

Ethics and information systems — Guest editors' introduction

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The technological evolution characterised by convergence into Information and Communication Technology (ICT) and divergence of applications has led to the birth of the Information Society. Where once scientists in white coats toiled in backroom laboratories to satisfy the needs of organisations, today children are ICT experts, consumers are major customers of applications and ICT is a widespread community notion. The Information Society has ushered out the Computer Science mantra and has ushered in the Information Provision perspective. New media such as wikis, podcasts, blogs and mobile downloads support all forms of communication relationships: many-to-many, one-to-many, many-to-one and one-to-one. ICT has changed the meaning of information through adding value to or subtracting value from traditional forms of presentation and access (Rogerson 2007). Perceptions of such transformations vary greatly particularly between creators and consumers of these new forms of information.

The evolution continues. In the beginning the scientists and technologists were elitist, but then professionals in organisations embraced ICT as an instrument for increased productivity. Knowledgeable citizens then enthusiastically consumed ICT but became sceptical as ICT system failures became commonplace. These citizens finally became realistic in their expectations of what ICT might deliver. The final evolutionary stage is where everyone, or nearly everyone, will use acceptable and increasingly invisible ICT. All systems will

need to be fit-for-purpose characterised as accessible, trustworthy or reliable, useful and usable (Rogerson 2008). Today's Information Society is in this final stage of evolution — it is a stage that will continue for the foreseeable future. In this society we cannot simply live with ICT, we need to live, work and learn beyond ICT. The papers in this special issue focus on these challenges. Preliminary versions were presented at the *Tenth ETHICOMP International Conference on the Social and Ethical Impacts of Information and Communication Technology* held in September 2008 at the University of Pavia at Mantua, Italy.

The Information Society must be built on a foundation in which integrity and rigour for good science will promote quality ICT and good ethics will promote good professional practice. These appear to be reasonable causal links but there can be and exceptions. These exceptions will impact dramatically on society in ways which we might be able to predict and in other ways whose impact, particularly in the long term, is simply unknown. Indicative of this is the paper *Analysis of MySpace User Profiles* (Massari 2009) in which the author explains that social network sites, such as MySpace have increased the opportunity of individuals to sustain relationships with others who share common interests. The author has found that the majority of MySpace users have many personal details in their profiles, have large numbers of friends who regularly make comments. It is unclear what the ramifications of such online networks will be for individuals or society at large. It is unclear whether the impacts will be positive, negative or neutral. It is unclear whether the impact will be greater for the more vulnerable or gullible members of society. A second ICT application is discussed in *The Ethics of Video Games: Mayhem, Death and the Training of the Next Generation* (Gotterbarn 2009). The author suggests that many games have been designed such that players are encouraged and trained to follow

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narrow and dangerous decision making strategies. The author's concern is that if this leads to this type of decision making being used beyond the virtual reality of games then there will be significant negative societal consequences. He demands that the developers of games need to take this societal risk into account.

The demand on developers is but one element of the notion of professionalism. Stoodley, Bruce and Edwards in *Expanding Ethical Vistas on the IT Professional Landscape* review this notion in detail (Stoodley et al. 2009). They argue that ethical practice must be sustained with an improved outward looking perspective which focuses on the user and that professional educational development should be geared to this shift in emphasis. The theme of users is developed further in *Users' Involvement May Help Respect Social and Ethical Values and Improve Software Quality* (Begier 2009). The author too argues for user involvement but recognises that the developer-user relationship can only succeed with improved competencies on the part of the professional developer. The author points out that this is essential in a world where dynamic development approaches have become the norm. The broad subject of education in the Information Society is the underlying theme of *Knowledge versus Content in E-learning: a Philosophical Discussion* (da Costa and da Silva 2009). E-learning facilities could certainly be used to help re-educate professionals in the way that Gotterbarn, Stoodley, Bruce and Edwards and Begier call for. Da Costa and da Silva argue that the concepts of *knowledge* and *content* need to be redefined with advancing ICT and the advent of the Information Society. They argue that knowledge is dependent on conceptual skills and cognitive abilities, which aligns with Begier's competencies idea, whilst content refers to yet-to-be consumed material which satisfies learning objectives from a perspective independent of the educator.

The nature of ICT is such that applications are developed by many beyond the confines of the so-called profession. In *Agents of Responsibility — Freelance Web Developers in Web Applications Development* (Ahmed and van den Hoven 2009) consider a new type of developer operating beyond the traditional boundaries of the ICT profession. These freelance web developers often reuse code to build systems. This reuse may inadvertently cause harm because of inherent vulnerabilities in free code. The authors argue that reuse should only be after very careful scrutiny of the code. Indeed, freelancers have moral obligations similar to ICT professionals. A second group beyond the profession is the focus in *Hacker Taggers: an Australian Example* (Warren and Leitch 2009). The authors define a subgroup called Hacker Taggers whose purpose is to break into systems and leave a visible calling card to prove entry has been successful. These competitive hackers mark their

territory. These cyber vandals seem analogous with litter louts and graffiti exponents who pollute our physical world. The question remains as to whether tagging is more damaging than littering or property defacement.

The papers in this special issue consider some mechanisms within the Information Society and how people conduct themselves accordingly. Monitoring of both mechanisms and conduct is legitimate within the Information Society but what is open to question is the extent and manner of such monitoring. In *Ethical Implications of Internet Monitoring: a Comparative Study* (Grodzinsky et al. 2009), the authors argue that monitoring should be done in a way that people feel valued and fairly treated. Monitoring in this manner when evaluated against societal norms can help reduce *cyberloafing* and Internet misuse.

Overall, living beyond ICT does not mean living without it, on the contrary, it means using ICT without even noticing it. It means relying upon ICT without even thinking about it. The better the science and the better ICT, the more unnoticed and reliable ICT can become and the more fit-for-purpose it can be (Bynum et al. 2008). Many challenges lie ahead during this final stage of ICT evolution before we can all live beyond ICT.

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