AUT

A FUTURE IN

DIGITAL SERVICES

WHAT ARE DIGITAL SERVICES?

Digital services means different things in different contexts. It can be a function like online shopping, the delivery of a program over the internet like a mobile app, or a facility like an automated updater for an operating system.

Digital services focus on the design and implementation of services-based systems to provide value for both external and/or internal customers. It deals with interacting systems that encompass people, technology and business and draw on existing IT disciplines in computer sciences.

For example, Microsoft Office 365 delivers Office applications through a web browser and cloud storage. Eroad's truck monitoring system allows firms to check load weights and monitor refrigeration. Google Docs provides cloud-based document storage so users can access documents anywhere, anytime.

The selection, management and maintenance of computer infrastructure of mainly web-based services are an important part of digital services. This is required across a wide range of industry settings and incorporates a range of business administration functions such as sales processing, procurement, systems installations, operations management, customer service roles.

Are you interested in needs analysis, service modelling, microservices, service innovation and design and information security management? Are you keen to help companies operate more effectively through IT and cloud and service-oriented computing? Then this could be a great career path for you.

OUTLOOK AND TRENDS

Digital world

Digital services are at the forefront of an increasingly connected and digital world in which all organisations use software and information technology in one form or another. These organisations need people to design and construct service systems, as well as to innovate and improve productivity and quality. As the fastest growing sector of the economy in most industrialised and developing nations, organisations within the IT service sector need to become more systematic about service design and delivery.

Importance of security

Security of personal, corporate and private data is an important part of IT service. Companies need to develop policies and procedures that protect their data from unauthorised access inside and outside the company, including protecting employees from their own actions.

Cloud computing & big data

The scope for IT services is also expanding because of the increased uptake of cloud computing and the use of big data analytics to leverage competitive advantage using cloud services such as Amazon Web Services. Many large computing firms are reconfiguring their software to provide services-oriented computing.

Personal use

Over 135.6% of New Zealanders had at least one smartphone in 2021, with usage rising from 57% in 2015 to 97% in 2021, according to Statista. This usage is driven by increasing reliance on smartphones and tablets to access mobile media, social networking, online shopping, video and music access. One of the most popular mobile activities is messaging. Social messenger apps, such as Facebook messenger and Snapchat, have become increasingly popular across the country. All these users need service-based IT support.

Strong job prospects

Overseas prospects are strong for digital services graduates who enter jobs in organisations such as the PPF Company (Vietnam operation), Harvey Nash and Bosch. There is a shortage of graduates with both IT and business knowledge, as well as a shortage of highly skilled IT professionals. Technical skills are no longer enough.

WORK SETTINGS

Many companies offer graduate programme schemes that rotate graduates through all areas of their business. Digital services graduates normally work in teams within projects. They generally begin in support or service delivery teams, then move into roles such as business analyst, tester, requirements analysis continuous improvement team, or management roles.

PROFESSIONAL REGISTRATION

There is no compulsory registration in this field but it is recommended that graduates belong to the NZ Institute of IT Professionals (IITP), and two international organisations; the Association of Computing Machinery (ACM) and Institute of Electrical and Electronics Engineers (IEEE).

SKILLS & KNOWLEDGE

- Ability to analyse IT and digital needs
- Understanding of IT services, security and operations management practices and strategies
- Ability to integrate and relate information security frameworks with technical and non-technical requirements
- A sound technical understanding of contemporary IT service and operations management practices, and computing systems and hardware infrastructure
- Competency in streamlining organisational systems and processes using IT based solutions
- Capable of managing IT installations and service level contracts
- Knowledge and experience in contemporary architectures and tools
- An understanding of concepts in networks, databases, data and process modelling
- Competency with programming concepts and techniques
- Ability to develop and apply appropriate information technologies and tools for enterprise systems
- Ability to effectively match business needs with integrated IT solutions.

PERSONAL ATTRIBUTES

- Analytical person who pays attention to detail
- Independent, critical and reflective
- Effective and articulate communicator, verbally and written
- Open minded, collaborative team person
- Innovator who enjoys experimenting, exploring, finding new and accessible ways to use things

CAREER DIRECTIONS

Service delivery and innovation

Ensures digital services levels are maintained and performance objectives are met. At managerial level the service delivery manager is responsible for service desk and desktop support personnel.

Entry role – IT service support, service desk analyst
Role with experience – service delivery manager, service quality specialist / manager

Service modelling and microservices

Designs and models software-based service systems and service-based software architectures. Carries out major architectural design patterns for highly available, scalable and maintainable software and focuses on the features and facilities of the microservices environments.

Entry role – system analyst, business analyst
Role with experience – service delivery manager, solutions architect

Needs analysis and acquisition

Involves identifying information technology solution requirements, investigating and evaluating suitable solutions such as software, platforms and vendors, and planning and implementing solutions. This also includes identifying training requirements and planning training programs.

Entry role – business analyst
Role with experience – solutions architect, senior project manager

Systems design and analysis

Involves working on the delivery mechanisms and services of organisations, including IT project management, business or feasibility analysis.

Entry level role – business and/or systems analyst, systems analyst, junior engineer (networking, systems, databases)
Role with experience – solutions architect

Security management

Involves management of information security for organisations, and its relationship with law, ethics, culture, and standards. Also involves management of the frameworks, processes and technology needed to design and build secure operational environments for businesses and individual users.

Entry level role – trainee security analyst
Role with experience – security manager

Knowledge intensive services

Involves working with organisations to identify important knowledge trends in data. This could be within a team interacting with data analysts, database specialists and data warehousing specialists to develop application frameworks for processing big data problems.

Entry level role – systems analyst, data analyst, database designer
Role with experience – business intelligence solution architect

Enterprise architecture

Involves taking a strategic view of an organisation's resource allocation providing a clear strategic direction, identifying how and what resources are needed to achieve those goals. Usually only found in medium or large organisations.

Entry level role – roles relating to understanding business and how business uses information technology.
Role with experience – enterprise architect

SALARY BAND GUIDELINES

	Typical salary (per year)
IT helpdesk / desktop support technician	$55,000–$71,000
Testing and QA	$68,000 Graduate ave $64,000 1–4 yrs ave $76,000 5–9 yrs ave
Business / systems analyst	$56,000 Graduate ave $64,000 1–4 yrs ave $76,000 5–8 yrs ave
Programme / project manager	$85,000–$120,000
Service delivery manager	$85,000–$140,000

Sources: Jobted, Hays Salary Guide 2021, payscale.com, Indeed.com. Salary range is indicative of the New Zealand job market at the time of publication (early 2022) and should only be used as a guide.

THE AUT ADVANTAGE

AUT is currently the only New Zealand university offering a dedicated digital services major within an IT degree, following a growing number of overseas universities also offering digital service science degree programmes.

FURTHER STUDY OPTIONS

Graduates can extend their digital service science expertise through a Master of Computer and Information Sciences (MCIS), or other relevant master's programmes. There are also Master of Philosophy and Doctor of Philosophy options.

Ghazi Suliyanto

Junior Systems Engineer,
VEMO IT Solutions Ltd

Bachelor of Computer and Information Sciences in IT Service Science (now titled Digital Services)

"A full time internship with Kitchen Cabinets & Stones Ltd for four months started my career journey. I was asked to stay on in a full-time role but I continued part-time because I was still studying.

At Kitchen Cabinets, I supported the organisation's IT and networking infrastructure, handling around 86 end users (internal staff). I managed around 10 tickets using two communication channels; face-to-face and email/ Teams. This involved basic troubleshooting – looking at end user problems ranging from printers not working to diagnosing internet connectivity issues.

I graduated in December 2021. In mid-January I landed a full-time junior systems engineer position at VEMO IT, a managed service provider (MSP) providing IT solutions for small to medium sized businesses. I handle – on average – 20 tickets a day utilising three communication channels; phone calls, email, and face-to-face (on site). This role involves analysing and identifying risks and issues and developing proposals/ solutions that create value.

My focus is now on providing IT solutions to external small to medium sized businesses, rather than supporting internal users.

I enjoy how I'm always learning something new. I love the challenge of trying to solve IT problems and trying to fix something as quickly as possible so I don't disrupt a business's workflow. Having end users depending on you to solve a problem in a reasonable time frame can be stressful but the outcome is always rewarding."

EMPLOYER COMMENT

"When I'm hiring a junior systems engineer I expect a basic understanding of IT infrastructure, ie knowing what a firewall/switch/UPS/O365 is and its function. I wouldn't expect an applicant to be able to configure them but any exposure outside of the classroom is a bonus.

The most critical thing I'm looking for is the ability to communicate and empathise with customers. I believe I can train anyone to be an engineer, but sincerity in wanting to support the client and being able to engage is higher up my priority list than technical ability. Obviously, a good combination of the two is desired.

Ghazi is amazing and definitely fits my criteria. He showed a passion for learning and his enthusiasm is next level. He engaged in the interview exceptionally well. Work wise, he's a testament to his interview – hardworking, gets on well with the team and our customers and is keen to be the best engineer he can be.

To graduates, my advice about interviews is to be well presented, try not to be too nervous or talk too fast and be friendly/approachable. A smaller MSP like ours is not just looking for the best engineer but someone to fit the existing team and be easy to work with."

Andrew Watson, Technical Manager,
VEMO IT Solutions Ltd

USEFUL WEBSITES

IBM – Invention of Service Science
www.ibm.com/ibm/history/ibm100/us/en/icons/servicescience

Service Science Society of Australia
www.servicesciencesociety.org.au/

Dept of Computer and Service Systems, Stockholm University
www.dsv.su.se/en/research/research-areas

FURTHER INFORMATION

For the most up-to-date digital services information, visit our website
www.aut.ac.nz/digital-services

EMPLOYABILITY & CAREERS

For other Future Career Sheets visit:
www.aut.ac.nz/careersheets

For employability and career support, AUT students can book an appointment through
https://elab.aut.ac.nz/

FUTURE STUDENTS

Contact the Future Student Advisory team for more information: www.aut.ac.nz/enquire
futurestudents@aut.ac.nz
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CURRENT AUT STUDENTS

Contact the Student Hub Advisors team for more information:
0800 AUT UNI (0800 288 864)
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The information contained in this career sheet is correct at time of printing, April 2022.