Information Technology Roadmaps
2021 – 2024 Overview

Prepared by: Enterprise IT Architecture
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INTRODUCTION

This iteration of the IT Architecture roadmaps have been reconfigured and simplified to outline the overall intent and direction for architecturally significant activities over the 2021 - 2024 time period, without specifying what the means of meeting those intents is to be. This is to provide leeway for organisational units to use agility and creativity in meeting those needs.

Overall, the leadership of the University are seeking to gain efficiencies and to have access to high quality information to support decision making and measure those gains, as well as being able to demonstrate benefits for projects and undertake reporting for compliance. To be able to support these organisational goals, ITS needs to examine and reorient its underlying architectural structures and to work with key organisational units to develop shared initiatives, which ITS will deliver aspects of.

As such, Enterprise IT Architecture have defined the following Themes for the 2021 roadmaps:

THEMES

1. Refreshing the Foundation

Our experiences outside of the University shape our expectations of technology, and as such our students, staff and collaborators have needs and expectations based upon those experiences.

In order to meet these organisational needs and expectations, fundamental changes to the IT architecture at the data, application and technology levels will be required. The goal of the Foundation theme is to provide a strong architecture foundation to support the needs of a modern, agile organisation.

Improving our management of identity along with automating the provisioning and deprovisioning of access will help staff and students to quickly gain access to the resources they need to succeed.

Cyber Security risks are a global trend, the increasing awareness and shift from being a technology problem to a visible problem organisation wide, this is reflected in the continuation of the Cyber Security Programme of work which has key initiatives enacting the Cyber Security Framework to ensure the University has safe, stable and trusted technology.

Almost as important is the need for simplification across all aspects of the organisations IT architecture. Simplicity helps IT be easier to use, easier to understand and maintain, and is more robust and secure.

2. Modernisation and Consolidation

This focus is driven by the current strategic imperatives for efficiency, consolidation, simplification, and releasing resources for reuse, as well as supporting specific information and reporting needs to demonstrate success in achieving those gains.

There is a global trend towards delivering software, platforms and infrastructure “as a service”, and is being driven by vendor organisations through available licensing and contractual arrangements.

Activities will be undertaken where it makes sense to do so, such as migrating existing applications to the cloud, or by rolling up an identified organisational capability currently met by multiple systems into a single enterprise-wide offering.

3. Enhanced Experiences and Engagement

Life has been difficult for many over the last few years, and inefficiencies that make their experience of their student, academic and professional lives just that bit harder than they need to be impact satisfaction and engagement with the organisation.

As such, ITS is looking to apply technology in ways that will improve the user experience and their engagement with the University.

To help understand how technology can achieve this, additional engagement methods will be utilised, to support the continuous improvement of ITS services.

Feedback provided to ITS through the former Enabling Excellence project indicates sometimes, staff and students desire more capability to discover and utilise services for themselves, rather than waiting for a service department to undertake this for them. In other areas, there is a desire for fuller service. There have also been requests for more efficiencies with information capture tasks, such as form-filling.

It is also necessary to be able to measure and disseminate specific types of information that directly indicate whether the organisation is meeting its goals with respect to improving engagement and compliance. In order to do this we need to ensure we are capturing the data that informs those measures.

4. Research and Teaching

Teaching and Research sit at the heart of the University. ITS is tightly focused on addressing specific pain-points in Research and Enterprise. The goal is to reduce the burden of managing research projects, so that researchers can focus what they do best, undertaking research.

This will be done by improving or replacing selected systems and services that guide and support research activities throughout the research lifecycle.

Teaching initiatives are equally important and ITS is looking to address some persistent pain-points around timetabling, micro-credentials and digital learning.

HOW TO READ THIS PLAN

- Theme = plan on a page
- Dependencies

Information Technology Roadmaps (1/4)

1. Refreshing the Foundation

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UNIVERSITY of OTAGO
Te Whare Wānanga o Otāgo
NEW ZEALAND
SAPERE AUDE

Target Timeframes:	Current State	2022	2023	2024 Target State
Focuses				
1.1 All Architecture	**1.1.1 :** There is a lack of coordinated Data Governance and Management within the organisation. ITS is not fully capable of providing and supporting certain data management deliverables. The approved Information Classification framework have not been applied. Security data classifications are not complete.	Working with key organisational units, lift data capabilities and understanding by leveraging and aligning with a 'Body of Knowledge' and internal documents such as the Information Management framework and security data classifications as reference guides. Establish fundamental practices (data governance, reference & master data, quality and metadata) and data services.	Establishment of core artifacts such as data catalogues, metadata repositories and organisational glossaries enable usage of high-value operational data. Data quality is improving, and security controls put into place. Additional practices from the Data Body of Knowledge are being established.	Data governance practices are maturing. More types of data are coming under governance/management. Curated data is available to the University population via a self-service model.
	1.1.2 : ITS's current identity management practices and architecture are based on assumptions, ways of thinking and methodologies that no longer meet our organisational needs.	Via the Identity Management project, authentication, authorisation and access practices and the principles and products that provide them will be realigned and/or replaced as required. This will increase security, reduce productivity losses, enable automation, provide assurance that users have the appropriate access/permissions and also allow users to utilise a self-service model. Move from an encoded to a workflow based structure.		Identity management practices, and the solutions that provide them will support University needs for the foreseeable future.
	1.1.3 : Our current state architectures are characterised by their complexity.	Update and disseminate principles and guideline documents to ensure those designing and implementing organisational IT deliver solutions that are as simple and maintainable as possible.		A first pass of simplification is complete and further opportunities for improvement sought.
1.2 Information Architecture	**1.2.1:** Currently used integration platform is due for review, with fundamental structural changes needed to meet current and future integration needs.	Re-architect the integration domain utilising a 'data fabric' reference architecture. Develop/obtain skills and toolsets to support and provide the improved capability.	Continue to develop the integration capability, including the capability to process and support real-time data streams. There are co-dependencies with the Data Governance and Management piece and Identity.	The data fabric architecture is in use. ITS has the tools and skills to move, hold and manipulate information as the University requires.
1.3 Application Architecture	**1.3.1**: Some existing applications /domains are due for review.	Learning Management System, EDMS, Library DAMS, OURArchive	Student Management System, OURHeritage, other library systems such as Springshare, Minisys, DODI, Exams	Reviews indicate whether applications need replacing or can wait.
	1.3.2: Individuals and organisational units want to undertake their own development and/or automation.	Utilise low-code platform(s) to enable 'citizen development', so staff and students can undertake simple and rapid development tasks and basic process automation that is able to be supported by ITS.		The platform architecture provides self service capability that is secure and maintainable.
1.4 Technology Architecture	**1.4.1:** ITS, Research and Teaching are needing to consume cloud space and services.	Complete establishment of cloud tenancies and enable frictionless provisioning. Ascertain an initial selection of services that support Research & Teaching needs, develop and socialise.		ITS, Research and Teaching can select and consume standard cloud service offerings on demand.
	1.4.2: Dunedin data centres are physically close to each other which provides very capable high availability options, but does not provide the best disaster recovery capability.	Rearchitect infrastructure with a preference for improved disaster recovery over high-availability for non-critical services which need to remain on-premise. Establish a presence in a geographically distance datacentre to provide a disaster recovery ability and associated plans for workloads which must remain on-premise.		On-premise systems are replicated to a geographically diverse site, with capability and dependencies migrated or scheduled to be moved to external datacentres/services.
	1.4.3: The current Network domain, from the operating model through to current design and implementation is not anticipated to meet future needs.	Deliver DDI replacement project. Define detailed future visions for the network and associated compute. Produce delivery plan and implement. Establish central support for IoT devices for operational and research activities. Establish a new operating model and begin use. Put strategic asset management in place to enable network assets approaching end of life to be renewed and incorporated into a refreshed network design.		End of Life network capabilities have been decommissioned, with a new design in place that includes cloud tenancies and with security enhancements applied. Network assets are being managed and renewed.
1.5 Security Architecture	**1.5.1:** IT Security policies are inconsistently applied. Multiple administration points encourage work-arounds.	IT Security rules, policies & procedures formalised where necessary. Administrated via a centralised IAM & Governance platform with access logs feeding to SIEM.		Centralisation of identity and access functions is underway. Policies can be enforced. Circumstances that created work-arounds are being addressed.
	1.5.2: Ability to detect, identify and manage security events is inadequate.	Multiple initiatives to collect, process, analyse, report & alert on security-related events and incidents organisation wide.		The organisation is difficult to breach at the application or network levels. If an intrusion or other security breaches do occur, they are automatically detected and contained, and security staff alerted to the incident/event.
	1.5.3: Protective safeguards for critical services are a work in progress.	Multiple initiatives to prevent unauthorised access across different architectural layers and levels of granularity. Rearchitect infrastructure based on zero trust principals – identity health, device compliance and telemetry. Document incident management processes.		

Information Technology Roadmaps (2/4)

2. Modernisation & Consolidation

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Target Timeframes:	Current State	2022	2023	2024 Target State
Focuses				
2.1 Consolidation & Enterprise Gap Coverage	**2.1.1:** The Transition Project is working with departments to move applications and servers to central support, including moving to an existing enterprise application where suitable. Some business capabilities do not have an enterprise level equivalent.	Gaps in the enterprise application and/or capability offering that are raised during departmental transition will be assessed. They could result in small projects to procure new capabilities for multiple departments; BAU/continuous improvement work to incorporate specific departmental needs into an existing enterprise solution; or, simply moving the capability 'as-is' into ITS.	ITS continues with consolidation work based on the discoveries made by the Transition project.	Departmental applications and servers have been incorporated into existing solutions or new capabilities obtained.
	2.1.2: 'Continuous Improvement' groups yet to be established.	Continuous Improvement Groups and practices have been established and are providing value-driven change requirements to ITS. Demand is being analysed and managed either as a BAU initiative or as a project. Architecture reviews are done to identify trends or needs that may need addressing across the IT Architecture.		Processes for incorporating continuous improvement into the IT pipeline are mature. Demand is managed and new initiatives deliver organisational value.
	2.1.3: Hardware supporting the landline University phone capability at the Dunedin campus is obsolete. Consolidate onto Microsoft Teams.	Softphone capability gradually ramped up, with phones being moved to the service over time. Solution found and implemented for landline phones where Teams may not be suitable. Anticipate increase in mobile use, initiate Mobile Device Management practices.		Enterprise wide IP based Telephony has been delivered. University data on mobile phones has been secured.
	2.1.4: 'Intranet' information is scattered across multiple information systems, including bespoke systems.	Develop a standard methodology to move organisational intranet needs to the Microsoft platform (SharePoint Online, Teams, AD etc.) Develop plan and begin migrations.	Any remaining migration work from 2022 is completed. Examine and migrate those parts of OURDrive that are being used for Intranet functions to Microsoft platform where suitable.	Consolidation onto the Microsoft platform is complete. Functions that were unsuitable for the Microsoft platform are being addressed.
2.2 Migration to Cloud	**2.2.1:** Core operational systems (HR, Finance etc.) are maintained on-premise. Outcome of HR & Finance Review pending.	Begin core modernisation. Identify future HR & Finance cloud platform, begin process to establish and migrate HR capabilities. Develop plan for Finance and Supply Chain integration or migration.	Projects to move HR capabilities and processes onto new platform have begun. Finance is moved to the cloud. Scheduling/planning for others is underway.	Cloud migration of core systems is well under way, with remaining systems scheduled.
	2.2.2: Blackboard's vendor will no longer support the on-premise product.	Migrate Blackboard to the cloud inline with vendor best practices.	Blackboard has been successfully migrated to the cloud and is in use with additional features available such as the mobile app.	
	2.2.3: Documents held on the Microsoft platform are unable to be managed by Corporate Records.	Apply/enable information management practices within 365 and apply information classification schemes. Begin moving capabilities met by OURDrive to SharePoint Online or other solutions as required.	Complete migration off OURDrive by April. Roll out information classification to other cloud services/platforms as needed.	Corporate records are managed on the cloud environments. Continue moving off of OURDrive.
2.3 Asset Identification and Optimisation	**2.3.1:** Asset information is either not captured or of poor quality. The data is held on systems that make it difficult to utilise the information.	The Property Services project will enable high-quality information about built-assets to be used for strategic planning and optimisation. The IT Asset Management project will provide similar capabilities for IT hardware and software assets. Capability gaps in the Resource Booker application will be addressed to enable increased utilisation of assets.		Projects have completed and enable quality information for the management of organisational assets.
	2.3.2: The organisation does not recognise data and information as an asset.	Formally recognise data as an asset. Develop standardised organisational glossary and Master Data definitions. Develop a Metadata catalogue. Take a data inventory, improve data quality and develop data catalogue.		Data is valued and managed in a similar way to other organisational assets.
2.4 Reporting & Analysis	**2.4.1:** The 'Business Objects' reporting system is aging. Moving core systems to the cloud will require changes to reporting.	Review and plan how to meet operational reporting needs in a hybrid cloud environment. Begin implementation.	Continue to build and mature operational reporting capacity in a hybrid cloud environment.	Decommission the 'Business Objects' application.
	2.4.2: Lack of foundational data stores and software to support dashboarding and Business Intelligence activities.	A team is formed and trained to build and manage cloud data stores and associated capabilities. The existing Business Intelligence project is progressed.		A modern reporting and analysis capability has been formed and is maturing.
2.5 Automation	**2.5.1:** The organisation is taking its first steps into automation. ITS to support and enable this process.	Support tactical deployment of Robotic Process Automation and development of a Centre of Excellence. Enable the capture of business rules (including approvals) for reuse.	ITS is utilising automation capabilities and incorporating into Architecture Vision/Solution Designs. Tactical solutions have been replaced with well-designed integrations.	Maturity is improving and a range of automation capabilities are in place.

Information Technology Roadmaps (3/4)

3. Enhanced Experiences & Engagement

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Target Timeframes	Current State	2022	2023	2024 Target State
Focuses				
3.1 Enabling Self-Service and Self-Reliance	**3.1.1:** The University community has to rely on service departments to undertake identity and access tasks for them.	The Identity and Access Management project will enable the University community to undertake identity and access related tasks themselves, and not have to wait.		The project has been delivered and the University community has this capability.
	3.1.2: Staff who are looking to collate data themselves for analysis do not have ready access to quality data.	An outcome of the Data Governance and Management project will be to provide data catalogues and access to a high quality, curated selection of data for consumption by the University Community.		Data is available. Specialist teams such as SARO and ITS will continue to assist with complex strategic and operational analysis and reporting needs.
	3.1.3: Staff or groups who have need of infrastructure services must wait while they are manually undertaken/built.	Service offerings suitable for self-service are identified. Plan developed for implementation and support.	Initial service offerings released via service catalogue.	Infrastructure-as-a-service is in place and maturing.
	3.1.4: Public and University communities members wishing to make requests must find forms, lodge them and wait for service teams to respond.	Further develop ITS Cloud Solutions team. Migrate suitable forms to CRSM. Identify candidate locations for other forms.	Utilising workflow and automation tools and guided by continuous improvement groups, expand self-service capability.	Users can easily find and use forms, and their requests progress quickly via automated workflows.
	3.1.5: A lack of security awareness within the University community puts everyone at risk of hacking/security breaches.	The Cyber Security Awareness project delivers cyber security training to the University Community, as part of both on-boarding and on an on-going basis.		The University community actively contributes to decreasing risk.
3.2 Simplify Engagements & Interactions	**3.2.1:** Lengthy wait times to obtain computers and software.	The Standard Otago Desktop project is commenced and delivered. Cloud-based Application Delivery Platform established for students and BYOD. Student VDI decommissioned.		Decrease in ITSS workload, faster turnaround on machines and software.
	3.2.2: Over time, the University Website has had a lot added to it due to many different organisational needs.	Web Refresh Project is commenced and implemented. Core marketing functions are transferred to new platform, with ancillary functions moved to other locations/platforms which are more easily found by the University and external community.		Organisational functions previously facilitated by the webpage have been moved to more logical systems/solutions.
	3.2.3: Staff, students and the wider community cannot engage with the University via their social media or other accounts.	The Identity Access and Management project will provide a limited ability to access some University systems via a range of federated logins, via other trusted account types (e.g. Google, Facebook, ORCID).		University and external community have a limited capacity to use non-UoO accounts.
3.3 Efficiency improvements across the student lifecycle	**3.3.1:** An initial round of work has been undertaken to improve the Student Management System. Further enhancement opportunities have been identified and a cloud impact review is due by the end of 2021. There is a lack of strategic product oversight.	The identified enhancement opportunities are reviewed and sustainable options explored for meeting the needs described. eVision is migrated to the cloud.		The SMS has been moved to the cloud and enhancement opportunities addressed.
3.4 '360 degree' view of students	**3.4.1:** The organisation cannot track the development of a student across their student lifecycle, nor monitor their well-being.	ITS is adopting an overall data architecture strategy to identify silos and duplication of information. We will work with the University leadership to identify, make available and secure the information needed to support student success and wellbeing.		Information is available to help identify at-risk students.
3.5 Enabling the Measuring of Improvement	**3.5.1:** The University wants to be able to surface information about student engagement. **3.5.2:** The Carbon Zero initiative needs to be able to baseline and measure improvements.	Collaboration between ITS and other business units is required to determine what information needs be measured, if that information is currently captured and to what quality level, and how to collect, manage, transform and surface that information. There are dependencies on strategic and IT projects as well as other initiatives within these Roadmaps to deliver these capabilities. Any gap areas, where information is not currently captured need to be identified and solutions to address these found.		The University is able to utilise high-quality information to inform and support specific initiatives.
3.6 ITS Facilitated Engagement	**3.6.1:** The organisation has needs that ITS would like to understand more clearly.	Continuous Improvement in partnership with ITS inform need for core organisational capabilities. Strong relationships with other organisational units provide another input mechanism to recognise organisational needs.		ITS is a trusted partner who helps the organisation to recognise and deliver organisational value.
	3.6.2: ITS has compliance obligations to meet.	Help the organisation with determining effective and efficient solutions for meeting known and unknown compliance needs, looking to reuse or revamp existing or planned capabilities where possible. Design patterns are developed to aid future endeavours.		Strong foundations are in place that enable the University to quickly meet compliance needs.

Information Technology Roadmaps (4/4)

4. Supporting Research and Teaching

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Target Timeframes:	Current State	2022	2023	2024 Target State
Focuses				
4.1 Transform Research Administrative Systems	**4.1.1:** Software applications that support the research lifecycle are difficult to use and support, or otherwise not meeting organisational needs. This is true across multiple organisational units that support the research lifecycle.	Progress existing projects that are in the Evaluate stage of the project portfolio (ORIS, RDM), and begin work on a research Picture Archiving solution. Produce a domain-level roadmap specifically for Research Support, that takes the needs of the entire Research Lifecycle and the organisational units that support it into account, including but not limited to R&E, the Library, the Publications Output and Ethics.		There is a clear understanding of what is needed in this space and how it is going to be achieved. Initial projects are being or have been delivered.
4.2 Leverage Multiple Platforms to Facilitate Leading-Edge Research	**4.2.1:** Researchers require computing power, data transfer capabilities and places to store their research data. Need may be large or small, and service offerings should suit all sizes and scales of research work.	Updates and upgrades made to local storage options. Pilot initiatives to increase data transfer speeds and collaboration with REANNZ for fast, secure connectivity to selected cloud providers.	Long-term cloud-based storage (cloud pools) is becoming available, and on-premise cloud-like services are being trialled in the Otago Science DMZ. eduGain is used to gain access to additional international research platforms.	Storage capacity for research data expanded. Platform collaboration opportunities being explored with NeSI, REANNZ, NZ University's, CRI's and AARNET.
4.3 Research & Teaching Computing	**4.3.1:** Departments are running their own mini High Performance Computing (HPC) clusters in isolation. Courses with software requirements can have high overhead for students.	Establish a 'mid-tier' HPC computing resource centrally within ITS and consolidate Department run HPC clusters. Procure and implement an platform for delivery of software applications and data which allows universal access form any device and curated experiences for a course.		HPC offerings are clearly defined and readily available for common use cases. Delivery of software and data for courses is simplified and experience enhanced.
4.4 Support Research IT Events & Teaching Activities	**4.4.1:** Research IT training and mentoring for early career research students and staff. Promote and support initiatives such as Software Carpentry and focussed events including the Research @Otago Symposium and collaboration events with eRA, REANNZ and NeSI.		Support for these events and teaching activities continues. Over time and as core services become more automated and require less training effort, begin to shift the training focus to provide more value in the research and teaching spaces.	
4.5 Student Attendance Information	**4.5.1:** Multiple departments capture and hold student attendance information. This information is used both for assessment and for pastoral care/wellbeing.	The IT Transition team is discovering these (usually bespoke) and will be moving these bespoke applications to central support. The information in these systems needs to be made accessible for use to support student success and wellbeing at a higher level than individual departments/schools.	Architect a centralised solution that will allow consolidation of the bespoke applications whilst continuing to meet departmental needs. Enable attendance information to support Student 360 degree visibility.	Ensure that this information is secure, yet accessible for analytics. Attendance taking is able to be supplied via a centralised capability.
4.6 Micro Credentials	**4.6.1**: Multiple departments are looking at micro credential capabilities and some issues are with the Ministry of Education (MoE) for resolution.	Run a series of discovery workshops/ information collation exercises to understand the use cases associated with micro credentials. Hear back from MoE.	A roadmap for this capability has been developed and aligns with the University's strategic direction. Selected tactical solutions may be utilised in the short to medium term.	
4.7 Room Bookings for Teaching Activities	**4.7.1:** Departmental rooms and some additional resources are being on-boarded to Resource Booker. Scheduled for completion in 2021.	A solution to address known gaps in the Resource Booker capabilities will be determined and work will begin to implement it.	All rooms, equipment and other resources that are available to be booked are able to be booked, including those where chargeback/invoicing is involved. The University is able to make more efficient use of its research and teaching resources. There is an expanded range of rooms for timetabling purposes.	
4.8 Digital Teaching, Learning and Assessment	**4.8.1:** The Digital Exam capability utilised in 2020 has been retained for risk management purposes. **4.8.2:** The organisation needs to look at enhancing the teaching, learning and assessing functions via technology.	Examine any new assessment capabilities that may be available as a result of moving Blackboard to the cloud and incorporate into the LMS review. Undertake the LMS review and also review the findings of the Transition project to identify current state and organisational need.	A roadmap for this capability has been developed and aligns with the University's strategic direction. Selected tactical solutions may be utilised in the short to medium term.	

Information Technology Roadmaps
Summaries for the Architecture Layers

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Technology/Physical Layer

The proposed move to focus on disaster recovery influences and emphasises multiple other initiatives and also aids in risk reduction in the case Dunedin based data centres are unavailable. Operational applications that are run on-premise, along with the establishment and improvement of compute and storage services within the cloud.

Work also needs to be done on aspects of the University network, some to support decommissioning, some to consolidate departmental networks onto the University network, and also to continue to meet the University's needs and expectations for network connectivity and quality of service.

Throughout these roadmaps we consider alternative service delivery methods, particularly 'as-a-service' (aaS). As part of this, most voice calls will be moved to a 'softphone' capability, as well as development of other 'Infrastructure as a service' (IaaS) capabilities.

Information Systems (Data & Applications) Layer

Establishment of sound data governance and management, based on a best-practice framework such as the 'Data Management Body of Knowledge ' (DMBOK) is critical for most of the themes and focus areas in this set of roadmaps.

It is an enabler for the efficiency/automation and reporting/BI related initiatives, as well as supporting the compliance, governance and security related ones. Other focus areas, such as changing the integration architecture from 'point-to-point' to a 'data fabric' pattern and establishing specialised data stores provides structures and pathways for storing and making use of data. Business Intelligence leverages all aspects and adds further value.

Identity and access management (IAM) is the backbone of the organisations IT operation. Alternatives to how we undertake authentication, determine 'identity' and manage access are needed to support efficiencies and improve our security practices. It is an important place for enforcement of security policy, rules and procedures. Other initiatives to support automation and workflow will help with delivering a secure IAM system or with delivering efficiencies. ITS will look at how more advanced automation capabilities can be facilitated.

Initiatives that are expected to surface more changes over the next year or two at this level include the ITS Continuous Improvement groups, the Transition project, as well as the broader improvement initiatives undertaken outside of ITS. The decoupling of certain functionality from the University website will also create change, and necessitate an architecture exercise for organising 'intranet' like content and bringing it under information management governance.

There are fewer items related to Teaching and Learning in the 2021 set of roadmaps due to the scheduled LMS review and related committees actively at work in this area at the time of roadmap development. Apart from the necessary shift to the cloud for Blackboard, the roadmaps in this area will need fleshing out once these activities are completed.

Another piece of work anticipated to need further definition in the next round of roadmaps is in the research management and support area, with two projects in the portfolio potentially covering multiple areas, including the NZRIS national research database upload via the ORIS project.

Organisational or 'Business' Layer

At the organisational layer, there are initiatives that enable organisational units to work in ways that they have asked for, including self-service, low-code automation and other pieces of work that provide ways for the University to undertake some IT related task for themselves. The provision of low-code platforms, curated and consumable data services and suchlike ensure that this work sits within an ecosystem that still enables us to meet the organisations compliance and other management needs.

Investigation and planning is needed to address newly identified business gaps, and to look into known problem areas such as micro credentials and some use cases involving the resource booking. This work will inform future roadmaps.

The University also needs to undertake work and development at this level to provide guidance for and to ensure the success of the IT initiatives. This includes scheduled reviews, the development of governance practices and frameworks, as well as policy, procedure and processes.

Security Architecture

Security is applied across each layer of the organisational architecture, with the bulk of these being tactical steps to cover identified gaps at or across the layers, including processes and practices.

The success of the overall Security strategy is not only dependent upon ITS and its internal practices and projects, but also upon strategic projects run by other organisational units recognising and incorporating security requirements into their planning and delivery.