Assessing the Organizational Value and Cost of Emerging Data-as-a-Service

Master thesis

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As society becomes increasingly digitalized, data has evolved into one of the most valuable resources within modern organizations. In the energy sector, enormous amounts of data are generated every day through electricity networks, consumption patterns and operational systems, creating major opportunities for improved data utilization. Despite this growing importance, organizations often struggle to understand how data-driven services create value and how their costs should be measured. This thesis investigates how Data-as-a-Service can be understood within E.ON and highlights the challenges organizations face when data becomes a strategic organizational asset.

Introduction and Background

In recent years, the society has moved from mainly selling physical goods to a more service-oriented offerings and most recently, offering Data-as-a-Service, DaaS (Vandermerwe & Rada, 1988). This transition towards a more digital and service-oriented society has changed how organizations create value.

To handle these challenges, organizations increasingly rely on internal data services. These services provide insights that support operational processes. However, while the technical development of data-driven services has accelerated rapidly, many organizations still struggle to understand how the value of these services should be assessed and how costs should be allocated (Bharadwaj et al., 2013; Davenport & Prusak, 2000). While costs related to labor costs, IT systems and infrastructure are usually measurable, the value generated is significantly more difficult to quantify.

As organizations become increasingly dependent on internal data services, understanding how these services create value becomes strategically important. This thesis therefore investigates how Data-as-a-Service can be understood within E.ON and explores the organizational challenges connected to value creation and cost allocation.

Purpose

The purpose of this master thesis was to:

Describe and analyze Data-as-a-Service, DaaS, internally in an international organization, and

identify the associated value and cost.

Methodology

The thesis was conducted as a qualitative case study at E.ON, one of Europe's largest energy companies. The study combined an exploratory approach with a problem-solving perspective in order to both understand how internal Data-as-a-Service functions and identify challenges related to value creation and cost allocation. (Höst et al., 2006)

Data was collected primarily through a literature study and interviews with employees working at E.ON (Höst et al., 2006). Internal company documents and organizational material were also analyzed to create a broader understanding of how data services are integrated within the organization.

Two internal data products used in operational processes at E.ON was selected: *Korttidsprognos för fördelningsstationa* and *Basdata med reläskyddshändelser*.

Theory

The theoretical framework combines perspectives from product-, value- and cost perspectives, see Figure 1. The study is based on theories related to Kotler's Three Level of Product, Product-Service Systems, Service-Dominant Logic, theories about value creation and capture, together with frameworks for cost allocation and cost analysis. (Beuren et al., 2013; Kotler et al., 2016; Lusch & Vargo, 2014)

These perspectives were used to analyze how internal data services create value beyond the data itself. Particular focus was placed on understanding how support functions such as maintenance, quality assurance and continuous updates contribute to the usefulness of the data products. (Lepak et al., 2007)

The theoretical framework also enabled an analysis of the organizational challenges connected to measuring and distributing costs for internal digital services. (Skärvad, 2020)

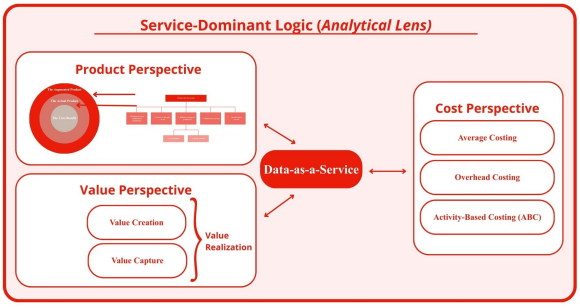

Figure 1: Illustration of the theoretical framework.

Empirical Context

The empirical study was conducted based on the theoretical framework for the two data products.

Product Perspective

Both data products are classifies as *result-oriented* according to the PSS framework. However, the data products differ in their nature and therefore in other product aspects. The first data product, *Korttidsprognos för fördelningsstation*, supports the electricity network by forecasting short-term electricity demand within distribution stations. The data product enables improved planning, more stable operations and better decision-making regarding load balancing within the electricity grid (Person C, 2026; Person D, 2026).

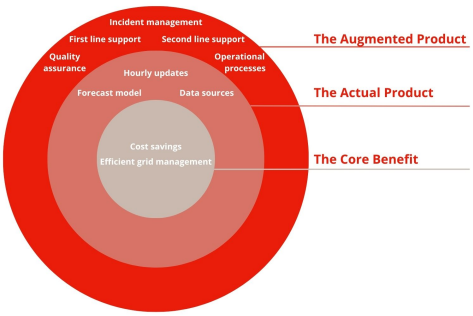

Figure 2: Applied Kotler's Three Levels of Product.

The second data product, *Basdata med reläsky-*

ddshändelser, collects and structures event data connected to relay protection systems within the electricity network. The data product is primarily used to improve monitoring, fault analysis and proactive maintenance of critical infrastructure (Person A, 2026; Person E, 2026).

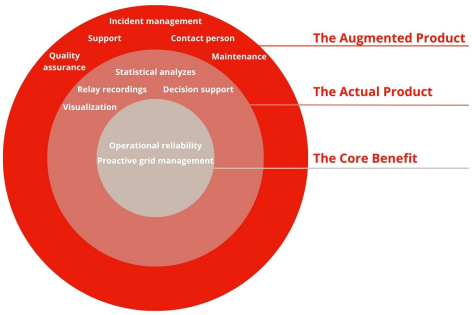

Figure 3: Applied Kotler's Three Levels of Product.

Value Perspective

For both data products, the phenomenon of *value slippage* occurs, since value is created in one business department while it is captured in another. The study identified challenges regarding how organizational value is captured, since the departments creating the data services are often separated from the departments receiving the operational benefits.

The study also revealed differences in how value is generated between the two data products. *Korttidsprognos för fördelningsstation* was identified as generating a relatively high *exchange value*, since the data product is directly connected to an automated process regulating the amount of electricity supplied to the market based on demand forecasts. This creates measurable operational and economic effects through improved forecast accuracy and more efficient electricity distribution. (Person C, 2026; Person D, 2026)

In contrast, *Basdata med reläskyddshändelser* primarily generates high *use value*. The main purpose of the data product is to act as decision support for proactive operational work, enabling employees to identify disturbances, analyze network behavior and prevent future issues within the electricity grid. The value is therefore less directly linked to measurable financial outcomes and instead connected to improved reliability and operational stability. (Person A, 2026; Person F, 2026)

Cost Perspective

The costs connected to the data products mainly consist of labor- and IT-costs (Person B, 2026). An important finding is that the current cost allocation model does not fully capture the actual cost of individual data products, especially regarding shared IT systems and continuous operational support.

The study also highlights challenges connected to traditional *average-based calculations*. This costing approach was originally developed for organizations producing a single homogeneous product, where costs can be distributed relatively evenly across production volumes. However, modern data-driven offerings are significantly more complex and consist of interconnected systems, continuous updates and varying usage patterns.

As organizations introduce new digital services and data products, traditional costing approaches become increasingly insufficient. The study therefore demonstrates that emerging digital offerings create new requirements for how organizations allocate costs, evaluate internal services and manage shared resources.

Conclusions

The study shows that internal Data-as-a-Service is best understood as a result- and service-oriented offering rather than as a standalone product, see Figure 4. The value does not primarily exist in the raw data itself, but instead in the surrounding services that ensure reliable delivery, maintenance and quality over time.

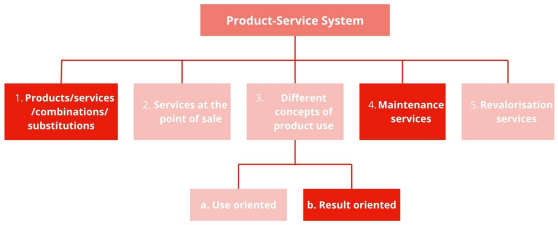

Figure 4: *Summary of applied PSS.*

One important finding is that organizations often experience a disconnect between where value is created and where value is captured financially. This creates difficulties when motivating investments in internal data services, since the economic benefits may appear in a different part of the organization than where the costs occur.

The study also demonstrates that traditional cost models are often insufficient for handling modern data-driven services. As organizations become increasingly dependent on data, there is a growing need for more sophisticated approaches to value assessment and cost allocation.

Reflections

As organizations continue to digitalize their operations, the importance of internal data services will likely increase significantly. This study illustrates that many organizations are still in an early stage of understanding how to evaluate the full impact of these services.

One reflection from the study is that the organizational challenges are often greater than the technical challenges. Creating value through data requires collaboration between technical teams, business units and decision-makers across the organization.

The thesis also raises broader questions regarding how future organizations will measure value in increasingly digital and data-driven environments, where operational reliability and decision support may become just as important as direct financial returns.

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Interviews

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Person B. (2026). Business controller. Interview conducted 2026-03-02 and 2026-03-31, Malmö.

Person C. (2026). Data product manager. Interview conducted 2026-03-12, Malmö.

Person D. (2026). Flexibility analyst. Interview conducted 2026-03-17, Malmö.

Person E. (2026). Product owner switch. Interview conducted 2026-03-20, Malmö.

Person F. (2026). Data product owner. Interview conducted 2026-03-24, Malmö.