



Accelerating the Creation of Value with Data Mesh

Alberto Pan, Chief Technology Officer of Denodo, solution leader in data management, talks to us about the virtues of a decentralized approach to data management according to the Data Mesh concept, to increase the agility of data-driven organisations, guarantee the quality of data and democratize it

When we mention the challenges involved in analysing data, the Data Mesh concept is not yet known by everyone. Can you tell us about the most important principles that define it?

Data Mesh is a new approach to architecture and organisation. The concept was coined by Zhamak Dehghani, specialist in data management and enhancement. The promise behind this notion is to create more value from data. It is not a purely technical concept, but rather a cultural and organisational approach to data management with significant technological involvement.

What makes this concept ground-breaking?

What is new with Data Mesh is the idea of choosing a decentralized approach to data analysis, mainly within large organisations. In terms of data enhancement, these structures are traditionally based on a centralized infrastructure and a single team whose task is to provide decision-makers with useful data. This often has limits. With Data Mesh, the production and management of data is no longer centralized. The responsibility inherent in the production and provision of data is shared by various domains, either by departments or business units of the company. It is up to them to manage data as a product and directly offer it to anyone who might need it.

How important is the data product concept?

The data product concept is not new. Organisations have become aware of the fact that data is a valuable asset that makes it possible for better decisions to be made. Above all, the Data Mesh approach has the virtue of clearly defining the components and features of a data product, of standardizing the concept. The most interesting thing about this method is that it shifts responsibility for data into the hands of those who have the deepest understanding of it: the professionals. A centralized management team, in fact, is not always in possession of all the element contexts linked to the data used. The idea is to shift responsibility for data into the hands of those who are in the best position to specify its value, who have the best understanding of the way in which it can be enhanced and contribute to business.

Why adopt this approach? What challenges does it address?

In my opinion, the Data Mesh concept addresses two major problems encountered by organisations. The first one is the lack of agility when providing data to meet business needs. Managers at all corporate levels wish to back their decision-making with data. However, organisations with a centralized approach and a single data analysis team find it difficult to democratize sound information. With the traditional model, it does not take long for a bottleneck to occur as the central team does not manage to effectively meet growing demands. The second problem, as we mentioned, concerns data quality. By giving responsibility for data to professionals, a better understanding of this data is ensured and more effective care can be taken regarding its quality.

To what extent is the shift towards a decentralized/more professional-driven method complex?

That depends on the organisations. Nowadays, if they have a high maturity level in terms of data management and enhancement, many organisations already apply principles that are similar to those established in the area of Data Mesh, often without knowing it. If they do not follow these principles to the letter, they have already seen the point of a decentralized approach for certain use cases.





The challenge is greater for organisations that rely on a traditional and centralized model. This is organisational, cultural and technical at the same time. At an organisational and cultural level first, it is essential that teams come to understand the purpose of the approach, while also allowing skills to be developed within so that these challenges are properly comprehended. Not all units in the company are prepared for this. For some of them, there is no point. At this level, the organisation must therefore evolve gradually, for example by starting with the teams that have the highest maturity level in this area or which are in possession of high-value-added data for the company as a whole.

What is the role of technology in the implementation of this approach?

In order to implement this approach, monolithic architectures must be left behind, and a set of new data virtualization tools, APIs or even a data catalogue, for example, should be used. A range of technologies must be integrated in order to facilitate data management for teams and simplify access for all parts of the organisation. This decentralized approach is at the core of Denodo. Our platform facilitates the organisation-wide implementation of the Data Mesh concept.

If decentralization makes it possible to access new opportunities, does the approach not involve certain risks?

Yes. Decentralizing purely and simply involves many risks, for example as regards data quality control and security. The Data Mesh concept therefore establishes a series of principles which make it possible to comprehend these risks. Three major principles are brought to mind in particular. The approach clearly defines the features of a data product, what each one must include, as well as a series of best practices associated with data production and management. This makes it possible to guarantee that the teams have a common understanding of what a data product is, while ensuring that each data product can be found and used by anyone who needs it.

What are the other two challenges regarding risk management?

Common data governance must also be adopted. Each team is free to establish a certain number of rules associated with data use for which it is responsible, as it is in the best position to determine risks concerning, for example, privacy and security. Nevertheless, it is important to establish global governance, allowing boundaries to be set for an array of elements, and to ensure good use of data across the whole organisation. Lastly, it must be possible to rely on a centralized platform, facilitating the publishing and use of data. If this platform is managed by a central team, its role evolves. It is no longer solely responsible for producing and providing data, but also for ensuring good data management coordination, supporting the units that are now responsible for data, and guaranteeing that governance rules are followed.

Data Mesh is an important subject for Denodo. Can you tell us why?

The Data Mesh concept emphasises a distributed data management architecture. This is in keeping with the view that Denodo has had since it was founded. The Denodo solution, in this case, certainly addresses the challenges that we have just discussed. With data virtualization in particular, this solution makes it possible to accelerate the creation and provision of data products. It integrates a set of capabilities, in particular a data marketplace, facilitating access to data for the different parts of the organisation. Lastly, it offers the chance to implement global governance rules and ensure that these are followed.

Although the Data Mesh concept is relatively new, this method is based on other distributed approaches that have proved themselves and stood the test of time. If you really want to combine value and company data, it seems that there is no better way to do so: it must be ensured that this value is created and maintained by those who provide it, in other words the business units.

You must therefore consider decentralizing your data and analysis management, restructuring your work method.

At Denodo, we have always played a key part in the implementation of a distributed data architecture, and it seems that customers who have adopted a Data Mesh evolve a lot more quickly than any which have not done so (yet).



Denodo is a leader in data management. The award-winning Denodo Platform is the leading data integration, management, and delivery platform using a logical approach to enable self-service BI, data science, hybrid/multi-cloud data integration, and enterprise data services. Realizing more than 400% ROI and millions of dollars in benefits, Denodo's customers across large enterprises and mid-market companies in 30+ industries have received payback in less than 6 months.