

# Automation at UQ



## Contents

<b>Strategic drivers for automation .....</b>	<b>3</b>
<b>Automation at UQ .....</b>	<b>3</b>
Case study: UQ disclosure of interests process.....	3
Case study: International student and applicant location automation .....	4
Case study: RPA (Robotic Process Automation) at UQ .....	4
<b>Our approach .....</b>	<b>4</b>
<b>Enable digitisation and automation .....</b>	<b>5</b>
<b>Enhance ability to work digitally .....</b>	<b>6</b>
<b>Streamline IT processes .....</b>	<b>6</b>
<b>Automation Centre for Enablement .....</b>	<b>8</b>
<b>Data analytics capabilities.....</b>	<b>9</b>
<b>Anticipated benefits.....</b>	<b>10</b>
<b>References .....</b>	<b>11</b>

## Strategic drivers for automation

The 2017 – 2020 Information Technology Strategy saw significant investments in automation technologies and practices to help reduce the administrative costs associated with paper-based, repetitive, and manual tasks.

With the support of several organisational units and external partners, the candidature management system and Business Process Digitisation and Automation (BPDA) program have provided workflow automation for 60 processes across areas such as Finance, Human Resources, Student Administration, Office of the Provost, Health, Safety and Wellness, and the Graduate School. These processes have resulted in 209,089 requests being processed in the last three years. In addition to the workflow automation, seven robotic process automations (RPA) have resulted in over 50,000 successful transactions in six months.

Our earlier focus was to build and provide workflow and process automation capability in priority areas across both professional and academic organisational units. The priority areas were those identified as having significant workload challenges, with increased demands and costs savings associated with administrative staff reductions. Having undertaken this work and built substantial technology, process and people capability in this area, this paper proposes a model to support automation as an ongoing agile operational capability.

In order to stay ahead or even on par with the competition, business leaders are in constant pursuit of solutions that will help them do more with less.

Below are key drivers that are prompting IT to further invest in automation:

- increased visibility of University operations and perceived outside influences, combined with the need to comply with government regulations
- significant pressure to continue reducing administrative functions and staffing
- increased pressure from organisational units when it comes to prioritising and implementing their own automation solutions
- increased pressure to reduce reliance on development-heavy tools and external labour forces.

## Automation at UQ

### Case study: UQ disclosure of interests process

Disclosure and management of personal interests is fundamental to maintaining public trust in the University. One uncommon but particularly important interest that needs to be registered is where a staff member has a financial interest in a company that has commercialised University Intellectual Property (IP). The Crime and Corruption Commission Queensland highlighted the increased risk of corruption when researchers hold such personal interests, and when research is ongoing in University facilities.

ITS, PBI and Intelligent Pathways worked with the Office of the Provost to deliver a UQ-wide online disclosure of interests register. The joint initiative delivered training materials, an integrated online disclosure tool and a suite of compliance reports to meet tight deadlines. All fixed-term and continuing professional and academic staff must complete the register annually. Six simple questions prompt an individual to think about the personal and financial interests that should be disclosed. Where nothing changes annually, staff simply need to re-affirm that circumstances have not changed. When circumstances change, staff need to update their information.

The online register replaced the old conflict of interest forms that staff filled out when they identified an interest they thought needed to be declared.

## Case study: International student and applicant location automation

During the COVID-19 crisis, it became imperative to have timely information on the onshore/offshore location of UQ's international student and applicant population. ITS and PBI worked together over three weeks to expedite a robot capable of performing location checks for individual students and applicants in the Department of Home Affairs VEVO system. The robot allowed data no more than a week old to be used as part of the standard UQ data warehouse student and applicant data collections, which has informed key executive decision making and allows detailed forecasting of future student numbers. This has enabled UQ to offer a fee rebate for offshore students using automation (and the data it produces) and respond quickly to student needs in uncertain times.

## Case study: RPA (Robotic Process Automation) at UQ

UQ worked with Blackbook.ai to implement RPA to achieve efficiencies across the University. As part of the effort, ITS (Information Technology Services) worked with Finance, the Graduate School, Human Resources, Student Administration and UQ International to identify and implement automations that enabled University employees to spend their time on higher value activities, with the goal of improving service quality and increasing customer satisfaction.

The joint UQ/Blackbook.ai team has identified over 50 potential automations and worked with functional leaders across the University to prioritise those with the most promising cost-benefit trade-offs. Within six months, the combined team developed and implemented seven automations, which spanned allocations across the spectrum of back-office hybrid, and fully student-facing functions.

The University is already experiencing benefits from its RPA implementation. Automating student language results checks will soon eliminate manual checks and improve processing time by a factor of 1.5. This will save the University 140 days of manual effort per year, and more importantly, it will also improve service time and reduce errors.

## Our approach

It is easy to mistake the increasing presence of digital information and processes for digital transformation, but these processes lack the institutional understanding and maturity, which will continue to cost the University significant resources unless addressed. Enterprise IT will look for support to establish an Automation Centre for Enablement to support UQ staff in transforming existing work practices and support models, on top of existing software and infrastructure investments.

In addition to establishing an automation mindset, UQ must be forward thinking and gain a better understanding of emerging technologies (e.g. artificial intelligence, machine learning, process automation, etc.) and their potential application to our current and future operating practices.

The proposed Enterprise IT Strategy for Automaton is to:

- Look for support to establish an **Automation Centre for Enablement (AC4E)** to educate and support the University to undertake automation activities as part of ongoing operations. The AC4E aims to help identify opportunities to support the University and coordinate cultural, workforce, and technology shifts that enable UQ's strategic direction and value proposition.
- Where possible, support the automation or integration with internal and external systems to further reduce or remove administrative and transactional workloads.
- Identify opportunities to apply advanced machine learning (ML) or exception-based processing for the further removal or reduction of administrative workloads.

- Further establish enterprise reporting and **data analytics capabilities** to establish a baseline measure for more intelligent, data driven methodology and automation.
- Extend the current priority focus areas to IT operations including workload automation.

## Enable digitisation and automation

Given the scope of automation technologies, platforms and processes, it is important to consider several key factors before undertaking automation on this scale:

- Trying to automate everything is costly and can create unnecessary complications.
- Understanding customer expectations and identifying how to deliver the preferred customer experience is a necessary step before undertaking automation.
- Managing “automation anxiety” is an important aspect of automation and IT should not underestimate the level of change management required to successfully manage this transition.

IT must also continue to improve processes to identify suitability and complexity, and prioritise automations based on business value.

Currently, all requests to digitise or automate go through a rigorous analysis, assessment and prioritisation process. To date, the assessments of prioritised processes have resulted in the following (see Figures 1 and 2).

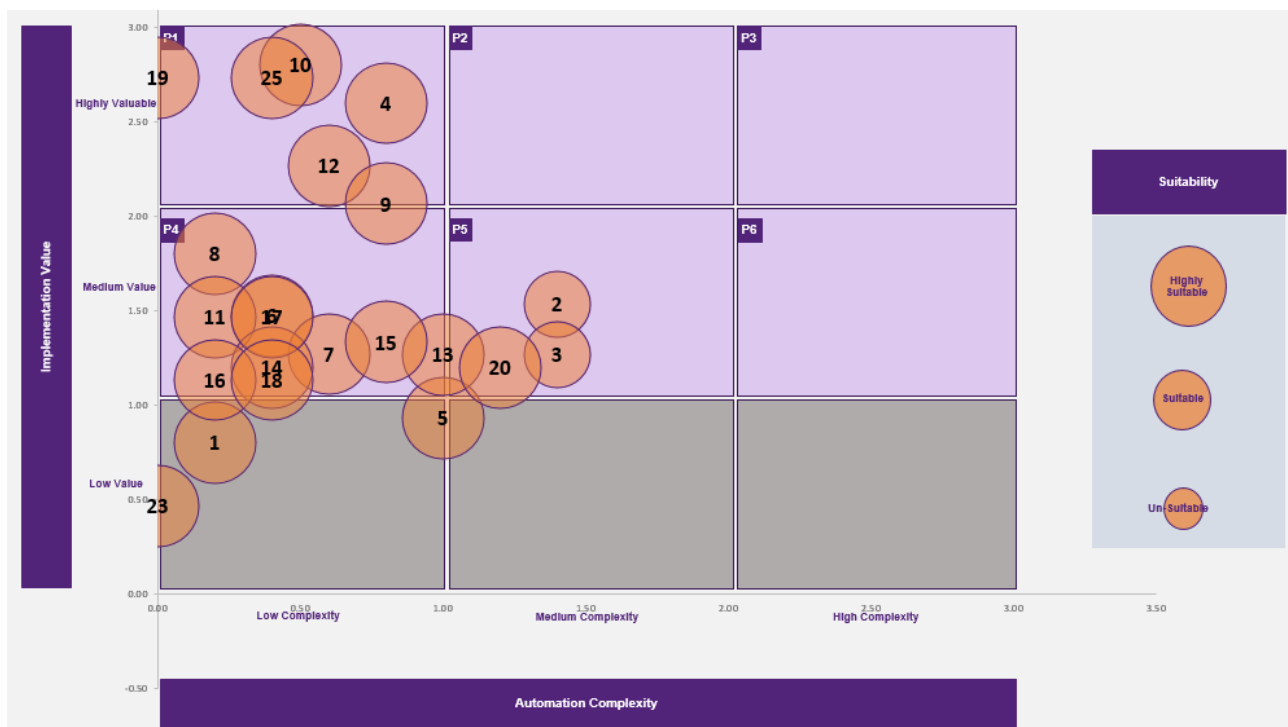


Figure 1: RPA prioritisation results as at 30 July 2020

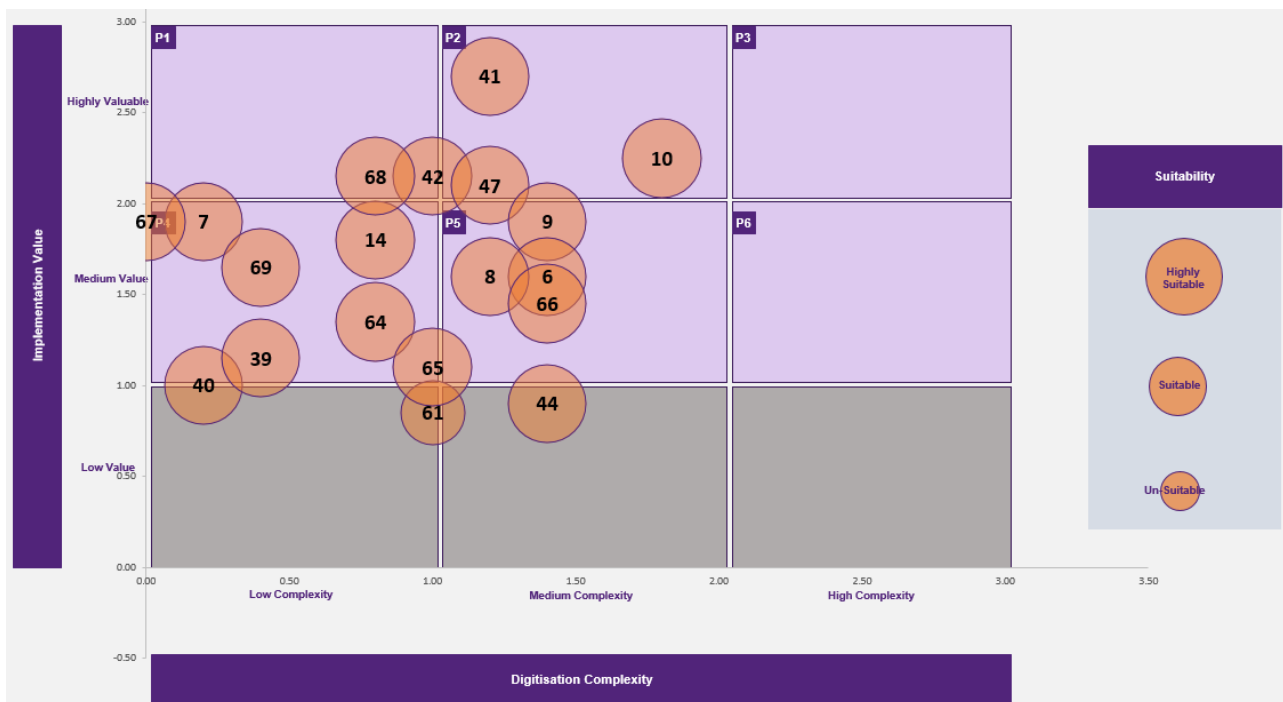


Figure 2: BPD prioritisation results as at 30 July 2020

## Enhance ability to work digitally

To date, IT’s approach has been to partner with external organisations like Intelligent Pathways for our BPD stream and Blackbook.ai for our RPA stream. Their resources supplement UQ’s internal development capabilities in an industry that is seeing increasing demand and talent shortages. As we invest in new support models and technologies (like machine learning), we will look to build on existing partnerships and establish new relationships to provide UQ with competitive advantages.

While investments in automation technology have delivered significant strategic benefits for the University, of equal importance has been the investment in the internal processes, training, and staff development to deliver and support this capability. Establishing the AC4E will allow UQ to build on this investment.

## Streamline IT processes

### On-boarding and new services/applications deployment

Staff and student IT on-boarding optimisation (e.g. automated access to appropriate tools, documentation, projects, team-specific resources, a zero-touch provisioned laptop) can significantly decrease the time it takes new staff or students to be productive. Waiting for a device, software or access on day one is a major stress point. Providing a seamless IT on-boarding experience contributes to UQ’s standing as a world-leading institution.

Investment in a centrally supported application provisioning workflow, that includes financial, licensing and deployment approvals would remove the manual intervention required to distribute/enable applications. Applications could be provisioned to staff based on role and/or discipline.

## Off-boarding and requalifying access

When staff leave UQ or transition to other roles, manual administrative effort is required by multiple teams across ITS to remove staff access to almost 50 different systems. Several audit reports have identified this as a potential risk to the University. Automation could be used based on a person's last day at UQ to initiate a process to remove access to all relevant systems.

## Role management

Improvements and consolidation of group and role management would allow the delegated control of permissions to the wider UQ community. Supervisors could manage access to systems and services by initiating workflows themselves. For example, a supervisor in a school has an administrative officer with access to TRIM, their school in Aurion, and some other systems. If that staff member leaves the position, the supervisor should be able to "move" that access across to their replacement's UQ account. This would help get new staff up and running more quickly, and eliminate manual requests that come to IT support via the Service CRM.

## Tier 1 support, service reporting and configuration management automation

Four key areas that would benefit from automation are:

- Data collection and intelligent reporting across systems (e.g. usage reports from CRM/Jira) to inform process changes to improve response and resolution times.
- Addressing gaps in inventory management (automated configuration management database (CMDB) for all our assets) to help identify duplicate assets and services.
- Application health monitoring (development of health models for all applications and services) and resolution automation (certain health conditions triggering automated healing responses) to reduce administrative workloads.
- Adding or removing staff from email or permission groups and resolving or responding to common enquires. A recent Microsoft professional service review indicated opportunities to automate several significant support tasks, through appropriate automation, and configuration management processes.

## Service CRM and intelligent advisor

The increased adoption of the Oracle service cloud and integrated application also provides a significant opportunity to utilise consistent workflows and RPA integration to facilitate the removal and/or reduction of manual enquiry management, routing and resolution. 2019 saw the development of five intelligent advisors across different business units utilising Oracle policy automation.

## Microsoft 365

The planned rollout of Microsoft 365 to all staff in 2020 will enable the use of PowerBI, Power Automate, Power apps and our existing data integration and process capability. This creates an opportunity to automate a significant number of additional Microsoft Office-based workflows.

## Workload automation

*Workflow* automation allows the routing of service requests and incident reports to the right people, whereas *workload* automation allows forecasting based on data collected or probable scenarios. Workload automation can improve resource management, increase productivity and improve IT's alignment to business goals. The scope of workload automation ranges from single actions to discrete sequences and, ultimately, to an autonomous IT that takes actions based on user behaviour and other event triggers.

## Automation Centre for Enablement

Enterprise IT will look for support to deploy automation capability at UQ in four 'horizons' as described below in Figure 3. This will ensure that the appropriate capability and operating model are in place to support the sustainable and profitable growth of automation at UQ. IT is at the end of the second horizon and is now looking to:

- expand the current toolset and focus on more user-friendly (non-development heavy) tools,
- continue reducing reliance on contractors and consultants and upskill internal resources, and
- commence upskilling key business areas through informal coaching and on-the-job learning.

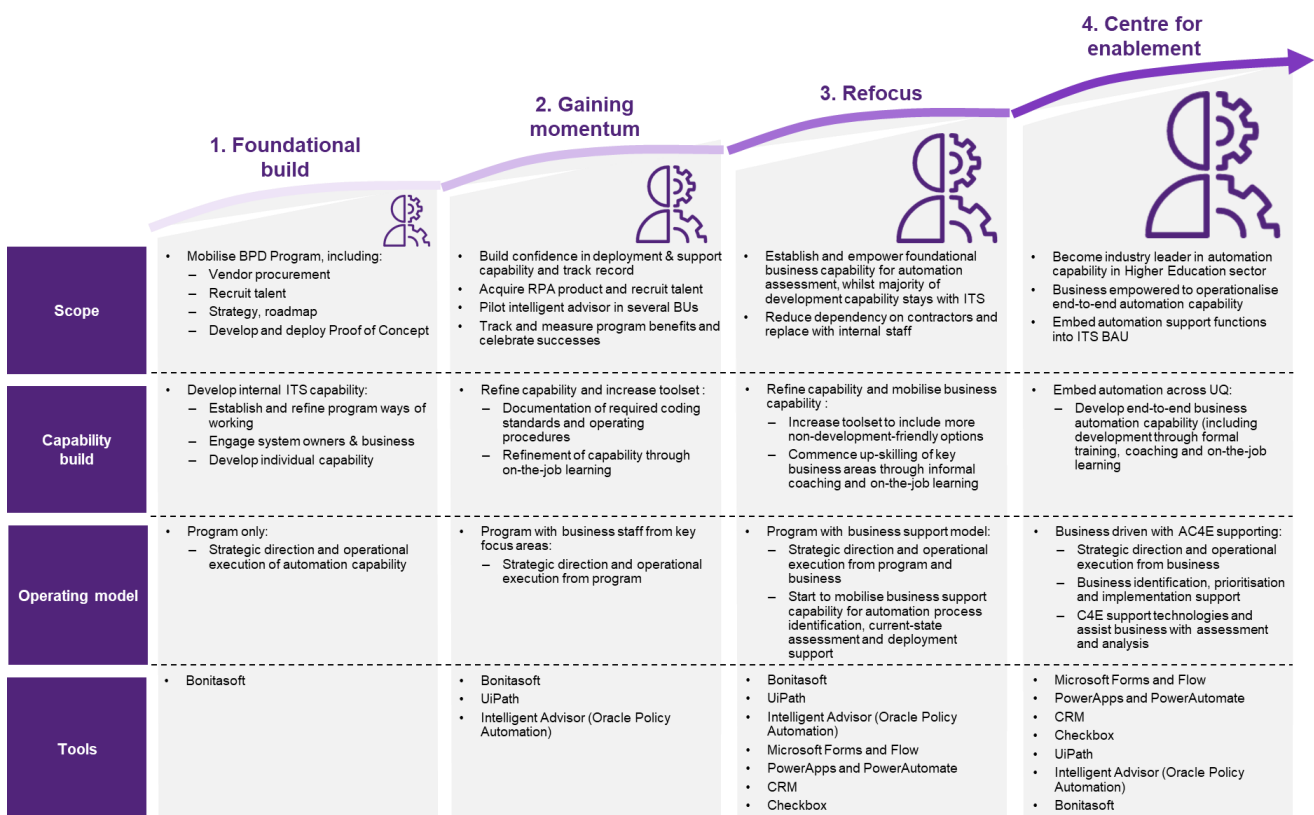


Figure 3: Automation centre for enablement roadmap



## Data analytics capabilities

Business intelligence is a combination of technology, processes, and people that enables faster, better-informed business decisions. It allows for the quick transformation of information into data, data into insight, and insight into action. The collection of data across the University can be used to improve strategy, design, execution and measurement. Business intelligence also provides business leaders timely access to structured and unstructured data that can help them make better decisions.

According to the Senior Manager, Business Enhancement and Compliance projects (ASD, UQ) “The work done in automating manual paper-based processes, and subsequent development of a reporting framework via Reportal (Figure 4), has enabled:

- better visibility and turnaround times of transactional processes,
- a single location for students to lodge and track applications/requests with the University, and
- consistency of decision making and informed development of policy.”

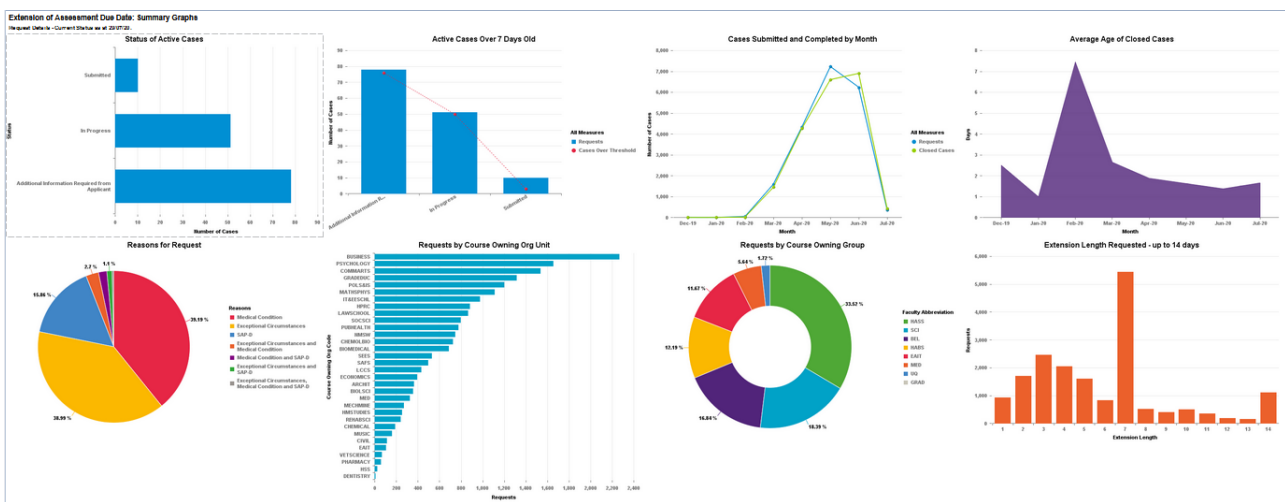


Figure 4: Student administration dashboard for extension of assessment due date process as at 30 July 2020

## Anticipated benefits

### Improved experience for UQ staff and students

Continued workflow and process automation will further improve the staff and student experience through simple and easy to use interfaces and the removal of repetitive, mundane tasks.

### Improved accuracy

Automated processes do things repeatedly and reliably. Tasks done at regular intervals like configuration and provisioning can save time, costs and help achieve higher accuracy when automated.

### Increased visibility

Automated processes increase visibility over UQ operations. They provide an instantaneous view of what is going wrong and allow the University to stay up to date with service, workload and compliance requirements.

### Redirected staff effort

Efficient, automated processes can transition staff from manual tasks to high value services.

### Impetus to innovate

Automation of operations frees up resources from the manual day-to-day administration and provides time to innovate. It also acts as the catalyst for speedy implementation of innovative business models, required to keep pace with changing technology and customer preferences.

## References

1. Patrick Gillespie, "[Rise of the machines: Fear robots, not China or Mexico](#)," *CNN Money*, January 30, 2017.
2. Barb Darrow, "[The Bright Side of Job-Killing Automation](#)," *Fortune*, April 5, 2017.
3. [Scripting language](#), Wikipedia.
4. Clifford Lynch, "[From automation to transformation: forty years of libraries and information technology in higher education](#)," *EDUCAUSE Review*, Vol. 35, No. 1 (January/February 2000): 60–68.
5. R.L. Adams, "[10 Powerful Examples of Artificial Intelligence In Use Today](#)," *Forbes*, January 10, 2017.
6. [Digital transformation in Higher Education](#) , *Process Automation Blog*, 14th September 2018
7. [Strategic Planning and Quality Assurance](#), *Microsoft*
8. Betsy Reinitz, [Consider the Three Ds When Talking about Digital Transformation](#), *EDUCAUSE Review*, June 1 2020

CRICOS Provider Number 00025B