IT Strategic Plan 2017-2025

Condensed version

Anthony Molinia, CIO
IT Services, Resources Division

THE UNIVERSITY OF
NEWCASTLE
AUSTRALIA

IT Strategy on a page

NeW Futures Strategic Plan

Technology Horizons

Client Centricity

Omni-Modal IT

IT Goals

Sustainable Value

Intelligent Connected Experience

Organisational Agility

Information Driven Excellence

Lead IT Strategies

Flexible Learning

Research Power

iCampus

Proactive Engagement

Data Services

Future Workforce

Sustainable Service
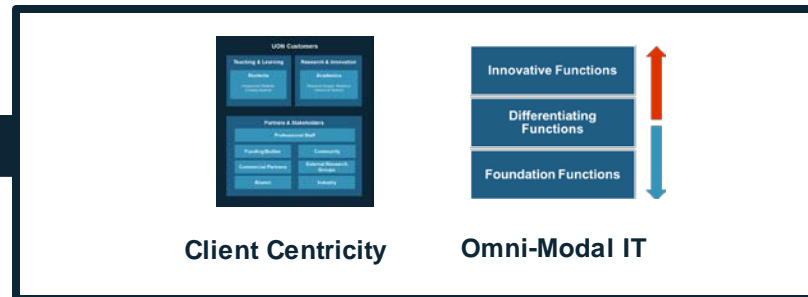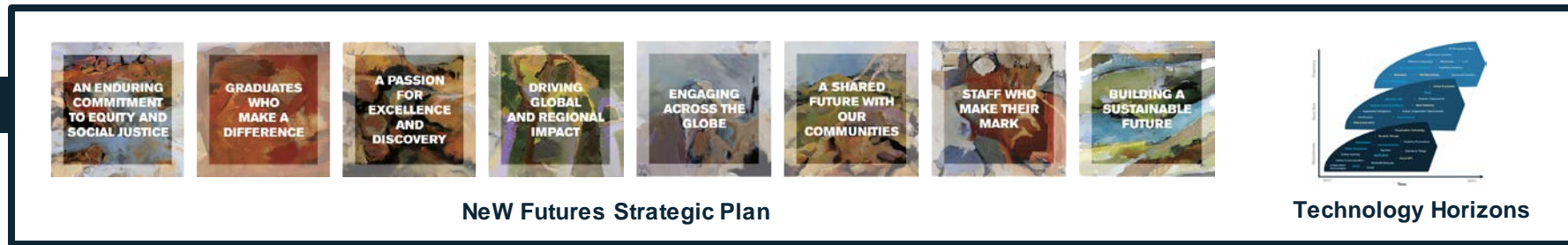
Technology Horizons

Understanding trends and technologies impacting the global higher-education industry is critical for creating a successful IT strategy.

Out of the rankings of strategic technologies driving the higher-education industry from multiple sources (Gartner, CEB, NMC, Educause), the IT Strategic Plan considers those affecting or most likely to affect UON's business models for teaching, learning, research and innovation in 2017 and beyond.
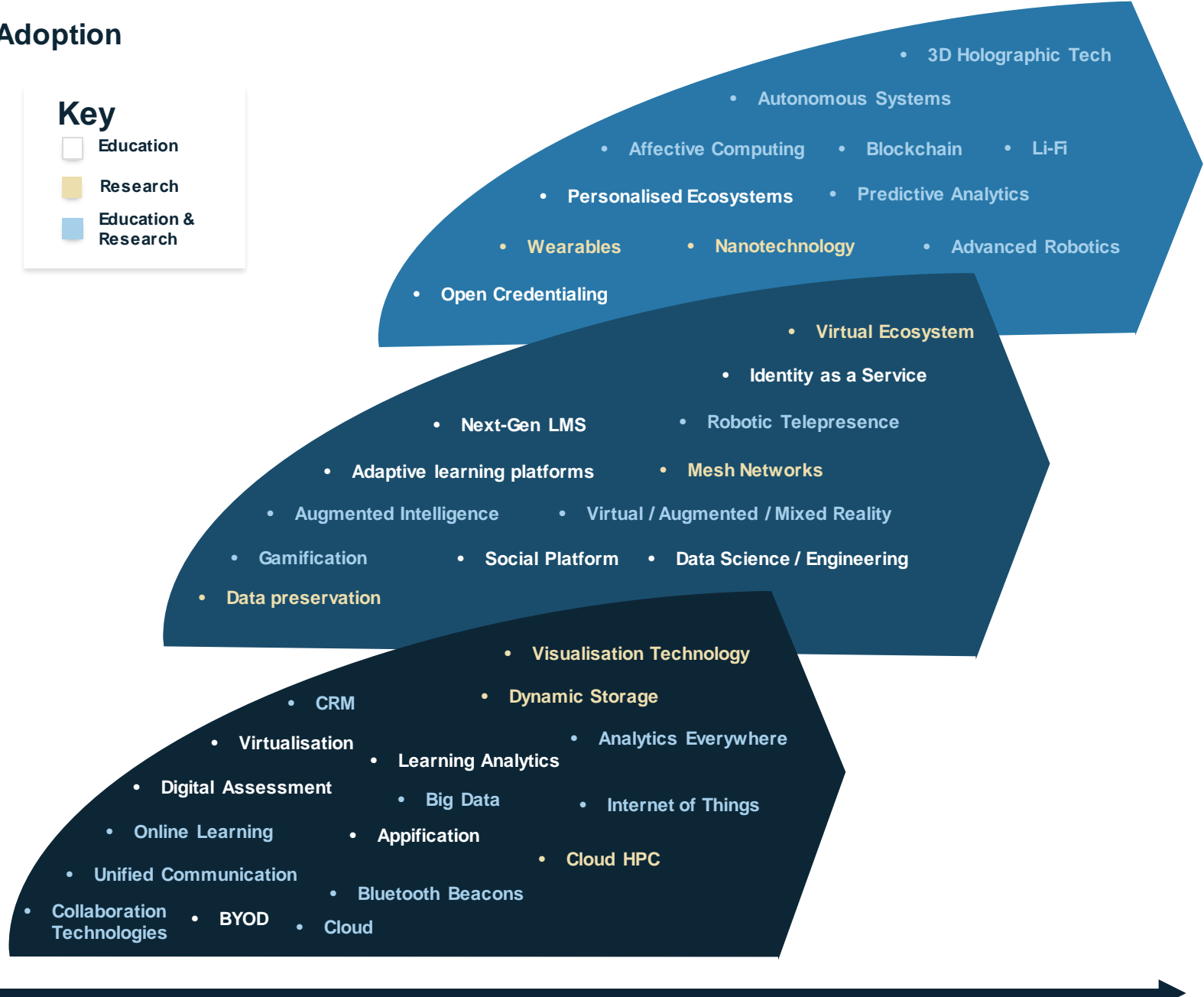
Value / Adoption

Key
- ☐ Education
- ☐ Research
- ☐ Education & Research

Visionary
- • 3D Holographic Tech
- • Autonomous Systems
- • Affective Computing   • Blockchain   • Li-Fi
- • **Personalised Ecosystems**   • Predictive Analytics
- • **Wearables**   • **Nanotechnology**   • Advanced Robotics
- • **Open Credentialing**

- • **Virtual Ecosystem**
- • **Identity as a Service**

Next Gen
- • **Next-Gen LMS**   • Robotic Telepresence
- • **Adaptive learning platforms**   • **Mesh Networks**
- • Augmented Intelligence   • Virtual / Augmented / Mixed Reality
- • Gamification   • **Social Platform**   • **Data Science / Engineering**
- • **Data preservation**

Mainstream
- • **Visualisation Technology**
- • **Dynamic Storage**
- • CRM   • Analytics Everywhere
- • **Virtualisation**   • **Learning Analytics**
- • **Digital Assessment**   • Big Data   • Internet of Things
- • Online Learning   • **Appification**
- • **Cloud HPC**
- • Unified Communication
- • Bluetooth Beacons
- • **Collaboration Technologies**   • **BYOD**   • Cloud

2017

2025

Time

A Client-Centric Vision

IT Services puts UON's clients at the centre of everything it does.

Students and academics are acknowledged as the epicentre of the University and therefore of IT Services. As such, the IT Strategic Plan targets the needs of prospective and existing students, as well as those of research groups and centres.

By partnering with educators, researchers, divisions, alumni and external stakeholders, IT Services works to give our students the best opportunity to succeed in their education endeavours. We will also enable the academic staff to achieve their research outcomes.

We are committed to support the UON's community engagement and the delivery of the NeW Futures Lead Strategies to ensure UON's business targets are met.

Our Mission

To be a pivotal strategic partner, a trusted adviser and enabler of organisational, education and research strategies.

We will transform ourselves from a service provider to a strategic asset, delivering innovative and value-adding solutions to the University.

UON Clients

Teaching & Learning

Students

Prospective Students, Existing Students

Research & Innovation

Academics

Research Groups, Research Centres & Partners

Partners & Stakeholders

Educators	**Researchers**
Professional Staff & Divisions	**Community**
Commercial Partners	**Funding Bodies**
Alumni & Philanthropy	**Industry**

Innovative Functions (Front Office)	New Ideas	Next Competitive Advantage	Rapid Change	Uncertainty Learning	Prototyping
Differentiating Functions (Middle Office)		Standardisation			Agile Delivery
Foundation Functions (Back Office)	Common Ideas	Operational Efficiency Compliance	Stability Continuity	Predictable Demonstrable	Waterfall Approach
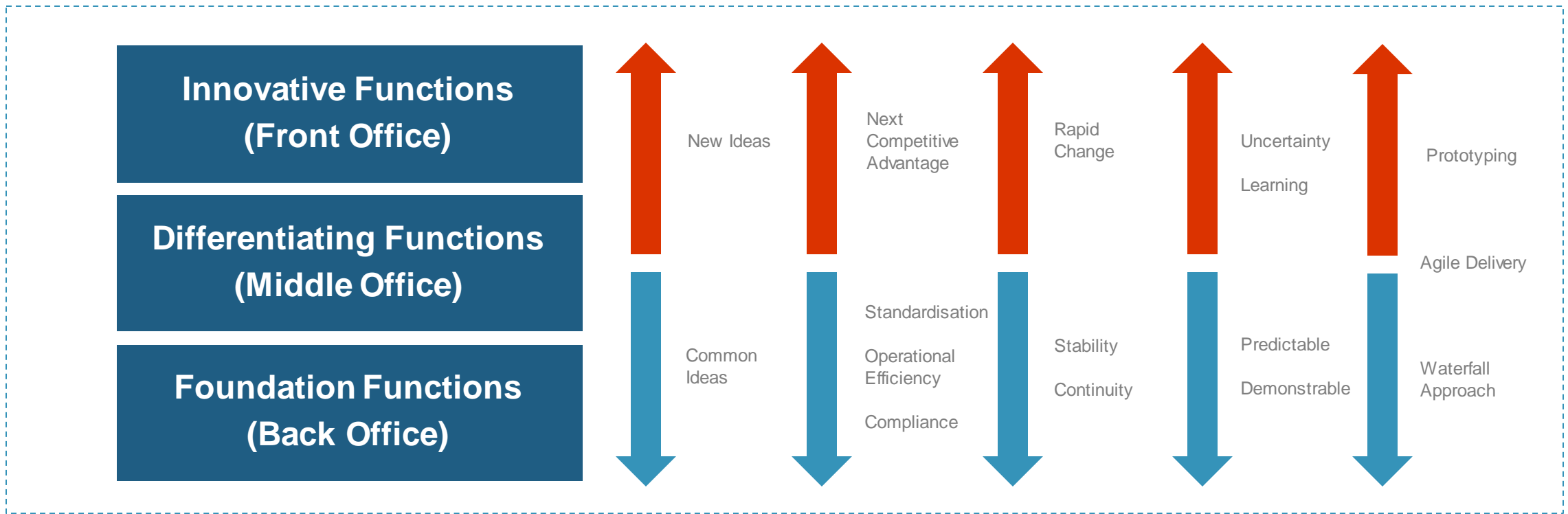
Omni-Modal IT

Omni-modal IT is the practice of coherently managing multiple styles of work, with focus varying from predictability to exploration. Modes range from renovating the legacy environment into a state that is fit for a digital world, through to experimenting to solve new problems and optimising areas of uncertainty.

Business functions and applications are segmented by the activities performed, the problems they address, their rate of change and the distinctiveness of the business capabilities they embed. Omni-modal IT recognises that UON requires several modes of operation with different governance, sourcing, funding, data/process integrity, software development and deployment models.

IT Goals

Our IT Goals define how IT Services contributes to UON's success.

The four IT Goals have been designed to put students and academics front-and-centre. Whilst the IT Goals have targeted specific NeW Futures Lead Strategies, the diagram demonstrates that the goals do not have a unique mapping and will deliver business outcomes broadly across many NeW Futures Goals concurrently.

AN ENDURING COMMITMENT TO EQUITY AND SOCIAL JUSTICE

ENGAGING ACROSS THE GLOBE

STAFF WHO MAKE THEIR MARK

Organisational Agility

A focused execution and a flexible technical architecture to enable UON to become more responsive to business needs and market competition to support financial sustainability.

Intelligent, Connected Experience

Clients interact digitally with UON anywhere, anytime through a rich set of contemporary physical and virtual services.

DRIVING GLOBAL AND REGIONAL IMPACT

A PASSION FOR EXCELLENCE AND DISCOVERY

Sustainable Value

Ensure the most effective, ethical and efficient use of UON resources to generate business value and fulfil client demand.

GRADUATES WHO MAKE A DIFFERENCE

Information-Driven Excellence

UON leverages data analytics to support decision making, predict and shape demand, improve quality and exceed client expectations.

BUILDING A SUSTAINABLE FUTURE

A SHARED FUTURE WITH OUR COMMUNITIES

Lead IT Strategies

Seven Lead IT Strategies will transform the way UON consumes information-related services and interacts with digital technologies.

The Lead IT Strategies in the following slides define the portfolio of strategic key initiatives that will realise the IT Goals over the coming years. Supporting the NeW Futures Goals and Lead Strategies, the Lead IT Strategies provide tangible, measurable benefits, including the development of new and existing capabilities for IT and the broader University.

Flexible Learning

Research Power

iCampus

Proactive Engagement

Data Services

Future Workforce

Sustainable Service
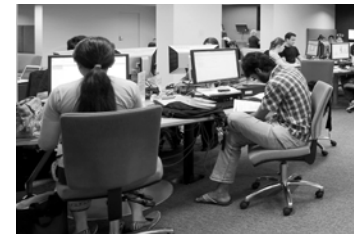
Flexible Learning

As students' expectations for higher education evolve, so will UON's teaching and learning offerings.

GRADUATES WHO MAKE A DIFFERENCE

AN ENDURING COMMITMENT TO EQUITY AND SOCIAL JUSTICE

BUILDING A SUSTAINABLE FUTURE

Visionary
- 3D Holographics
- Affective Computing
- Open Credentialing
- Next-Gen LMS

Next Gen
- Adaptive Learning
- Gamification
- VR / AR

Mainstream
- Learning Analytics
- Digital Assessments
- Online Learning
- Appification
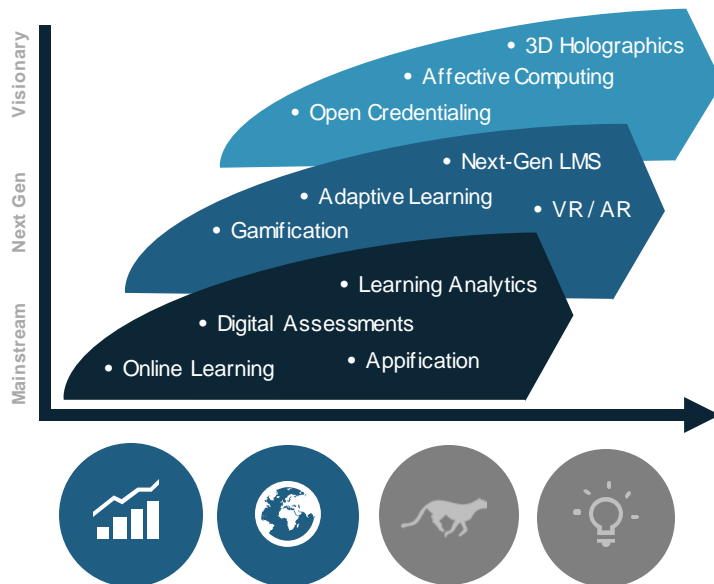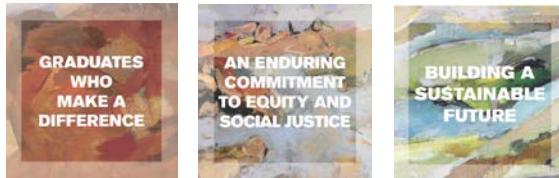
Key Initiatives

1. **Teaching & Learning DNA**
   We will develop a digital-native architecture for Teaching & Learning to revolutionise the creation, distribution and consumption of educational material through omni-channel, scalable and interactive learning capabilities.
2. **Personalised Adaptive Student Experience (PASE)**
   IT Services will enable UON to drive an enhanced student experience through persona-based adaptive learning technologies, automation and digitally rich, integrated learning assets.
3. **360-Degree Teaching & Learning**
   We will establish a real-time environment that enables interactive feedback, behaviours, assessment, formal and informal social interaction and networking to enhance overall student and staff performance.
4. **Teaching & Learning Ecosystem**
   IT Services will implement a step-change in Teaching & Learning Management systems that will underpin the evolution in teaching and learning methods, credentialing and course design.
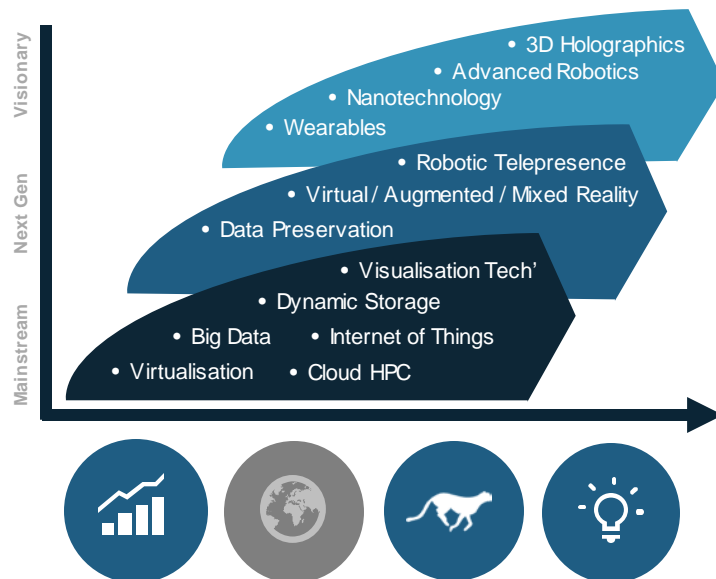
Key Measures of Success

1. Delivery of contemporary digital solutions that enable state-of-the-art education for students to set their own learning journey.
2. Students will have the ability to choose the time, place and device they use to learn.
3. UON will be a sector leader in utilising technology to distribute and consume learning assets.
4. A Teaching and Learning ecosystem that meets the needs of the Students and Educators.

Research Power

Research at UON is powered by digital technologies that decrease the time to results, enable activity and information sharing and preserve critical data.

A PASSION FOR EXCELLENCE AND DISCOVERY

DRIVING GLOBAL AND REGIONAL IMPACT

BUILDING A SUSTAINABLE FUTURE

Visionary
- 3D Holographics
- Advanced Robotics
- Nanotechnology
- Wearables
- Robotic Telepresence
- Virtual / Augmented / Mixed Reality

Next Gen
- Data Preservation
- Visualisation Tech'
- Dynamic Storage

Mainstream
- Big Data
- Internet of Things
- Virtualisation
- Cloud HPC

Key Initiatives

1. **Research Solutions**
   IT Services will provide a new range of integrated data, processing and technology services to UON's researchers and research partners to support grant and industry-funded research outcomes, idea incubation and acceleration, and enriched curriculum updates.

2. **NeW DC**
   We will deliver a new highly available consolidated data centre to enable big data analytics, enhanced high-performance computing (HPC), cloud bursting and IP protection.

3. **Collaborative Research & Innovation Partnerships**
   We will form strategic partnerships with leading technology partners, provide broker services and technology consulting and development capability that will enable co-creation, co-innovative and scalable research.

4. **Research Toolkit**
   We will implement and streamline solutions to support the management and administration of Research activities, HDR student management and Compliance and Ethics.
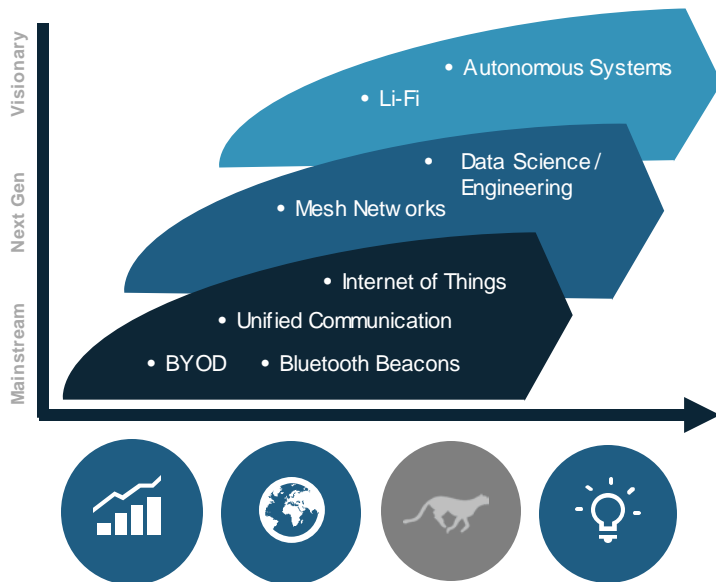
Key Measures of Success

1. On-demand, managed and measured provision of HPC, storage and big-data analytics.
2. Research data that can be securely accessible from anywhere at anytime.
3. Achieving increased research system compliance, agility and flexibility.
4. Establishment of strong partnerships with leading IT partners.

iCampus

UON is supporting our region's transition to a knowledge economy by creating intelligent campus environments that connect students, staff and the broader community with smart facilities.

GRADUATES WHO MAKE A DIFFERENCE

ENGAGING ACROSS THE GLOBE

DRIVING GLOBAL AND REGIONAL IMPACT

STAFF WHO MAKE THEIR MARK

BUILDING A SUSTAINABLE FUTURE

- Autonomous Systems
- Li-Fi
- Data Science / Engineering
- Mesh Networks
- Internet of Things
- Unified Communication
- BYOD
- Bluetooth Beacons

Visionary

Next Gen

Mainstream

Key Initiatives

1. **NEW Digital Experience**
   IT Services will enhance the on-campus experience and efficiency by utilising various IoT, mobile and other digital solutions to deliver personalisation, information and notifications to students, staff and the community.

2. **Intelligent Campus**
   Through a range of assisting technologies, we will help deliver campus environments that connect students, staff, partners and the community with smart facilities to help manage parking, transport to, from and within campus, and to become more aware of the surroundings and services available on and around campus.

3. **Smart City Link**
   We will work with the local city councils and utilities to integrate with their Smart City initiatives and provide seamless capabilities, access and information to enhance the student, staff and community experience.

Key Measures of Success

1. Increased advocacy from student, staff, and community with the on-campus experience and UON facilities.
2. Access to usable and rich datasets to facilitate improved insights on the campus, student and UON facilities.
3. Effective integration with Smart City initiatives.

Proactive Engagement

Based on customer relationship management (CRM) and social media, Proactive Engagement encompasses initiatives that promote student and researcher uptake and increase client satisfaction.
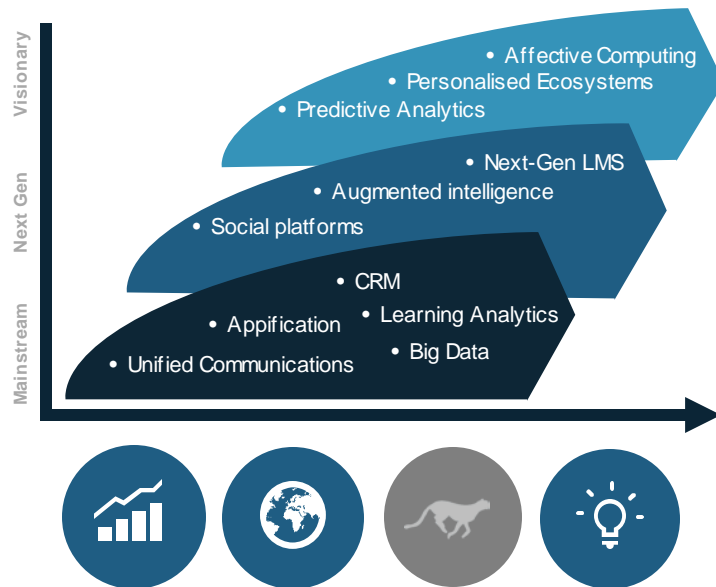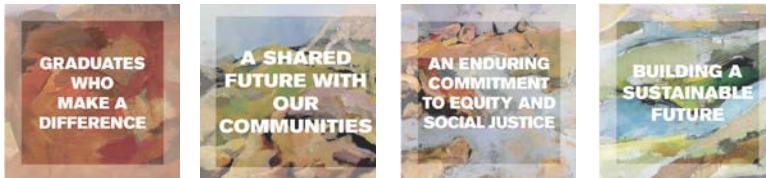
Key Initiatives

1. **360-Degree Client View**
   We will establish a single view of client interactions, from prospective students to alumni, through digital and traditional channels that create client insights and enable personalised digital marketing locally, nationally and globally.

2. **Digital Connections**
   To improve client experience and drive innovation, collaboration and connectedness, we will provide an environment that fosters local and global community engagement, supports communities of practice and captures social conversations.

3. **Mobile Ecosystem**
   A "mobile first" channel will be introduced where apps are tailored to distribute content, marketing and notifications to the different user communities who use UON services with opt-in capability to personalise use, information and content.

Key Measures of Success

1. Student interactions will be personalised and automated.
2. Increase in the levels of local, national and global marketing interactions through automated digital channels.
3. Students, staff and visitors will have access to mobile apps providing personalised information

Data Services

With data underpinning educational and research activities, it is essential for UON to develop robust, flexible and integrated data-related capabilities.
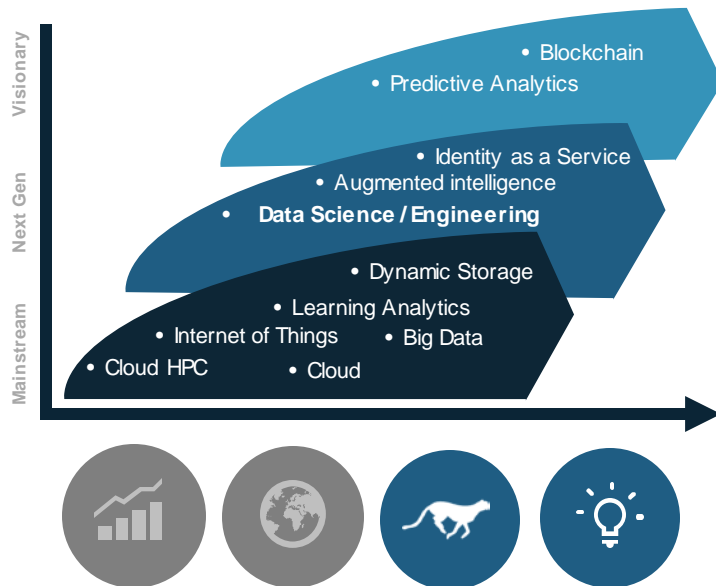
Key Initiatives

1. **Information Management**
   We will implement enterprise-grade information management capabilities to capture, store, distribute and protect data. This will underpin all Teaching & Learning, Research and Corporate functions for all key systems across the University.

2. **Analytics Core**
   The implementation of a new Enterprise Data Warehouse and associated data visualisation technologies will enable the University to leverage the scalable, repeatable, live data to inform strategic decisions on scale, impact, innovation, and agility.

3. **Integration Services**
   We will establish an application integration framework that enables real-time exchange of data between disparate UON and third-party systems to ensure all UON data sources are kept up-to-date, accurate, reliable and fit-for-purpose.

4. **Open Data**
   To extend others' reach to our data sources and to access local, state and federal government data resources, we will implement a framework and environment to provide open access to public and de-identified data.
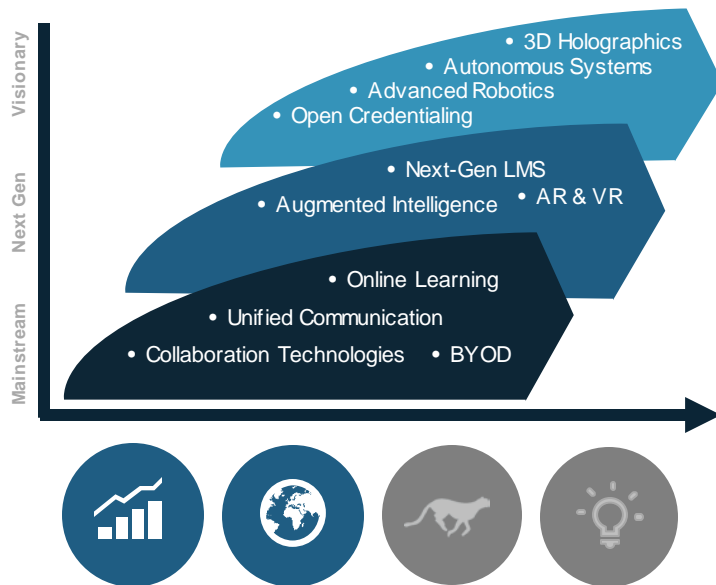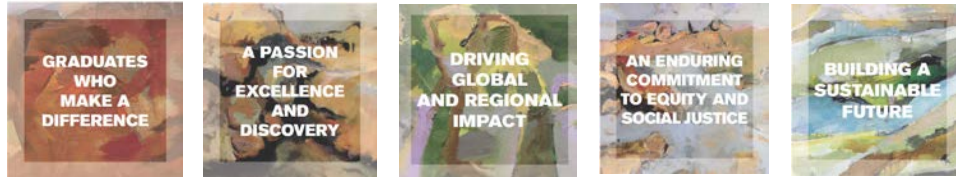
Key Measures of Success

1. An integration framework and interface standards will be implemented.
2. Support of repeatable and scalable analytics across various vertical business and product lines of the University.
3. An enterprise data warehouse and an information management framework will be developed.
4. Open data standards for access, utilisation and analytics will be implemented.

Future Workforce

Building upon the namesake NeW Futures Lead Strategy, the Future Workforce initiatives will provide the building blocks to support UON's goals for its staff.

GRADUATES WHO MAKE A DIFFERENCE

A PASSION FOR EXCELLENCE AND DISCOVERY

DRIVING GLOBAL AND REGIONAL IMPACT

AN ENDURING COMMITMENT TO EQUITY AND SOCIAL JUSTICE

BUILDING A SUSTAINABLE FUTURE

Visionary
- 3D Holographics
- Autonomous Systems
- Advanced Robotics
- Open Credentialing

Next Gen
- Next-Gen LMS
- Augmented Intelligence
- AR & VR

Mainstream
- Online Learning
- Unified Communication
- Collaboration Technologies
- BYOD

Key Initiatives

1. **Anytime, Anywhere on Any device**
   We will provide virtual communication, collaboration, document sharing and records management through a new secure and compliant digital workspace.
2. **Application Modernisation**
   We will transform our applications into a consolidated, contemporary set of digital solutions that fully align to UON's enterprise architecture and industry best practice operations.
3. **Remote Access**
   To facilitate research activity, we will provide students and Academics with remote access to UON and partners' laboratories and computer facilities.
4. **Efficient UON**
   By employing self-service workflows, Robotic Process Automation (RPA) and Augmented Intelligence (AI), we will drive efficiency and improvements across core processes in the University.
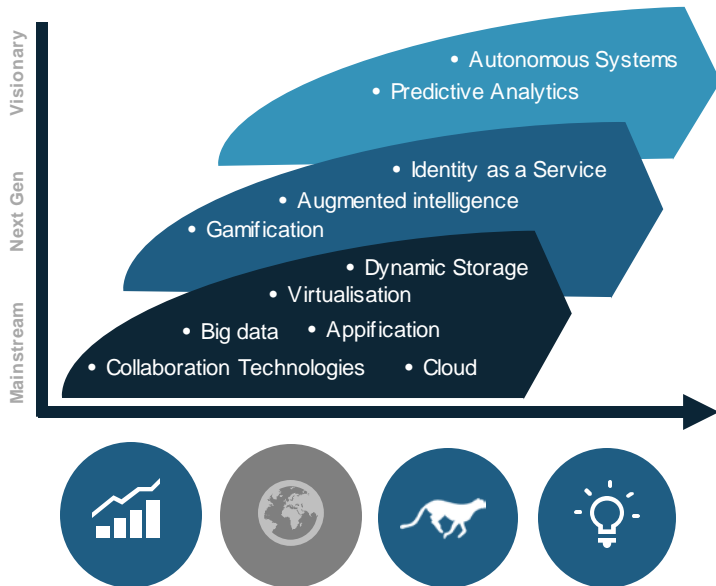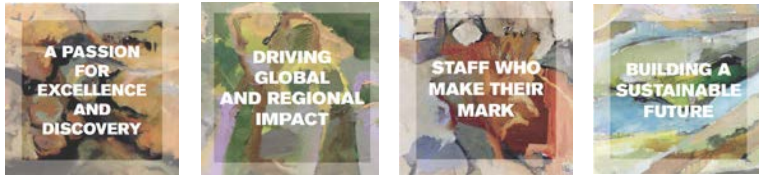
Key Measures of Success

1. The delivery of digital workspace across UON with an increase in adoption of collaboration technologies.
2. Clear standards, technology guidelines and roadmaps will be established and managed.
3. UON workforce will achieve higher capacity, capability, diversity and performance targets.

Sustainable Service

IT Services is gearing up for the critical role it plays in supporting NeW Futures Lead Strategies.

A PASSION FOR EXCELLENCE AND DISCOVERY

DRIVING GLOBAL AND REGIONAL IMPACT

STAFF WHO MAKE THEIR MARK

BUILDING A SUSTAINABLE FUTURE

Visionary
- Autonomous Systems
- Predictive Analytics

Next Gen
- Identity as a Service
- Augmented intelligence
- Gamification

Mainstream
- Dynamic Storage
- Virtualisation
- Big data
- Appification
- Collaboration Technologies
- Cloud

Key Initiatives

1. **Lifecycle Management**
   IT Services will implement capability to enable the management of lifecycles for students, academics, staff and partners, including enablement, engagement, on-boarding, development, support and administration.
2. **Service Management**
   We will streamline and standardise UON's services through a central service management platform.
3. **Operational Excellence**
   We will build operational excellence around IT governance, strategic planning, enterprise architecture, vendor management, information security, business continuity and IT asset management.
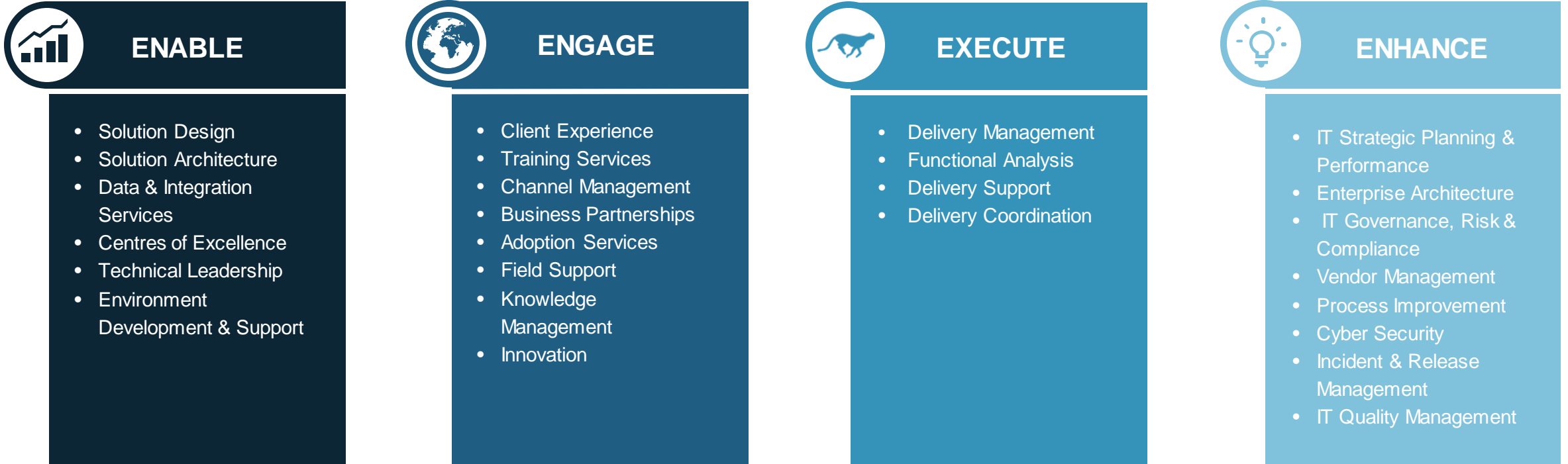4. **Technology Roadmaps**
   We will implement roadmaps for computing, storage, networks, applications and audio-visual technologies that consider current and future technology trends and ensure the benefits can go beyond the typical gains in efficiency, effectiveness and agility.
5. **Strategic Partnerships**
   To reduce cost to serve and foster co-innovation, we will build and manage strong partnerships with leading technology partners.

Key Measures of Success

1. Increased capability to respond to the changing needs of the higher education sector.
2. Improved IT Services operating performance and consistency on key benchmarks.
3. Demonstrated improvement in staff and student satisfaction.
4. Increase in value-for-money from IT assets and services.

ENABLE

- Solution Design
- Solution Architecture
- Data & Integration Services
- Centres of Excellence
- Technical Leadership
- Environment Development & Support

ENGAGE

- Client Experience
- Training Services
- Channel Management
- Business Partnerships
- Adoption Services
- Field Support
- Knowledge Management
- Innovation

EXECUTE

- Delivery Management
- Functional Analysis
- Delivery Support
- Delivery Coordination

ENHANCE

- IT Strategic Planning & Performance
- Enterprise Architecture
- IT Governance, Risk & Compliance
- Vendor Management
- Process Improvement
- Cyber Security
- Incident & Release Management
- IT Quality Management

Organisational Competencies

To deliver on the IT Strategic Plan, competencies will be structured into four key areas of accountability, each aligning with one of our four IT Goals.

A people strategy that integrates with the UON strategy is key to the execution of the IT Strategic Plan. By focusing on talent development, organisational design and performance metrics, IT Services will ensure it possesses the skills and competencies required to ensure UON's goals are met.