

CAREER VIEW

INFORMATION SYSTEMS

Waiting at a bus stop with the latest mobile phone in your hand you can be in touch with the rest of the world. You may text and call your friends; play a game and listen to music; do banking or pay your bills. The mobile phone is a small yet powerful example of information systems at work and play. Information Systems (IS) underpins the daily lives of people throughout the world. It creates social and commercial networks, allowing individuals, governments and businesses to exchange information and knowledge that contribute towards better decision-making and problem solving.

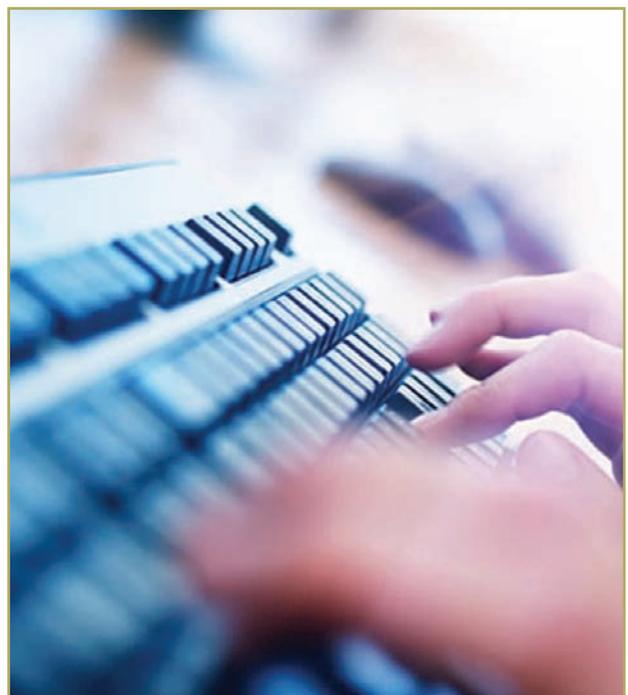
Through Information Systems (IS), people can access an increasing range of services and products from anywhere in the world. Organisations are able to market themselves on the internet and use sophisticated software to monitor their business performance, ensuring they remain efficient and competitive. On-demand and mobile delivery is made possible through faster and faster broadband technologies and delivery platforms that can be network or home-based. Multi-media applications add stimulation and user friendliness to information systems.

Information systems streamline processes and create new and interesting work to keep people's minds busy and productive. It helps us work more efficiently, using tools that lead to further ground breaking discoveries and inventions.

In New Zealand, scientists measure and forecast the effects of resource use and natural hazards on the environment using environmental sensing technology. The data they gain through eco-informatics helps them develop methods that minimise damage to the environment and give agricultural businesses a competitive edge. Around the world, IS professionals help develop ways to monitor climate change as it happens in real-time. Sensors and computerised systems are also used by architects to design "green buildings" that save energy by adjusting heating, cooling and lighting to changing conditions.

WHY STUDY INFORMATION SYSTEMS?

The discipline of Information Systems deals with how information and communications technologies



(ICT) can be used to solve real-world challenges in business, government and society. It focuses on the use, application and design of cutting-edge systems that continually transform and improve all areas of our lives. Studying Information Systems builds an understanding of when, how and why technology should be deployed - an essential skill in today's employment market.

Topical coverage of career related issues brought to you by Victoria University Career Development and Employment.

Areas covered include how degrees and courses relate to employment opportunities, to life/work planning, graduate destination information and current issues or material relevant to the employment scene. Your comments and suggestions always welcomed.

WHAT DO INFORMATION SYSTEMS GRADUATES DO?

Graduates in IS have a varied and exciting choice of fields to work in, ranging from hands on application building such as developing a web site to more management orientated roles such as negotiating contracts with external software providers. Opportunities will be determined by personal interest and degree specialisation, however, Information Systems provides an excellent basis for many different exciting careers.

Information systems is a people business and people who specialise in information systems are not necessarily just experts on the technical side of information and communications technology. No matter how good an information system is, people won't use it unless it is user friendly. Experts in information systems guide the development and delivery of the electronic systems that continue to change production and business processes, social structures and human interactions.

In the field of education, software engineers produce learning tools that deliver information and interactive learning online. In central and local government IS professionals design and build web-based systems to provide citizens with access to information about government processes, so that they can participate more fully in democratic decision making. For example, you can go to the New Zealand Government website to find out about immigration, how to start a business and pay taxes, how to dispose of hazardous waste, be a smart cyber kid and stay safe online, and much more.



Information is a key resource for every organisation and information systems are a vital part of business culture. As in any other business culture, things in IS change. Some technologies are in a growth phase while others are declining. New technologies emerge regularly so graduates will find they are working in the future with systems that do not exist or are not even envisaged today. Being able to adapt and learn new systems is vital in the changing world of business and IS.

WHERE DO INFORMATION SYSTEMS GRADUATES WORK?

IS graduates work in a wide range of sectors including: banking and finance, insurance, defence, manufacturing, the petroleum industry, telecommunications, the dairy industry, transport, insurance, energy, medical research, market research and forestry.

Information and communications technology companies, business consultancies, central government and city councils are among employers of new graduates. Doing business online is well established and continually being improved. Every government ministry has an IS function which includes internet web sites, education and training functions, security, and most business processes.

Even the smallest organisations use information systems. This means graduates have an extremely wide range of employment options both within New Zealand and overseas. There are also opportunities for the graduate entrepreneur with many students creating their own companies or joining start-up companies.

During their degree studies students have the chance to gain industry work experience. These work experiences are an excellent way for students to gain first hand understanding of the IS profession.

Whilst there is some overlap between degrees and jobs, some positions are more suited to particular academic specialisations. Students who have taken a degree in information systems may consider roles with a business and people focus such as:

Project Managers co-ordinate the different aspects of IS projects, managing budgets and the people with the expertise required to achieve results within a designated timeframe.

Business Analysts or Systems Analysts belong to a group called system development workers, which also include Systems Developers and Systems Architects. They are more specialised than IT consultants, solving

computer problems rather than business ones. They help plan and develop new computer systems or devise ways to make existing systems do more. Systems Analysts may design new systems, including both hardware and software, or add a new software application to harness more of the computer's power.

Systems Integrators specialise in building complete computer systems by putting together components from different vendors. They enable organisations to use off-the-shelf hardware and software packages to meet their needs.

Software Developers co-ordinate the production of software products from choosing content providers, assembling graphic creators, and working with programmers, to actual assembly, pressing and distribution of the final product. **Web Developers** use specialist software to design, layout and code pages on the web.

Software Trainers train others to use particular software packages.

IT Consultants help organisations make the best use of existing or new information technology to solve their business problems.

IT Risk Analysts identify and analyse the areas of potential risk threatening projects or the success of organisations in the industrial, commercial or public sector. They have the responsibility of predicting change and future trends.

Test Analysts use test scripts and customised test software to test new or modified software. For example, online banking software will have been tested to ensure that customer details cannot be accessed by an unauthorised person.

Management Consultants help businesses improve their performance and grow by solving problems and finding new and better ways of doing things. They work in both private and public sector organisations to help develop their services in a range of areas from HR and marketing to IT and finance.

Business Improvement Analyst, Performance Review Analyst, Business Process Re-engineer, Change Analyst, Process Analyst, Productivity Analyst are role titles common to the business analysis profession which aims to improve business performance or productivity by examining processes; for example how an order for a new computer is handled from the initial customer contact to dispatch and after sales support.

Database Administrators use database management systems software to work out the best ways to organise and store data securely and ensure that databases continue to meet an organisation's needs.

Computer Support Technicians help identify and fix problems with computer hardware, software and websites.

If you are considering combining Information Systems with another degree there are even more employment possibilities. A career consultant or course adviser can help you to explore your options.

WHAT SKILLS DO INFORMATION SYSTEMS STUDENTS DEVELOP?

A degree in Information Systems gives graduates a foundation on which they can build in order to keep up with the play. Hardware and software may change but the underlying principles stay the same. Employers look to hire people who want to keep learning new skills and apply those principles to evolving technology. Whilst good grades and technical skills are important, graduates also have the following key skills and abilities.

Relationship Management

IS professionals manage the interplay between people, technologies and organisations that underlies information systems. Students will learn how to use information technology to develop relationships with customers, clients and suppliers.

Technical Knowledge

Knowledge of the different types of information technology and how and why they are used in business is essential. Students learn how to develop simple database and Internet applications, and then move into more detailed systems analysis, design, implementation and maintenance.

Adaptability

By the end of their studies, graduates will have developed a sound understanding of IT and related organisational processes. The ability to learn new systems and apply their learning to new situations is vital in the changing world of business and information systems.

Strategic Thinking

New technologies are emerging all the time and IS professionals are required to identify and exploit opportunities created by technology innovations. Through project work, students learn to clearly frame ideas, assess information, find solutions and enact decisions.

Analysis and Problem Solving

IS specialists are sharp thinkers and can draw on a range of technical skills, people knowledge and commercial awareness to grasp key issues, explore options and identify appropriate solutions.

Interpersonal Skills and Teamwork

During their degree studies, students learn how to work and communicate cooperatively to develop and deliver solutions. This skill is very important in the workplace where people interaction forms a large part of many roles.

Communication Skills

IS specialists need an excellent grasp of technical information and industry jargon but also the ability to explain complex ideas in simple terms to a wide range of clients.

Commercial Awareness and Risk Management

Graduates will have an understanding of how technology supports the objectives of businesses and individuals. They can explain the impact of IT on social, economic, legal and ethical issues in organisations and society. They can also manage and control IT risks and security.

HUZ BHIND A TXT MSG? (Who's behind a text message?)

Have you ever thought about how many people are working behind the scenes so you can send a text message to your friends?

Information System Experts: Information system professionals such as business analysts help to improve business performance and productivity by examining processes e.g. the billing system used by the mobile operator to charge for text messages. In addition, service desk people provide technical assistance, support, and advice to customers and users. These experts interpret and resolve problems reported by the mobile phone user. IS experts also help people and organisations work out the best ways to organise and store data securely. In addition, they ensure that the products delivered by hardware and software experts meet users' needs.

Information System Managers: IS managers are responsible for the business and its customers. Graduates of Information Systems degree programmes combine strong managerial skills with technical



knowledge. They coordinate the work of the various stakeholders – network, software and information systems experts – to ensure they deliver the best service possible to customers. Some IS managers also work as project managers and consultants e.g. they may manage the development of a new technology, create a new set of mobile phone plans and pre-paid cards, or help develop a new marketing campaign. Typically an IS manager will have practiced in the industry for 3 to 5 years before moving up to a management position.

Software Experts: Software experts qualified in information systems, computer science or engineering provide the software that allows you to send a text message. Software enables all the components of the cellular network, from the mobile phone to the message centre, through to the accounting and the billing system. Software engineers, who have a wider role in creating the background applications, research, design, develop, test and deploy the software. Software experts have specific skills that allow them to create application programs such as the text message application on the mobile phone itself through to the core systems required by the mobile network operator.

Network Experts: People with degrees in engineering and computer science provide the key infrastructure for the wireless network and associated service platforms required to transfer a text message. Electronics, computer systems or network experts develop and install the equipment that connects the mobile phones to the network.

GRADUATE PROFILES

Michael Canty

*Technology Advisory Analyst
Deloitte*



I have always had an interest in computing and I took a liking to economics at high school. This spurred me into wanting to take a major which combined technology and business and so I signed up to take a Bachelor of Commerce and Administration (now known as Bachelor of Commerce) with a major in Information Systems.

Throughout my undergraduate study, I really enjoyed learning and applying information systems theory to business problems. For example, learning ways in which businesses use tools such as websites and mobile applications to deliver services to customers. In my last year of undergraduate study and throughout my honours year, I was very fortunate to engage with talented lecturers who took a keen interest in my study and who were always more than happy to help me with my studies.

Studying Information Systems allowed me to develop a number of important soft skills: Critical thinking (the ability to analyse information to form an argument), teamwork (working with others to create a quality, combined outcome) and time management (delivering multiple assignments under multiple deadlines). These skills were applied to my job and life in general.

My study in information systems led me to my current job as a technology advisory analyst in Deloitte consulting. In this role, I work with various organisations to ensure that IT contributes to business performance. This involves a great deal of person interaction as well as applying problem solving strategies – consulting is dynamic work! Having that knowledge about both business and technology set a good foundation for consulting and coupled with the soft skills I developed, this led me to a job at Deloitte.

Thinking of studying an Information Systems major? Give it a go! University is so flexible – you can afford to take a couple of introductory Information Systems papers and decide from there. Don't think that a career in technology is just for geeks. There are many opportunities to study business as well as the technical side (such as programming or web development). Finally, check out the market trends. The IT industry has always been active and there will always be opportunities for new graduates to make their mark.

Jessica Sina Slade

*Junior Business Analyst
Ministry of Social Development*



Advancements in technology have always appealed to me coming up through college because of their ability to completely change the way we live our lives on a daily basis. Furthermore, I have always enjoyed working and meeting people from various walks of life. As a result, it only felt natural to carry on studying Information Systems (IS) at university after college. The IS major catered to both the technical and social aspects of my interests and so the idea of working as a Business Analyst or Project Manager became very attractive.

I learnt so much from my experiences at university. The classes were very interactive and the lecturers were always passionate about the subject matter. A lot of what I learnt at university came to fruition in the working environment and still does today. During my time at Victoria, I met a lot of people from various backgrounds and many of whom I can call my best friends today. Not only did university life equip me with academic prowess, but it also taught me a lot about life.

After completing my undergraduate degree I carried on to complete my Honours degree part time for two years while working full time as a Graduate IT Analyst at the Ministry of Social Development (MSD). The Honours programme was quite a fulfilling journey and really taught me a lot about myself. It built up my confidence to be able to speak to a group of academics, enhanced my research skills and taught me a lot about time management. One thing that I particularly enjoyed during the Honours programme was the open discussions that we would have in class which would often turn into debates. This enabled us to broaden our views of the world and introduced us to new ways of thinking. I would definitely recommend the programme to students looking for the next challenge in their academic careers.

My advice to students would be to ensure that you are passionate about what you want to study. This will make for a more enjoyable university experience and can lead to a more prosperous career path.

Lana Traut*Business Analyst
Datacom*

I graduated from Victoria University with a Bachelor of Commerce and Administration, majoring in Information Systems and Marketing as well as First Class Honours in Information Systems. I'm currently working as a Business Analyst at Datacom in Wellington.

I decided to study Information Systems as a major because I find technology, the creation and implementation of systems interesting. The web design papers of the major also appealed to me. From studying Information Systems however, I gained far more than just a knowledge of what goes into creating and implementing systems. I learned fundamental aspects of communication, through written assignments and presentations, as well as the essential analytical skills I use in my current role at Datacom. Many of the technical skills learnt throughout my studies such as SQL, HTML and CSS have also proven useful in providing advice in implementing specific client solutions.

The study of Information systems has provided me with the essential skills to perform my role as a Business Analyst and has also allowed me to meet inspiring people who have had a big impact on both my time at university and setting me on my current career path.

My advice to students contemplating doing a major in Information Systems would be to choose papers that give you a wide variety of knowledge across the major. Also, for the less technically inclined students, although there are technical papers within the major, these provide an essential understanding that is useful even in the more business orientated role of a business analyst and are a really good opportunity to challenge yourself.

Daniel Whittington*Web Developer
Squiz*

I was always interested in learning languages and I studied Japanese and Spanish throughout college. I was also looking for ways to embrace new technology that could make life a bit more interesting. While deciding what I should study at university, I had an interesting discussion with my cousin who told me all about his job in IT and the different programming languages he had learnt at university. It seemed like a great idea to combine my interest in languages and technology into, hopefully, a career using a different type of language. What really sold me though, were his stories about getting to work on a driving simulator used by some of the world's best drivers and mechanics.

The highlights of my studies were learning about emerging web technologies such as the "Internet of things", and how mobile orientated consumer markets were becoming and the technologies that were driving that change. This led me to strive to be a developer so that I could always be innovative and learn new tools to deliver new experiences to people.

Studying Information Systems gave me a really great baseline of knowledge to apply to an IT career, from basic web skills to database administration skills and a great introduction to data analysis, project management and marketing techniques. The degree allowed me to find out what I wanted to pursue as a career most from my studies, and has since enabled me to have input into several areas of my company. Working alongside awesome developers at Squiz has helped to extend the skills I learnt at university so that I can now apply them in the development of boundary pushing websites and web applications.

As part of a small team of developers it became quickly apparent that while I didn't enjoy a lot of the collaboration, teamwork and presenting that they made us do a lot of at university, I now understand the importance that communication plays in my role at the company and am grateful I was equipped with the knowledge and confidence to portray my ideas to a group of much more experienced colleagues. I never became bored of learning at university because I chose to do something that continually kept challenging me. This has followed on to my career and every day there is something new to learn or a new problem solve, which makes work so much more enjoyable and the hard work I put in at university worth it.

Julie Watson

*User Experience Researcher
Trade Me*



I was always interested in commerce and what made the (business) world go round. So, I undertook a Bachelor in Commerce and Administration in Commercial Law, Information Systems and Management. I really enjoyed Information Systems and quickly recognised how applicable it would be to many different business situations. I then furthered my studies through an Honours degree and a PhD in Information Systems.

Throughout my studies I most enjoyed being challenged to decide things for myself. I think I was fortunate to have some really good tutors and lecturers, particularly at Honours and PhD level, who encouraged critical thinking and took the time to talk things out and answer my never-ending questions!

Key skills that I developed while at Victoria that have been directly transferrable to myriad organisational situations include critical thinking, problem solving and reasoning, report writing and presenting, research and analytical techniques. Being able to conduct and then present user research as a compelling – but ultimately true – story is core to my role as User Experience Researcher at Trade Me.

My PhD centred on online professional development, and as I used the action research methodology I had started to develop some consulting skills. It was this combination that opened the door to my first role in educational technology and learning design that started my career. From there, I worked as a lecturer in eLearning design and facilitation, before transitioning from learning design to the broader user experience field as a consultant at Optimal Experience.

My current role at Trade Me allows me to exercise my love of and natural aptitude for research and further extend my knowledge of business and information systems. For me, that's really the perfect combination.

The Information Systems major is a great foundation for many different roles and careers. Although I am not a technical person or in a technical role, being able to understand how the work I am doing and the recommendations I am making impact the website, mobile app or technology behind such platforms is a precondition to success. And the way that technology and media are progressing, I can only see this becoming more important in the future.

Ana Matsis

*Contractor
Westpac Group, Sydney*



I knew I wanted to work with people, hit the \$100k per year mark as quickly as I could and I didn't want to spend five consecutive years studying to get there. During my first Information Systems class I was shown a table that outlined typical IT jobs and their salaries. I could do a three year degree, get a few years of experience and earn close to \$100k; I wanted in. I understood the theory of coding but wasn't great at applying that theory. My passion is people. Information Systems gave me the best of both worlds. My dad's advice: Every job in the world will work with money, people and/or technology. Make sure you tick as many of those boxes as you can; you'll be marketable that way. With my father's advice in mind, I opted for the Bachelor of Commerce and Administration majoring in Management and Information Systems. This combination opened many doors and options.

I loved tutoring at the School of Information Management (SIM). I really enjoyed teaching others and igniting potential. Helping students excel and find passion was an indescribable feeling. SIM is a fairly young school at Victoria so it was flexible in its tutoring approach and was very supportive of all students.

I loaded my degree with the Information Systems papers that focused on the people side of systems. I took a Successful Systems Implementation course and my world changed. I wanted to be an Organisational Change Manager (OCM). In 2006, OCM was non-existent in New Zealand, so I used the Business Analyst role as a stepping stone into OCM. After three years at Contact Energy I became a certified Business Analyst and a certified OCM practitioner.

Think of the big picture and look beyond your degree, any job in the world will work with money, and/or people and/or technology. If you want to be a strong candidate competing for graduate positions make sure you tick off as many of these as you can. Information Systems gives you two of those options. Good luck!

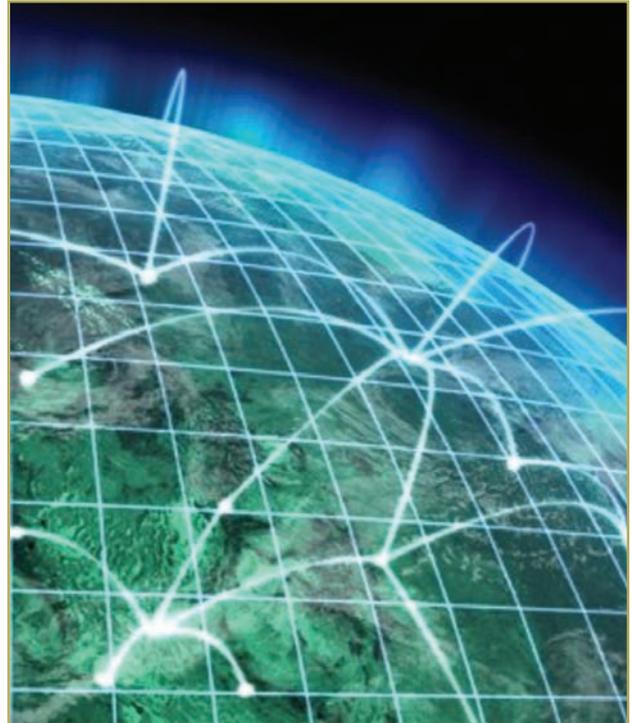
INFORMATION SYSTEMS AT VICTORIA

Victoria offers a number of complementary degree programmes. You may study Information Systems as a major within the Bachelor of Commerce (BCom). You can also include Information Systems as an outside major in the Bachelor of Arts (BA) and Bachelor of Science (BSc) degrees. It is also possible to take a minor in Information Systems in combination with other subjects.

The BCom provides a primary focus on organisations and how they use and manage information. The Information Systems major has two specialisations which reflect different possible career paths. The Information Systems Business Analysis specialisation focuses on the design and management of information systems for organisations. The Information Technology Solutions specialisation focuses on developing and testing those information systems. It is also possible to mix and match courses to follow your own individual interests.

You also have the opportunity to combine studies in Commerce with other subjects such as Law, Philosophy or Mathematics by undertaking a conjoint degree. A BCom can be combined with a BA, BSc or LLB. This demanding programme of study offers two degrees in four years. You must complete a major requirement for both degrees, for example Computer Science within the BSc could be combined with Information Systems for the BCom.

Each major within a degree programme has requirements that must be completed. Beyond those requirements you may choose courses to tailor your individual programme of study to your liking. Some students focus on an area in which they hope to be able to apply their IS knowledge, others choose courses that satisfy their personal interests. You can



seek advice from a university careers consultant or course adviser.

The School of Information Management (SIM) contributes to the degrees of Victoria Business School at undergraduate, postgraduate and post-experience levels.

SIM offers the Information Systems (INFO) major in a number of degrees:

- Bachelor of Commerce
- Graduate Certificate/Diploma in Commerce
- Bachelor of Commerce with Honours
- Master of Commerce
- Masters in Information Management
- PhD

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