Informatica

White Paper

Recommendations on How to Tackle the ‘D’ in GDPR

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1. Executive Summary

Effective May 2018, the European Union General Data Privacy Regulation (GDPR) comes into force, affording enhanced protection to the personal data. The GDPR applies to any organization established in the EU and to any organization (anywhere in the world) that processes the personal data of EU data subjects when offering them goods or services or when monitoring or tracking their activities. This regulation could have significant impact for many organizations' and how they manage data pertaining to customers, consumers, partners, staff and other "data subjects"; where a "data subject" is an individual. The GDPR impacts the storage, processing, access, transfer, and disclosure of an individual's data records as well as having some potentially very large penalties for violations.

The GDPR will require many organizations to fully understand how they use current and future information assets to incorporate these new data privacy requirements and enhance citizen's privacy rights. For many, the associated changes to information management practices will require a thorough evaluation of current and future data capabilities. This paper explores how breaking these requirements down, helps aid the understanding of the data challenges and the direction organizations could take around their GDPR initiative.

To aid understanding, this paper looks at some of the more common questions many organizations ask on their GDPR initiative journey. We call these the Entry Point Questions. To help answer each Entry Point question we have laid out a set of capability requirements that we consider important and, aligned to each capability, is a Technology Use Case for how each Capability can be developed. The table below how these items are all related.

ENTRY POINT QUESTION	CAPABILITY REQUIREMENT	TECHNOLOGY USE CASE
Where is all our potential in-scope data?	**Sensitive Data Discovery & Risk Analysis**	**Detect and Protect**
How is our personal data being used?	**Policy Interpretation**	**Enterprise Data Governance**
How do we manage data subject data?	**Personal Data Management**	**Data Matching and Linking Use Case**
How do we secure data and prevent unauthorized access?	**Enabling Data Security Controls**	**Detect and Protect**

There are also examples where requirements, such as consent capture and management, may span multiple capability requirements and technology use cases; so, organizations need a clear understanding of the potential complexities involved.

Whilst the GDPR poses many challenges, it has the potential to bring many opportunities around the use of data. This paper outlines potential use case approaches and draws on our depth in data management experience to help organizations simultaneously address these challenges and introduce innovative data management, governance and security capabilities to maximise their compliance programs. Informatica delivers integrated and innovative software solutions to automate secure and control data, and these solutions can quickly support organizations' on their GDPR initiative.

2. Background

2.1 General background and potential implications

The digitization of society is proceeding at a rapid rate, with almost every organization leveraging the power of data to improve business decisions, engage customers and partners, and drive transformational business processes. The European Commission has recognized that much of the data being created, collected, processed and stored is in fact personal data, which can reveal extensive information of EU data subjects.

Existing data protection regulations have not necessarily reduced concerns regarding the protection and safety of personal data. Diversity of data protection regulations across the EU member states frustrates data subjects, with 90% indicating that they would like the same data protection regulations across the EU—regardless of where their data is stored or processed.[1]

Therefore, the GDPR has been enacted to better protect citizens' fundamental privacy rights in the digital age, and address concerns regarding diversity of data protection laws.

Beginning in May 2018, the GDPR will require many organizations to more effectively manage and protect data on customers, citizens and staff and others. This regulation applies to EU data subjects, regardless of nationality or residence, to provide principles and rules on the protection of personal data.

With GDPR being a "principles" based regulation, this means organizations must consider what obligations they may, or may not, need to meet given the unique circumstances of their business and use of data. Many organizations will therefore need to create an interpretation of these principles to help guide and steer their GDPR initiative.

The GDPR will require many organizations to better understand how they will utilise their current and future information assets to comply with these new data privacy principles. This will have an impact on the people, the processes, the technology and the data management practices and policies for many organizations.

Violations to the regulation could have significant financial penalties for many organizations, depending upon the type and scale of the violation. Fines of up to €20M or 4 percent of an organizations total worldwide annual turnover, whichever the larger, could be applied.

2.2 Who is GDPR relevant to?

GDPR compliance has multiple dimensions and is not limited by physical geography; organizations in North America, Asia and others must comply if they store and process EU data subjects. Today personal data is handled by organizations that deal directly with consumers (B2C), organizations that deal with other organizations (B2B) as well as dedicated data processing companies. Organizations that process data on EU data subjects will need to thoroughly understand their compliance requirements, regardless of which country their operations or data centers are physically located.

[1] http://ec.europa.eu/justice/data-protection/reform/index_en.htm

2.3 What makes GDPR challenging from a data perspective?

For many organizations, there are distinct data challenges in relation to GDPR. Compliance to the GDPR implies control and governance of personal data wherever it is within an organization. However, the proliferation of data throughout organizations and their business ecosystems, can make managing data challenging. Significant trends like an increase in data diversity, and a move to cloud based computing adds to the data management and security challenges by creating a highly dynamic IT landscape. To demonstrate these challenges, we have provided some questions that many organizations are struggling to answer in relation to GDPR:

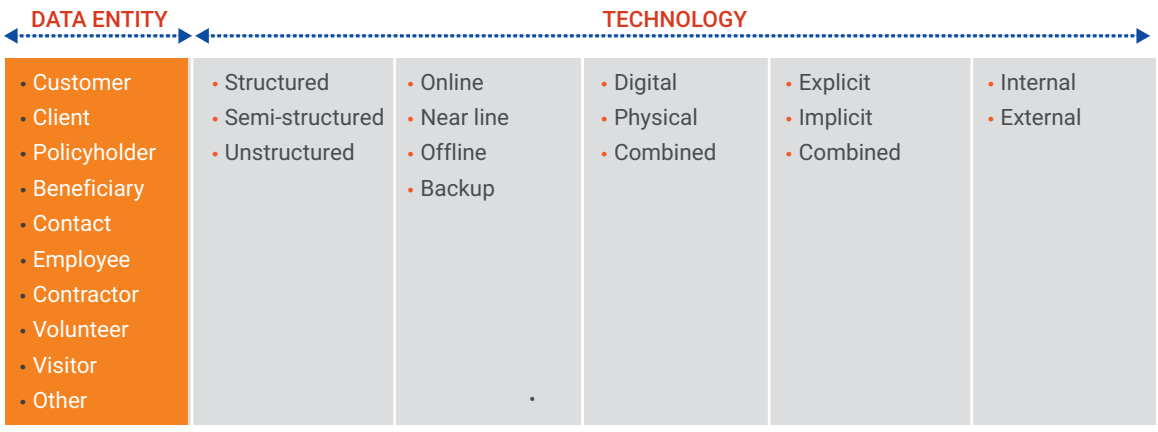
- Whereabouts in any organization, and its ecosystem, is all the relevant and in-scope data that the GDPR principles would apply to? Is that data at risk?
- How do organizations keep track of its data across its operational ecosystem?
- How does an organization define and manage all its relevant data assets to help ensure all necessary policies and procedures are applied and enforced?
- Whereabouts in any organization are all the relevant in-scope data records held that the GDPR principles would apply to? How can these be identified and linked?
- How does an organization capture and manage the consent provided by a data subject? How can an organization manage changes to the data subject's choice of consent or manage the definition of consent?
- How can an organization efficiently and effectively respond to subject access requests, right of erasure and portability requests within the required time frames?
- How does the organization control access to the relevant data? Is privacy data removed when it is not required for the organization function or activity?

2.4 Types of data potentially in scope

Another potential challenge is how organizations respond to the types of data they hold. In this context, we define types in two ways:

1. A data entity type
2. A technology type that manages the data entity type

Most pieces of data subject information would fit into one or more data entity types, as well as one or more Technology types. The diagram below shows some examples of potential Data and Technology types, that may apply to in-scope GDPR data:

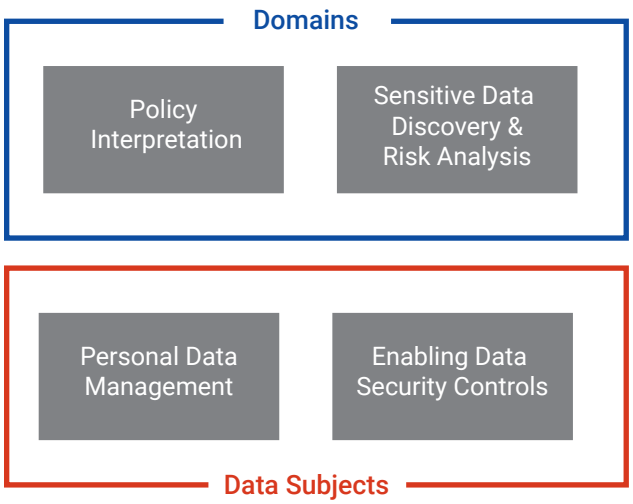


These different types may require organizations to consider very different approaches, methods and technologies for the capture and management of in-scope GDPR data assets.

3. Entry Points, Capability Requirements, and Technology Use Cases

To help drive understanding and awareness, as well as aid activity planning, Informatica has identified several key entry point questions that highlight some of the more common GDPR data challenges. These entry points are often driven by simple questions, that may require organizations to carefully consider the people, process and technology they need to produce the answers.

To help support answering these questions we have outlined the potential capabilities required, as well as some technology use cases that deliver the required capabilities. The capabilities required are structured into groups, the diagram below shows how this grouping works and the relevance of each group.



These Capabilities sit within two areas called Domains and Data Subjects.

Domains relates to the domains of data subject data. It helps provide insights into Domain Discovery and Management, which is used in defining scope and providing an organizational view of data.

Data Subjects relates to the actual data subject data at a transactional level. It helps provide insights into personal data management, which is used to provide subject level responses and subject level insights.

3.1 Entry Point Question: Where is all our potential in-scope data?

Background: Data is usually scattered across many systems, applications and sources across an enterprise. This is especially true for larger organizations, and those that have grown by acquisition. Due to the roles EU data subjects could play in an organization (customer, supplier, partner, employee, etc.), it is unlikely that personal data will be restricted to one department or system. Organizations with more diverse IT systems should not only consider data in core applications but also spreadsheets, local databases and big data solutions.

Capabilities required: Sensitive data discovery and risk analysis is a capability to discover data across a wide range of technology solutions and using this, along with other sources of information such as the amounts of actual data and data proliferation, to create a risk score for data. The risk score helps organizations understand where the highest risk data is stored so that any potential remediation or security control requirements can be prioritized based upon a risk. Tracking the risk score over time shows whether remediation or control activities have improved the data risk position. In support of the lawful purposes, consent may be required so capabilities, such as Data Lineage, help organizations identify new stores of personal data to aid understanding potential changes in use.

Technology use case: Sensitive data discovery and risk analysis could be characterized as being a detect and protect usse case, with a focus upon the detect portion. These are core capabilities to provide insights into where in-scope sensitive data is and where it proliferates to, with analytical insights into data risk. Typical capabilities that could apply to this use case include:

- **Data policy definition:** Business and IT definitions, vague data, policy conflict
- **Automated data discovery:** Find relevant in-scope sensitive data, 1st pass plus continual monitoring, classification of data, supporting system integration
- **Data proliferation:** Where is the data? Where does it go? New sources?
- **Data risk scoring:** Based upon movement of data + proliferation + access + volume, prioritization plus planning, history and score monitoring over time
- **Data protection:** Identify where data access need restrictions, what data should be pseudonymized, where should encryption be applied, and the viewing of data based on time, location and role.

Technology solutions: Informatica's Secure@Source, could be used to help discover the locations of in-scope data, classify the data, monitor data proliferation and assign risk scores. Tracking over time, shows how changes are positively or negatively influencing compliance efforts..

Benefit: Provide insights into not just the location of data but also rank data according to risk.

3.2 Entry Point Question: How is our personal data being used?

Background: Our world is undergoing a digital transformation which is affecting all sectors. Growth in data generated, collected and analyzed is a clear global trend, and a significant percentage of this data can be attributed to individual's personal data. As data proliferates in an organization, the ownership, control and management of this data becomes more challenging. Like many forms of regulatory compliance, initiatives to deliver GDPR will be optimally achieved through an enterprise-wide approach to data governance.

Capabilities required: Policy Interpretation is a capability to capture both business and technology understanding of policies, responsibilities, processes, data terms, logical and physical models. Crucially, it is also the location where understanding of the technical environment is linked to the understanding of the business environment. This linkage provides an organization with a holistic view of information about their in-scope data Domains and forms an integral part of an approach to managing their data assets.

Technology use case: Policy Interpretation could be characterized as being an enterprise data governance use case. These are core capabilities to provide a top down and bottom up view of the organizational management of data, with links between the Business and IT view of information. Typical requirements that would apply to this use case include:

- **Policy definition:** Business and IT definitions, documentation across all operational levels of the business, logical and physical data and process models
- **Responsibilities:** Who owns the data, who uses the data and what functions have responsibility for quality and security
- **Definition of terms and process:** Business processes, key data entities, attributes, systems, quality and controls, standardization, business definitions of consent
- **Change process:** Governed process for definitions, governed process for change, process governance
- **Linkage to artefacts:** Logical to physical artefact linkage, technical & Business data lineage, data quality incorporation

Technology solutions: Adopt enterprise data governance solutions that enable business and IT functions to work together towards the common goal of data governance. Solutions, such as Informatica Axon, are specifically designed to unite business and IT views of data, and create the link between logical and physical data assets.

Benefit: Quick and easy contribution from all subject matter experts, to define the processes, policies and data entities the organization has to rapidly build a holistic data governance capability for in-scope data..

3.3 Entry Point Question: How do we manage data subject data?

Background: As a direct result of the diverse usage of data in complex IT environments, creating a single view of all information for individual data subjects is challenging. This challenge stems from the fact that different systems use very different mechanisms to store and index data. Without a complete view of an individual data subjects' data and how this is stored, managed or processed within an organization, GDPR compliance will be challenging, especially around individual data subject's rights.

Capabilities required: Personal data management is a capability to identify data subject records within all identified sources, match and link records together for each individual data subject and create a Entity 360 repository. This repository provides a source of high quality data on what actual data records are held across the in-scope sources and how each piece of data is linked to an individual data subject. The Entity 360 could act as the authoritative source of data when organizations are responding to subject access requests, right of erasure or right of portability requests. From a business perspective, Entity 360 can support organizations in managing consent for personal data usage, and then managing this consent: when was it given/withdrawn, through which channel, and which specific terms were agreed to?

Technology use case: Personal data management could be characterized as being a **data matching and linking** use case. These are core capabilities to identify data subject records across systems and provide a cross-system view of data by matching like records together and creating linkages. Typical capabilities that could apply to this Use Case include:

- **Access to relevant data:** Profile data subject data, extract relevant data from source systems, apply analytical processes to semi & unstructured content
- **Data quality processing:** Assess data quality levels, apply manual/automatic remediation, process control for manual remediation, metric reporting
- **Single trusted source of data on data subjects including consent, how it is obtained, and how it is managed:** Includes different views and perspectives of the subject depending on their consents
- **Matching and linking:** Define matching rules based upon business process definitions, match records, link like records with scoring, associate consent
- **Data persistence:** Persist linked/unlinked records, analytics, and reports

Technology solutions: Adopt solutions that help discover data subject records from all data domains, using advanced algorithms to match all data related to the same data subject, regardless of where the data is stored. **Informatica Relate 360** leverages advanced algorithms to identify data associated with the same data subject, and Master Data Management provides the framework to maintain and manage a common view of data on data subjects.

Benefits: A single view of individuals has shown to have business benefits beyond GDPR. This is especially true if the individual in question is a customer, who are increasingly expected tailored personal experiences. From a GDPR viewpoint, the ability to link all data for each individual data subject will ease the burden of enabling individual's rights. This includes the right to understand data usage, right to be forgotten and ensuring consent is correctly applied.

3.4 Entry Point Question: How do I secure data and prevent unauthorized access?

Background: Data protection controls are an approach to enacting the GDPR consent requirements and help protect personal data. There could be a requirement on from IT viewpoint to remove, mask or pseudonymize production data used for testing purposes or to pseudonymize data used for external data transfers. Data access control for personal data at a user level in applications should be reviewed for compliance purposes.

Capabilities required: Detect and protect also provides access controls and protection to information on data subjects. Data subject information is often exposed to many different individuals across an organization and its ecosystem. Data security controls are used to remove or hide data subject information from those who shouldn't have visibility of it, whilst making the information available to those that should.

Technology use case: Enabling consent control could be characterized as being an **detect and protect** use case. These are core capabilities to protect and secure data access, applying data centric controls such as masking, encryption and access controls, and to manage the lifecycle of data including archiving and deletion of data and the application. Typical capabilities that could apply to this use case include:

- **Risk analysis input:** Use risk scoring to direct data controls methods
- **Orchestration:** The ability to schedule and coordinate data protection tasks based on identified risks and monitoring of unsafe access or conditions
- **Data security controls:** Static or dynamic masking, pseudonymized, role-based access, encryption or tokenization.
- **Change / update history:** Application against source systems, record masking or archiving outcomes against consent record, audit trail generation for evidence
- **Archiving:** Archive data out of production systems, log activity to provide evidence, move offline to prevent accidental usage or access

Technology solutions: Adopt solutions that can help manage the lifecycle of data assets and apply controls over these assets. **Informatica Permanent Data Masking** and **Dynamic Data Masking**, could be used to help to automatically limit the number of people and systems that have unrestricted access to personal data. **Informatica Secure@Source** provides data security remediation by orchestrating updates to security controls.

Benefits: Introduce automation into data masking to reduce risk of breaches of personal data. Visibility of personal data is restricted to those authorised to view it, and personal data is not proliferated without suitable protection.

4. Partners

As with many forms of regulation and compliance, technology alone will not ensure compliance. Organizations may need the best thought leadership for their GDPR journey, as well as traditional service and technology solution delivery. Informatica is working together with many highly trained and skilled partners to support you on your wider GDPR initiative. These partners have been specifically chosen due to their deep understanding of data management, and their focus on GDPR compliance.

Find the right partner for you, or contact your local Informatica representative, who can help you find the best partner based upon your needs and requirements.

5. Conclusion

This paper sets out the need for organizations to consider the data implications of GDPR. This new regulation brings with it both challenges and opportunities for many organizations. Given the short amount of time until this regulation becomes effective, many organizations will need to consider how their interpretation of the GDPR principles will impact current and future data management processes.

To help organizations quickly move to operationalizing these interpretations, Informatica has outlined some of the key entry point questions stakeholders are asking and suggesting some capabilities that will be required to help answer these questions. The diagram below shows how these questions and capabilities don't just tackle one part of the set of GDPR requirements; rather it helps build out a whole set of capabilities to tackle many of the data challenges GDPR brings.

Aligned to each capability is a technology use case. Each use case outline the types of software solutions and technologies that could be employed to deliver it.

Informatica has been the leading data management vendor for over 20 years and has solved complex data management challenges for thousands of organizations around the globe. GDPR will create many complex data management challenges for many organizations, so Informatica and its associated partner ecosystem are ideally placed to help these organizations with their GDPR initiatives.

6. Disclaimer

Compliance with the GDPR will be based on the specific facts of an organization's business, operations and use of data. This document provides a set of discussion points that may be useful in the development of an organization's GDPR compliance efforts, and is not intended to be legal advice, guidance or recommendations. An organization should consult with its own legal counsel about what obligations they may or may not need to meet.

About Informatica

Digital transformation is changing our world. As the leader in enterprise cloud data management, we're prepared to help you intelligently lead the way. To provide you with the foresight to become more agile, realize new growth opportunities or even invent new things. We invite you to explore all that Informatica has to offer—and unleash the power of data to drive your next intelligent disruption. Not just once, but again and again.

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