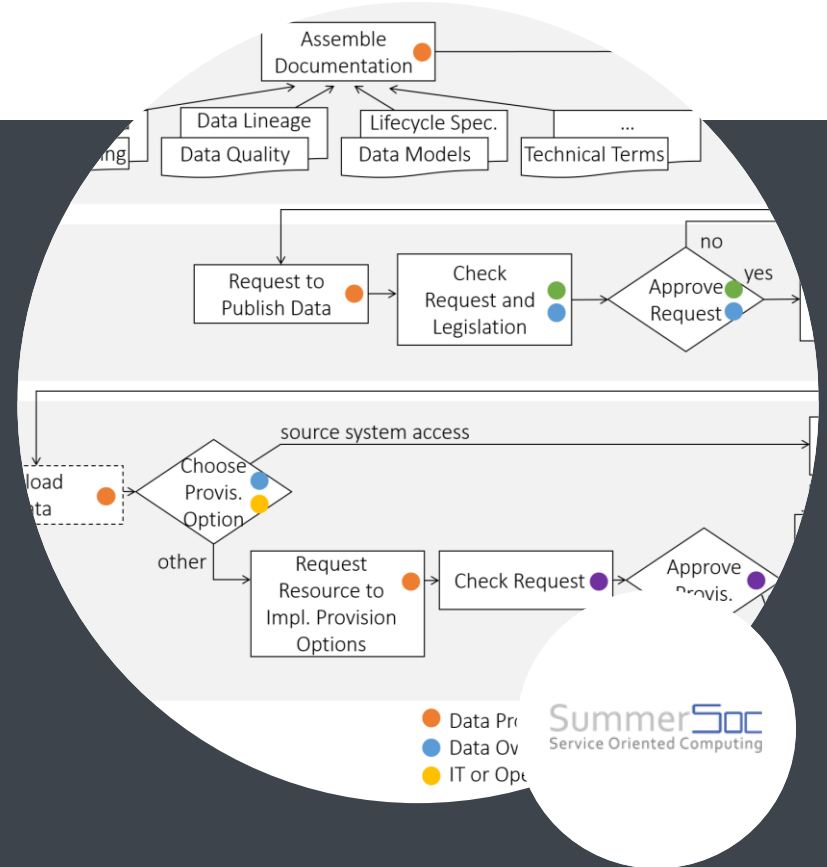


From Data Asset to Data Product

The Role of the Data Provider in the Enterprise Data Marketplace

Rebecca Eichler, Christoph Gröger, Eva Hoos, Holger Schwarz, Bernhard Mitschang

16th Symposium and Summer School On Service-Oriented Computing (SummerSoC 2022)



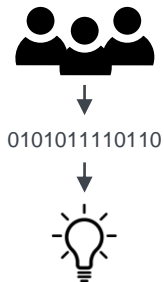
Outline

- Introduction
- Providing Data in the Enterprise
- Providing Data Through the Enterprise Data Marketplace (EDMP)
- Assessment - How does the EDMP Assist the Data Provider
- Conclusion

Introduction

The Enterprise Data Marketplace

Goal: Extract Data Value in Enterprise



Data Democratization:

empower employees to

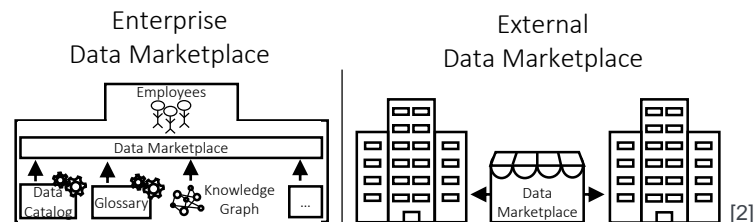
- find
- understand
- access
- use
- and share

data across the enterprise.



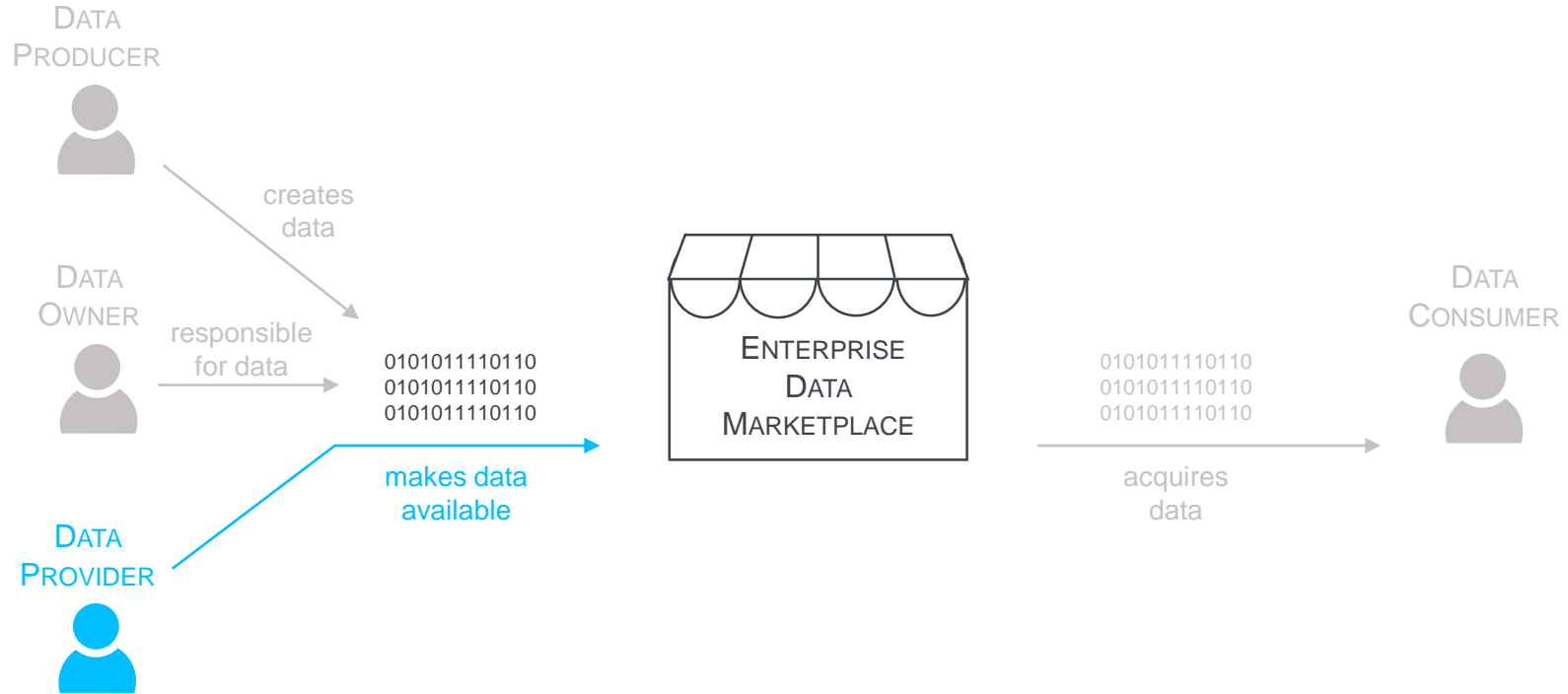
Enterprise Data Marketplace:

Platform for exchanging data within an Enterprise



Introduction

Role Distinction



Introduction

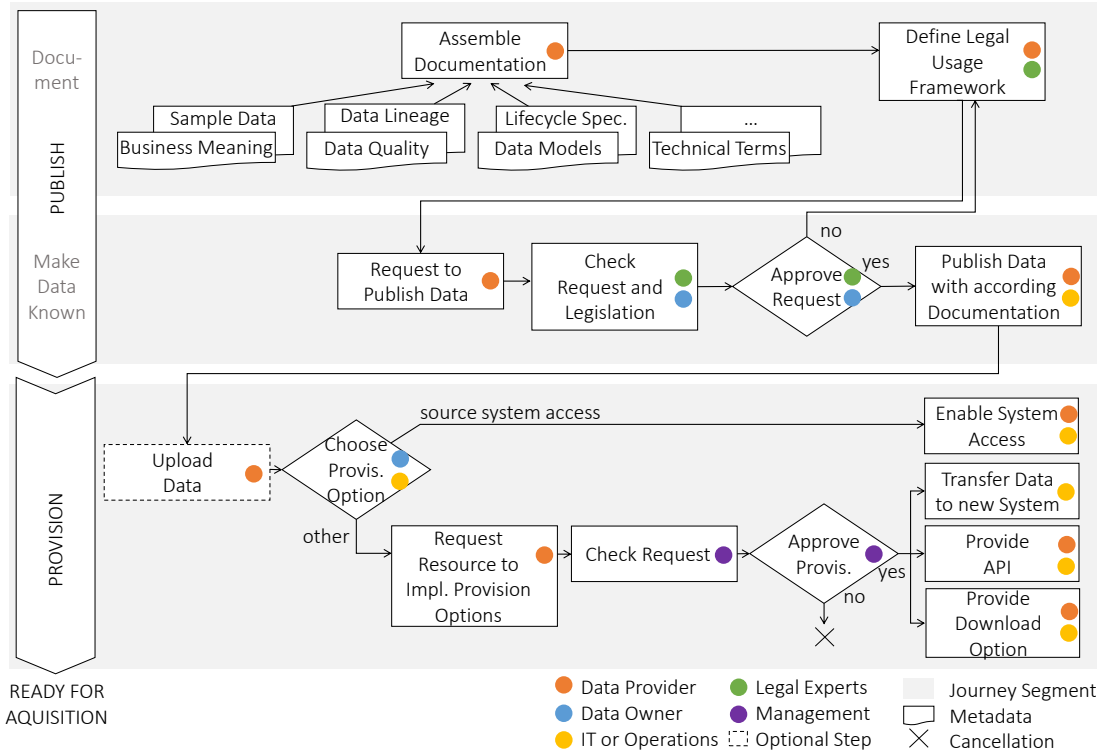
Method

- Scientific perspective - literature study
Including research articles and white papers
- Practical perspective - semi-structured expert interviews
 - Based on rough set of questions
 - Interviewees in various roles

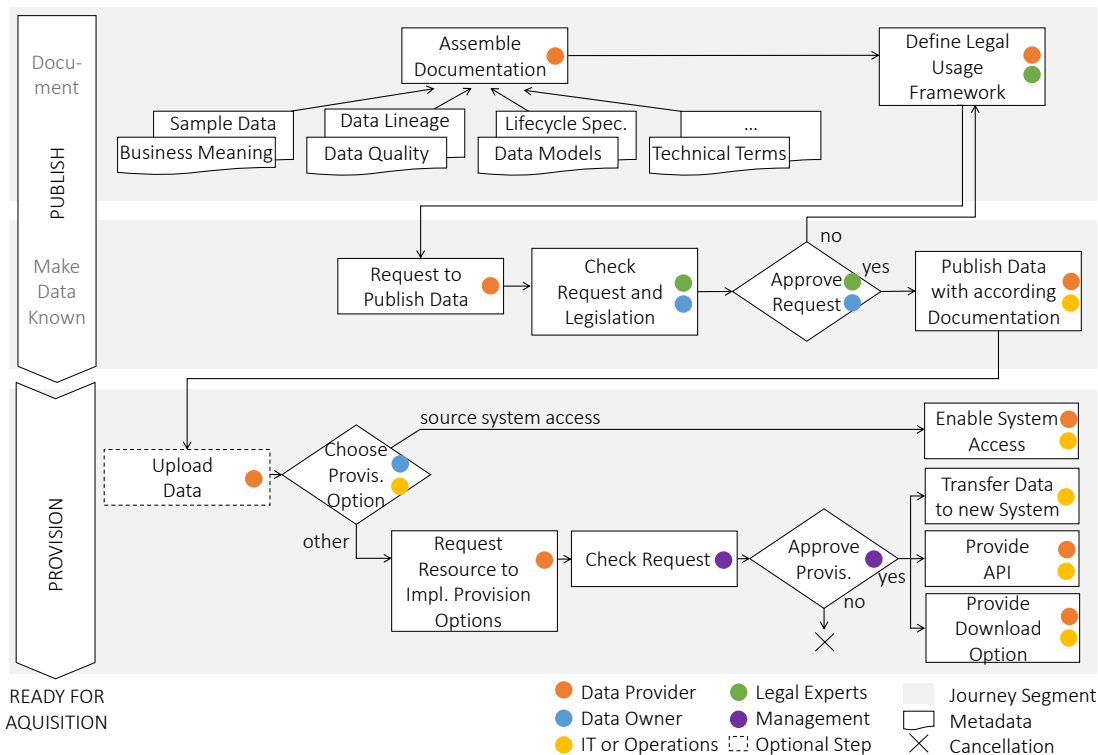


Providing Data in the Enterprise

The Data Provider Journey



Providing Data in the Enterprise Challenges

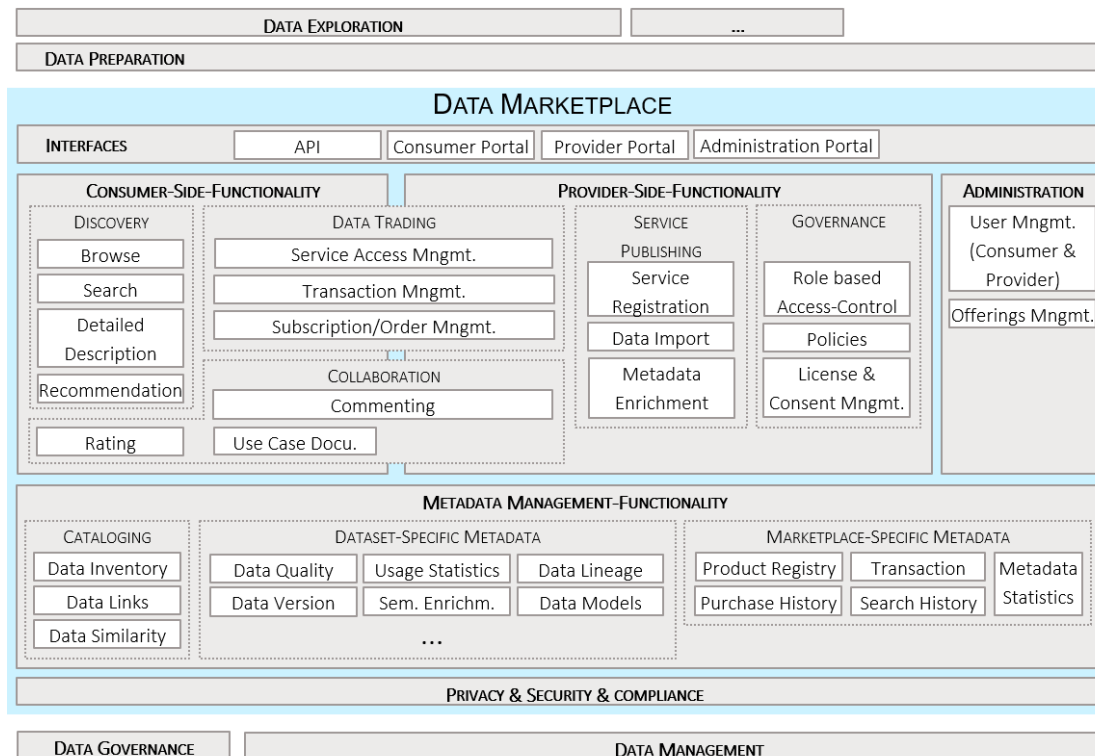


CHALLENGES:

- (1) Assembly of metadata
- (2) Supplying provisioning options
- (3) Registering data in several publishing tools
- (4) The process involves several parties

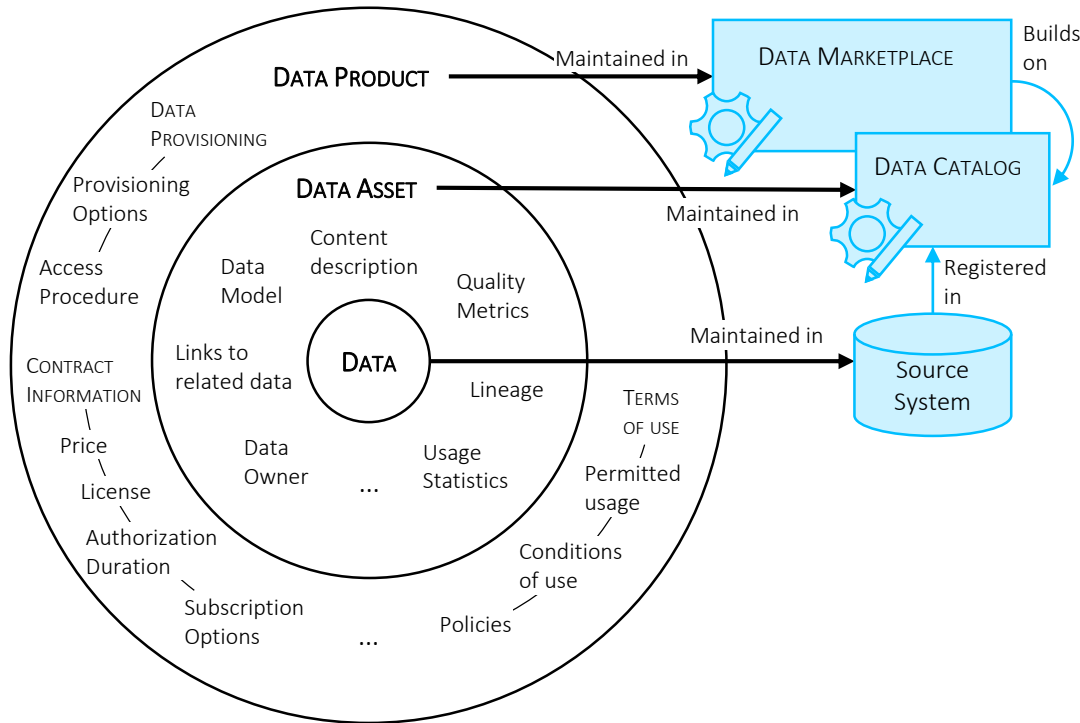
Providing Data Through the Enterprise Data Marketplace

Data Marketplace Functionality



Providing Data Through the Enterprise Data Marketplace

From Data Asset to Data Product

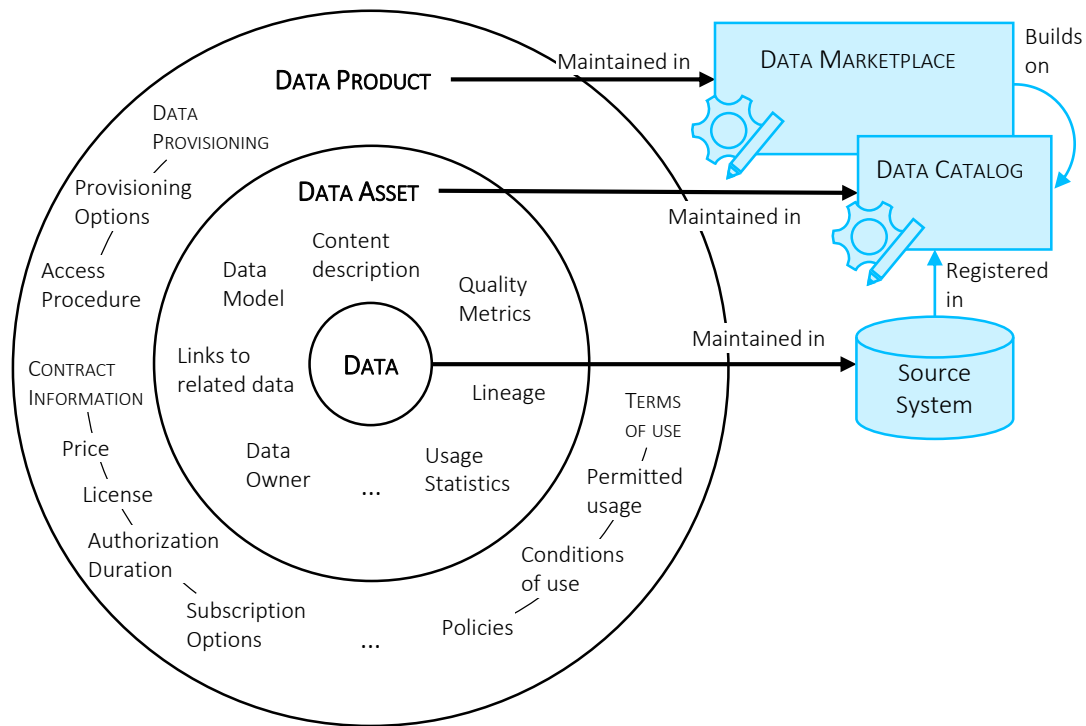


DATA CATALOG:

Tool for maintaining inventories of data through the discovery, description and organization of datasets [1].

Providing Data Through the Enterprise Data Marketplace

From Data Asset to Data Product

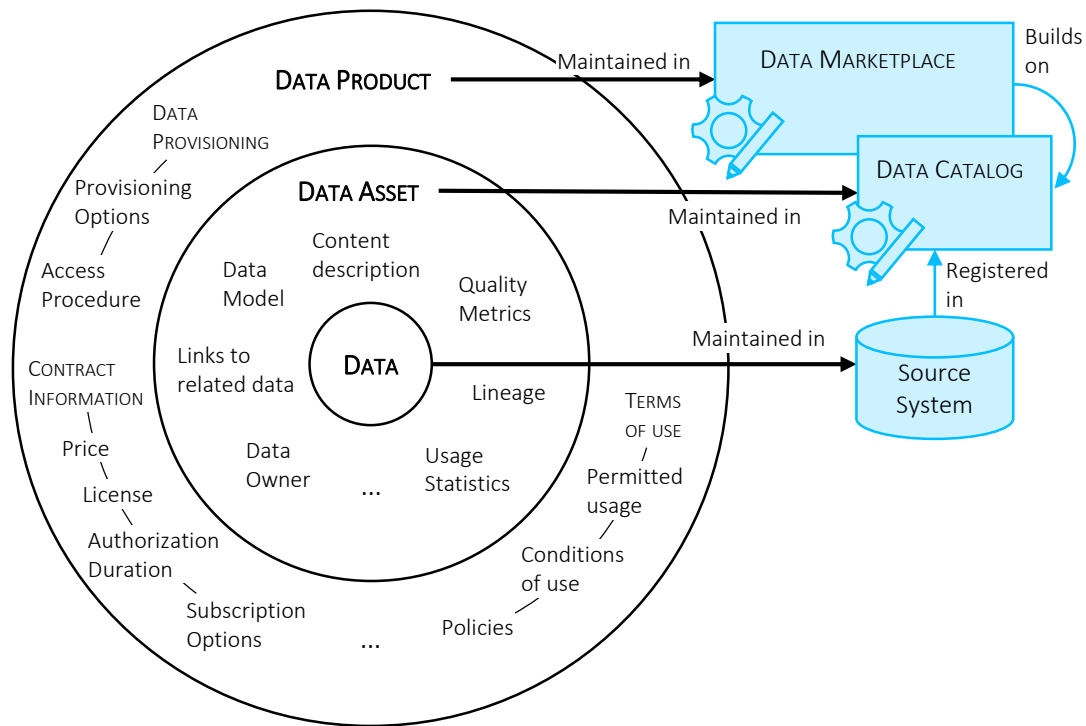


ASSET TO PRODUCT TRANSITION SCENARIOS:

1. Provider explicitly registers data product in the marketplace
2. Provider registers data in the catalog. When requested in the marketplace the provider fills in the product metadata.
3. Another employee fills in the product metadata and sends request to provider for asset-product transition.

Providing Data Through the Enterprise Data Marketplace

From Data Asset to Data Product



ADVANTAGES:

- + Marketplace references data even if only registered in catalog.
- + Providers only have to register data in catalog so it can be found and understood in the enterprise.
- + Provider only has additional effort for adding product metadata and provisioning options when data is requested.

Assessment - How does the EDMP Assist the Data Provider

Prototypical Demonstration – From Asset to Product

ASSET TO PRODUCT TRANSITION SCENARIOS:

1. Provider explicitly registers data product in the marketplace
2. Provider registers data in the catalog. When requested in the marketplace the provider fills in the product metadata.
3. Another employee fills in the product metadata and sends request to provider for asset-product transition.

The screenshot displays the 'Enterprise DMP' interface. The top navigation bar includes 'Explore', 'Data Provider', and 'Data Consumer'. Below the navigation bar, there are three progress indicators: 'SELECT ASSET' (green dot), 'ADD ASSET' (green dot), and 'ADD AS PRODUCT' (blue dot). The main content area is titled 'Register Data Product in the Marketplace'. It shows a table with the following details: 'sleep_study dbms_table', 'Data Owner: Anny Smile', and 'Security Class: 3'. Below this, there are several form fields: 'Term of use' (Is the data personal? Yes/No), 'Permitted usage' (Specify which uses of data are permitted), 'Conditions of use' (Describe specific conditions of use for your data), 'License' (CC BY-ND 4.0: Attribution-NoDerivs), and 'Description' (This license lets others reuse the work for any purpose, including commercially; however, it cannot be shared with others in adapted form, and credit must be provided to you. Learn more about Licenses). At the bottom, there are 'Data Delivery Options' including 'Update-Cycle' (No updates), 'How can I provide data' (Download), 'Access Link' (Enter a link to your data), and 'Description of access procedure' (Describe the procedure for access to data). The form has a 'Back' button and an 'Add As Product' button.

Assessment - How does the EDMP Assist the Data Provider

Prototypical Demonstration – From Asset to Product

ASSET TO PRODUCT TRANSITION SCENARIOS:

1. Provider explicitly registers data product in the marketplace
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3. Another employee fills in the product metadata and sends request to provider for asset-product transition.

The screenshot displays the Enterprise DMP interface. At the top, there is a navigation bar with the logo, 'Explore' search, and dropdown menus for 'Data Provider' and 'Data Consumer'. Below the navigation bar, there is a filter section with a 'Remove all' button and a search input field. The main content area shows a list of data assets and products. The first asset is 'wine_quality dbms_db' with a 'DATA ASSET' icon. The second asset is 'cats dbms_db' with a 'DATA PRODUCT' icon circled in blue. The third asset is 'electricity dbms_db' with a 'DATA ASSET' icon. The interface also includes pagination controls and a 'Sort by' dropdown.

Asset Name	Description	Data Owner	Security Class	Icon
wine_quality dbms_db	Database with Information about Wine Quality	Stefanie Schulze	3	DATA ASSET
cats dbms_db	Cats roaming GPS data	Mario Richter	4	DATA PRODUCT
electricity dbms_db	Production plant PX1 power consumption	Stefanie Schulze	3	DATA ASSET

Assessment - How does the EDMP Assist the Data Provider

Prototypical Demonstration – From Asset to Product

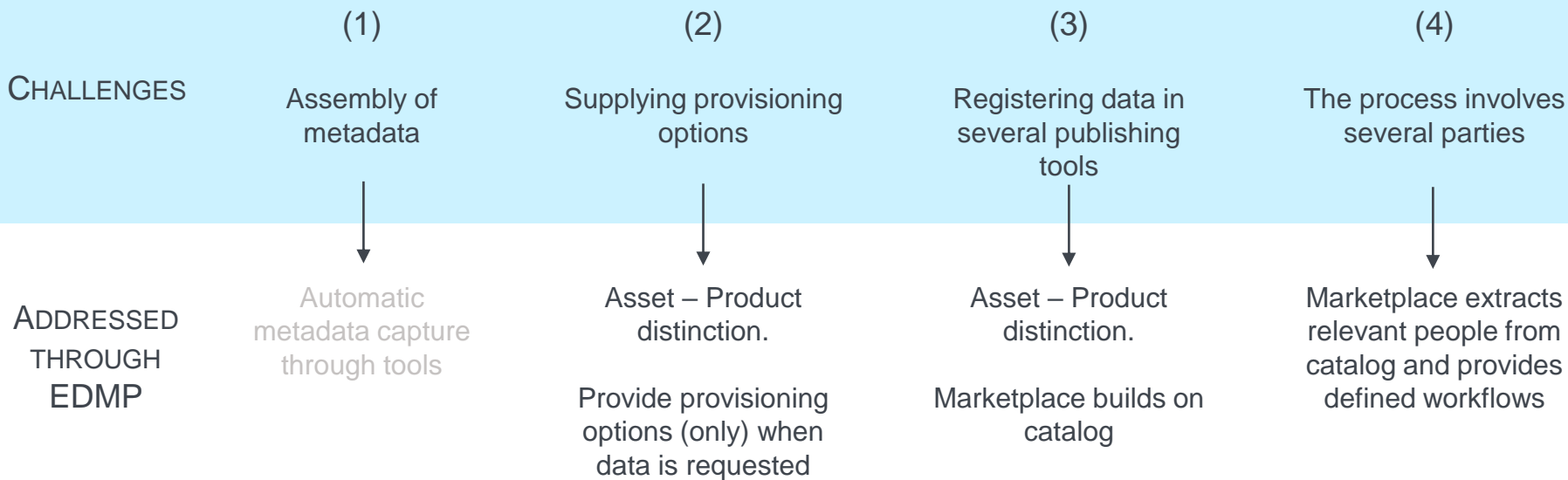
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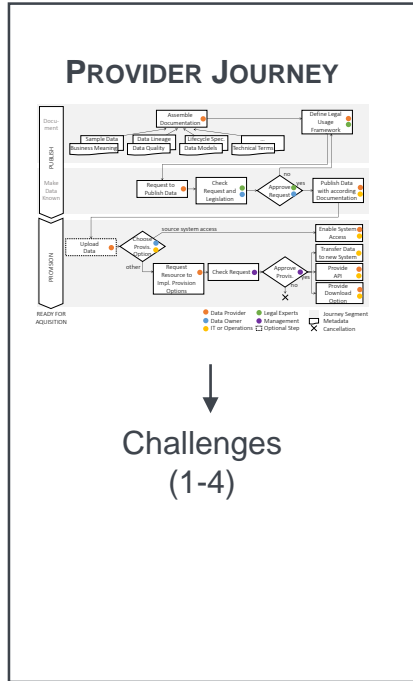
The screenshot shows the Enterprise DMP interface. The top navigation bar includes the logo, 'Explore' with a search icon, and dropdown menus for 'Data Provider' and 'Data Consumer'. Below the navigation bar are three tabs: 'SELECT ASSET' (green dot), 'ADD ASSET' (green dot), and 'ADD AS PRODUCT' (blue dot). The main content area is titled 'Register Data Product in the Marketplace'. It displays a table icon, the name 'sleep_study dbms_table', and the description 'Table with Sleep Study Statistics'. The data owner is listed as 'Anny Smile' and the security class is '3'. A warning message in orange text states: 'You are not the owner of this data. You can register/update the data as a product, but you must first notify the owner.' Below this are two input fields: 'Term of use' and 'Data Delivery Options', both containing a 'Placeholder' text. At the bottom, there is a blue 'Back' button with a left arrow and an orange 'Notify Owner' button with an envelope icon.

Assessment - How does the EDMP Assist the Data Provider

Challenges in the Provider Journey



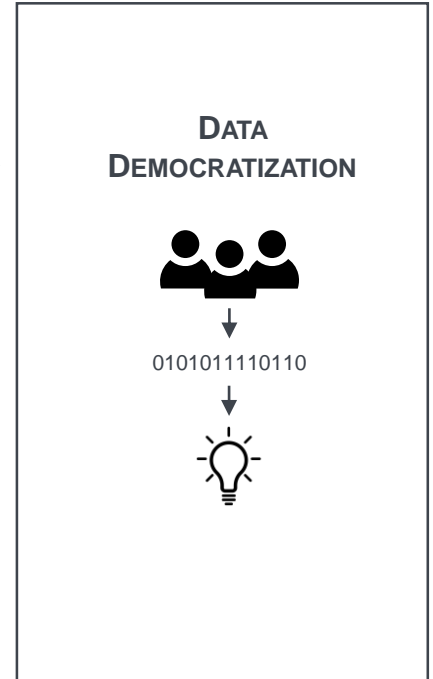
Summary & Conclusion

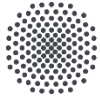


provider challenges (2-4) addressed through



supports





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Thank you!



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References

- [1] E. Zaidi, G. De Simoni, R. Edjlali, and A. D. Duncan, “Data Catalogs Are the New Black in Data Management and Analytics,” Gartner, Consultancy Report, Dec. 2017.
- [2] Eichler, R., Giebler, C., Gröger, C., Hoos, E., Schwarz, H., Mitschang, B.: Enterprise-Wide Metadata Management: An Industry Case on the Current State and Challenges. In: Proc of the 24th International Conference on Business Information Systems (BIS). pp. 269–279 (2021).