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Legal Regulation & Education: Doing the Right Thing?

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Bridging the gap between law and technology design: the challenges of ubiquitous computing

Abstract: This paper contributes to a body of work seeking to narrow the gap between the law and design communities. It will consider the international policy and regulatory climate for privacy in the context of ubiquitous system design. The authors are combining, law, political science and human computer interaction perspectives to understand and map solutions to new regulatory challenges posed by this emerging technology. Weiser's (1991) influential view of ubicomp is one where ICTs weave themselves "into the fabric of everyday life until they are indistinguishable from it". This future involves 'invisible' technology operating in the background, seamlessly monitoring human behaviour and using embedded sensing devices to engage, observe and respond to various stimuli in a range of routine, everyday practices. One of the clear contemporary examples of this is the Internet of Things (i.e. networked objects communicating with each other independently), but other examples include smart assistive homes and smart cities of intelligent transport, energy and logistics infrastructure.

A fundamental conflict exists between established legal principles founded on human autonomy/control and the increasingly ambient human data collection being conducted by invisible (psychologically and physically) sensing technologies. As Cas (2009) has stated, "ubiquitous computing will erode all central pillars of current privacy protection", and this is not a sustainable position. Challenges to be addressed by regulators and businesses include maintaining user trust in increasingly autonomous decision making computer infrastructure, gaining valid consent from users and controlling use, collection, & sharing of data.

A number of law & policy initiatives attempt to tackle these issues, such as privacy impact assessments or privacy/ethics by design frameworks, like those currently proposed in Article 23 of the General EU Data Protection Regulation reform package. These tools will be considered in detail, specifically addressing the operational challenges of translating abstract regulatory concepts into guidelines that can be understood by designers, and embedded into the very architecture of the technology. This paper will ground discussion through real life examples of ubicomp deployments, focusing on new business models for deriving value from services/data collection and what role the law has in shaping these. The paper will also engage with ideological arguments surrounding commoditisation of data vs human rights approaches, reflecting the near-future regulatory sphere, especially the EU DP reforms.

References:

- J Cas (2009) "Ubiquitous Computing, Privacy and Data Protection" in S Gutwirth et al (2009) Computers, Privacy and Data Protection: An Element of Choice (Springer)

- M. Weiser (1991) "The Computer for the 21st Century" Scientific American