Radio-Frequency Identification and Human Tagging: Newer Coercions

Nada K. Kakabadse, The University of Northampton, UK
Alexander Kouzmin, Southern Cross University and University of South Australia, Australia
Andrew P. Kakabadse, Cranfield University, UK

ABSTRACT

Technological innovation continually shifts boundaries of possibilities and at the same time challenges ethical dimensions. Radio Frequency Identification (RFID) technology challenges both what is possible and what is ethical. On this basis, this paper incorporates an analysis of RFID development and provides penetrating insight concerning the ethical issues society faces and will face. Attention is given to the burgeoning and challenging field of human-centred RFID technology and its impact on the individual’s privacy, safety, civil liberty and on society in general. The paper briefly outlines the history of RFIDs and identifies three broad themes concerning the application of RFID tags for the purpose of human “branding”. In particular, the social rights impact of implants in humans, the potential and actual damage of implants to the physical health of the person, and the ownership, use and miss-use of information collected through implant technology, act as the central themes. In conclusion, the authors identify the critical areas surrounding human branding that require research and public deliberation.

Keywords: Human Branding, Human Tagging, ICT Ethics, Invisible Control, RFIDs, Spychips, VeryChips

INTRODUCTION

New information and communication technology (ICT) holds on the one hand a promise of a new dream of a transparent and vast universe of connections with a new politics of inter-dependency and integration, flexibility and functionality across boundaries. At the same time, ICT engenders ‘transformation in human affairs’ (Toffler & Toffler, 1995, p. 11) such as morality, culture, ideas as well as institutional and political structures. For example, just as one’s eye may be designed to notice movement rather than stillness, one’s mind may also be designed to focus on the obvious rather than what is in the shadow. One of the more important emerging domains of “invisibility” (Thorne & Kouzmin, 2004, 2006, 2007) is the electromagnetic spectrum - the largely invisible space over which radio waves, light waves and directed energy travel connecting a variety of systems in invisible ways. Radio-frequency
Identification (RFID) is gaining a foothold in an ICT-dominated society without the necessary, critical debate concerning its effects (Kakabadse et al., 2009). Although promoted as an innovation in convenience and enhancing efficiency, RFID technology also has its shadow - a dark side of surliness and control.

Identification technology (ID) is at least 4000 years old and was practised in ancient Egypt, where detailed descriptions of criminals were maintained by the authorities (Di Nardo, 2009). However, the fusion of individual technologies (memory, logic, MEMS, image sensors, biochips) is opening unlimited possibilities and is becoming commonplace in a wireless rather than in an electronically-wired society. Since 1917, when Nikola Tesla, used electromagnetic waves to identify the range, altitude, direction and speed of objects and, thus, established principles regarding frequency and power level for the first and primitive radar units (Tesla, 2000), the military has developed highly-sophisticated systems which depend upon the spectrum for communication; radar; targeting assets; laser and radio frequency-guided munitions; Global Positioning Systems; Blue Force Trackers; and all manner of sensors for collecting intelligence and information (Ebbutt, 2008).

There are whole arrays of robust Combat Systems programs connecting many manned and unmanned systems which enhance soldier capability and protection. Some of those systems are being introduced into civilian space as well. RFID is the combination of radio technology and radar and ‘consists of two main components: a transponder to carry data (e.g., a tag), located on the object to be identified and an interrogator (or reader) to read the transmitted data (a device handheld or embedded in a wall)’ (Srivastava, 2007, p. 5; Foster & Jaeger, 2007). The tag size of the grain of rice, 1 mm in diameter and 11 mm long (and getting smaller), consists of a tissue-bonding special plastic cap that contains a hermetically-sealed galls capsule with an RFID circuit, coil antenna and ID chip (Foster & Jaeger, 2007).

Governments and other non-public authorities have increased their overall spending on security (Seahill, 2007). Surveillance is also becoming increasingly intense as well as competitive (Bauman, 2006; Brzezinski, 2004; OECD, 2004; Thorne & Kouzmin, 2008). New identification and smart technologies, such as biometrics and RFIDs, are becoming more commonplace and satellite-based monitoring is increasingly becoming prevalent (OECD, 2004). Although these security services are promising, they are open to abuse (OECD, 2004).

In the last few years, people have begun to legally implant microchips, without much public debate or policy consultation - a move that could have serious repercussions for privacy and freedom (Foster & Jaeger, 2007). However, the majority of the literature is concerned with non-humanistic applications, with a focus on improvement of supply-chain management. The literature on humanistic RFID is focused on suitability with a focus on medicine (Masters & Michael, 2006). Although there are many parallels, and potential for convergence, human-centric RFID requires special attention as the control of inventory may be desirable but control of people is not (Masters & Michael, 2006). RFID ‘benefits for consumers remain largely hypothetical, while the privacy-invading threats are real’ (Stajano, 2005, p. 31) and public policy is noticeably silent on human-centric RFID issues. This paper aims to discuss the burgeoning field of human-centred RFID technology and its impact on individual privacy; safety; civil liberty and broader societal effects. The paper is based on a broad literature review, outlining RFID history and introducing the broad themes of the application of RFID tags for the purpose of human “branding”.

In particular, the paper first introduces a historical background analysis of RFIDs. This is followed by a discussion highlighting the sanctioning of RFIDs for the purpose of human implant. Then, discussion focuses on RFID boundary crossing from that of outside to that of “under the skin”. This is followed by critical discourse focusing on RFID potential