



Queensland biomedical industry snapshot

The Queensland Government's vision is that by 2027 Queensland will be a globally competitive biomedical hub in the heart of the Asia-Pacific region.

Our biomedical sector at a glance



A\$1.44 billion estimated annual gross value added to the Queensland economy



9440 people employed



38 per cent growth forecast to 2027



Global expertise in tropical medicine and infectious diseases



Established networks of top-tier industry support services



Expertise in e-health and telemedicine



Mature and emerging health and knowledge precincts



Two decades of state government investment in science and innovation



World-class research base, state-of-the-art translational research facilities and hospitals



High-value specialist businesses



Queensland – an ideal destination for your biomedical business

Easy to do business

- ✓ **Educated and highly skilled workforce** with access to world-class clinicians, clinical research, trials and training facilities.
- ✓ **Fast, pragmatic regulatory pathway** ideal for conducting clinical trials, prototyping and testing new medical technologies.
- ✓ **Excellent legal framework** providing strong intellectual property protection.
- ✓ **Market access via free trade agreements** with key trading partners including Japan.
- ✓ **Strong, stable and diverse economy** – 27+ years of consecutive economic growth.
- ✓ **One of the lowest payroll tax** jurisdictions in Australia.
- ✓ **Shared time zones and close proximity** to high-growth markets in the Asia-Pacific region.
- ✓ **Direct flights** to/from Queensland's five international airports



Queensland – an ideal destination for your biomedical business

Access to specialist biomedical businesses

- Renowned [entrepreneurial environment and innovative](#) biomedical industry.
- Global expertise in [tropical medicine](#) and biosecurity.
- Niche [precision medical products](#) sector that responds to global demand more personalised, targeted and preventative approaches to treatments.
- Comprehensive [biopharmaceutical research, development and commercialisation supply chain](#).
- Two dedicated current Good Manufacturing Practice (cGMP)-grade contract manufacturers of biopharmaceutical active ingredients (the only two organisations in Australia with this capability).
- [Pre-clinical and early-phase clinical trial capabilities](#) that are underpinned by a [world-class research](#) base and [state-of-the-art translational facilities](#).
- Mature and emerging [health and knowledge precincts](#)



Queensland – an ideal destination for your biomedical business

Existing strengths and emerging capabilities include:



vaccine development and
delivery



medical devices, diagnostics
and imaging



biopharmaceutical manufacturing
generic pharmaceuticals
complementary medicines
nutraceuticals



digital health technologies such as:

- connected devices
- remote monitoring technology
and point-of-care diagnostics
- wearable devices
- telehealth.



Queensland Government support

The Queensland Government has a long history of investing in knowledge-intensive industries.

A\$5.9 billion invested in science and innovation since 1999





Queensland Government support

Advance Queensland initiative

- Advance Queensland is our vision for the future and our investment in a stronger Queensland economy.
- Funding of A\$513 million is supporting programs that drive innovation, build on our natural advantages, and help raise our profile as an attractive investment destination.





Queensland Government support

Queensland Biomedical 10-Year Roadmap and Action Plan

Three key strategies:

- support Queensland start-ups to prosper and successfully scale up
- support existing businesses to grow and **attract new businesses to Queensland**
- promote capabilities to attract investment and facilitate alliances.



Queensland Government support

The Queensland Government helps international clients access services, programs and incentives to help them succeed in Australia.



Navigation of the local biomedical industry



Business case information (project requirements, business costs, skills availability, etc.)



Site selection and expansion



Introductions to Queensland Government contacts and other service providers (property groups, utilities, education organisations, research institutes, raw material suppliers, etc.)



Assistance with potential funding (for entities that incorporate in Queensland).



Major initiatives

Advance Queensland Industry Attraction Fund (AQIAF)

The A\$65 million AQIAF attracts businesses to Queensland, to either relocate or establish new projects in the state. The fund supports jobs creation, regional growth, increased innovation and the building of local supply chains.

Biomedical Voucher Program

The Biomedical Voucher Program provides international biomedical companies with access to Queensland's biomedical infrastructure and capabilities.

- Funds up to 50 percent of the cost of obtaining biomedical services from a Queensland-based company.
- Capped at \$250,000, with the international client paying the balance of the costs.
- Eligible services include design development and validation, prototype building and testing, contract research and development and/or manufacturing, specialist professional services, and the cost of small items of plant and equipment.





Queensland is a globally competitive location for clinical trials





In early phase clinical trials
Australia is **28 per cent cheaper**
than the US before tax
incentives, and **60 per cent
cheaper** after tax incentives.

Source: Frost and Sullivan report 2016

R&D Tax Incentive - overview



43.5%

Refundable

R&D Tax offset for
R&D entities with
an aggregate
worldwide turnover
<AU\$20 million

38.5%

Non-
refundable

R&D Tax offset for
R&D entities with
an aggregate
worldwide turnover
of ≥AU\$20 million

R&D Tax Incentive - eligible R&D entities



- Company incorporated in Australia, e.g. as a subsidiary of a overseas parent company.
- Overseas-incorporated company that is an *Australian resident* for tax purposes (central management and control must be in Australia).
- Overseas-incorporated company that is a resident of a *foreign country* for the purposes of a double taxation agreement (DTA) with Australia, and carries on business in Australia through a permanent establishment (as per the DTA).
- One of the simplest structures is to incorporate a company in Australia that is wholly owned by the overseas parent company.

Source: ©2018 Deloitte Touche Tohmatsu.



R&D Tax Incentive – eligible activities



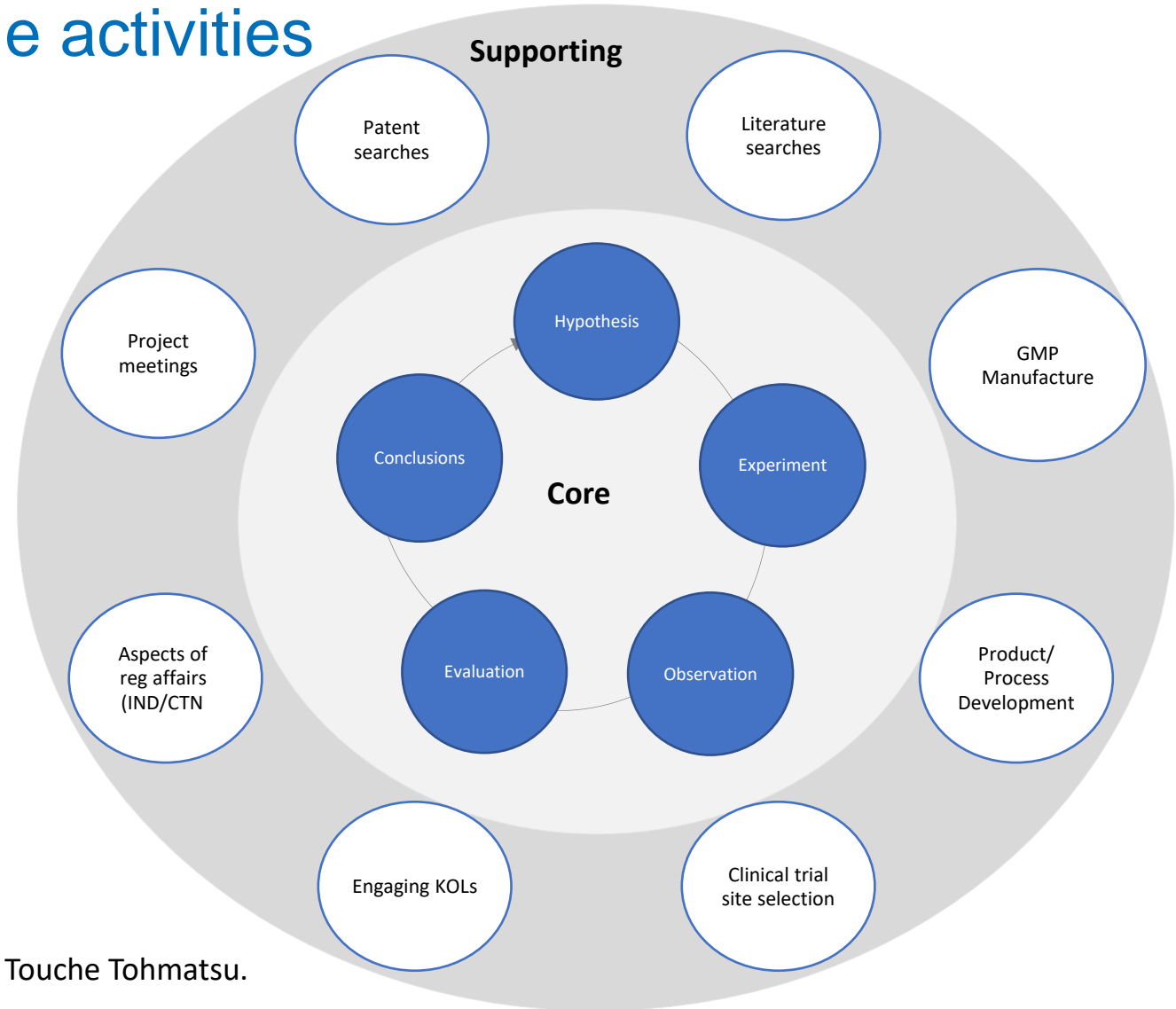
Core activities

- Outcome cannot be known or determined in advance
- Need to undertake an experiment to resolve knowledge gap

Supporting activities

- Directly related to core activities
- Is an activity excluded from being a core activity; or
- Produces, or is directly related to producing, goods or services

NB An activity is a supporting activity only if undertaken for the dominant purpose of supporting core activities.



Source: ©2018 Deloitte Touche Tohmatsu.



Quality – World-class standards

- The Australian Therapeutic Goods Administration (TGA) is the equivalent of the United States Food and Drug Administration (FDA).
- Strict TGA compliance standards ensures our products and services meet the highest international standards.
- Data from Queensland studies is globally recognised and can support international regulatory applications, including the FDA and the European Medicines Evaluation Agency (EMA).
- Queensland adheres to a well-developed ethical and regulatory framework.



Speed – Fast and flexible regulatory process

Clinical Trial Notification Scheme (CTN)

- Provides a fast and efficient trial environment, particularly for early-phase clinical trials
- This translates into some of the fastest start-up times in the world
- Eliminates unnecessary duplication and saves significant time and money.

Fast ethics approval

Under the CTN, clinical trials are assessed by human research ethics committees (HRECs), not the TGA. This significantly reduces the regulatory burdens associated with applications and approvals.

Queensland – an ideal destination for your biomedical business

Cost. Quality. Speed.

- Superior scientific talent plus excellent research and medical infrastructure
- Attractive R&D tax incentives
- Fast, pragmatic regulatory pathway with rapid ethics approval
- Clinical data that complies with top international standards
- Strong capability in biomedical manufacturing
- World-class niche precision medical products sector
- Robust intellectual property system
- Global expertise in tropical medicine
- Ethnically diverse, English-speaking population
- Close proximity to Asia
- Direct flights to Queensland's five international airports
- Advantageous time zone within two hours of major Asia cities
- More than 27 years of continuous economic growth and long-term political stability
- World-famous culture, attractions and lifestyle



Unique 'Innovation Patent'

| Feature | Innovation patent | Standard patent |
|---|--|--|
| Patent period (annual renewal fees apply) | 8 years | 20 years (or 25 years for pharmaceutical patents) |
| Application period | Approx. 1 month | Approx. 6 months, to several years |
| Cost | Relatively inexpensive compared to standard patent. Consult IP Australia for detail. | Consult IP Australia for detail. |
| Requirements | Be new, useful, and involve an innovative step | Be new, useful, and involve an <u>inventive step</u> , that is, that the invention must be 'non-obvious'. |
| Protection against infringers | None. However enforceable if patent is examined and approved. | Yes. |
| Is the patent examined? (Tests to have patent granted) | Examination to be requested by patent owner. | Yes, examination is mandatory. |
| When to consider this patent? | 1- When the IP has a short product life cycle of up to 8 years. 2- When the invention meets the innovative step requirement but not the inventive step. | 1- When the IP has a longer product life cycle of up to 20 years. 2- When you seek an investor to invest in your innovation, who requires robust patent protection. |
| Drawbacks | As this type of patent is not usually examined, it is not as valuable as a standard patent. Its value may be improved by requesting examination, but as the duration of the patent is 8 years instead of 20, it will always have a lesser value. | The process of applying for and having a standard patent examined can take 2 to 6 years, or sometimes longer. |

eHealth Digital Innovation Strategy

Vision: To create new value for our customers in the delivery of healthcare through digital innovation.

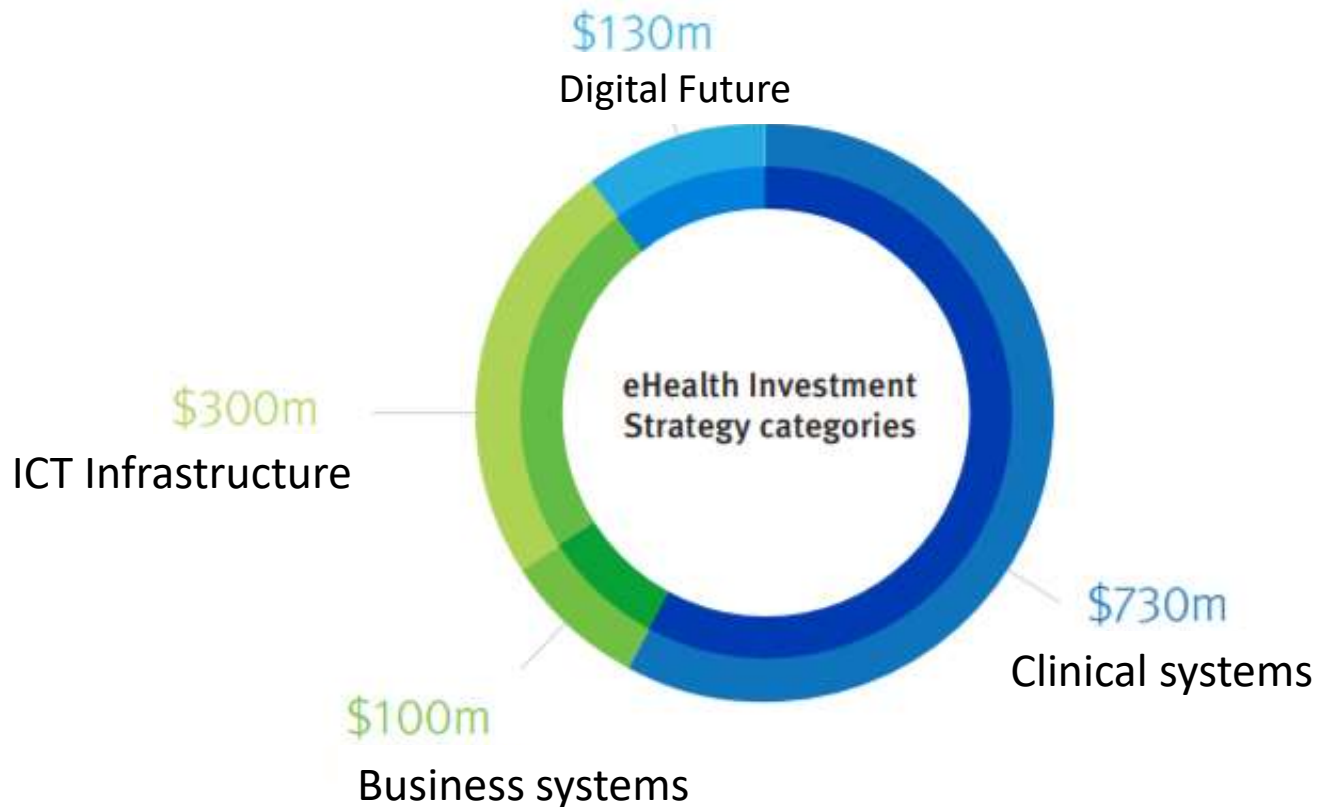
The **focus** of our digital innovation efforts span five digital health themes:

- Precision medicine
- Integrated care
- Population health
- Intelligent enterprise
- Reliable enterprise



eHealth Investment Strategy

Figure 1: eHealth Investment Strategy categories and indicative costings



Digital Future

- Information interoperability
- eHealth foundations

ICT Infrastructure

- Infrastructure Utility
- Contemporary desktop

Clinical Systems

- Patient administration system
- Integrated Electronic Medical Record and digital hospitals
- Pathology system renewal
- Primary and community care
- Digital imaging and transmission

Business Systems

- Finance system renewal

Health data management

The Statistical Services Branch (SSB), Queensland Health:

- centralised collection, processing and validation of data of several major corporate health-related data collections
- developing the Queensland Health Integrated Data System: a state-of-the-art integrated information system
- SSB's Master Linkage File contains over 45 million records and includes nine datasets
- SSB actively engage with Queensland Health divisional business areas to develop and establish statistical standards for data collection

Health Innovation, Investment and Research Office

International collaboration work is backed by an innovative and globally competitive biomedical research community, with focuses on:

- aged and dementia care
- children's Health
- clinical trials
- health systems and design
- health technologies
- maternity and neonatal care
- professional development and doctor training

HIIRO facilitate international investors to identify partners and projects.

Johnson & Johnson's x QLD (2015~)



- J&J launched a \$100,000 contest for medical tech startups, as part of a QLD government plan aimed at attracting healthcare technology companies to QLD.
- Part of \$513 million Advance Queensland initiative.

University Collaborations

- Partnership with James Cook University to research whether proteins in hookworms can treat inflammatory bowel diseases like crohn's and ulcerative colitis.
- Collaboration with University of Queensland to developed more targeted pain relief using spider venom.
- Johnson & Johnson Innovation was born from an agreement between Johnson & Johnson Innovation, QUT and the QLD Government and provides scientists, entrepreneurs and emerging companies with one-stop access to the broad resources of the J&J Family of Companies across the pharmaceutical, medical devices and consumer healthcare segments.



AstraZeneca x QLD (1993~)



Griffith University

- Biodiscovery collaboration – ‘The Griffith University AstraZeneca partnership for Natural Product Discovery’ (NPD).
- Over AUD\$100 million investment.
- Screening over 45,000 biota samples to identify bioactive molecules as potential leads for pharmaceutical discovery.
- Benefited from QLD’s robust legal system, increasingly clear “access and benefit-sharing” (ABS) regulatory environment granting legal certainty over materials studied.
- Provision of the research building and other support through QLD Government.



University of Queensland

- 2015- AstraZeneca and UniQuest- 3 projects selected to receive funding to study new treatments for ovarian cancer, liver disease, and lung and colorectal cancers.

Commonwealth Games legacy- Global hub for innovation



- Games Village to become Gold Coast Health and Knowledge Precinct- one of Asia-Pacific's most advanced health and knowledge innovation hubs.
- \$5 billion project
- A unique 200ha high-tech hub including the Gold Coast University Hospital (Gold Coast Private Hospital x Griffith University).
- Hub to support 26,000 full-time jobs
- 80 million project → world's most high-tech 3D printers to print specialist medical instruments, bones and organs.

International Markets





Brisbane, Queensland

31 October – 2 November 2018

The annual AusBiotech conference has brought together Australian and international biotech leaders and stakeholders for more than three decades, creating a forum to reflect on the sector's achievements and exchange ideas to further advance the sector's standing both nationally and globally.

<http://ausbiotechnc.org>