1.6 Adjust our approach to the development of educational offerings so that there is a greater focus on the whole program.

Online master’s degree
In October 2018, UQ launched a fully online postgraduate coursework program through the edX platform, the Online Master’s Degree (OMD) in Leadership in Service Innovation. This program adopts a cross-disciplinary perspective aimed at developing the transformational mindset needed for leaders in a rapidly changing world. The program is a natural progression to UQ’s activities in the eLearning space, following the popularity of its MicroMasters, which have achieved more than 2.5 million course registrations.

New and enhanced programs

2. Enhancing our high-quality research by improving our capacity to collaborate to achieve greater impact

While rightly proud of our research excellence, over the coming years we need to ensure that our research remains collaborative and continues to achieve great impact. To succeed in our focus areas of enabling healthy ageing, ensuring food security, supporting a resilient environment, developing technology for tomorrow, and positively transforming society, we will be outwardly focused, while at the same time working across disciplines internally.

2.1 Build a One UQ approach to acquiring, maintaining and utilising research infrastructure.

Research infrastructure model
In 2018, UQ transformed its high internal and external researchers identify and access research infrastructure. For increased strategic operations and greater visibility, the University’s research infrastructure was centralised and renamed as Central Research Platforms, which was centralised and renamed as Central Research Infrastructure and equipment. UQ’s current in the process of selecting a software solution that will give researchers and external collaborators easier access to UQ’s research infrastructure resources.

Transferring research data
A tangible step-change in supporting the research community is the reduction in time to transfer data generated by our research community. In 2018, UQ became the first university in Australia to install a 10Gigabit per second network switch, which will enable our Lattice Light Sheet Research Project to handle the large volumes of data expected to be generated by a revolutionary new microscope being installed at the Institute for Molecular Bioscience. The Lattice Light Sheet Microscope data collection—a new modality for 4D imaging of live biological specimens, ranging from individual molecules to small organisms—is expected to generate up to seven terabytes of imaging data per day. To move one terabyte of data at the present rate (one gigabit per second) can take approximately two hours; however, the upgraded links will reduce that transfer time to just over one minute.

1.5 Online master’s degree

The Bachelor of Engineering (Honours)/Master of Engineering became accessible from first year, the Master of Engineering and Master of Engineering Science offered majors for the first time, including in Fire Safety Engineering, and a Mining Leaders Program, a blended learning professional development program offering credit and pathway towards the existing Graduate Certificate in Executive Leadership and MBA qualifications, was launched.
2.2 Actively encourage internal collaboration between researchers from different disciplines and organisational units.

Research networks

Greater collaboration across and between different disciplines and organisational units allows our researchers to better tackle the increasingly complex challenges facing society. These global grand challenges increasingly require multi-disciplinary, multi-institutional, multi-sector solutions.

In 2018 the University Senate approved a new type of organisational entity, the research network. Research networks facilitate collaborative multi-disciplinary research that has a direct societal benefit. Members of a research network share a common research goal but come from various faculties and institutes, facilitating collaboration across disciplines and bringing diverse perspectives. The resulting entities will profile the research strengths of the University in an accessible and visible way that will be easily discoverable to potential collaborators and partners.

2.3 Actively pursue strategic and high-quality international collaborations in research and education.

The University of Queensland – Indian Institute of Technology-Delhi College of Research (UQIDAR)

In September 2016, UQ signed an agreement with the Indian Institute of Technology-Delhi College of Research (IIT-D) to establish the Academy of Research (UQIDAR), which aims to leverage shared resources and expertise across industry, government and academia between nations. The key feature of the partnership is a joint PhD program involving all IIT-D faculties and research institutes. UQIDAR scholars will typically spend three years at IIT-D and one year at UQ, although some students will spend three years at UQ and one year at IIT-D. The Academy is expected to graduate more than 360 students within the next 10 years, with approximately 50 due to begin their programs in 2019.

UQ–University of Exeter (QUEX)

The UQ and University of Exeter partnership, through the QUEX Institute, has progressed significantly since the agreement was signed in June 2017. The first cohort of the joint PhD program commenced with five students at each of the universities, while another 10 students have been awarded places in the 2019 round. A QUEX Institute Board was formed to guide the strategic direction of the partnership and acts as a selection committee for QUEX Institute grant programs, including the UQ Initiator Grants Scheme and Professional Services Fellowship Scheme. The QUEX Institute Partnership Implementation Plan 2018-2020 was also developed and endorsed.

Joint doctoral supervision

UQ signed new joint doctoral supervision agreements with The Technical University of Munich, Germany, during the year and with Sao Paulo State University (UNESP), Brazil, to support increased research collaboration with these key partners. UQ has been selected as one of UNESP’s strategic partners for the PrInt-CAPES, a new funding program for the internationalisation of Graduate Programs and Research in Brazil. The focus of the program is on the mobility of PhD students and faculty to foster the impact of the research produced in the country.

The implementation of the PrInt-selected projects began in November 2018, with a running time of four years.

In April 2018, the Universidade de Sao Paulo (USP) (UQ) also invited UQ to be a key strategic partner for the CAPES–PrInt Program, and an agreement is currently being drawn up.

2.4 Actively encourage researchers to partner with industry, government and the community both within Australia and internationally.

Dow Centre partnership

Thanks to a $10 million investment by The Dow Chemical Company, the University established the UQ Dow Centre for Sustainable Engineering Innovation in 2014, creating a hub of excellence for collaborative research, with three flagship programs: Rapid switch, Low carbon dioxide making, and Low carbon dioxide hydrogen and fuels. Throughout 2018, the Dow Centre made strong progress across these three programs, and also advanced important research to develop next-generation technologies that decrease environmental degradation; develop thin, flexible printed batteries for use in everyday products; and explore affordable, reliable and sustainable energy systems to effect change in impoverished communities in developing nations.

The Dow Chair in Sustainable Engineering Innovation, a prestigious research and teaching position in the School of Chemical Engineering, was also created. The Centre also received a $15 million donation from the Trevor and Judith St Baker Family Trust to fund the Tritium Visiting Fellow, a postdoctoral research position that will focus on advancing the performance, economics and uptake of electric mobility.

Industry 4.0 Energy Testlab

In December 2018, UQ was advised it had been successful in applying for an Industry 4.0 Energy Testlab. Industry 4.0 refers to the fourth industrial evolution involving the connection of the physical world with the digital world and its impact on industry. The Testlab is to be one of six across Australia—an initiative of the Industry 4.0 Advanced Manufacturing Forum funded by the Australian Government and hosted by the Australian Industry Group. Each Testlab is focused on a particular industry sector and will provide a physical space where businesses and researchers can trial, explore and showcase Industry 4.0 technologies.

2.5 Develop a more consistent approach to higher degree by research (HDR) training with a focus on ensuring students build research, transferable and professional skills.

Industry Cohort PhD Program

The Graduate School provides strategic HDR scholarships to facilitate greater connectivity and involvement with industry and end-users, and also provides support for industrial co-supervision arrangements, and placement opportunities for HDR students.

HDR oral examination implementation

UQ is committed to producing high-quality, adaptable research graduates and leads the sector with its implementation from 2018 of mandatory oral examinations (Viva Voice). HDR candidates at UQ now participate in an oral examination with two expert external assessors, in addition to an examination of a thesis, to ensure that UQ graduates not only produce quality research outputs but also communicate their knowledge and contribution to research.
2.7 Develop flexible models to effectively utilise the institution's intellectual property.

UniqQuest

UniqQuest is Australia’s leading university commercialising entity, managing UQ’s intellectual property. It consistently benchmarks in the world’s top five per cent for university-based technology transfer offices.

Since 1984, UniqQuest has built, commercialised and managed an extensive intellectual property portfolio, including more than 1500 patents and 100 companies resulting from university-based discoveries. In August, UniqQuest celebrated 100 startups with an award ceremony at Customs House.

Since 2002, UniqQuest and its spin-out companies have raised more than $700 million in commercialisation revenue which has been generated by UniQuest for UQ. Gross revenue has been more than US$17 billion since 2007.

Among others, UniqQuest was responsible for commercialising the HPV vaccine Gardasil®.

the Triple P – Positive Parenting Program, the image correction technology used in most of the world’s MRI machines, and a potential new treatment for pain through spin-out company Sirtex Pharmaceuticals Pty Ltd—a biopharmaceutical company acquired recently in one of Australia’s largest ever biotech deals. At present, UniqQuest has four molecules and two devices in clinical trials.

JKTech

As the technology transfer company for the University’s Sustainable Minerals Institute (SMI), JKTech provides technical consulting and training services (in mining), geometallurgy and processing), laboratory services, specialist testing equipment, specialist laboratory kits and simulation software products.

Significant activities and achievements during 2018 included:
- JKSimMet software increasing its client numbers to more than 60 per cent of the global market
- JKTech team completing client work in more than 17 countries
- executing a substantial Rio Tinto global contract covering 17 mine sites to roll out a new blast movement model (Value Based Ore Control) that JKTech is commercialising from SMI research.

3. Building engaged and strategic partnerships with a broad range of local and global networks

Engaging and collaborating with the community, industry, government and other research innovators is critical to UQ’s capacity to meet the rapidly changing needs of society. We aim to enhance our approach to external engagement with a partnership framework, customer relationship management system, deeper international connections, diverse income sources and ongoing commercialisation interests.

KEY PERFORMANCE INDICATORS

PARTNERSHIPS

Rank first in Australia for attracting research income from industry

An increase in the proportion of our publications that are co-authored with external international or industry partners

3.1 Build a centralised resource to support, develop and manage significant partnerships guided by a clear partnership framework.

New partnerships committee

In 2018, UQ introduced a new Partnership Framework that adopts a ‘One UQ’ approach to the development of strategic industry partnerships. Building on the current Partner Engagement Strategy for international higher education institutions, the new framework seeks to ensure a more coordinated approach to building and strengthening collaborations with industry partners and ensuring that UQ maximises opportunities for the whole institution.

For UQ’s valued industry partners, the framework will streamline the process of engaging with UQ (particularly with first contacts), support delivery of services, and ensure that UQ provides a comprehensive, consolidated offering to match to each partner’s unique needs. Under the new framework, a Strategic Engagement and Partnerships Committee was established to help coordinate activity related to UQ’s strategic industry partnerships. The Committee includes senior representatives from UQ’s research, teaching and engagement portfolios to ensure broad representation and connectivity between all functional areas.

1 Industry includes research income from the following sources: non-Commonwealth schemes, rural R&D, Australian and international organisations, and Cooperative Research Centre (CRC) R&D income received from state government.

2 Source: Indexes Dataset within Web of Science and is based on a single full year only; the document types included in this metric are Article, Review or Note.

3 Figures for 2018 are preliminary. Data will be finalised in mid-2019.