THE FUTURE OF DATA ARCHITECTURE

HAS THE DATA WAREHOUSE HAD ITS DAY?

TOPICAL SURVEY

BARC

Authors

Jacqueline Bloemen
Timm Grosser

databricks

precisely

denodo

TIMEXTENDER

CONTENTS

FOREWORD

Data architecture is a topic that is as relevant today as ever. It is widely regarded as a matter for data engineers, not business domain experts. But is it really? Statements from countless interviews with our customers reveal that the data warehouse is seen as a "black box" by many and understood by few business users. Therefore, it is not clear why the costly and apparently flexibility-inhibiting data warehouse is needed at all. We even know companies that are cutting back their investments in a "single point of truth" for these reasons.

Participants around the world were surveyed, with most responses coming from Europe. We examined the current architecture approaches of companies of different sizes from various industries. Participants were asked to rate the skills and competencies in the handling of data in their company compared to their main competitors. This allowed us to gain an understanding of how "best-in-class" companies are shaping their data architecture in comparison to "laggards" (see demographics).

In general, central data & analytics teams determine the data architecture for analytical data, decoupled from the landscape of operational data sources. Our survey shows that they continue to pursue clearly centralized architecture concepts. Indeed, this is what the data warehouse, data lake and data lakehouse have in common, regardless of the differences in their detail. However, is this best practice, which has basically lasted for three decades, still suitable for meeting the challenges of the increasingly distributed data landscapes of today's digital enterprises?

Our survey results show that the opinions of different roles in the organization differ considerably in many cases. It is primarily the data & analytics experts in the central teams who adhere to the central approach. They see it as proven and successful.

Among executives and managers, as well as process and data & analytics experts in business units, the picture is often different. The question arises: Should future data architecture be determined more centrally from the perspective of data engineers or more decentrally from the perspective of domain experts? Or is a federated approach the best way forward?

We hope that our survey results will provide you with valuable insights and help you find the right solution for the future design of your company's data landscape. We welcome your feedback at any time.

Jacqueline Bloemen and Timm Grosser
Würzburg, August 2022

MANAGEMENT SUMMARY

01 — DATA & ANALYTICS USERS ARE SURPRISINGLY PATIENT

At first glance, users appear to be quite satisfied with their existing data landscape. But in fact, line-of-business managers and team members tend to be more critical about the future viability of their data landscape than the data & analytics experts in central teams. They are frequently dissatisfied with flexibility and extensibility and also criticize the lack of comprehensibility. Both executives and business users say that existing data is hard to find. All groups agree that existing analyses are not easy for business consumers to understand.

RECOMMENDATION

The most important measure in favor of better data utilization is to create transparency. The data landscape of most companies is complex. Business users are already confronted with this issue today, despite the data warehouse. This will not change with a new platform or a new architecture. Help is required to navigate this complexity. At the same time, central data & analytics teams must gain more insight into the concerns and needs of business users.

02 — BUSINESS USER EMPOWERMENT MUST FINALLY GAIN MOMENTUM

Providing self-service analytics tools to the business has picked up speed. Only a minority finds that the tools available to them are too technical. The limiting factor is rather the data landscape. Because data warehouses frequently do not meet business needs, data for analysis must be tediously gathered from various sources. Nevertheless, initiatives in the direction of a data catalog including suitable data documentation and self-service data preparation are not widespread.

RECOMMENDATION

Best-in-class companies realize that it is important to invest in enabling business users to work with data as and when required. For selected data experts in the business, this will include data preparation. They already do this, but with inappropriate support, for example, in spreadsheets and without the right data documentation. Central data & analytics teams must embrace this reality and shape it more consciously in the future.

MANAGEMENT SUMMARY

RECOMMENDATION

Investments in data must deliver business value. Business domain expertise is required to assess where this is appropriate and how it should look. Plan for a gradual transformation, because it goes hand in hand with a cultural change and learning process. Central data teams become advisors to the business, provide support with their technology and data engineering expertise and consult on central data governance issues.

RECOMMENDATION

As the quantity and volume of distributed data sources increase, data architecture concepts that are exclusively centrally oriented quickly reach their limits. Therefore, design your future data architecture with extended capabilities. Work towards a federated overall architecture in which data virtualization and distributed data pipelining and orchestration are options and create the framework for this.

03 BUSINESS DOMAIN EXPERTS MUST TAKE RESPONSIBILITY FOR DATA PRODUCTS

Creating useful and understandable data & analytics products that deliver business value requires business domain expertise. While central data & analytics teams have very strong technology and data engineering knowledge, their business domain expertise is not so strong. This is why there is an urgent need for business domain experts to take responsibility for data products. This should not be limited to analytical data products but must include source-system-oriented data products that provide the original source data as well.

04 CENTRALIZED DATA ARCHITECTURE CONCEPTS HAVE SERVED THEIR TIME

Most companies continue to apply tried-and-tested concepts such as the data warehouse design paradigm when redesigning their data landscape. Best-in-class companies favor the data lakehouse approach. However, executives and business users in particular criticize the fact that centralized approaches cannot prevent the emergence of further data silos.
But there are also signs of a change in thinking. Companies are seeking to improve their source data to streamline their data pipelines and to build a better basis for data virtualization.

MANAGEMENT SUMMARY

05 EVOLVING A DATA CULTURE IS ABOUT PEOPLE, NOT JUST BUYING TECHNOLOGY

Companies are aware that organizational measures are needed above all to further develop their data culture. But in practice, only a minority is implementing such measures. Initiatives that support self-service analytics are the most widespread. This is good, but not enough. Strengthening cross-domain data collaboration requires both harmonized master and reference data, and an understandable and shared view of data regardless of system silos.

This can only be achieved if business process owners and experts, the data producers, are actively involved.

RECOMMENDATION

Establishing a data culture is a long-term process. It requires a change in mindset and a willingness to look outside the box. You need to bring data producers and consumers together to enable the exchange of perspectives and objectives. Technology such as a data catalog can effectively support data collaboration. But it is ultimately the business users who, through their contributions, bring the technology to life. It takes cross-domain collaboration to find the right measures to improve the data landscape.
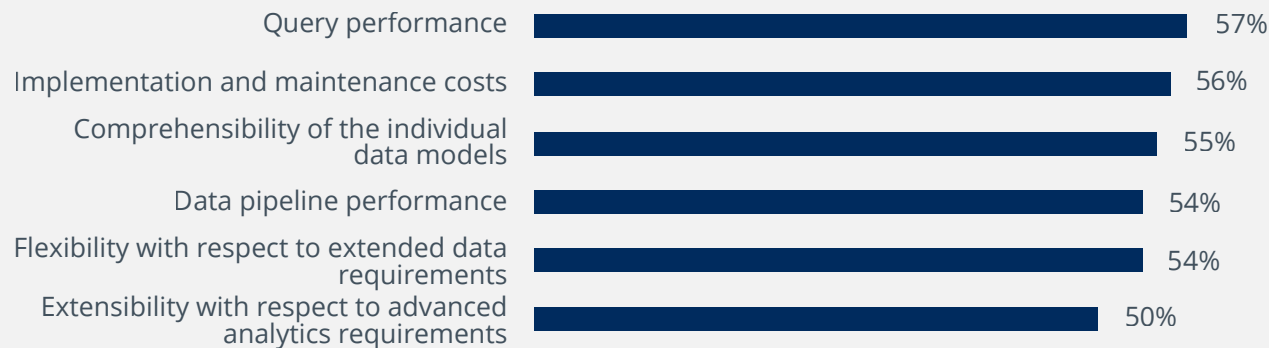
DATA & ANALYTICS USERS ARE SURPRISINGLY PATIENT

CORPORATE DATA LANDSCAPES ARE ONLY MODERATELY SUCCESSFUL

● "Somewhat satisfied" and "very satisfied"

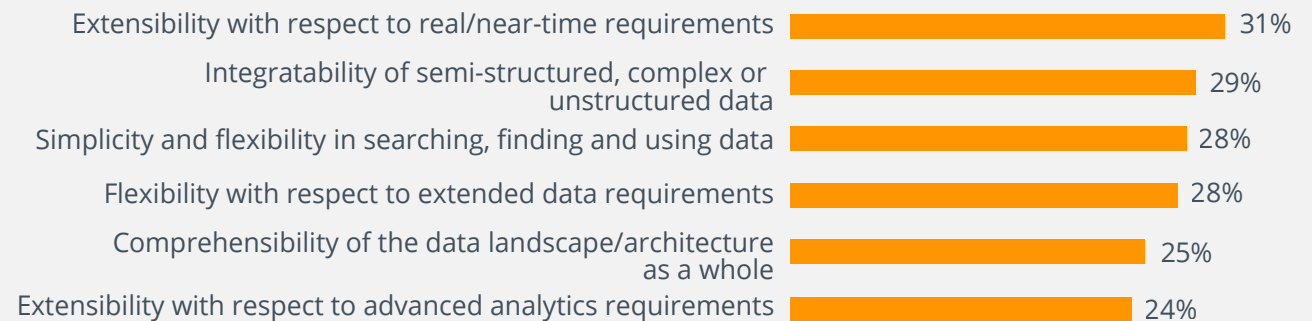|	
Query performance	57%
Implementation and maintenance costs	56%
Comprehensibility of the individual data models	55%
Data pipeline performance	54%
Flexibility with respect to extended data requirements	54%
Extensibility with respect to advanced analytics requirements	50%

To what degree are you satisfied with the current data & analytics landscape in your company with regard to the following aspects? Top 6 satisfied (n=258)

here. Interestingly, some of the points with the highest satisfaction ratings are also included here ('flexibility with respect to extended data requirements' and 'extensibility with respect to advanced analytics requirements'). Satisfaction levels with 'extensibility with respect to real/near-time requirements' and 'integratability of semi-structured, complex or unstructured data' were below average. This reflects the fact that established data landscapes tend to struggle with advanced requirements that traditional architectures were originally not designed for .

When asked about the degree of satisfaction with the data & analytics landscape in their companies, survey participants were predominantly positive. For six of the twelve points we asked about, more than 50 percent said they were "somewhat satisfied" or "very satisfied". It is worth noting, however, that the proportion of "very satisfied" users is mostly between 10 and 15 percent .

The six highest dissatisfaction ratings range from 24 and 31 percent, with the proportion of "somewhat satisfied" ratings also predominating

● "Somewhat dissatisfied" and "very dissatisfied"

Extensibility with respect to real/near-time requirements	31%
Integratability of semi-structured, complex or unstructured data	29%
Simplicity and flexibility in searching, finding and using data	28%
Flexibility with respect to extended data requirements	28%
Comprehensibility of the data landscape/architecture as a whole	25%
Extensibility with respect to advanced analytics requirements	24%

To what degree are you satisfied with the current data & analytics landscape in your company with regard to the following aspects? Top 6 dissatisfied (n=258)
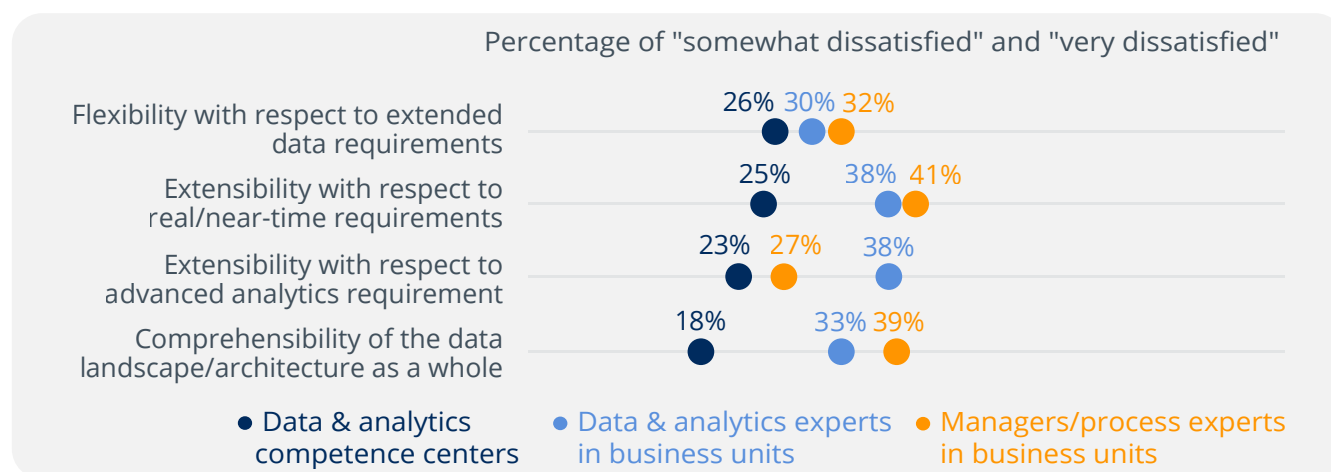
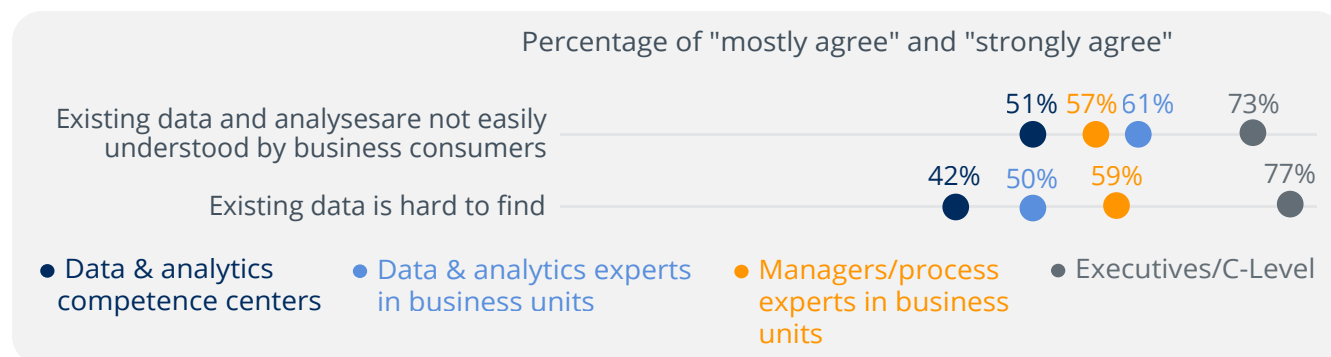# 01 DATA & ANALYTICS USERS ARE SURPRISINGLY PATIENT

BUSINESS USERS ATTEST TO LACK OF FLEXIBILITY, EXTENSIBILITY AND COMPREHENSIBILITY

Closer analysis reveals, however, that the satisfaction picture is somewhat deceptive. Line-of-business managers and process experts tend to be more critical about the future viability of the data landscape than data & analytics experts in central teams. The latter are convinced of their ability to solve new challenges with existing resources, but business users are less satisfied. 41 percent of all participants cite IT's lack of speed in implementing new requirements as a major challenge for users of the data landscape, with the proportion even higher among business users at 48 percent.

Especially worth mentioning is the lack of comprehensibility of the data landscape and architecture as a whole. Only 18 percent of data & analytics experts in central teams see cause for dissatisfaction here, compared with 33 percent of data experts and 39 percent of process experts in the business. When asked directly about the challenges in finding and understanding data and analyses, the dissatisfaction is even more evident, as the following graphic illustrates. The problem has not gone unnoticed at management level either.

Percentage of "somewhat dissatisfied" and "very dissatisfied"

Flexibility with respect to extended data requirements: 26% 30% 32%

Extensibility with respect to real/near-time requirements: 25% 38% 41%

Extensibility with respect to advanced analytics requirement: 23% 27% 38%

Comprehensibility of the data landscape/architecture as a whole: 18% 33% 39%

● Data & analytics competence centers   ● Data & analytics experts in business units   ● Managers/process experts in business units

To what degree are you satisfied with the current data & analytics landscape in your company with regard to the following aspects? Dissatisfied by role (n=258)
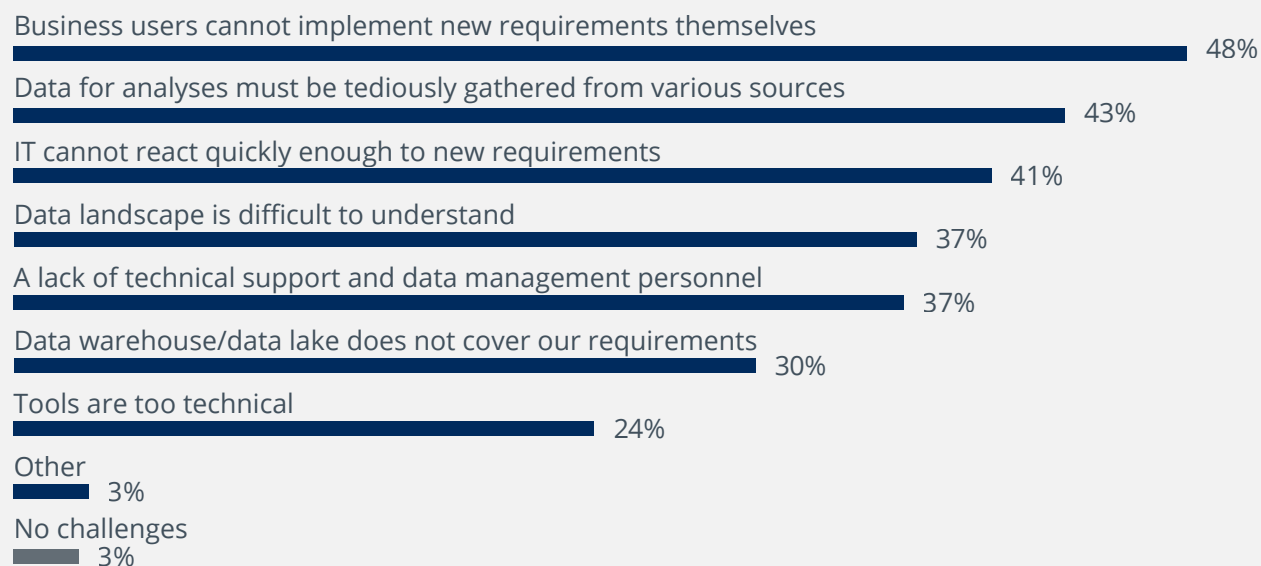
Percentage of "mostly agree" and "strongly agree"

Existing data and analysesare not easily understood by business consumers: 51% 57% 61% 73%

Existing data is hard to find: 42% 50% 59% 77%

● Data & analytics competence centers   ● Data & analytics experts in business units   ● Managers/process experts in business units   ● Executives/C-Level

To what extent do you agree with the following statements regarding the data & analytics landscape in your company? Agree by role (n=259)

02 BUSINESS USER EMPOWERMENT IS ABOUT FAR MORE THAN SELF-SERVICE DASHBOARDS

THE ANALYSIS TOOLS ARE NOT THE LIMITING FACTOR, BUT RATHER THE DATA LANDSCAPE

Business users cannot implement new requirements themselves — 48%
Data for analyses must be tediously gathered from various sources — 43%
IT cannot react quickly enough to new requirements — 41%
Data landscape is difficult to understand — 37%
A lack of technical support and data management personnel — 37%
Data warehouse/data lake does not cover our requirements — 30%
Tools are too technical — 24%
Other — 3%
No challenges — 3%

What challenges do data users in your company face? (n=260)

Self-service analytics has been a trend for some years, and this survey underpins its importance. The fact that business users cannot implement new requirements themselves is regarded as the top challenge data users are facing (48 percent). At 53 percent, this opinion is particularly strong within central data & analytics teams. In line with this finding, 74 percent are either already introducing analytics tools suitable for business users or plan to do so. Strikingly, only 24 percent actually find that existing tools are too technical. Even though line-of-business data & analytics experts in particular agree with this point (35 percent), all other persona groups concur to a lesser degree. So, the tool issue does not seem to be all that important.

Distributed data sources and the tedious collection and preparation of this data is an annoying issue for users (43 percent). For participants from best-in-class companies, this even tops the list of user problems at 38 percent. Overall, the level of agreement across the business is particularly high: 45 percent of executives, 51 percent of business data experts and 61 percent of business managers and process experts share this view, compared to only 33 percent of central data & analytics experts. This should come as no surprise as it is among the primary responsibilities of this latter group of experts to have a good overview of the data landscape. Furthermore, they are generally the ones who implement the central analytical data sets, such as data warehouses or data lakes.

While these centralized data repositories seem to work well at first glance, almost one in three respondents finds that data warehouses and data lakes do not cover their requirements. Dissatisfaction is even greater among business managers and process experts. 43 percent of these personas believe that the data warehouse/data lake does not meet their requirements.

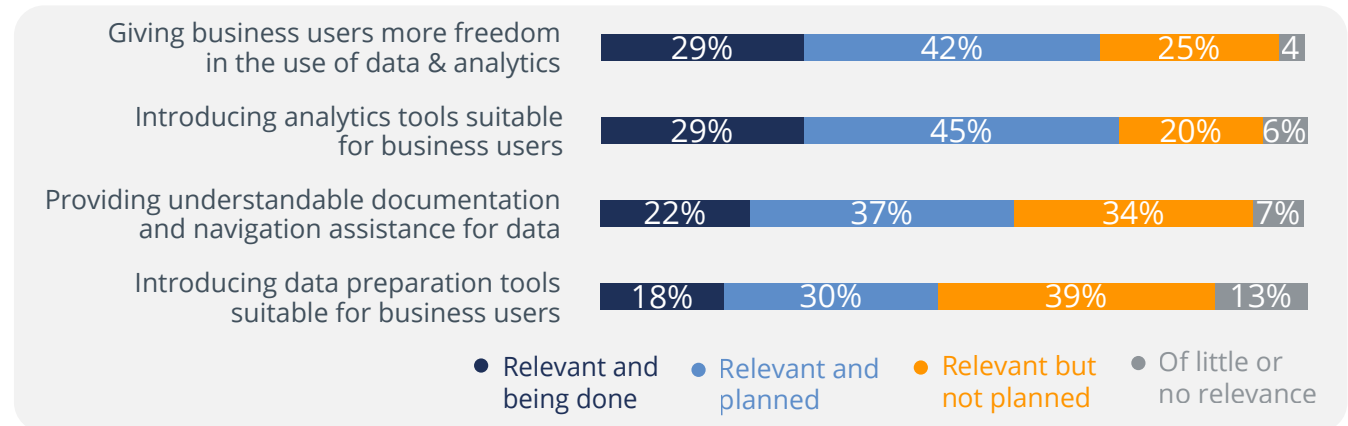# 02 BUSINESS USER EMPOWERMENT IS ABOUT FAR MORE THAN SELF-SERVICE DASHBOARDS

FINDING DATA, UNDERSTANDING IT AND PREPARING IT APPROPRIATELY IS THE CENTRAL CHALLENGE

71 percent of our survey participants find it important to give business users more freedom in the use of data & analytics. Although only 29 percent of companies are currently implementing this, a further 42 percent are planning to do so.

This seems to be reflected in simplified data access. 59 percent of all respondents strongly or mostly disagree with the statement that it is difficult to get access to existing data. A contrary view, however, can be found among executives as well as managers and process experts in lines of business, where a majority actually feels strongly or predominantly restricted (57 and 52 percent respectively).

Yet progress seems half-hearted. Despite the challenges of finding and understanding data and analytics, only 22 percent are currently providing understandable documentation and navigation assistance. 34 percent have no plans to do this even though they consider it relevant. The picture is very different in best-in-class companies. A clear 100 percent of them consider this measure to be

	Relevant and being done	Relevant and planned	Relevant but not planned	Of little or no relevance
Giving business users more freedom in the use of data & analytics	29%	42%	25%	4
Introducing analytics tools suitable for business users	29%	45%	20%	6%
Providing understandable documentation and navigation assistance for data	22%	37%	34%	7%
Introducing data preparation tools suitable for business users	18%	30%	39%	13%

How relevant are the following business-related/organizational measures for your company? (n=253)

relevant, 83 percent of which are already implementing it or have plans to do so.

It is surprising, however, that the introduction of a data catalog and/or metadata management is planned by only 28 percent. At 37 percent, the figure is somewhat higher for central data & analytics teams. This suggests that such initiatives are rather technically driven and therefore may not be appreciated or considered less useful by business users.
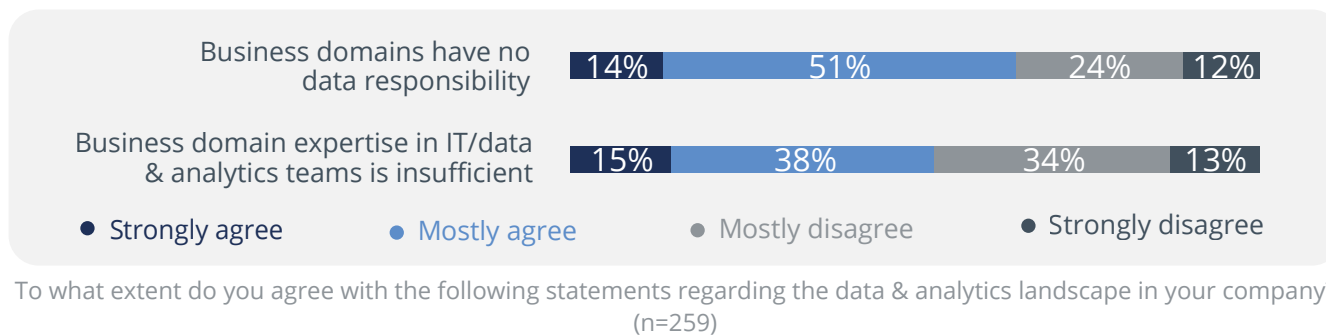
Introducing data preparation tools suitable for business users seems to be even less relevant. For 13 percent of the companies surveyed, this measure has no relevance, and for another 39 percent it is relevant but not planned. It is interesting to note that a surprisingly high 41 percent of managers and process experts state that this measure is already being implemented at their company. It has very high relevance (90 percent) for best-in-class companies, with 74 percent already implementing it or planning to do so.

03 BUSINESS DOMAIN EXPERTS MUST TAKE RESPONSIBILITY FOR DATA PRODUCTS

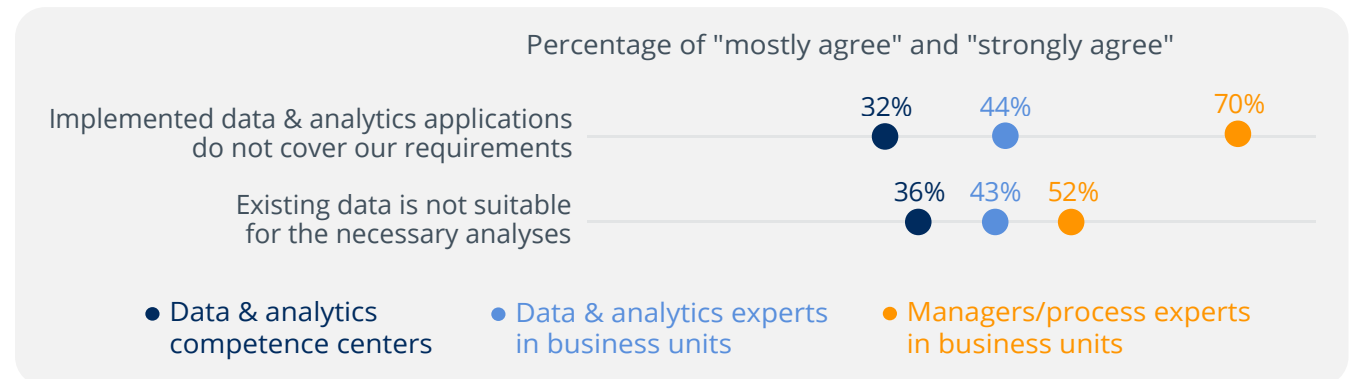## CREATING ASSETS WITH BUSINESS VALUE REQUIRES DOMAIN EXPERTISE

Business domains have no data responsibility	14%	51%	24%	12%
Business domain expertise in IT/data & analytics teams is insufficient	15%	38%	34%	13%

● Strongly agree　　● Mostly agree　　● Mostly disagree　　● Strongly disagree

To what extent do you agree with the following statements regarding the data & analytics landscape in your company? (n=259)

It is common to bundle responsibility for data & analytics assets in central teams, which are often located in IT. 53 percent of survey participants strongly or mostly agree that business domains have no data responsibility. However, these central teams lack business domain expertise (65 percent agree). Consensus is even higher among executives (80 percent) and business managers and process experts (73 percent).

Lack of domain expertise generates a risk to the quality of results. While more than two in three data experts in central teams believe that the existing data is well suited for analyses and

analytics applications cover requirements, the contrary is the case for executives and line-of-business respondents.

It is therefore not surprising that putting consumer requirements at the center of data & analytics developments is a relevant measure for 92 percent of survey respondents. So far, only 28 percent have implemented this measure , while a further 41 percent plan to do so. Despite its relevance, 24 percent have no plans to implement it at all. Best-in-class companies are particularly active in this area (95 percent are implementing or planning to do so).

Percentage of "mostly agree" and "strongly agree"

Implemented data & analytics applications do not cover our requirements	32%	44%	70%
Existing data is not suitable for the necessary analyses	36%	43%	52%

● Data & analytics competence centers　　● Data & analytics experts in business units　　● Managers/process experts in business units

To what extent do you agree with the following statements regarding the data & analytics landscape in your company? By role (n=259)

03 BUSINESS DOMAIN EXPERTS MUST TAKE RESPONSIBILITY FOR DATA PRODUCTS

MORE DECENTRALIZED OWNERSHIP OF DATA PRODUCTS IS NEEDED

To improve the quality of data & analytics assets, they must be treated as products whose success is ultimately measured by the satisfaction of their consumers. An obvious solution would be to place the responsibility in the hands of subject matter experts. 91 percent see this as a relevant measure, and 63 percent are already implementing it or plan to do so.

However, the crucial factor for successful work with data is its quality, which is determined first and foremost in the operational business processes. This opinion is shared by a clear majority of respondents. 92 percent consider it important to establish responsibility for data production and consumption in the business domains.

90%

believe establishing domain-oriented ownership of data products is a relevant measure.

Despite its importance, more than one in three organizations (35 percent) has not yet planned any corresponding measures. Among laggards, the figure is as high as 60 percent. This makes it one of the top two measures that companies are having the most difficulty implementing. Many executives have recognized this and are making it

a top priority: 50 percent of these personas are planning such initiatives.

In fact, decentralization and distribution of domain-oriented data responsibility to the people who are closest to the data and the principle of data as a product are central pillars of one of the latest trends in the data & analytics marketspace: data mesh. Interestingly, only 22 percent believe that data mesh is a concept that will be important for their future data & analytics landscape, although the percentage is higher among data & analytics experts in the line of business (32 percent).

	Relevant and being done	Relevant and planned	Relevant but not planned	Of little or no relevance
Putting consumer requirements at the center of data & analytics developments	28%	40%	24%	8%
Placing the creation of data & analytics products more in the hands of subject matter experts	20%	43%	28%	10%
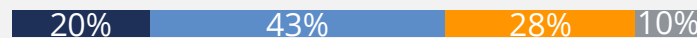
How relevant are the following business-related/organizational measures for your company? (n=253)

04 CENTRALIZED DATA ARCHITECTURE CONCEPTS HAVE SERVED THEIR TIME

## MOST MODERNIZATION EFFORTS FOLLOW OLD CONCEPTS

Optimization of existing data models, data processes, queries	56%
Migration to a cloud platform for data & analytics	49%
Improving the quality of source data and/or data interfaces	43%
Redesign of the data architecture	43%
Software and/or hardware modernization	37%
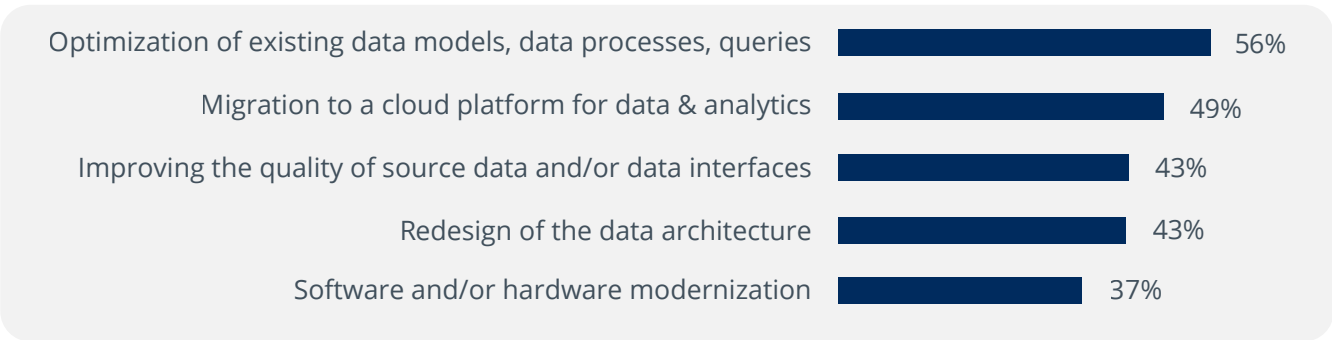
Which of these approaches to modernizing your data landscape are planned in your company? (n=260)

The identified shortcomings in established data & analytics landscapes as well as the limited ability to respond to new requirements show a need for action. Companies are therefore planning to modernize their landscapes. The most common approach is to optimize existing data models, data processes and queries. Among best-in-class companies, as many as 60 percent have chosen this approach. Not surprisingly, the second most popular modernization measure is migration to the cloud.

Improving source data and redesigning the data architecture are also popular measures. Interestingly, the majority still relies on the data warehouse as a design paradigm. Among laggards, the figure is as high as 64 percent. The popularity of the approaches overall indicates that the redesign is largely taking place with tried-and-tested concepts including dimensional modeling and frequently adding a data lake.

Best-in-class companies in particular use the data lakehouse concept. In this group, it is the most popular data architecture approach (40 percent), followed by document modeling (36 percent). The data vault concept is also much more popular with these companies (31 percent versus 15 percent on average).
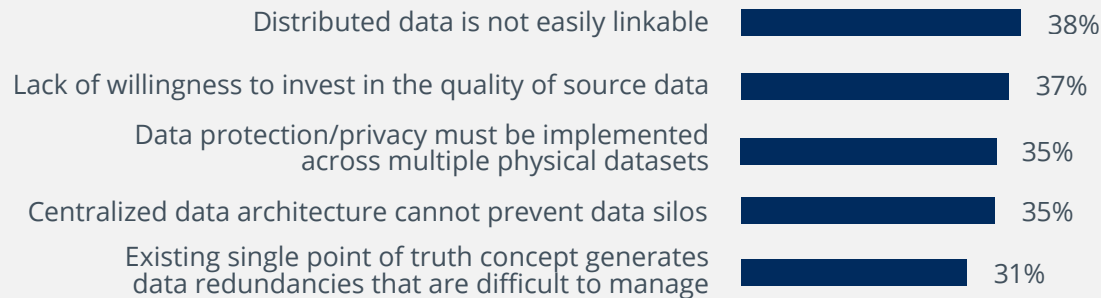
Data lakehouse	40% / 28%
Document modeling	36% / 27%
Data vault modeling	31% / 15%

● Best-in-class (BIC)
● All
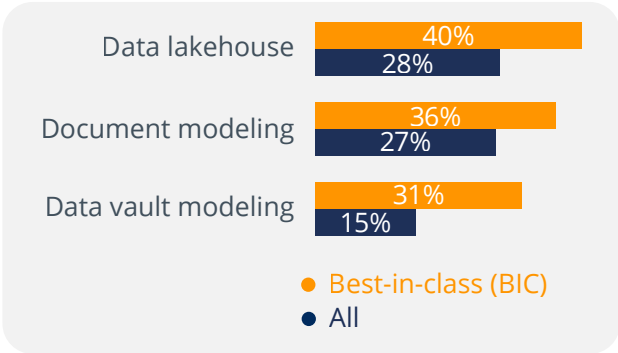
Which data architecture and data modeling aproaches will be important for your future data & analytics landscape? (all: n=260; BIC: n=78)

04 CENTRALIZED DATA ARCHITECTURE CONCEPTS HAVE SERVED THEIR TIME

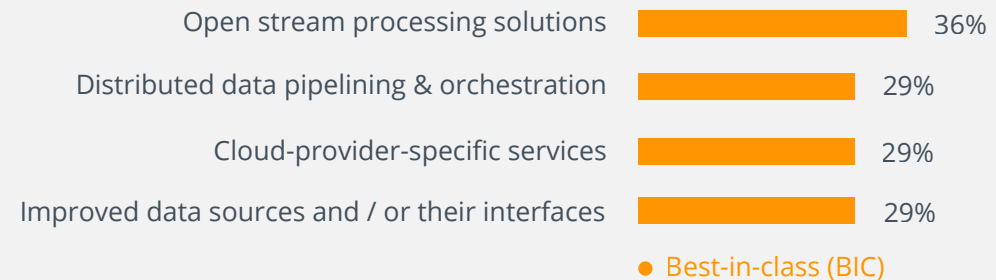## THERE IS A NEED TO EVOLVE FROM CENTRALIZED TO FEDERATED DATA ARCHITECTURE

Distributed data is not easily linkable	38%
Lack of willingness to invest in the quality of source data	37%
Data protection/privacy must be implemented across multiple physical datasets	35%
Centralized data architecture cannot prevent data silos	35%
Existing single point of truth concept generates data redundancies that are difficult to manage	31%

What are the current and future architectural challenges in your data & analytics landscape? (n=260)

Although best-in-class companies apply different principles to the redesign of their data landscapes, a central data architecture is still the goal for most respondents. Only 13 percent opted for an open data architecture for the future.

But there are good reasons to question the central concept. While only 31 percent of experts in central teams are convinced that a centralized data architecture cannot prevent data silos, the corresponding figure is 43 percent at executive level and 40 percent within IT. At the same time, data users in the business (42 percent) an are particularly aware of the fact that distributed data is not easily linkable.

Therefore, improving data sources is rightly a top priority. This can also help with better linkability, which is an important requirement for fast access to new data sources and the successful use of data virtualization. With these measures, it would

be more realistic to implement a logical data warehouse in some areas in the future. At present, only 18 percent consider this to be an important concept although best-in-class companies see greater potential (26 percent). Experience shows that in most cases it is not feasible to make all corporate data available in a single central data repository. The growing number of distributed data sources and the increasing volumes of data make this even more obvious. Accordingly, stream processing (36 percent) and distributed data pipelining & orchestration (29 percent) are the most important concepts for the future from the best-in-class point of view.

Open stream processing solutions	36%
Distributed data pipelining & orchestration	29%
Cloud-provider-specific services	29%
Improved data sources and / or their interfaces	29%

● Best-in-class (BIC)

Which concepts and technologies will be important for your future data & analytics landscape? By BIC (n=79)

05 EVOLVING A DATA CULTURE IS ABOUT PEOPLE, NOT JUST BUYING TECHNOLOGY

DATA COLLABORATION REQUIRES TARGETED ACTION

Organizations are aware that becoming a data-driven enterprise entails far more than architectural and technological measures. A majority (63 percent) is either implementing business-related/organizational measures or has plans to do so. However, there is also a remarkable proportion of companies that consider certain measures to be relevant but have no plans to address them.

Companies are mainly prioritizing improvements for the benefit of data consumers (top 3 being done). Measures that are instrumental in the overarching use of data and thus in breaking down both data and departmental silos appear to be important but are frequently not a priority. Harmonizing master and reference data is relevant for 92 percent of respondents, but 30 percent have no plans to do so.

To enable cross-divisional data collaboration, the data must be understandable. 93 percent find it relevant to provide understandable documentation and navigation assistance for data. Especially business managers and process experts (55 percent) demand making all relevant data sources searchable and accessible.

Only a few (17 percent) are aware that an overarching semantic data layer is actually a

93%
of organizations require more data documentation,

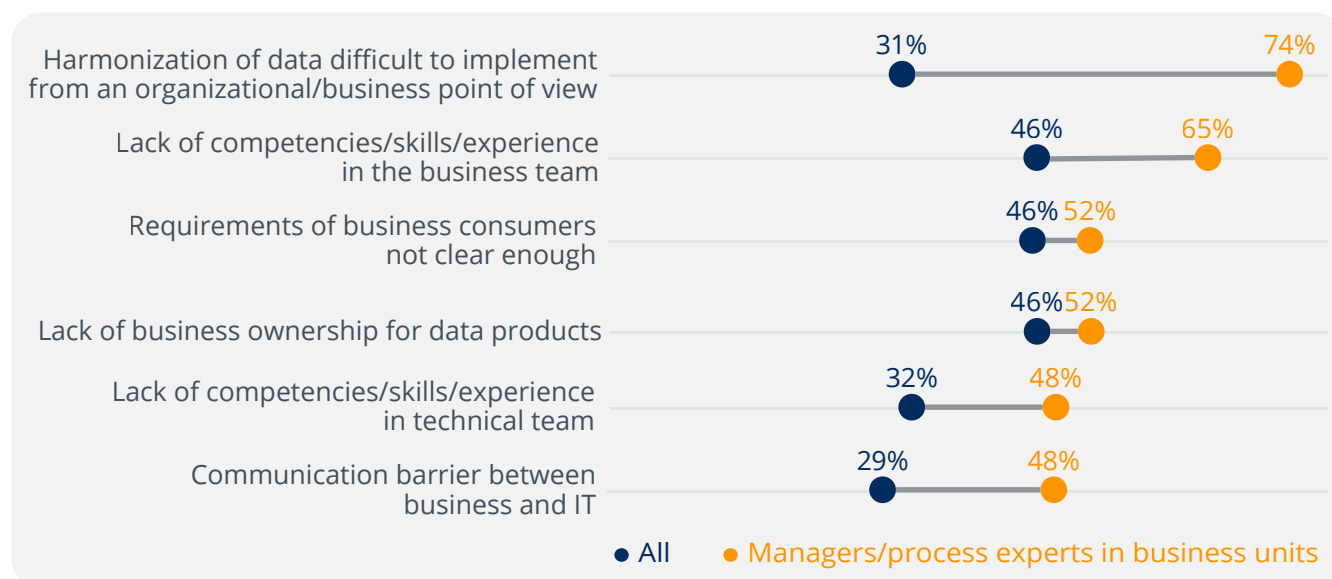but only **28%**
have plans for a data catalog.

prerequisite for both, with the proportion in the central data teams being somewhat higher (23 percent). This may also be the reason why only 28 percent plan to introduce a data catalog and/or metadata solution. Interestingly, in companies where tools are too technical, business users cannot implement new requirements themselves or IT cannot react quickly enough to new requirements, this measure is taken much more frequently (by 44, 53 and 58 percent respectively).

On average **92%**
of respondents believe business-related/ organizational measures are relevant to improve data & analytics utilization.

05 EVOLVING A DATA CULTURE IS ABOUT PEOPLE, NOT JUST BUYING TECHNOLOGY

DATA CULTURE DOES NOT ONLY CONCERN DATA CONSUMERS

Harmonization of data difficult to implement from an organizational/business point of view — 31% / 74%

Lack of competencies/skills/experience in the business team — 46% / 65%

Requirements of business consumers not clear enough — 46% / 52%

Lack of business ownership for data products — 46% / 52%

Lack of competencies/skills/experience in technical team — 32% / 48%

Communication barrier between business and IT — 29% / 48%

● All   ● Managers/process experts in business units

What challenges have you experienced in implementing these approaches and measures? Top 6 by role (n=259)

The organizational measures required to achieve a new culture in dealing with data pose challenges to many companies. In fact, managers and process experts in business units have a much clearer view of these than all other users. And they see themselves as being primarily responsible.

About one in two in this group claim that there is a lack of willingness to invest in the quality of source data and to optimize the data landscape (48 and 52 percent respectively). 74 percent believe that data harmonization is important but difficult to implement from a business and organizational perspective. In this group, this is the most frequently cited challenge.

Interestingly, there is reportedly no lack of management support. Only 24 percent of respondents say this would be a problem. However, many executives see it differently, with 40 percent judging the sluggish modernization of the data landscape it to be a priority issue. And yet it would be precisely in their power to change this.

The modernization of the data landscape requires business departments to take more responsibility as well as a greater focus on improving and harmonizing the source data. As many as 69 percent of respondents are working on improving data sharing across different business domains and 63 percent are committed to harmonizing master and reference data and placing the creation of data & analytics products in the hands of business users. Obviously, these tasks require a sound level of competencies and skills within the business paired with a clear vision of the business goals that data activities are intended to support. To achieve this, the change in dealing with data must be a top priority.
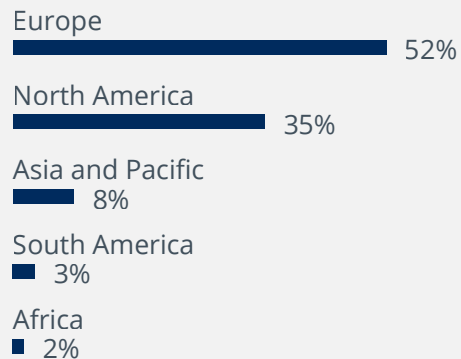
DEMOGRAPHICS
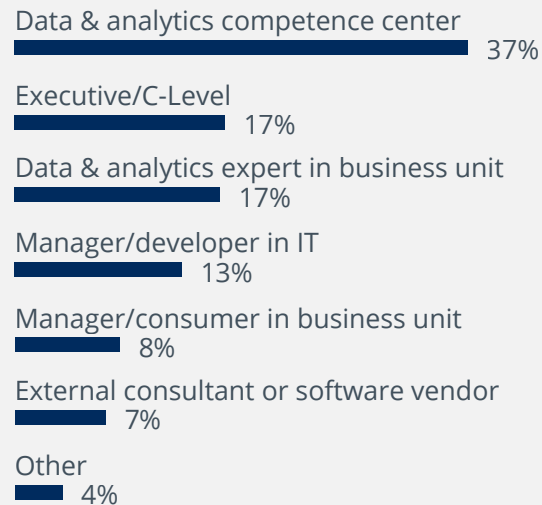
BROAD SPECTRUM OF INDUSTRIES AND COMPANY SIZES

This study was based on the findings of a world-wide online survey conducted in March and April 2022. The survey was promoted within the BARC panel, as well as via websites and newsletter distribution lists. A total of 268 people took part, representing a variety of different roles, industries and company sizes.
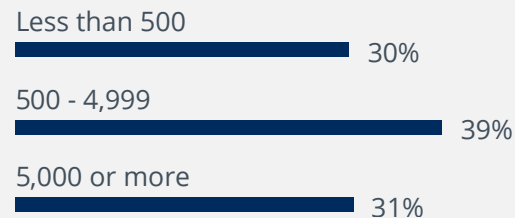
POSITION IN THE COMPANY

Data & analytics competence center — 37%

Executive/C-Level — 17%

Data & analytics expert in business unit — 17%

Manager/developer in IT — 13%

Manager/consumer in business unit — 8%

External consultant or software vendor — 7%

Other — 4%

What is your role in the company? (n=260)

INDUSTRY SECTOR

Industry — 26%

Services — 22%

Public sector — 17%

IT — 13%

Banking and finance — 12%

Retail/Wholesale/Trade — 9%

Other — 2%

Which of the following best describes your organization's industry sector? (n=260)

REGION

Europe — 52%

North America — 35%

Asia and Pacific — 8%

South America — 3%

Africa — 2%

In which region are you located? (n=260)

COMPANY SIZE

Less than 500 — 30%

500 - 4,999 — 39%

5,000 or more — 31%

How many employees does your company have? (n=260)

BEST-IN-CLASS

Much better
17%

Slightly better
28%

Similar
40%

Slightly worse
13%

Much worse
2%
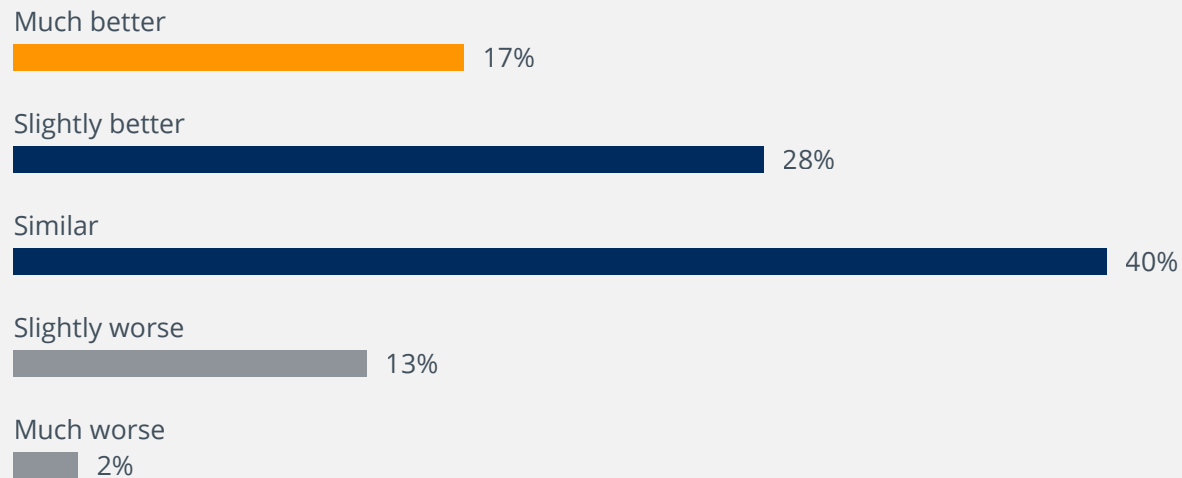
How would you rate your company's data culture compared to your main competitors? (n=253)

We divided the sample into "best-in-class" and "laggards" in order to identify differences in terms of the current data culture within organizations, the hurdles companies are facing and the initiatives that are underway. This division was made based on the question "How would you rate your company's data culture compared to your main competitors?". Companies that have a much better data culture than their competitors are referred to as "best-in-class" (17 percent) while those who have a slightly or much worse data culture than their competitors are classed as "laggards" (15 percent).

BARC – MAKING DIGITAL LEADERS

BARC – BUSINESS APPLICATION RESEARCH CENTER

BARC (Business Application Research Center) is one of Europe's leading analyst firms for business software, focusing on the areas of data, business intelligence (BI) and analytics, enterprise content management (ECM), customer relationship management (CRM) and enterprise resource planning (ERP).

Our passion is to help organizations become digital companies of tomorrow. We do this by using technology to rethink the world, trusting data-based decisions and optimizing and digitalizing processes. It's about finding the right tools and using them in a way that gives your company the best possible advantage.

This unique blend of knowledge, exchange of information and independence distinguishes our services in the areas of research, events and consulting.

Research

Our BARC studies are based on internal market research, software tests and analyst comments, giving you the security to make the right decisions.

Our independent research brings market developments into clear focus, puts software and vendors through their paces and gives users a place to express their opinions.

Events

Decision-makers and IT industry leaders come together at BARC events. BARC seminars in small groups, online webinars and conferences with more than 1,000 participants annually all offer inspiration and interactivity. Through exchange with peers and an overview of current trends and market developments, you will receive new impetus to drive your business forward.

Consulting

In confidential expert workshops, coaching and in-house consultations, we transform the needs of your company into future-proof decisions. We provide you with successful, holistic concepts that enable you to use the right information correctly. Our project support covers all stages of the successful use of software.

BARC GmbH
Berliner Platz 7
D-97080 Würzburg
Germany
+49 931 880 6510
www.barc.de

Hirschstettner Straße 19 / I / IS314
A-1200 Wien
Austria
+43 660 6366870

BARC Schweiz GmbH
Täfernstraße 22a
CH-5405 Baden-Dättwil
Switzerland
+41 56 470 94 34

Rest of the World
+44 1536 772 451
www.barc-research.com

SPONSOR PROFILE: DATABRICKS

ABOUT DATABRICKS

Databricks is the data and AI company. More than 7,000 organizations worldwide — including Comcast, Condé Nast, H&M and over 40% of the Fortune 500 — rely on the Databricks Lakehouse Platform to unify their data, analytics and AI. Databricks is headquartered in San Francisco, with offices around the globe. Founded by the original creators of Apache Spark™, Delta Lake and MLflow, Databricks is on a mission to help data teams solve the world's toughest problems. To learn more, follow Databricks on Twitter, LinkedIn and Facebook.

Databricks GmbH
Herzigspitalstrasse 24
80331 München
Germany

ABOUT DENODO

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. For more information, visit www.denodo.com

Denodo Platform: ONE Logical Platform for All Your Data

Denodo Technologies GmbH
Oberanger 28
Munich, 80331
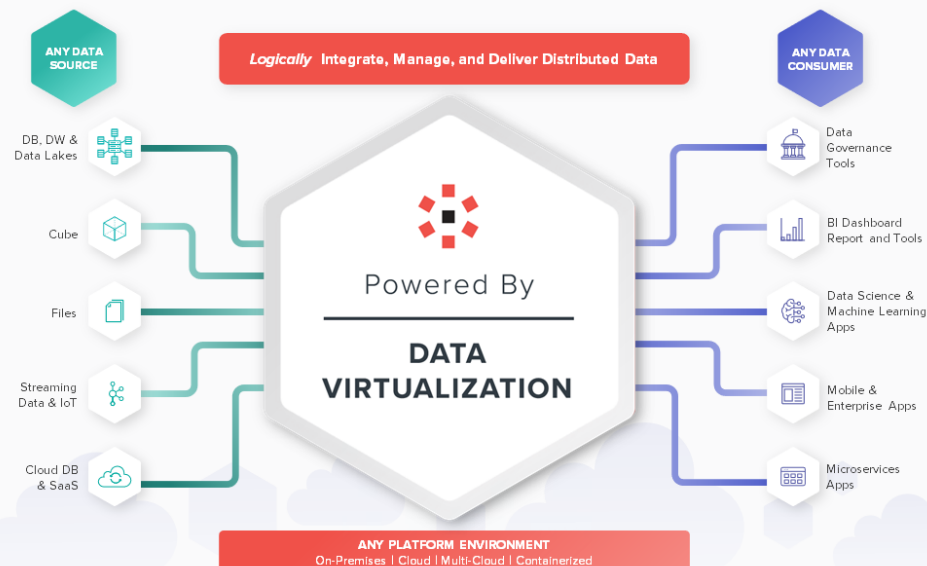Germany
+49 89 599 904 50

www.denodo.com
info.emea@denodo.com

UK
+44 20 3196 4710

Spain
+34 912 77 58 55

France
+33 1 42 68 51 27

Italy
+39 2 72546395

ABOUT PRECISELY

Precisely is the global leader in data integrity, providing accuracy, consistency, and context in data for 12,000 customers in more than 100 countries, including 99 of the Fortune 100. Precisely's data integration, data quality, data governance, location intelligence, and data enrichment products power better business decisions to create better outcomes.

- The Forrester Wave™: Data Governance Solutions
  Precisely (Infogix) is named a Leader in The Forrester Wave™: Data Governance Solutions, Q3 2021
- IDC MarketScape: Data Catalog Software 2022 Vendor Assessment
  Precisely Named a Leader for Data Catalog Software
- The Forrester Wave™: Location Intelligence Platforms
  Precisely is named a Leader in The Forrester Wave: Location Intelligence Platforms, Q2 2020

Learn more at
www.precisely.com

Precisely Data Integrity Suite
Your one-stop shop for trusted data

The Precisely Data Integrity Suite is a set of seven interoperable modules that enable your business to build trust in its data. Data with integrity has maximum accuracy, consistency, and context – empowering fast, confident decisions that help you add, grow, and retain customers, move quickly and reduce costs, and manage risk and compliance.

At their heart, the modules of the Data Integrity Suite are built on proven Precisely technology that over 12,000 businesses across the globe rely on to meet their data integrity needs. The interoperable modules work together to build value at each step of your journey to data integrity, integrate with Precisely's portfolio of market-leading products, and work seamlessly with both traditional and modern tech stacks.

The modular, interoperable Precisely Data Integrity Suite contains everything you need to deliver accurate, consistent, contextual data to your business - wherever and whenever it's needed.

precisely

Precisely Software GmbH
Ungelsheimer Weg 14
40472 Düsseldorf
Germany
www.precisely.com/de

Contact
Kerstin Krämer
Marketing Campaigns Manager
kerstin.kraemer@precisely.com

SPONSOR PROFILE: TIMEXTENDER

ABOUT TIMEXTENDER

TimeXtender empowers you to build a modern data estate 10x faster by eliminating manual coding and complex tool stacks.

With our low-code data estate builder, you can quickly integrate your siloed data into a data lake, model your data warehouse, and define data marts for multiple BI tools & endpoints – all within a simple, drag-and-drop user interface.

TimeXtender seamlessly overlays your data storage infrastructure, connects to any data source, and integrates all the powerful data preparation capabilities you need into a single, unified solution.

Because all code and documentation are generated automatically, you can reduce build costs by 70%, free data teams from manual, repetitive tasks, and empower BI and analytics experts to easily create their own data products – no more bottlenecks.

We have 16+ years of experience optimizing best practices and building modern data estates for top-performing organizations, such as Komatsu, Colliers, Direct Relief, and The Puerto Rican Government. We do this for one simple reason: because time matters.

We are a Microsoft Gold-Certified Partner and our solution is recommended by Microsoft.

We have an unprecedented 95% retention rate with over 3,300 customers due to our commitment to simplicity, automation, and execution.

- Get Fast Access to Reliable Data: Quickly extract insights and maximize the value of your corporate data – no more waiting weeks or months for data to be ready for analysis.
- Low-Code Simplicity: Code and documentation are generated automatically, which frees data teams from manual, repetitive tasks, and empowers BI and analytics experts to easily create their own data products.
- No Loss of Flexibility or Power: Don't worry! Powerful developer tools, SQL scripting, and custom coding capabilities are still available, if needed.
- Future-Proof Scalability: Because TimeXtender is independent from data sources, storage services, and visualization tools, you can eliminate vendor lock-in, and ensure your data infrastructure is highly-scalable to meet future analytics demands.

TIMEXTENDER

TimeXtender
13555 SE 36th St
Suite 100, Bellevue
Washington 98006
United States
https://www.timextender.com/

AUTHORS

JACQUELINE BLOEMEN
SENIOR ANALYST

Jacqueline Bloemen is a senior analyst with a major focus on data & analytics strategy and culture, architecture and technology, governance and organization. She is an author and speaker and has been advising companies of various sizes and industries for over 35 years. Currently, her research and consulting activities focus on the transformation to becoming a data-driven company.

TIMM GROSSER
SENIOR ANALYST

As a senior analyst, Timm Grosser has been advising domestic and international companies of various sizes and industries in the areas of BI, data management and analytics for more than 10 years. During his time as a consultant, he has designed numerous solutions in BI/big data strategy, organization, architecture and tool selection with customers and in the BARC test lab. He is a frequent speaker at conferences and seminars as well as the author of numerous industry articles and market studies.
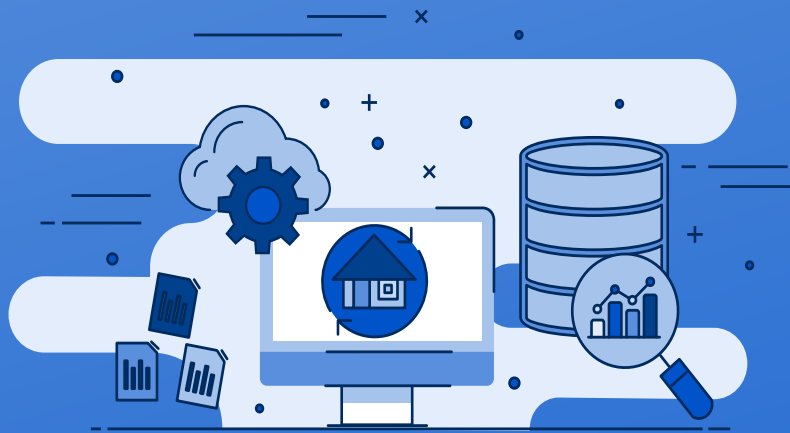
Germany

BARC GmbH

Berliner Platz 7

D-97080 Würzburg

+49 931 880 6510

Austria

BARC GmbH

Hirschstettner Straße 19
/ I / IS314

A-1220 Wien

+43 660 6366870

Switzerland

BARC Schweiz GmbH

Täfernstraße 22a

CH-5405 Baden-Dättwil

+41 56 470 94 34

Rest of the World

www.barc-research.com

+44 1536 772 451