

# Chapter 78

## A Decision Support System for Privacy Compliance

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### ABSTRACT

*Regulatory compliance in areas such as privacy has become a major challenge for organizations. In large organizations there can be hundreds or thousands of projects that involve personal information. Ensuring that all those projects properly take privacy considerations into account is a complex challenge for accountable privacy management. Accountable privacy management requires that an organization makes sure that all relevant projects are in compliance and that there is evidence and assurance that this actually is the case. To date, there has been no suitable automated, scalable support for accountable privacy management; it is such a tool that the authors describe in this chapter. Specifically, they describe a privacy risk assessment and compliance tool which they are developing and rolling out within a large, global company – called HP Privacy Advisor (HP PA) – and its generalisation and extension. The authors also bring out those security, privacy, risk, and trust-related aspects they have been researching related to this work in particular.*

### INTRODUCTION

The tool discussed in this chapter is an intelligent online decision support system that assesses privacy compliance and risk, guiding employees in their decisions on how to handle different types of data. Employees access the tool via a web-based interface and answer a dynamically-generated

questionnaire; the tool compares the answers against the company's policies and standards, local laws and requirements, and other guidance. It assesses a project's degree of compliance with corporate privacy policy, ethics and global legislation, and the privacy promises the company makes. It generates a compliance report for each project that is retained in a central database and, if appropriate, notifies an appropriate member of the corporate Privacy Office. It also provides check-

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lists, reminders, customized help and warnings to users. The major areas of technical innovation are in knowledge representation and inference and in simplifying knowledge management. The core technology that underpins this tool is the result of a joint effort by HP Labs and the HP Privacy Office. Organizations are currently finding it very challenging to be compliant to regulations, particularly in areas such as privacy. Contributing factors to this challenge include a growing number of privacy regulations around the world, outsourcing and transborder data flow concerns and novel technologies such as cloud computing that challenge existing governance and security frameworks for handling personal information.

Organizations processing personal data need to ensure that their operations are in compliance with applicable privacy regulations as well as with consumer expectations. Many larger organizations have a Chief Privacy Officer and privacy staff in order to implement compliance in their organizations. However a privacy staff is typically small, making effective oversight over hundreds or possibly thousands of projects per year difficult. Smaller organizations often do not have the resources for hiring qualified privacy experts.

Both large and small organizations can benefit from automated solutions (such as decision support tools) that help them take privacy concerns properly into account for all relevant projects. Both large and small organizations will benefit from broad privacy knowledge encoded in the knowledge base of such decision support tools as this knowledge is becoming increasingly complex. In addition, for large organizations, tools – unlike manual processes – can scale up to handle hundreds or thousands of projects. Tools can thereby achieve a better level of assurance that *most or all* their projects are in compliance with regulatory standards and an organization's policies.

Unfortunately up to this point no automated tools existed that comprehensively support privacy management within organizations. In this chapter

we describe a decision support tool that we have developed for privacy as well as its generalization to other compliance domains. One of the key contributions of this work is to show that global privacy policies and laws can be successfully represented within a user-friendly tool. Although the knowledge base (KB) content we developed was specific to one company, we are confident that the KB is detailed and generic enough to make it highly likely that a similar approach can be taken for other companies (although some of their specific policies will surely differ). From initial modeling exercises for other compliance domains we conclude that their knowledge is not intrinsically more complex than that which we have encountered in the domain of privacy policies, suggesting that our approach to automating compliance can be utilized in these other domains as well.

## **BACKGROUND**

In this section we review the most relevant decision support technology as well as formalized approaches for expressing privacy and security policies.

The tool we have built is a type of expert system, as problem expertise is encoded in the data structures rather than the programs and the inference rules are authored by a domain expert. Techniques for building expert systems are well known. A key advantage of this approach is that it is easier for the expert to understand or modify statements relating to their expertise. We are able to use a relatively simple underlying representation, as it was not necessary to use confidences, nor to schedule many rules that are eligible for execution at the same time through the use of a 'conflict resolution' strategy, as a one-step reasoning process sufficed. Issues with expert systems include:

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