In Melbourne and Osaka, globally-connected researchers advance knowledge in hospitals and universities.

Melbourne is renowned for breakthroughs such as in-vitro fertilisation treatment and the first cochlear ear implant. We have particular strengths in stem cell research, clinical trials and cancer therapies.

Collaborations with Japanese researchers include developments in diagnosing Alzheimer's disease, and there is potential for partnerships in the areas of oncology, aged care and biotechnology.

As a leading medical and education hub, Melbourne will benefit from a newly established innovation district set to

forge new links between industry, research institutes and government. Digital games development is another sector attracting significant investment and creative talent in Melbourne.

The cities of Melbourne and Osaka have achieved much in the past 40 years. Staff exchanges in education, health and municipal government result in firm friendships. A highlight of celebrations marking the 40th anniversary will be the 2018 Melbourne-Osaka Double Handed Yacht race. Over 5000 nautical miles, the crews' skills and endurance will be put to the test.

As they will discover, excellence is often hard-won. That's why City of Melbourne takes a dynamic and energetic approach to promoting our strengths. Previous missions have succeeded because Melbourne's business and research capabilities closely align with Japan's national priorities. In 2018 I wish all participants a most successful mission, enjoying what has always been a warm welcome from Osaka, to forge closer links between our cities.

A handwritten signature in black ink, appearing to read 'Arron Wood'. The signature is fluid and stylized, with a long, sweeping underline.

Arron Wood  
**Acting Lord Mayor of Melbourne**

# MESSAGE FROM THE MAYOR OF OSAKA



## City of Melbourne Delegation Visit to Osaka. 40th Anniversary of the Osaka-Melbourne Sister City Affiliation.

To celebrate the 40th anniversary of the sister city affiliation between Osaka and Melbourne, I would like to express my heartfelt welcome to the City of Melbourne delegation for visiting Osaka.

Over an extended period of time, Osaka and Melbourne have established cordial relations such as forming a sister port affiliation in 1974, a sister city affiliation in 1978 and a business partner city affiliation in 1999. Exchanges have been well accumulated in education, business and many other specialty fields.

For the biotechnology and life science fields, various exchanges have been actively progressing in recent years. When “Medical Japan,” the first medical trade show for Japan was to be held annually in Osaka, City of Melbourne visited our city for three consecutive years from 2014 to 2016. Also in 2016, Vice Mayor Tanaka attended the “AusBiotech” conference in Melbourne. In addition to this, medical departments from Osaka City University and Osaka University are conducting academic exchanges with Melbourne’s medical institutions.

It will be a great pleasure to have the presence of City of Melbourne and all distinguished delegates from Melbourne in Osaka. Furthermore, your encounters with Osaka based companies will provide another level of exchange that

surpasses the accustomed platform of exchange between governments. I truly hope that the relationship between the private sectors of both cities can be continuous and productive.

Reflecting upon these years, the activities that have occurred in a diverse range of fields have certainly inspired closer connections between our people as well as deepened the bonds of both cities. Thus, on this 40th anniversary year, I have aspirations that both cities will be able to promote a steadfast collaboration in sharing experiences and innovative strategies for creating lively atmospheres, enhancing urban appeal and stimulating economic growth.

On the occasion of this honorary visit, please accept my best wishes in further strengthening the cherished friendship between Osaka and Melbourne.

A handwritten signature in black ink that reads "Hirofumi Yoshimura". The signature is written in a cursive, flowing style.

Hirofumi Yoshimura  
**Mayor of Osaka**





# MELBOURNE: TAKE A CLOSER LOOK

Melbourne is Australia's fastest growing and most dynamic business city.

The cultural, recreational and business capital of Victoria, Greater Melbourne has a population of 4.7 million, with a diverse, young and highly educated workforce. Greater Melbourne is made up of people from around 200 countries, speaking over 150 languages and dialects and practising 150 different faiths.

Focused around a vibrant central business district, Greater Melbourne extends more than 40km to the south, 20km to the north and west, and 30km to the east towards the Dandenong Ranges.



Australia's Population  
**24,210,000**



Victoria's Population  
**6,180,000**

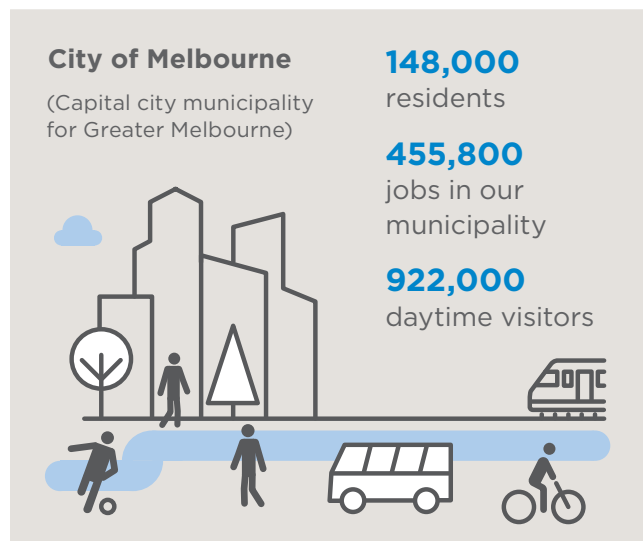


Greater Melbourne Population  
**4,725,000**

City of Melbourne is the municipal centre and capital city government of Melbourne.

Covering 37.7km<sup>2</sup>, it includes 15 inner city suburbs, nine universities and over 25 technology, engineering and medical facilities. Melbourne's knowledge economy includes thriving sectors such as biotechnology, life sciences, higher education, medical and scientific research, information communications technology (ICT), financial services, and sustainable urban and industrial design.

**Melbourne's time zone overlaps normal business hours in most Asia-Pacific nations and trading partners**



## A great place to live

Melbourne was ranked World's Most Liveable City in 2017 for the seventh consecutive year by The Economist Intelligence Unit.

Renowned for its arts, culture, shopping, and high quality food and wine, Melbourne knows how to mix business with pleasure. Boasting 89,440 hectares of green open space and state-of-the-art sporting facilities, the city stages some of the world's top sporting events including the Australian Open Tennis Tournament, the Formula One Grand Prix and the Melbourne Cup.

Melbourne also has hundreds of playgrounds, pocket parks and sporting facilities that are available for families and visitors to enjoy.

## A strong, high performing economy

Melbourne is a global centre of excellence for many growing and emerging industry sectors.

The city has key capabilities in biotechnology, life sciences, higher education, medical and scientific research, ICT, financial services and sustainable urban and industrial design.

City of Melbourne makes a major contribution to the Victorian and Australian economies, accounting for 25 per cent of Victoria's Gross State Product and 6 per cent of Australia's Gross Domestic Product. In 2016 the Gross Local Product (GLP) of City of Melbourne's economy was \$92.12 billion.

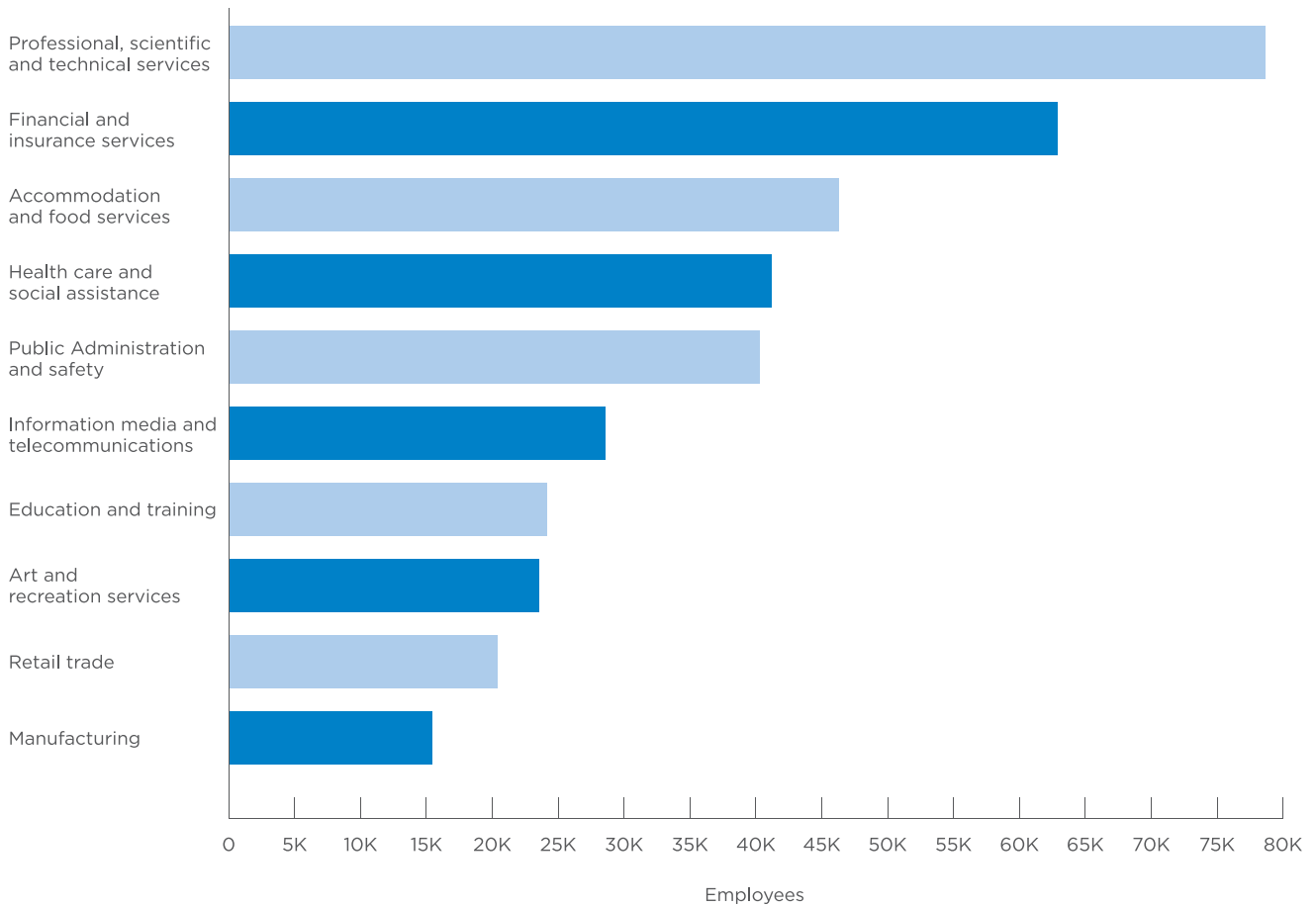
Six of the top 10 and 33 of the top 100 Australian companies have their headquarters in Melbourne and the city has won numerous awards including:

- 2017 International City Leadership and Adoption Award in recognition of its smart city innovations, awarded by TM Forum
- 2017 Intelligent Community of the Year in recognition of the city's innovative technology, education, sustainability and community programs, awarded by the Intelligent Community Forum
- Most Admired Knowledge City Award at the Knowledge Cities World Summit in 2016.

Victoria has maintained a AAA credit rating for more than 12 years.



## Industries within City of Melbourne's economy



## A diverse, highly educated population

Melbourne's residential population has doubled over the last 12 years and is forecast to be Australia's largest city by 2030.

The City of Melbourne has a highly diverse, educated population, with residents originating from more than 120 countries throughout the world. Melburnians are highly educated, with 40 per cent of all residents holding tertiary qualifications. There are around 16,600 businesses and 455,800 jobs located in the municipality.

## Melburnians speak more than 121 different languages

There are more than 1,100 public and private education and training providers in Melbourne and Victoria, along with 10 universities that have expertise in biotechnology, medical research, advanced manufacturing, ICT, water management, environmental and energy technologies and food.

The University of Melbourne is the highest ranked university in Australia and the third highest in Asia-Pacific according to the 2015-16 Times Higher Education World University Rankings.

Melbourne's universities **teach around 300,000 students**, one third of whom are from international origins. This makes Melbourne renowned as a 'university city' and one of the most popular destinations for international students in the world.

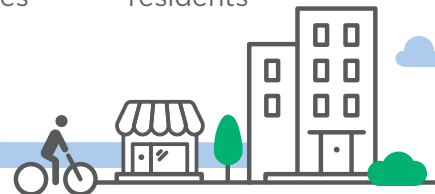
## People in the City of Melbourne



**16,600**  
city businesses

**148,000**  
residents

**171,000**  
Greater Melbourne visitors



**455,800**  
jobs in the municipality

**120+**  
languages spoken by residents

**80,000**  
students

**106,000**  
international, interstate and regional visitors, per average day

**39,800**  
overseas higher education students

**33,000**  
visitors under 15 years old, per average day

## Modern, reliable infrastructure

Melbourne has a fast, high capacity communications network and a safe and efficient road and public transport system.

The city also benefits from a 24-hour international airport and Australia's largest container and general cargo port.



### Melbourne Airport

- Served by 29 international and six domestic airlines
- Used by more than 35 million passengers in 2016-17
- Australia's leading air freight exporter



### Port of Melbourne

- Located on the edge of Melbourne's CBD
- Australia's largest port, with a trade volume of \$102 billion
- Handles about 3,000 ships and 2.64 million containers each year
- Global port partnership with Osaka, Japan established in 1976

Construction of Victoria's largest transport project, the \$11 billion **Metro Tunnel** project, is currently underway beneath central Melbourne.

City of Melbourne is working with the Victorian Government and other project partners to deliver a new dedicated pathway through the heart of the city to accommodate population growth and create space for more trains to run more often across Melbourne's rail network.

The project includes two nine-kilometre rail tunnels running underneath the city, with five new underground stations connected to the existing City Loop and other transport such as trams, buses, and cycling and pedestrian paths. It is due for completion in 2026.

## **A dynamic, supportive business environment**

Melbourne provides a positive, highly supportive business environment for startups, small to medium enterprises and global organisations.

Six of Australia's top 10 companies are headquartered in Melbourne including BHP Billiton, Rio Tinto and Telstra. As Australia's funds management capital, Melbourne is home to two of Australia's biggest four commercial banks (NAB and ANZ) and a large number of investment and financial services firms.

Australia has total funds under management of \$2.4 trillion, with six of the nation's top 12 superannuation funds and 60 per cent of all fund assets managed out of Melbourne. The city is also home to Australia's sovereign wealth fund, the \$110 billion Future Fund.

**Many top global companies also choose Melbourne as their Australian headquarters, including CITIC Resources, BUPA and ExxonMobil.**

Melbourne is recognised internationally by the Global Innovation Index as having one of the best regulatory environments in the world and by the World Bank Doing Business Report for being one of the easiest places to set up and run a business.

The International Chamber House in Melbourne's city centre is a business networking hub that encourages strong collaboration between government agencies, bilateral international chambers of commerce and business associations. The International Chamber House, Victorian Government Business Offices and City of Melbourne facilitate trade and investment opportunities for Melbourne businesses with key international markets.

In addition, Australia's currency is fully internationalised and there are few restrictions on access to credit, loan facilities or capital flows.

## A smart, forward thinking city

Melbourne is an outward looking city constantly seeking new ways to meet the changing needs of the community, the economy and the environment.

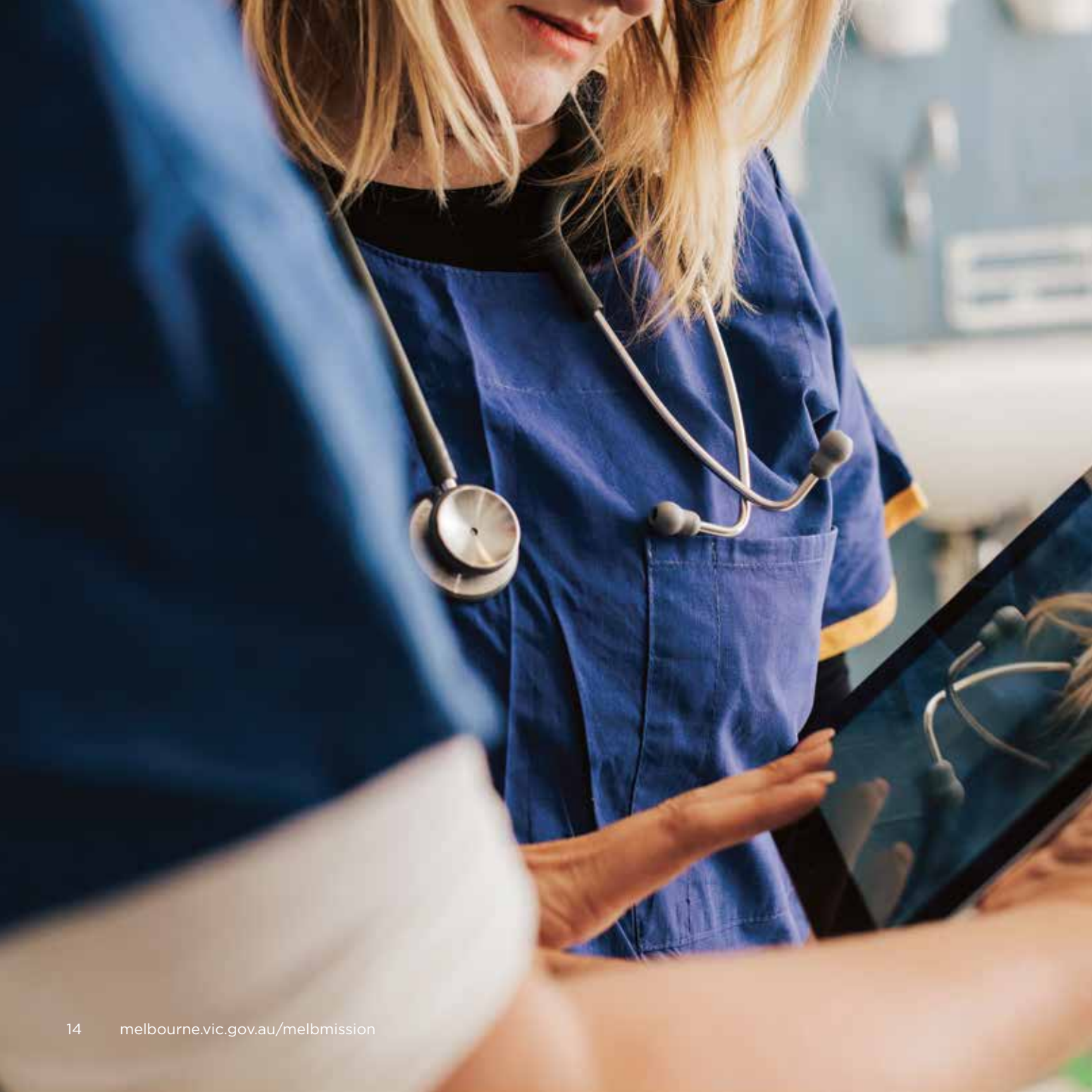
City of Melbourne works with businesses, students and residents to develop and test new ideas and technologies that have the potential to reshape everyday life for current and future generations.

Some of these initiatives include:

- **City Lab** - a human-centred design space to prototype and test new ideas and city services, particularly around climate change and the changing nature of work
- **IBM Smarter Cities Challenge** - Melbourne was one of only 16 cities worldwide invited to take part in the 2016 challenge. Our focus was on new and improved ways of responding to emergencies and long-term disruptive events
- **The open data platform** - a publicly accessible resource with around 100 unique data sets such as City of Melbourne's 24-hour pedestrian counting system which is used to help plan for population growth.

In 2013 City of Melbourne launched **Participate Melbourne**, an online portal for people to comment and contribute to Melbourne's future. All suggestions help inform the development of key strategies, programs and activities such as the recent Queen Victoria Market Redevelopment Plan and the Urban Forest Strategy.





# A 40-YEAR PARTNERSHIP WITH OSAKA

## Melbourne and Osaka first became sister cities in 1978

As busy port cities, with shared passions for food, sport and culture, they have since forged strong trade and investment links and deep business and cultural connections.

Our first sister city relationship, the partnership is one of our strongest and most respectful, with fast growing connections in the life sciences sector in areas such as clinical trials, regenerative medicine, oncology, aged care, biotechnology and medical technology.

The Japan-Australia Economic Partnership Agreement, signed in 2014, has opened up new opportunities for businesses in both countries.

Through our longstanding sister city relationship, memoranda of understanding have also been signed between Biomedical Research Victoria and Osaka University and the University of Melbourne and Osaka City University.

## Major achievements over the last 40 years include:

- Melbourne becoming the only Australian member of the Business Partner City Network in 1999 at the invitation of the City of Osaka, strengthening links with regional partners and providing opportunities for Melbourne businesses with 14 member cities in the Asia-Pacific
- Successful City of Melbourne business missions to Osaka in 2014 and 2016 and an inbound delegation led by City of Osaka Vice Mayor Seigo Tanaka in 2016
- Key educational exchanges such as the annual Melbourne Osaka Award at the Japanese Language Speech Contest, which has seen 10 young Melburnians complete cultural learning programs in Osaka
- Staff exchanges between municipal governments for professional development and increased knowledge sharing
- Launched in 2017, the Health Innovation Partners platform is a formal exchange program between hospitals, health systems and innovation precincts that supports innovators and entrepreneurs to develop new patient focussed clinical technologies and services.

Delivered by Sandringham Yacht Club, Osaka Hokko Yacht Club and Ocean Racing Victoria, one of the main sporting events marking the 40th anniversary of the Melbourne-Osaka sister city relationship will be the **2018 Melbourne-Osaka Double Handed Yacht Race**. Held on average every four years, the event is a 5,000 nautical mile, double-handed yacht race that tests crews' skill and endurance to the limit.

Image: Melbourne Health Accelerator at Royal Melbourne Hospital.  
Photo: City of Melbourne / That Startup Show  
Photographer: Wren Steiner



# CITY OF MELBOURNE: WHAT WE OFFER

City of Melbourne plays an important role in building Melbourne's global competitiveness and providing opportunities for local and international businesses.

We encourage knowledge sharing and collaboration among business, universities, research institutes and government stakeholders. We also support strategic investment in new industry sectors, infrastructure and work to reduce regulatory barriers to growth and innovation.

As a leading capital city government, City of Melbourne has an integrated, whole-of-business approach that ensures we are well positioned to meet the opportunities of the global economy.

We do this by:

- Supporting businesses of all sizes from startups to large multinational companies
- Building close relationships with the Victorian and Australian governments to strengthen international business relationships and advocate for new opportunities for Melbourne
- Being an active supporter and participant of the sister city network and the Business Partner Cities Network across the Asia-Pacific region.

## City of Melbourne provides:

- Business matching
- Market intelligence
- Direct links to government services
- Assistance with your visit program
- Introductions to Melbourne's business community

Image: Atlanta Daniel (Signal Ventures), Rohit Bhargava (Startup Playbook Podcast) at Southbank, Melbourne.

Photo: City of Melbourne / That Startup Show

Photographer: Wren Steiner

# BUSINESS MISSION LEADERSHIP TEAM



**Business Mission Leader**

**Councillor**  
Kevin Louey

Kevin has extensive experience across business, government and community sectors and spent seven years at the City of Melbourne as Chief of Staff to the former Lord Mayor John So, before joining as a Councillor in 2008.

Kevin is the Chair of the Prosperous City portfolio and the Deputy Chair of the Arts, Culture and Heritage portfolio. He is also the City of Melbourne's appointment to the following advisory committees: Enterprise Melbourne Pty Ltd and Business Partner Cities Network.

Kevin has been part of several City of Melbourne business missions, including visits to Osaka, Milan, Guangzhou, Tianjin, Beijing and Shanghai. In 2017, Kevin led City of Melbourne's first business mission to India. He has also represented the City of Melbourne at numerous Business Partner Cities Network roundtable meetings, the most recent being in 2017 meeting in Shanghai where the roundtable topic of discussion was trade facilitation in the Asia-Pacific region.



**Councillor**  
Philip Le Liu

Philip Le Liu was elected as a Councillor in 2016 and chairs the International Engagement portfolio. As a local resident living and working within the heart of the CBD, Philip is driven to deliver results that the people of Melbourne expect from their Council.

An accomplished management consultant with over five years' experience at a top tier professional service firm, Philip uses his skills and expertise gained across various industries to help solve current and future issues. In addition, Philip has a deep knowledge of Asia, where he worked as a general manager for a non-profit youth organisation that promoted bilateral relations between Australia and China.

Philip's passion includes entrepreneurship, multiculturalism and international relations – especially in the area of international students, a group that he believes is an integral part of the Melbourne community.





**Councillor**  
Susan Riley

Susan has extensive experience in local government having served three terms as Deputy Lord Mayor of Melbourne, including a term with former Lord Mayor John So. In 2001 Susan was the first female Deputy Lord Mayor of Melbourne, and was elected as a Councillor in 2017.

In 2015, Susan was recognised for her service to local government and received a Councillor Service Award through the Municipal Association of Victoria.

Susan is passionate about Melbourne and is a strong advocate for small business, women in business and community development. Susan is Portfolio Chair Small Business, Retail and Hospitality and Deputy Chair Prosperous City. These portfolios include key areas of startups and social investment.

In addition to experience in local government, Susan has enjoyed a distinguished career spanning more than 30 years in the publishing and media industry. She is a Director of a city-based publishing company, member of the Australian Intercultural Society Advisory Board, member of the RMIT University School of Fashion & Textiles Advisory Group, and a Director of Procurement Australia.



**Chief Executive Officer**  
Ben Rimmer

Ben Rimmer is the CEO at the City of Melbourne. Ben was Associate Secretary in the Australian Government Department of Human Services in Canberra and also worked for the Department of the Prime Minister and Cabinet, the Victorian Department of Premier and Cabinet and was Project Leader in the Boston Consulting Group's London and Melbourne offices.

Ben has degrees in Arts and Law from the University of Melbourne and an MBA with distinction from the University of Oxford. In 2017, Ben was awarded a National Fellowship from the Institute of Public Administration Australia (IPAA). This honour was awarded in recognition of Ben's contribution to the public sector and is the highest accolade for IPAA members. He has previously been awarded Victorian Fellow (FIAA), Institute of Public Administration Australia - Victoria and in 2014 received the James Wolfensohn Public Services Scholarship to undertake executive education at Harvard University's John F Kennedy School of Government.

Ben is also Chair of the Australian Youth Orchestra Board and last year became an Advisory Board Member on the Melbourne Networked Society Institute (MNSI).



# RENOWNED HEALTH AND LIFE SCIENCES INDUSTRIES

Melbourne is one of the leading health and life sciences centres in the world, with recognised medical research facilities, highly regarded public and private hospitals and key strengths in cancer treatment and research, stem cell research, clinical trials and medical devices.

A number of Nobel Laureates in Physiology or Medicine have taught, studied or researched in Melbourne including Professor Elizabeth Blackburn, Professor Peter Doherty, Sir John Eccles, Sir Frank Macfarlane Burnet and Lord Howard Florey.

The city has been at the forefront of global health and medical breakthroughs for more than 50 years including:

- Portable ultrasound device, 2013
- First bionic eye, 2013
- Use of colony stimulating factors for cancer patients post chemotherapy, 1990
- First cochlear ear implant, 1978
- In-vitro fertilisation treatment, 1977

Melbourne's health and life sciences industries include more than 950 organisations that employ around 36,000 people. The sector is worth \$22 billion and contributes \$15.5 billion to the local City of Melbourne economy.

Image: Andrew Yap (Medtasker) at Melbourne Health Accelerator, Royal Melbourne Hospital.  
Photo: City of Melbourne / That Startup Show  
Photographer: Wren Steiner

## Global companies including GlaxoSmithKline, Catalent Pharma Solutions and Australia's own CSL have all recently expanded their Victorian facilities

Supported by 10 major biomedical research institutes and 10 major teaching hospitals, Melbourne's health and life sciences sector is home to highly skilled scientists, entrepreneurs, venture capitalists and a wide range of business support services. The city's research and tertiary education sector attracts the bulk of Australia's medical research funding totalling \$487 million per annum.

More than 40 per cent of Australian life science companies are based in Melbourne and many are partnering with multinational companies, such as Roche and Siemens Healthcare.

In 2016 Melbourne opened the new \$1 billion **Victorian Comprehensive Cancer Centre**, a state-of-the-art facility for cancer research, treatment, education and care that brings together world-recognised Peter MacCallum Cancer Centre, the University of Melbourne and other key partners. The centre is focusing on multi-disciplinary collaboration to translate key research findings into clinical practice.

## Research and investment collaboration

Australia and Japan are long-term research partners in health and life sciences, with several joint successes and breakthroughs.

One recent example is a three-year research project between Takeda Pharmaceutical Company Limited and Melbourne's Monash University that aims to revolutionise treatments for gastrointestinal conditions.

One of the biggest research collaborations ever undertaken between the two countries, several teams are investigating new treatments for gastrointestinal inflammatory diseases such as ulcerative colitis, Crohn's Disease and Irritable Bowel Syndrome (IBS).

Another exciting collaboration is between Australia's Oral Health Cooperative Research Centre (OHCRC) and Japanese dental supplies business, GC Corp.

GC Corp have taken the active ingredient in a widely used dental gum called Recaldent, invented by Laureate Professor Eric Reynolds AO at the University of Melbourne and incorporated it into a range of products now sold in over 50 countries. Their core product is a dental cream called Tooth Mousse, often used after dental work, which repairs teeth and reduces tooth sensitivity.

The next major challenge for this partnership is a vaccine that could break the cycle of infection in people with severe gum disease.

## Melbourne's key strengths

Melbourne is celebrated for its groundbreaking efforts in:

### Stem cell research

Melbourne receives almost 60 per cent of Australia's research funding for regenerative medicine, with capabilities in stem cell therapy trials and point-of-care diagnostics, and experience with regulatory authorities such as the US Food and Drug Administration and European Medicines Agency.

## Melbourne is one of three global cities with two universities in the top 20 biomedical rankings

The city boasts global leaders in regenerative medicine such as **Mesoblast Ltd**, which uses its own proprietary technology platform to create late-stage products for orthopaedic, cardiovascular and inflammatory disorders and oncology or haematology conditions. Other leading Melbourne firms include **PolyNovo Biomaterial Pty Ltd** which recently won US approval for NovoSorb, a temporary lattice used prior to skin grafts for burns patients, and **Cynata**, a stem cell and regenerative medicine company that is developing a new therapeutic platform for treating devastating diseases such as osteoarthritis, Crohn's disease and heart disease.

### Cancer therapies

Melbourne is home to four major cancer research and treatment collaborations:

- **Peter MacCallum Cancer Centre**, a global leader in integrated cancer research treatment and education
- **Victorian Comprehensive Cancer Centre**, a state-of-art facility for cancer research, treatment, education and care
- **Olivia Newton-John Cancer Wellness & Research Centre**, dedicated treatment and supportive care centre, with programs in tumour targeting, cancer immunobiology and cancer trials
- **Monash Partners Comprehensive Cancer Consortium**, an affiliation of major academic research institutions and cancer services with research capabilities in the molecular mechanisms underlying the development, growth and metastasis of tumours

### Clinical trials

Melbourne has a well-deserved reputation for **efficient, high quality clinical trials**. The city is home to some of the world's best investigators, research infrastructure, an ethnically-diverse patient pool, robust intellectual property system and a favourable regulatory pathway known as the Clinical Trial Notification Scheme.

One of Melbourne's most impressive new companies is **Sienna Cancer Diagnostics** which develops and commercialises inexpensive, high performing in-vitro diagnostic products expected to lead to radical changes in the care and assessment of cancer patients.

Organisations undertaking clinical trials in Melbourne can apply for the Australian Government's research and development tax incentive, which provides up to a **45 per cent cash refund for eligible trials**.



### Infectious diseases research

Melbourne is a global hub of immunology excellence, with around 4,700 researchers working in the public and private sector focused on infectious and inflammatory diseases and immunology.

Melbourne's **Burnet Institute** recently developed an innovative test to enable CD4+ T-cell levels to be determined quickly using a finger-prick blood sample. The test is aimed at reaching HIV-positive patients around the world.

Working in partnership with Monash University and vaccine experts in Belgium, GlaxoSmithKline recently opened a pilot vaccine facility in Melbourne to test an innovative **blow-fill-seal technology for manufacturing vaccines**.

Following a decade of research in Melbourne, CSL developed **Gardasil®**, a vaccine against Human Papilloma Virus, responsible for many cervical cancers. Approved for sale in the US in 2006, Gardasil® now dominates the market with sales of US \$1 billion per year.

### Neurosciences

Melbourne has extensive expertise in research and treatment of stroke, epilepsy, Alzheimer's disease, Parkinson's disease, multiple sclerosis, Huntington's disease, motor neurone disease, traumatic brain and spinal cord injury, depression, schizophrenia and addiction.

Recent advances include **SmartStent Pty Ltd's** revolutionary stent-based electrode (stentrode) that is implanted within a blood vessel next to the brain to aid people with spinal cord injuries.

Melbourne is also the only centre outside North America that is involved in the **Anti-Amyloid Treatment in Asymptomatic Alzheimer's study**, which is testing whether an anti-amyloid antibody can slow memory loss caused by Alzheimer's disease.

### Aged care design

Melbourne provides world-class products, services and expertise to help countries around the world meet the challenges of an ageing population.

## The proportion of people aged over 60 in the developed world is expected to rise from 23 per cent in 2013 to 32 per cent by 2050

The Australian aged care system is a global benchmark for best practice, thanks to strong government funding, robust accreditation and regulation, and a long history of cooperation between government, service providers and the community.

Melbourne's capabilities span to include infrastructure, services, products, technologies, research and development, education and training. Examples include mobile communications technology to allow elderly people to remain in their own home, remote patient monitoring systems, electronic medical records and development of new medical devices and equipment. Dementia care in particular is emerging as a health priority.

## Medical devices

Victoria's medical devices sector, which includes around 1000 medtech companies, is backed by strong infrastructure, world-leading research institutes and strong government support.

Local success stories include **Dorsavi**, which recently developed a unique, wearable sensor system measuring movement, posture and muscle activity. The system is being used by elite sporting teams worldwide and by employers such as the London Underground to reduce manual handling injuries.

Another innovative device is **Penthrox**, a drug delivery system developed by Melbourne-based Medical Developments International, which allows the inhalation of safe, non-addictive pain relief for use in emergency situations.

Equally impressive is gene mutation diagnostic company, **GMDx Co**, which has developed platform technology for monitoring the immune-like responses of people with cancer and for the personalisation of treatment plans.

### Leading medical research institutes in Melbourne include:

**Walter and Eliza Hall Institute** – Australia's oldest and premier medical research institute.

**Murdoch Children's Research Institute** – third-largest paediatric research institute in the world

**Florey Institute of Neuroscience and Mental Health** – the world's third-largest neuroscience institute

**Baker Heart and Diabetes Institute** – internationally renowned for diagnosis, prevention and treatment of diabetes and cardiovascular disease

**Bionics Institute** – independent research institute focussed on neural prostheses

**Centre for Eye Research Australia** – focussed on eliminating major eye diseases that cause vision loss

**St Vincent's Institute of Medical Research** – researching common diseases that have serious effects on health

**National Centre of Excellence in Youth Mental Health** – world-leading research centre

**Biomedical Research Victoria** – facilitates collaborations between Victoria's universities, research institutes, academics and hospitals.

**The Peter Doherty Institute for Infection and Immunity** – a research and reference laboratory offering diagnostic and clinical services in infection diseases and immunity.

**WHO Collaborating Centre for Reference and Research on Influenza** – part of the World Health Organization's global surveillance and response system that monitors changes in the influenza virus



Photo: La Trobe University

# WORKING TOGETHER

## Repairing teeth together

Across Japan teeth are being made stronger with chewing gum and other products using an ingredient discovered in Australian dairy milk. Now an innovative Japanese company is taking the Australian discovery to dental surgeries around the world.

“Our discovery was based on milk, to develop a delivery system of calcium phosphate to make teeth stronger,” says Laureate Professor Eric Reynolds AO, from The University of Melbourne.

Clinical trials of the chewing gum showed that it helps stop tooth decay and helps reverse early stages of tooth decay.

“The Recaldent chewing gum was very successful in Japan and the leading dental supply company in Japan, GC Corporation, then became interested in the technology.

“We’ve developed materials for repair of tooth decay and damage but now we’re focusing on prevention and protection collaborating with Melbourne University,” says Satoshi Tosaki from GC Corporation.

“One of those products is a cream, which in Australia is called Tooth Mousse, that’s sold to dentists to strengthen patients’ teeth and that’s now sold in over 50 countries worldwide,” he says.

“I’ve really enjoyed working with GC because I’ve learnt a lot from them in terms of business. But I think the most gratifying thing is that their products actually help people, and substantially reduce the burden of oral disease,” says Professor Reynolds.

Laureate Professor Eric Reynolds AO received the 2107 Prime Minister’s Prize for Innovation for his achievements in oral health.

## Targeted Japanese investment in Melbourne

Melbourne’s leading research institutions, universities and startups have attracted a number of Japanese firms to invest in key research collaborations, particularly in health and medical technology.

Japanese corporation Fujifilm is investing almost \$4 million in Melbourne-based Cynata Therapeutics Limited to develop, manufacture and sell stem-cell derived regenerative medicine for age-related macular degeneration, Parkinson’s Disease and heart disease. Full clinical trials started in Britain in December 2016.

Another exciting collaboration between Takeda Pharmaceutical Co. Limited and Melbourne’s Monash University is focused on researching gastrointestinal disorders and devising new therapies.

Takeda’s three-year investment is one of the biggest collaborative research projects by a Japanese pharmaceuticals company and an Australian university. The main purpose of the research is to create a new class of therapeutic drugs to alleviate the symptoms of gastrointestinal disorders such as pain, diarrhoea and constipation.





# EXCITING STARTUP AND INNOVATION CULTURE

City of Melbourne has been helping innovators and entrepreneurs realise their dreams of starting, growing and going global for decades.

Startups are major contributors to job creation, investment and economic growth around the world and lie at the heart of Melbourne's \$59 billion knowledge sector.

The jobs created by startups are no ordinary jobs – instead they contribute to the ideas, skills and strengths that cities need to remain competitive as traditional jobs face disruption from automation and the changing nature of work.

**Between 2004 and 2011 startups created more than 1.2 million new jobs in Australia, and contributed \$164 billion to the national economy**

## Helping startups reach their goals

To realise its vision of being the number one destination for startups to 'start, grow and go global' across Australia and Asia, City of Melbourne has launched its **Startup Action Plan 2017-21**.

This plan builds on council's existing services and commitments through 12 targeted actions that support startups through the five life stages of 'welcome, found, funding, growth and go global'. The 12 actions are covered under the following four themes:

- Sustainable growth: Services to help businesses attract talent, investment and customers
- Places for innovation: Open and accessible places for community innovation
- Inclusive and collaborative culture: Programs that support collaboration
- Adaptive governance: Access to key data, resources and business opportunities.

City of Melbourne has also partnered with local talk show That Startup Show to establish a new **Startup Photo Library** of stock images, videos, stories and data, which the city's entrepreneurial community can contribute to and access to showcase Melbourne's startup community.

Image: Georgia Beattie and Mei Chan (Startup Victoria) at Gravity Coworking Melbourne.

Photo: City of Melbourne / That Startup Show  
Photographer: Wren Steiner



## Melbourne's key strengths

Melbourne's startup community benefits from:

### Co-working spaces, incubators and accelerator programs

City of Melbourne is the startup capital of Australia, with over 83 per cent of all businesses in the municipality being small businesses.

Facing many hurdles their first few years, startups often welcome the opportunity to be part of a co-working space where they can minimise initial rent and fitout costs and collaborate with other businesses in their field.

There are 33 co-working spaces and five incubators and accelerator programs located in City of Melbourne. Each offers flexible desk and office space for a range of entrepreneurs from not-for-profits, social entrepreneurs and technology freelancers to sustainability businesses and health and life sciences entrepreneurs.

### Melbourne Health Accelerator program

The Melbourne Health Accelerator program, embedded at The Royal Melbourne Hospital, is Australia's first 'in-situ' hospital accelerator that gives innovative startups the opportunity to access world-class health providers while empowering clinicians and researchers to collaborate on potential advances in treatment and care.

The program is delivered in partnership with the Health Roundtable, a network of 160 Australian and New Zealand hospitals, which provides startups with a unique insight into the challenges of the healthcare sector as well as opportunities to have their innovations validated, tested and potentially accelerated across the sector.

### Health Innovation Partners

A new health partnership between Melbourne and Osaka is seeking to improve patient outcomes by creating a formal exchange between hospitals, health systems and innovation precincts in both cities.

The innovative framework, known as **Health Innovation Partners**, provides a structured platform to enable participating organisations to drive unrealised benefits across the healthcare system including access to new potential revenue streams, increased staff capabilities in commercialisation, leveraging sunk investment, and support for companies to test and translate their ideas into commercially viable products.

As part of the inaugural 2018 program, healthtech startups in Melbourne and Osaka will be invited to participate in the **Health Innovation Exchange**, where teams that address specific health system problems shared by the two cities pitch to a panel of experts. Successful startups will be awarded an opportunity to travel to Osaka, Japan to further collaborate with local health system stakeholders including representatives from local government, hospitals, industry and startup counterparts. The program will then be reciprocated in Melbourne in late 2018.

### Melbourne Innovation Districts

City of Melbourne has partnered with the University of Melbourne and RMIT University to create Melbourne Innovation Districts, a plan to drive investment in the knowledge economy by initially creating an 'urban innovation district' just north of Melbourne's central business district.

This area is already home to 21 per cent of Melbourne's knowledge sector jobs and features the central campuses of RMIT and the University of Melbourne. The aim is to attract more small businesses, startups and social enterprises to the area and provide more opportunities for Melbourne's knowledge workers, researchers and students.

### Supporting innovative business to take the next step

Helping passionate businesses realise their dreams and reach new markets is the primary aim of City of Melbourne's small business grants program.

The program provides financial assistance to forward-thinking small businesses located or intending to locate in Melbourne, including startups and established businesses from any sector.

Since 1996 City of Melbourne has provided \$8 million worth of grants to over 360 businesses, many of whom have taken their ideas to the next level and achieved local and international success.

### Melbourne Knowledge Week

First staged in 2010, Melbourne Knowledge Week is now a premier annual event that showcases innovative, knowledge-based projects undertaken by Melbourne organisations and businesses.

In 2017 Melbourne Knowledge Week presented 90 events over seven days, with input from 57 dedicated programming partners. Audiences of over 13,000 people explored the creativity and technology behind these extraordinary innovations. Taking place in May each year, the event includes an exciting program of activities focussed on connecting people, place, research and technology to imagine the city of the future.

### StartSpace at State Library Victoria

Thanks to a \$2 million donation from local philanthropist and businesswoman, Christine Christian, Melbourne's State Library has launched StartSpace, a dedicated area in the library for early-stage entrepreneurs and startup founders.

StartSpace has a two tiered approach to help startups at different stages transform business ideas from concept to reality. The first space is free for anyone to use and provides users with resources, services, programs and mentors, while the second is a premium paid offer, with access to cutting edge technology, social space and member events. The StartSpace Network will provide dedicated co-working facilities with exceptional design standards and capacity for 1400 entrepreneurs.

## Dynamic games development centre

Melbourne and surrounding regional cities such as Geelong, Ballarat and Bendigo are home to almost half of Australia's digital games industry including over 120 game development studios and some of the country's best creative talent and support services.

In recent years Melbourne-made games have topped the sales charts, received major awards and gained international exposure. EA's largest mobile development studio is based in Melbourne's Docklands, leveraging the city's proven ability to develop landmark games such as Sims Freeplay, Need for Speed - Most Wanted and Real Racing 3.

The city attracts significant inward investors such as Electronic Arts from the USA and GREE from Japan, who both have studios in the city.

## Melbourne and surrounding regional cities produce hundreds of graduates each year from 29 games-related courses delivered by 20 academic institutions

Melbourne is home to the Microsoft Natural User Interface Laboratory at the University of Melbourne and a large motion capture facility at Swinburne University. The city also hosts international gaming conferences that showcase Melbourne expertise and innovation. **Melbourne International Games Week**, which runs annually, is the largest professional and consumer games communication and networking platform in the Asia Pacific.

Australia's first not-for-profit collaborative games co-working space, **The Arcade**, is based in Melbourne and is a dynamic hub for developers to create virtual reality, console, mobile and casual games. As well as being the headquarters of the Game Developers' Association of Australia, The Arcade is home to 32 games companies employing over 120 staff who work on entertainment products, serious games and problem solving through gaming.

### Fellowship for creator of new game set in Melbourne's laneways

The mastermind behind a new game that transforms Melbourne's streetscape into a fast-paced digital game was recently awarded the **2017 City of Melbourne Knowledge Fellowship**.

Artist, game designer and senior lecturer at Swinburne University, Dr Troy Innocent, was awarded the fellowship for his work in exploring how new technologies can activate existing city spaces. Wayfinder Live 2017 is a location-based, augmented reality game where players scan codes hidden in Melbourne's laneways as part of a digital street game to unlock the story of the mysterious fictional micro nation, Ludea.

Image: ACMIX Staff and attendees with Jack Welsh and Cher Coad at ACMIX.

Photo: City of Melbourne / That Startup Show  
Photographer: Wren Steiner



# CONTACT DETAILS

For over 40 years, City of Melbourne has developed valued relationships with six sister cities around the world, especially with our sister city Osaka as well as other important international alliances and cooperative agreements.

We use partnerships with Victorian and Australian governments, business organisations and international partners to advance our international business activities that increase exports and inwards investments in Melbourne's key industry sectors.

## **For more information contact:**

Ms Frances Fu  
Team Leader, International  
Council House 2  
Little Collins Street, Melbourne  
Australia

T: +61 3 9658 9643

E: [frances.fu@melbourne.vic.gov.au](mailto:frances.fu@melbourne.vic.gov.au) or  
[global@melbourne.vic.gov.au](mailto:global@melbourne.vic.gov.au)

Scan the QR code to find out more about melbourne and our business mission at [melbourne.vic.gov.au/melbmission](http://melbourne.vic.gov.au/melbmission)

