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Abstract

Data is one of the most valuable assets in modern enterprises as it provides businesses with strategic information and supports the decision-making process. Nonetheless, management of organizations often has limited knowledge of types and volumes of data that they collect, where it is stored, how it is used, who can access it and who is responsible for the management of data strategy. Enforcement of the General Data Protection Regulation in the European Union has increased the level of responsibility that companies hold in regard to protection of personal data of users and has grown awareness of their privacy rights amongst individuals. This motivated numerous discussions between academics and industry professionals regarding applicability of the GDPR to information systems domains and feasibility of the proposed privacy frameworks and design techniques. Data analytics is one of the concerned areas affected by the Regulation, and companies aim to implement appropriate privacy strategies while minimizing risks and disruption to the business. Data Warehouses are strategic tools that are used in data analytics as they support business decisions by supplying answers for relevant questions. Therefore, it is important to investigate how such systems can be implemented with privacy in mind while still being able to fulfill its business function. Using design science research methodology, this study reviews available privacy frameworks, analyzes their compatibility with data protection principles and tests the application of relevant privacy techniques and strategies by evaluating the process of designing and architecting a Data Warehouse system. The proposed solution answers the question of how application of Data Protection by Design and Privacy by Design philosophies in Information Systems Management can help organizations build GDPR-compliant systems.