Privacy by Design Beyond the Screen

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"Privacy by Design" (PbD) has become a widely supported concept, but is it actually possible to embed legal privacy rules in technology design? And what does it mean to 'embed' 'legal rules' or 'privacy protection' in 'design'? The workshop aimed to:

- bridge approaches between disciplines,
- find common ground between legal, technical, and design concepts;
- conceptually discuss the 'locus' of Privacy by Design (in the hardwiring, in default settings, and/or in the design of the environment);
- apply Privacy by Design to scenarios of smart toys and augmented reality; and 5) identify implications for law and technology.

These aims have been met. There was intensive, collective interaction between all participants from different disciplines (law, philosophy of technology, industrial and interaction design, computer science, and privacy engineering), leading to joint understandings of the challenges of PbD (aims 1-2), particularly in relation to smart toys and augmented reality, which were discussed at length in sub-groups (aim 4). The discussions made us realise the complexity of PbD in these contexts, but also in general: not only can PbD be located in hardware/software, in default settings as well as in the design of the environment (which was explored in the scenario discussions, aim 3), but it also matters considerably what one understands 'privacy' to mean. The many possible conceptualisations of privacy complicate the understanding of what PbD is or should be. In addition, while it is clear that privacy involves other aspects besides data protection, the relationship between Privacy by Design and Data Protection by Design needs more study, since they tend to be equated too easily. Moreover, it turns out to be difficult, and undesirable, to focus only on the design of particular devices (such as a toy or AR lenses), since these are connected to backend systems where bulk data are processed in continuous processes of machine learning and real-time feedback loops. If one wants to effectively design privacy into smart technologies, this should actually be done from scratch and encompass the entire gamut of infrastructures, platforms, apps, devices, and sensors in a ubiquitously connected world. The main findings and implications for law and technology (aim 5) —widely shared and somewhat of an 'Aha moment' to many— therefore turned out to be a) the importance of a holistic approach to privacy/technology design: many people are working on some pieces of the puzzle, but hardly anyone looks at the whole picture. Much more should be done, therefore, to connect different communities working on aspects related to privacy/technology design. And b) that the current understanding of Privacy by Design *as a product* is dangerous (since it misleadingly suggests that issues can be 'solved' by accommodating some privacy concerns in an application's design in some form; but privacy can never be achieved by design alone), and should be broadened up and instead be understood *as a process*, which should also acknowledge the broader (political) questions to ensure that proper attention is paid to the real underlying privacy regulatory and design challenges of new technologies.

The proposed outcome was a research agenda for PbD; a policy brief; and a kick-start of joint, multidisciplinary academic papers. The last outcome has been achieved: all three sub-groups have kick-started a joint paper during the workshop, which the participants are now discussing to elaborate in the coming year. The many questions raised have been noted in our elaborate meeting notes and will be used by individual participants to take up in their future research. The policy brief has been put on hold, since the outcome—the problem is even more complex than we envisioned ourselves—is not amenable at this stage to disseminate among policy-makers.

The format of the workshop and the Snellius venue worked very well. The facilities were excellent (except for a screen that, despite many efforts and assistance, no-one was able to connect to a computer); and the walls were used very productively—the venue stimulated to explore different discussion and work formats. There was a good mix of plenary discussions and work in sub-groups. The agenda, setting, and group of people fostered an atmosphere of intensive collaboration, in which everyone joined and no 'cliques' split off. Participants felt the five-day collaboration was very intense: exhausting and exhilarating at the same time, and several experienced it like an academic holiday. One aspect for possible improvement was that while the workshop was targeted at conceptual

discussions, with two scenarios to make the implications concrete, the discussions in the end tended rather to centre more around the concrete cases than around the conceptual questions; although this was not considered a drawback—the discussions were highly relevant in themselves—in a next workshop we might seek to organise the discussions and use of cases somewhat differently. A useful suggestion in the evaluation was also to involve an experienced participant from professional practice to take care of the workshop's process management, since academics are not always the most experienced in managing larger-scale workshops.

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