Informatics: A unique discipline and a valued qualification

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What is informatics exactly? This is a question that is often asked by colleagues who are not familiar with information technology (IT)-related disciplines, who are curious about what exactly happens in the Department of Informatics (also referred to as information systems at other universities).

To answer this question, one should consider the different schools of thought adressing Informatics. The first school of thought holds a narrow view, where Informatics is referred to as the collection, classification, storage, retrieval and dissemination of recorded knowledge. However, informatics is also defined as the science of information, the practice of information processing, and the engineering of information systems. Informatics is also concerned with the structure, algorithms, behaviour and interactions of natural and artificial systems that store, process, access and communicate information. In addition, it studies human-computer interaction and how an interface can be built to maximise user efficiency. It also develops its own conceptual and theoretical foundations and utilises foundations developed in other fields.

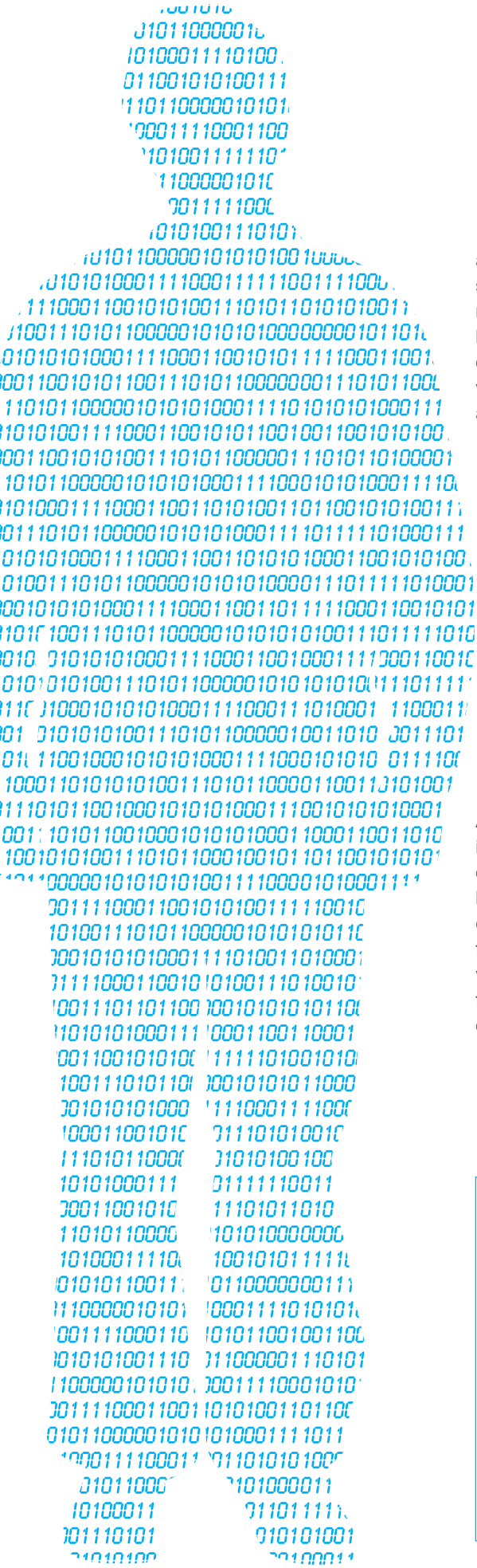
Many practical problems in society that are complex to solve are referred to as “wicket problems”. The domain of informatics focuses on some of these problems, and uses computing to solve them. Examples include privacy and security in computing, health care, education and poverty alleviation, as well as sustainable development and other challenges in managing our environment. Due to the nature of solutions that include technology, applications in informatics are computer-based. Informatics also enhances existing solutions and systems with tools and techniques from fields such as communication, mathematics, multimedia and human-computer interaction design. Informatics differs from sister domains such as computer science and computer engineering, where solutions and studies in informatics include a strong focus on the human use of computing.

Informatics is a relatively new field. The first journal articles published in the 1970s focused on information systems-related topics. By the turn of the century, there were still numerous discussions on the nature of informatics and the value of research in this domain. Davis (2000) argued that the field of information systems is now mature enough to become a reference discipline, embracing enough foundational theory for other disciplines. Davis highlighted the fact that all the top universities in the world already have an information systems or informatics department, and that there is at least one journal, the *MIS Quarterly*, that survived 25 years. The major conference in the field, the International Conference on Information Systems (ICIS), is 20 years old, while there is also an acknowledged international society, namely the Association for Information Systems.

The Informatics Department at the University of Pretoria educates informaticians to design, build, implement and secure information systems that meet human, organisational and societal needs. These students combine skills from the programme with their own unique personal and professional interests to foster innovation in information and technology in the private, public and non-profit sectors.

One emerging field in which informatics plays an important role is that of data science. Hal Varian (2013), chief economist of Google, states that “the ability to take data – to be able to understand it, process it, extract value from it, visualise it and communicate it – is going to be a hugely important skill in the next decades, not only at the professional level, but even at the educational level for elementary school kids, for high school kids and for college kids”.

His view supports the fact that informatics – as a discipline within the more traditional fields, such



Informatics studies human-computer interaction and how to build an interface to maximise user efficiency.

as data science – adds facets such as stakeholder and systems requirements elicitation, story-boarding and communication, data analysis, processes and value chains, as well as systems architecture and integration.

At the University of Pretoria, the Department of Informatics is proud of the fact that its graduates are popular in industry and are offered competitive salaries after receiving their bachelors or honours degrees. Through the Department's quest for excellence, it has received Accreditation Board for Engineering and Technology (ABET) accreditation – the only Informatics/Information Systems department in Africa to have received this international accreditation. Many of the Department's alumni are in leadership positions in the foremost companies in the world. Positive feedback is regularly received on the value that these individuals gained from their education at the University of Pretoria.

The Department's research focus areas include information systems in education, IT management and information and communication technology (ICT) for development. Its strengths in these focus areas are the first-class solutions that the Department provides, specifically in the South African domain, where technology is considered from an innovative perspective. The Department believes in contributing and being involved on an international level. Staff members deliver presentations at conferences, organise conferences, and act as reviewers and panellists internationally. The Department is extremely proud that nearly 70% of its staff members have PhD degrees, which enables it to grow its postgraduate base and produce more peer-reviewed articles.

References

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Varian, H. 2013. Hal Varian on how the Web challenges managers. [Online]. Available from: http://www.mckinsey.com/insights/innovation/hal_varian_on_how_the_web_challenges_managers (accessed in October 2013).

Project Day

On 23 October 2013, the Department of Informatics hosted its annual Project Day for final-year BCom (Informatics) students. Twenty groups took part in the exhibition, which was held in the Rautenbach Hall on the Hatfield Campus. As in previous years, each group of four to five students designed a business information system for a real-life client. These projects ranged from the design of a trailer manufacturing management system, to point-of-sales systems, an online shuttle service management system, a construction plant management system, a panelbeater quoting and administration system, an online electronic device management system and a soil-mixing and sales management system.