BARC

Data, BI and Analytics Trend Monitor 2024

The world's largest survey of data, BI and analytics trends

BARC Research Study

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Table of contents

Foreword 4

Management Summary 5

Survey Results 8

Trends Overview 9

Trends Development 11

Best-in-Class 13

The Trends in Detail 15

Data Security/Privacy 16

Data Quality Management 18

Data Governance 20

Data-Driven Culture 22

Data Literacy 24

Self-Service Analytics & Data Discovery 26

Advanced Analytics/Machine Learning/AI 28

Data Warehouse Modernization 30

Data Preparation by Business Users 32

Alerting & Triggers 34

Data Catalogs & Data Intelligence Platforms 36

Cloud for Data & Analytics 38

Real-Time Analytics & Streaming 40

Integrated Platforms for Performance Management (PM) & Analytics 42

Decision Intelligence 44

Embedded BI & Analytics 46

Data Products 48

DataOps & Observability 50

Data Lakehouse 52

Data Mesh 54

Recommendations 56

Sample 59

BARC Company Profile 61

Sponsor Profile 63

Foreword

Every business is a data business. And any data business needs to use analytics to support decision-makers across the enterprise and across all hierarchy levels to take action. Deriving value from data has become an imperative for many businesses to stay competitive – more and more business strategies call for the increased use of data throughout the organization.

But becoming data-driven is not that easy. This survey on the importance of trends shows above all that users of data and analytics do not consider the latest technical innovations or media-dominated topics such as AI to be the most important. Greater importance is attached to the fundamental aspects of the data basis: security and quality as well as the governance that ensures these two aspects. On the other hand, there is a focus on people: the aim is to develop a data-driven culture and increase data literacy.

With 2,398 users, consultants and vendors taking part this year, the BARC Data, BI and Analytics Trend Monitor 2024 illustrates which trends are currently regarded as important by a broad group of data, BI and analytics professionals. Their responses provide a comprehensive picture of regional, company and industry-specific differences and offer current insights into developments in the data and analytics market. Our time series comparisons also show how trends have developed, making it possible to distinguish hype from stable trends.

Dr. Carsten Bange
Würzburg, Germany, November 2023

Management Summary

Management Summary

The market for data management, BI and analytics is in constant and seemingly ever faster motion. Generative AI has left no company untouched in 2023 and has elevated the debate about the possibilities and limits of decision-making, automation and human-machine interaction to a societal level. This makes it all the more exciting to assess the significance of the trends in this study, which takes a unique approach: We asked more than 2,300 users, consultants and vendors for their opinions on the most important data, BI and analytics trends to get a broad perspective, especially from the users of the technology (71 percent of respondents). They clearly focus on two aspects: data and people. Even though AI / machine learning is clearly gaining in importance, as expected, it is the fundamental topics that users consider really important. The study also provides a comprehensive insight into regional, company and industry-specific differences in the assessment of trends, some of which are viewed very differently. We have summarized the key findings of this study in six hot spots to illustrate the most striking contrasts and ongoing trends.

1 Hot Spot Industry comparison

While there are notable differences in a few trends, such as the significant impact of advanced analytics on the finance sector and real-time analytics & streaming for telecommunication companies, the vast majority of trends maintain a consistent level of importance across all industries, particularly in the realm of data quality management and data security. We encourage readers to compare relevant trends specific to their industry, as this comparison will be of great interest to industry experts seeking to align their personal impressions with survey results.

2 Hot Spot Global differences

Observing trends from a geographical perspective reveals a greater tendency in the South American region to assess them as important. In comparison, most trends are generally rated as less important in Europe. The only exception is data security. Here, South American and European companies place similarly high emphasis on this trend. However, the generally rather conservative view is typical for Europe and can be further examined by looking more closely at the regions within Europe (see hot spot 6). Views in North America are largely consistent with the European perspective. Overall, data security and data quality management are perceived as important, while new topics (e.g., data lakehouse and data mesh) are deemed less significant across all regions. However, when it comes to self-service analytics & data discovery, APAC and South America attach greater importance to this topic than Europe and North America. This finding perfectly illustrates the fact that priorities vary from region to region.

3 Hot Spot Vendors vs. users

In general, vendors and users share a similar perspective on the importance of trends. However, technology plays a subordinate role in many of today's prevailing trends such as data literacy, governance and establishing a data-driven culture. Their high rankings in the overall results can be attributed to the fact that 71 percent of the survey respondents are IT or business users who come face to face with these topics on a daily basis. Vendors are generally more reserved and rate most trends lower in terms of importance. The only exception is cloud for data & analytics - a trend that vendors rate as significantly more important than users do.

Management Summary

4 Hot Spot
Top trending topics

The newly surveyed topic of data security and privacy jumps straight to number one this year. Data security and privacy are vital, as they safeguard sensitive information, preserving trust, privacy and compliance. After six years at the top, data quality management has been caught up and is now ranked as the second most important trend. This study has consistently highlighted the value of high-quality data as a raw material and asset over the years. It is likely to remain a high-profile topic for a long time to come. The significance of data governance has grown in recent years. Beyond its primary goals of ensuring data security and quality, it substantially shapes an organization's data culture. Striking a balance between easy access to data on the one hand and ensuring compliance, data ethics and efficiency on the other is crucial.

Establishing a data-driven culture occupies fourth position in this year's Trend Monitor. Since its introduction to the Trend Monitor in 2019, this trend has always ranked among the top five. Data literacy, which ranks fifth, is also key to establishing a data-driven culture. A culture of effective and ethical data use is essential for other trends to take root, ensuring that data and analytics make a lasting contribution to business success. Self-service analytics & data discovery in sixth place is a good example of this. All the top trends combine organizational and technological elements. They act as a solid foundation on which most companies are keen to put great emphasis.

5 Hot Spot
Best-in-class companies

Best-in-class companies differentiate themselves by prioritizing certain trends more than other organizations do. They especially highlight the importance of self-service and data discovery, ranking it third in importance, higher than its overall sixth-place ranking. These companies also recognize the crucial role of business users in preparing data, easing the burden on central teams. This is vital in an era when data is increasingly scattered and integration into a single platform is challenging.

Data warehouses remain key in many data architectures, despite the rising acceptance of data lakehouses and other frameworks. Best-in-class companies place greater importance on data warehouse modernization and integrated platforms for performance management and analytics than others.

A notable focus for all companies is data quality, with best-in-class companies placing an even greater emphasis on data quality management, making it their top priority. Interestingly, while advanced analytics, ML and AI is similarly valued by all, best-in-class companies significantly prioritize decision intelligence. This reflects the growing capability of AI to support or automate operational decision-making, highlighting its value for leading companies.

6 Hot Spot
Europe

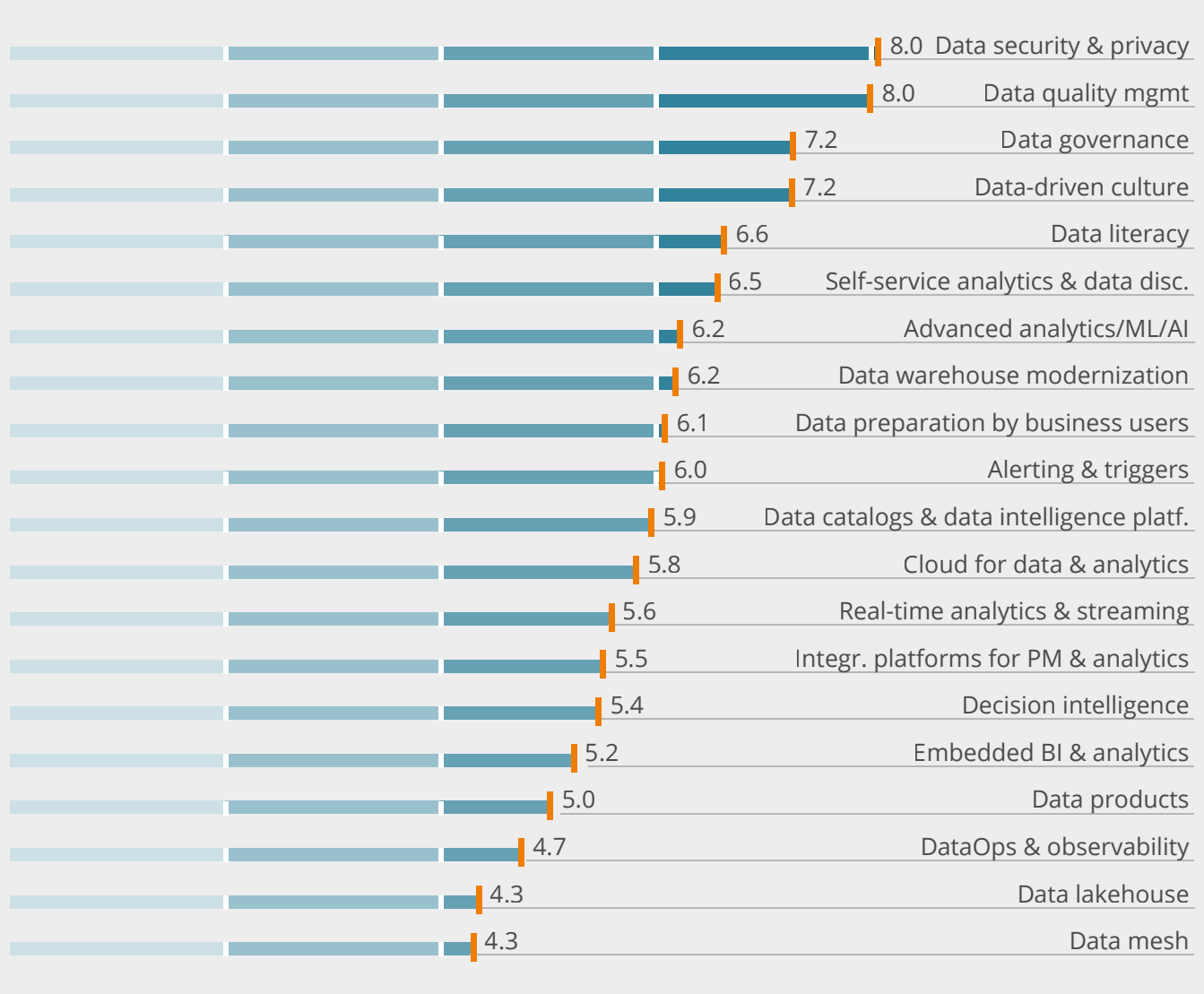
The importance of some trends is perceived quite differently across European countries. Southern Europe and the United Kingdom in particular place greater importance on most BI trends than the other European regions. Conversely, the German-speaking region (Germany, Austria and Switzerland – collectively known as DACH) places much less importance on most trends. The only exception is data literacy - rated as significantly more important in the DACH region. Data security and data quality management are rated as similarly important across Europe as a whole. Data quality management is also the one trend that the DACH region values the most. French respondents indicated that data preparation is very important to them, ranking this trend far higher than the rest of the world.

All in all, the European perception reflects the overall assessment of the top trends: Data security & privacy, data quality management, data-driven culture and data governance are seen as the most relevant trends this year. This is a consistent finding over recent years – with the exception of data security & privacy, a newly introduced theme to this year's Trend Monitor.

Survey Results

Trends Overview

Data security is the number one trend this year, overtaking data quality management



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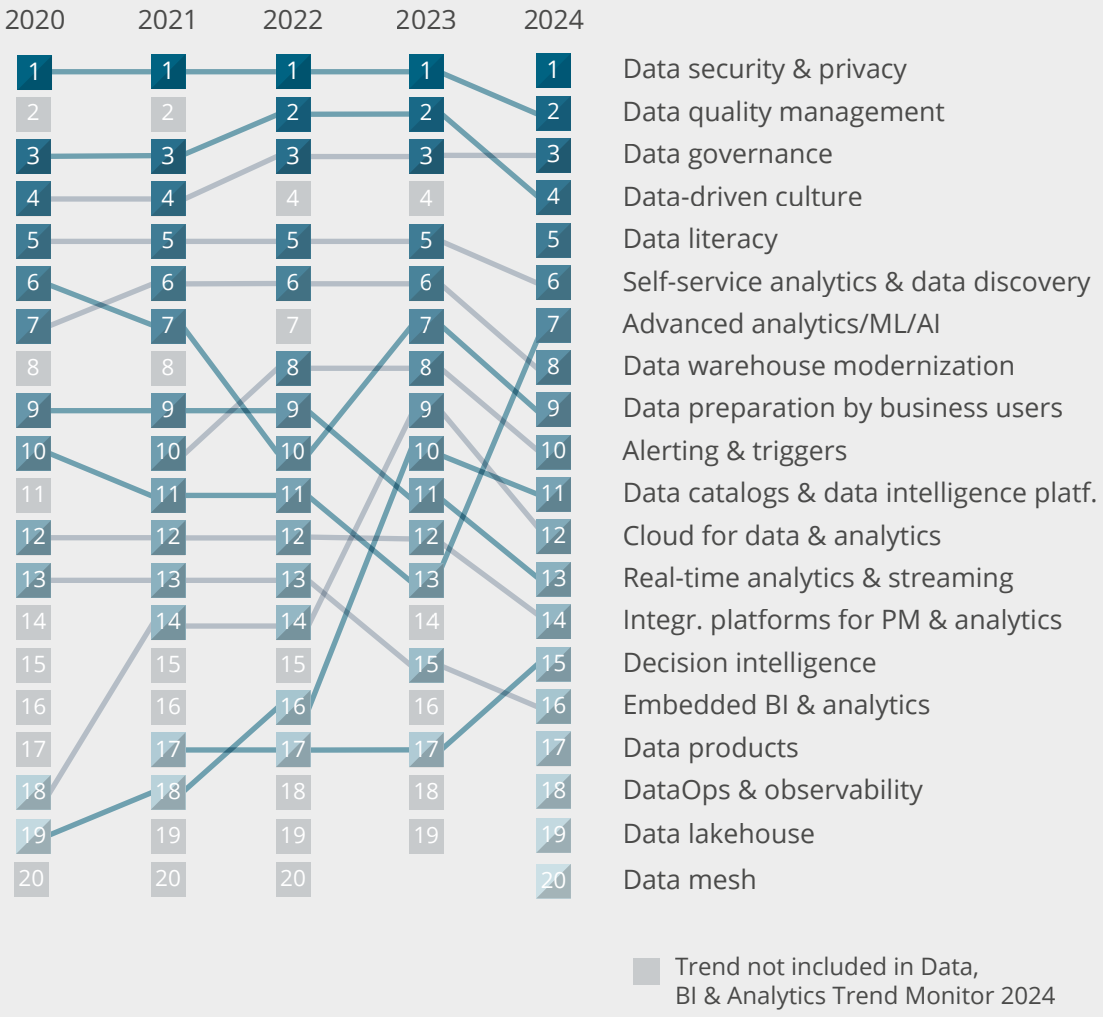
BARC Viewpoint

We asked users, consultants and software vendors of BI and data management technology to give their personal rating of the importance of twenty trending topics that we presented to them. Data security & privacy in first position is a newly-introduced trend this year, while data quality management has been among the top trends for the last nine years. The significance of these two topics transcends individual regions and industry sectors. Data-driven culture is a trend that was first featured five years ago and has made the top five ever since. Similarly, data governance has consistently been among the top four in recent years, gaining in importance over the last five years and now ranking third. Data literacy is also featured for the first time this year, occupying fifth position.

These top five trends represent the foundation for organizations to manage their own data and make good use of it. Furthermore, they demonstrate that businesses are aware of the relevance of secure and high-quality data. Organizations want to go beyond the collection of as much data as possible and actively use data to improve their business decisions – not only in management but across the organization. This necessitates broad data literacy throughout the enterprise.

Trends Development

Some movement this year: Cloud for data & analytics loses ground, while advanced analytics/ML/AI is becoming more important



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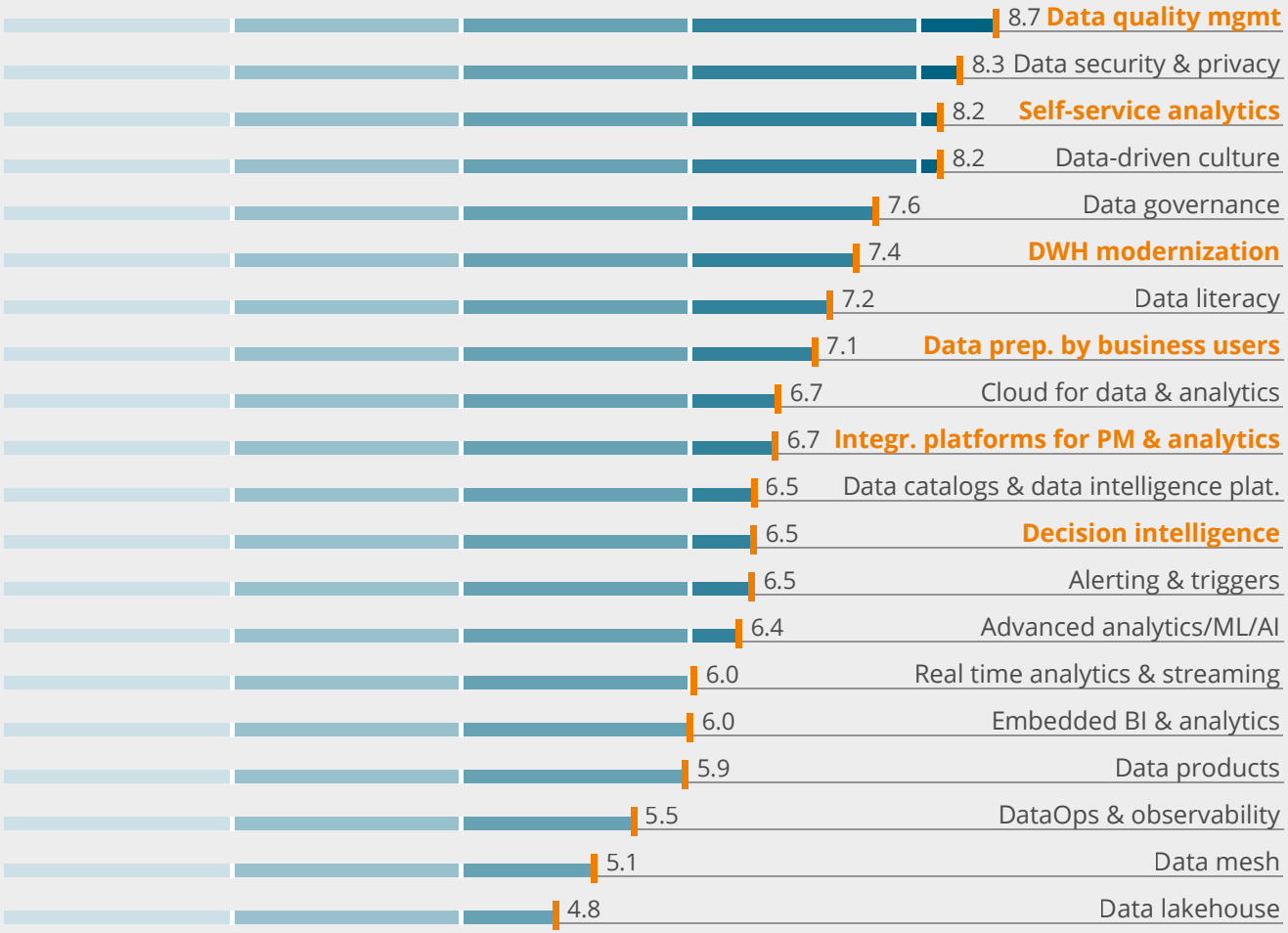
BARC Viewpoint

Some trends have increased in importance since last year. Decision intelligence and advanced analytics/machine learning/artificial intelligence are especially hot topics, which owe much to advances in generative AI and the resulting automation. The steady rise of data governance is also in line with the rising maturity and diversity of data landscapes and use cases as well as the need to fulfill regulatory compliance.

However, there are some minor shifts in the downward trends. Cloud for data and analytics has fallen three places to twelve. Data quality management, the survey leader in recent years, is ranked number two this year. For real-time analytics (13th) and embedded analytics (16th), a continuous downward trend can be observed over the years. Our survey represents a broad mix of trends and shows that there is steady movement in the market. Trends that have been around for a long time occasionally make room for new ones, often because they become mainstream and do not arouse much curiosity any more.

Best-in-Class

Learning from the best: How best-in-class companies see the trends



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BARC Viewpoint

Best-in-class companies prioritize certain trends more than other organizations. Self-service analytics & data discovery stands out the most here, ranking third in importance for them, while it is only in sixth place overall. Best-in-class companies also see a vital role for business users to prepare data for further use to reduce workloads in central teams. Data preparation by business users is especially important in an age when data can be found scattered all around the company and it is becoming increasingly difficult to integrate it into one physical data platform.

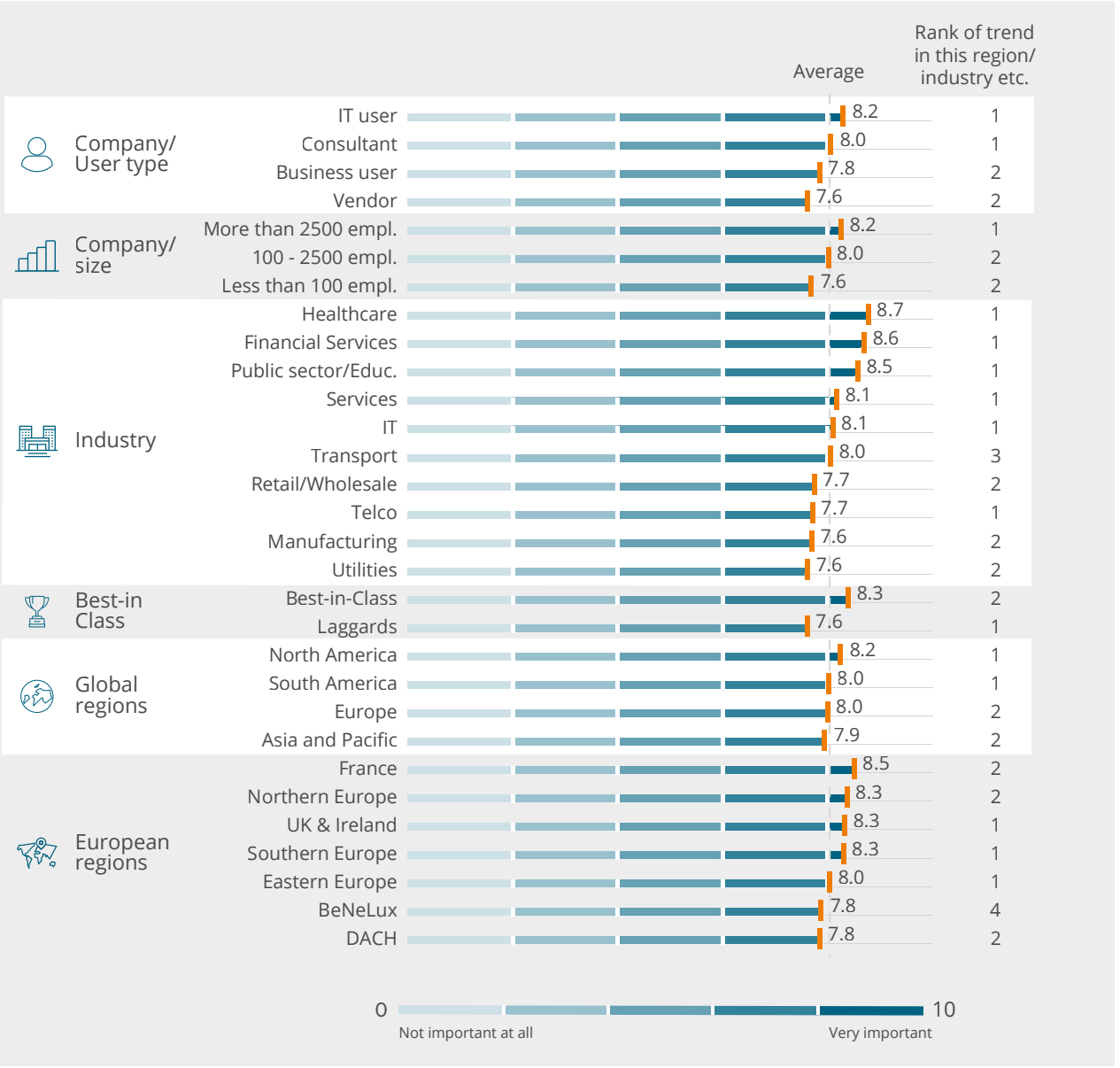
Nevertheless, data warehouses still play a major role in many data architectures, even as data lakehouses, data fabric and other architecture frameworks are gaining traction. Data warehouse modernization and integrated platforms for performance management and analytics rank significantly higher with best-in-class companies compared to the rest.

This integrated approach can help to improve the quality of data, a topic that ranks very highly for all companies, but especially best-in-class companies, who clearly rate it as their most important trend. With all the hype around generative AI, it is especially interesting to observe that best-in-class companies rank advanced analytics, ML and AI very similarly to other organizations, but they place much greater emphasis on decision intelligence than the rest. AI advancements are increasingly enabling software to support and even automate operational decision-making. Best-in-class companies thus value decision intelligence more than laggards.

The Trends in Detail

Data Security/Privacy

A major trend in the healthcare sector, but less important for small companies and vendors



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BARC Viewpoint

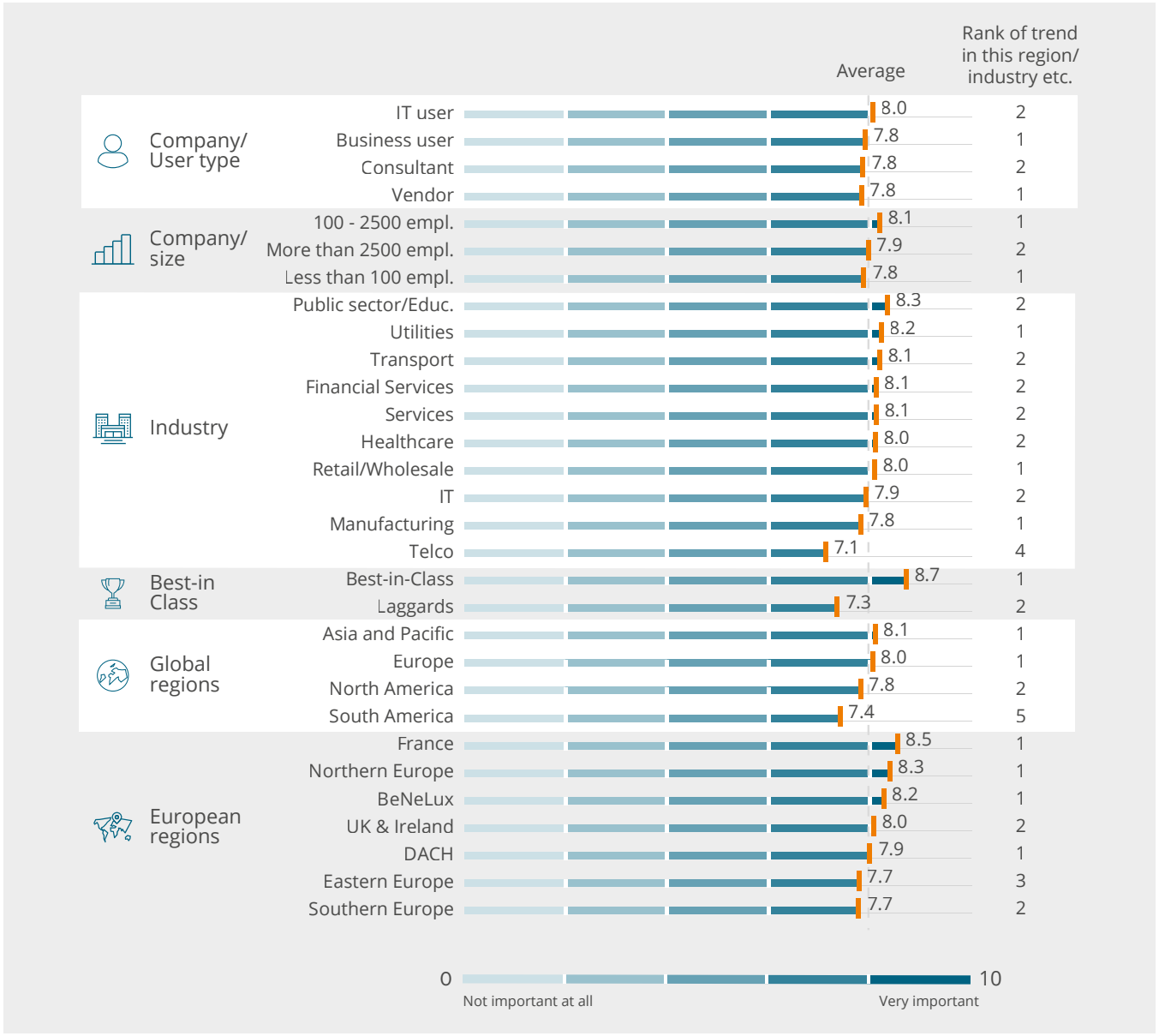
Data security is the protection of data against it being stolen, manipulated or destroyed. More and more professional cyberattacks, coupled with the general uncertainty in global markets and the political situation, are driving the desire for security and protective measures. However, the reality in business does not always reflect this. Risk assessments, emergency plans and protection measures are often not up to date or do not even exist.

Our survey shows that security is not adequately addressed in many companies and there is a need to take appropriate protective measures. Security is in the consciousness of companies, but there is often a lack of time and resources to implement the necessary technical, physical and organizational measures and to coordinate them appropriately. Data security is not just a task for the IT department.

Data security measures are grouped into prevention, detection and reaction. Data is protected by means of access restrictions, encryption and regulations governing data transmission and storage. If a data breach does occur, it should be detected as quickly as possible and damage prevented (or at least limited). A sound security concept and emergency plan should include options for tracing the attacker, measures for recovering the data, and clear action and communication processes to limit financial and non-financial damage. This also includes the obligation to provide information quickly if personal data is affected, in accordance with the applicable data protection laws.

Data Quality Management

Data quality management is a bigger trend in France and among best-in-class companies, but less relevant for telecommunications sector



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BARC Viewpoint

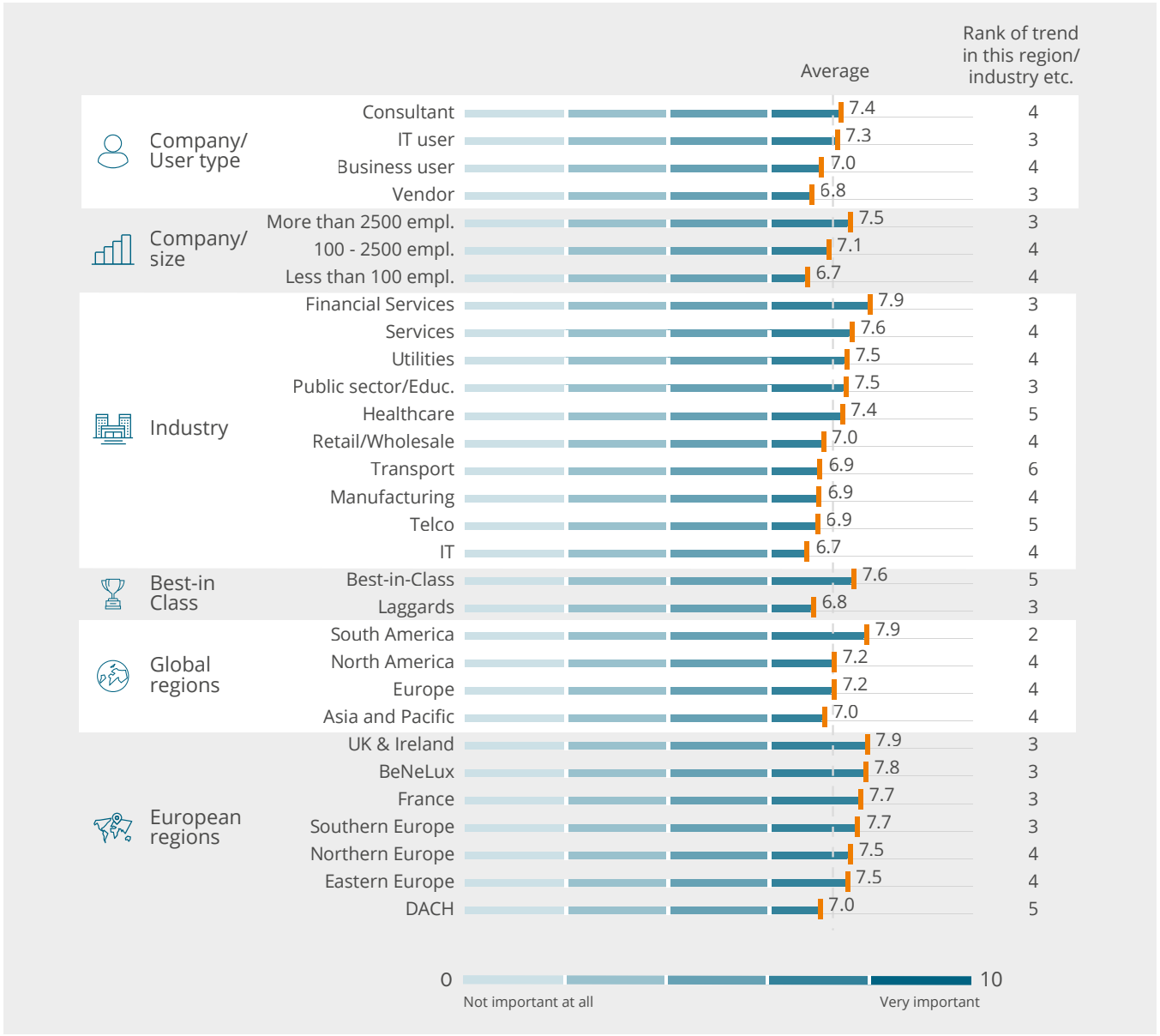
The importance of data quality and master data management can be explained very simply: Correct decisions can only be made on the basis of reliable, consistent data. Models can only make accurate predictions if they are trained and supplied with the correct data. More than that, high data quality standards are essential in order to increase flexibility for business users.

Master data provides the structure to understand and use data. It is only through master data that transactional data, IoT data and clickstreams get their meaning and context. Harmonized master data is critical to the uniform understanding of data and the interaction of company divisions as it helps to ensure consistent reporting and data-driven operations. In today's digital age, in which data is increasingly emerging as a factor of production, there is a growing need to flexibly use and produce high quality data to make new services and products possible.

The critical success factors for sustainable high data quality are defined roles and responsibilities, quality assurance processes, the continuous monitoring of the health of a company's data and – most importantly – everyone's awareness and transparency regarding the impact of poor data quality.

Data Governance

UK & Ireland and the financial services sector regard data governance as important. Smaller companies and the IT sector are some way behind



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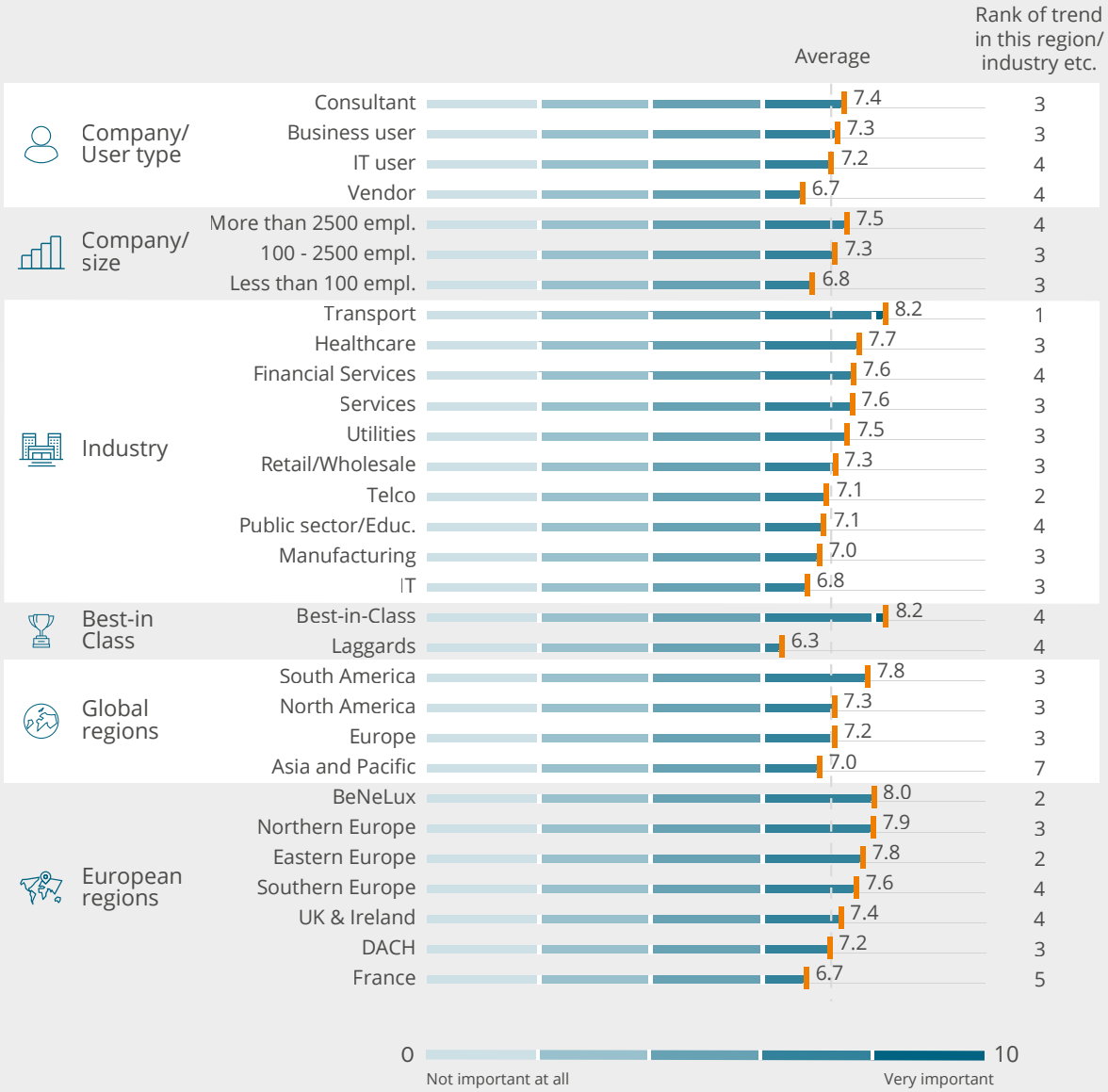
BARC Viewpoint

Unlike BI or analytics governance, which center on preparing and presenting data for analytical use cases, data governance focuses on the data in all systems that are dealing with data. Because business and technical responsibilities are traditionally covered at a 'per system' level, this overarching view of data needs to be specifically addressed. For a long time, this was usually performed by a central body within the organization. With the rise of data product thinking and data mesh, a decentralized and federated approach to data governance is now more prevalent. This requires broader thinking in terms of knowledge, people, organization and technology.

Data governance is needed as the steering mechanism for data strategy. A proper data strategy orchestrates how business strategy is translated into data and analytics. It enables the business to get value from data, for example, by applying data product thinking. Data strategy manages the exploitation of data across all business processes to promote business efficiency and innovation. Data governance is required to implement a data strategy, including policies and frameworks to manage, monitor and protect data capital while taking people, processes and technologies into account.

Data-Driven Culture

A big gap exists between best-in-class companies and laggards as well as between the transport and IT sectors



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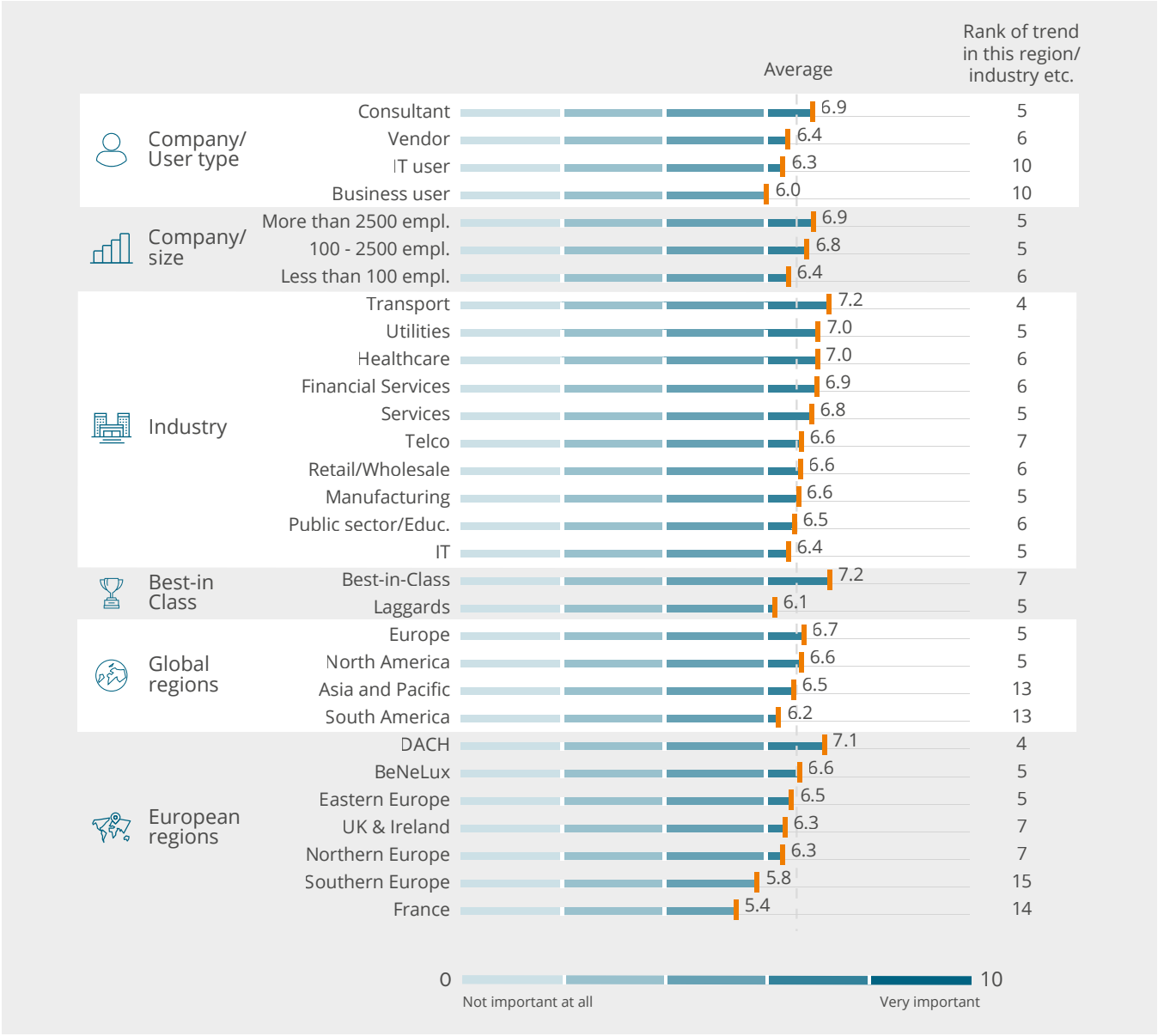
BARC Viewpoint

Many companies are pursuing the goal of using data and analytics more broadly throughout the organization in order to become data-driven. 'Data-driven' in this context means that as many decisions and processes as possible are based on data. Ultimately, data thus becomes the key driver for successful decisions, effective and efficient processes, and new competitive advantages.

To achieve this goal, technology investments alone are not enough. All employees must be involved and a culture of constant and open interaction with data must be created. The foundations of such a data culture are described in the BARC Data Culture Framework, which identifies six key action areas: data strategy, leadership, governance, literacy, communication and access.

Data Literacy

The transport sector and best-in-class companies place the most value on data literacy, France much less so



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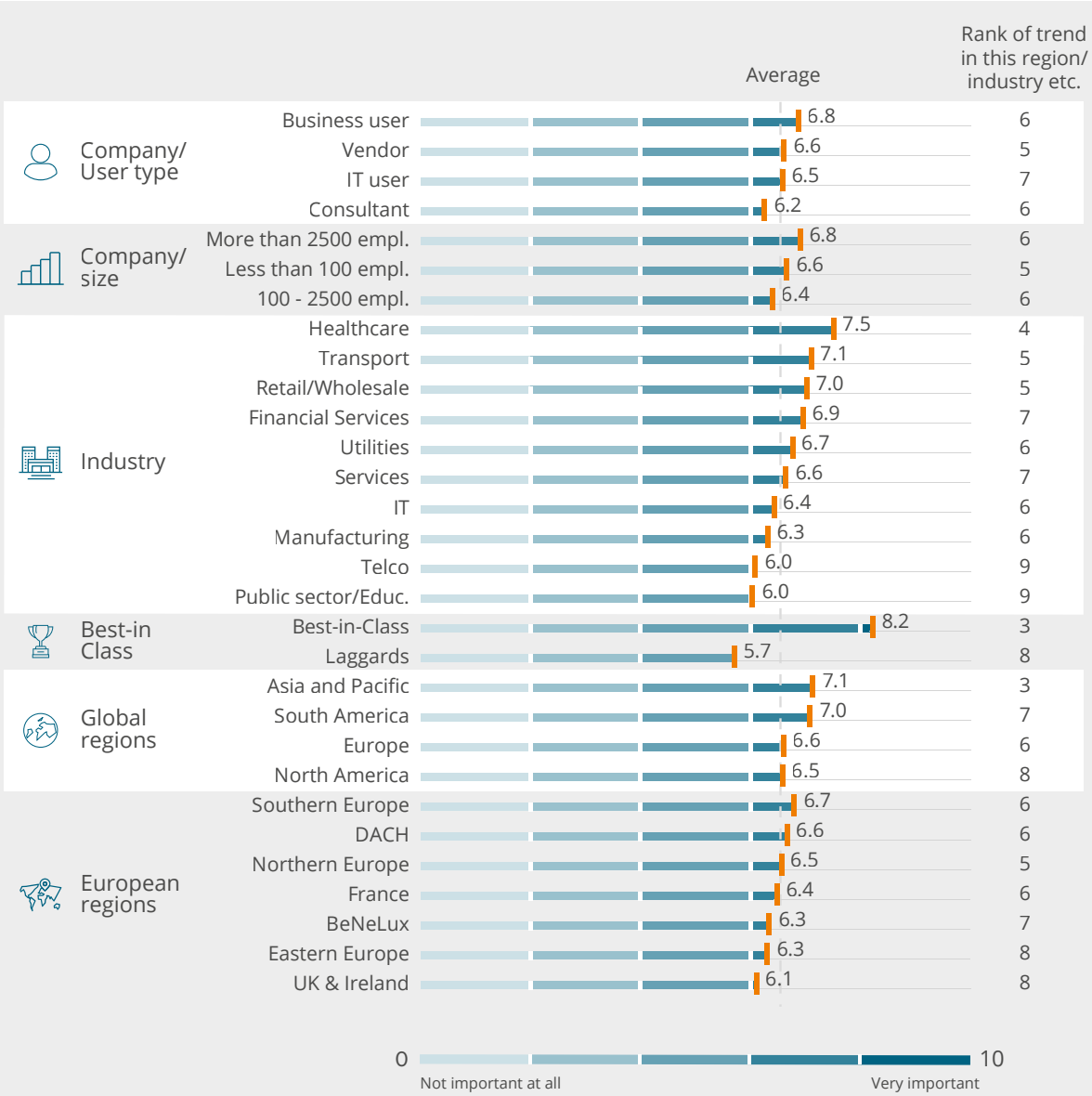
BARC Viewpoint

Data literacy is not limited to data professionals, data engineers and data scientists. It is increasingly important for all individuals in various roles and industries, as data plays a central role in decision-making and problem-solving across domains. Or, as Wayne Eckerson puts it, it "represents the baseline knowledge that every person [...] needs to have". BARC sees data literacy as the fundamental ability of users to work with data. In our view, this requires not only analytical skills, but also an understanding of the data (models) and data sources themselves, as well as knowledge of the software tools and how users work together.

This year, for the first time, we surveyed the importance of data literacy in the Trend Monitor and it immediately landed in fifth place. We also see it as a trend that vendors do not cover very well. When asked to rate the importance of data literacy, vendors gave it 6.4/10 while user organizations ranked it a bit higher at 6.7/10.

Self-Service Analytics & Data Discovery

Especially relevant in the healthcare sector and for best-in-class companies, but not so much for laggards and the public sector



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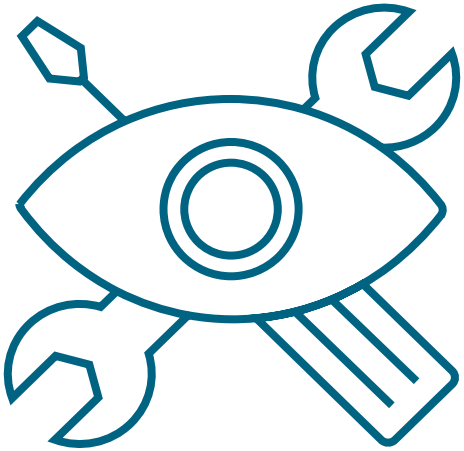
BARC Viewpoint

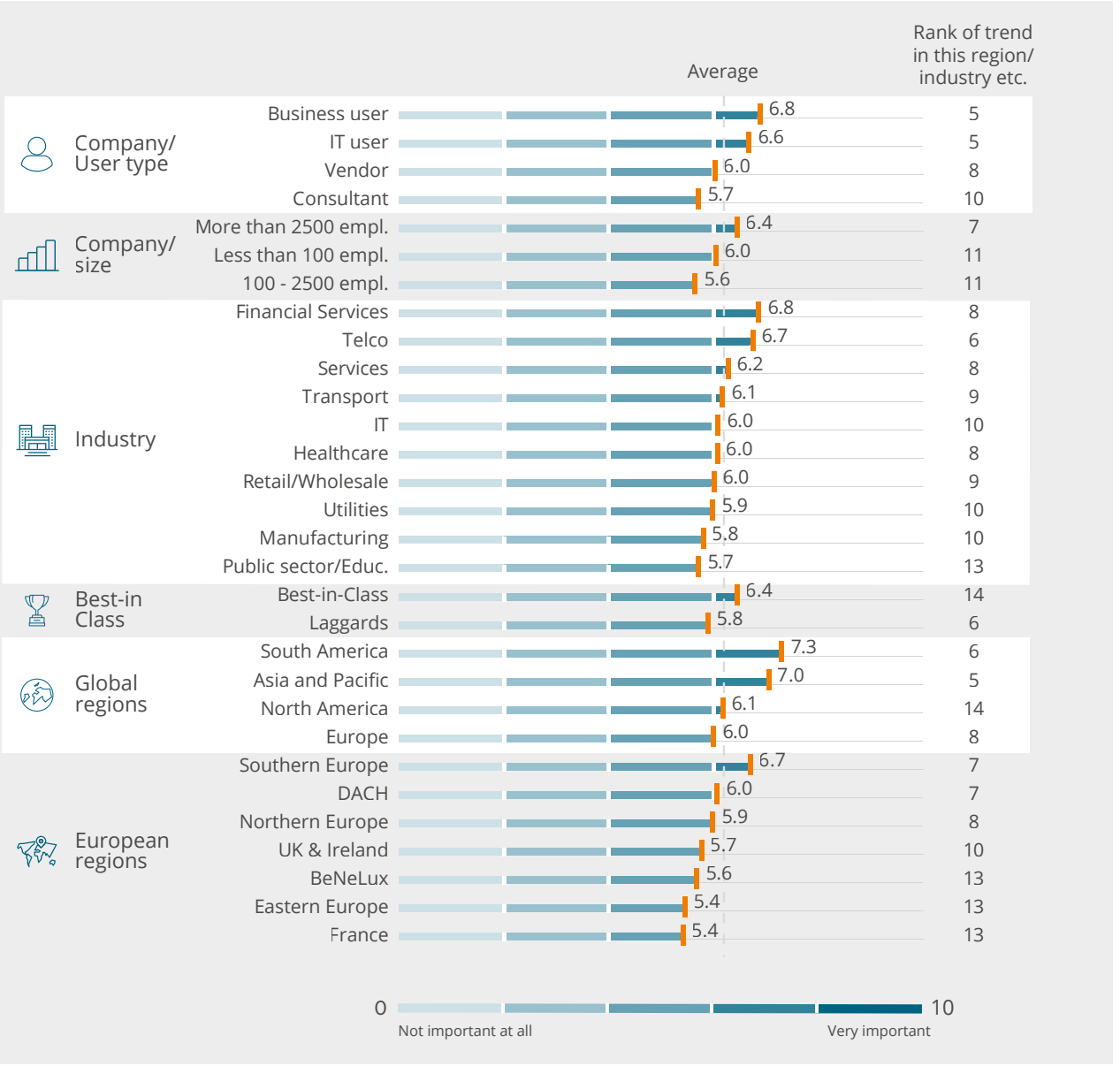
The enablement of business users to create BI and analytics content in a self-reliant manner has been adopted by many organizations but is still a hot topic. The continued high demand for self-service BI and analytics underscores the importance of empowering business users with sophisticated capabilities. However, there has been a shift away from point solutions as organizations have moved beyond simply providing self-service to meet departmental needs only. They want to democratize data access across the enterprise while ensuring efficient creation and consistent results by (or in spite of) cutting out the middlemen.

Self-service BI and analytics empowers business users to find answers to urgent questions and make informed decisions. They do this by communicating insights and results through visualizations, reports, dashboards and increasingly also analytical models that are created more quickly and efficiently. The share of organizations that empower business users to build content, at least in some areas, is already high. This creates more relevant content that then attracts even more users. However, not all business users create BI and analytics content. Organizations need to understand that self-service does not mean that business users do not need IT or BI and analytics experts. They still play a key role in enhancing, monitoring and supporting successful environments and serving business users.

Advanced Analytics/ Machine Learning/AI



Advanced analytics is especially popular in South America, but less so in France and Eastern Europe



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BARC Viewpoint

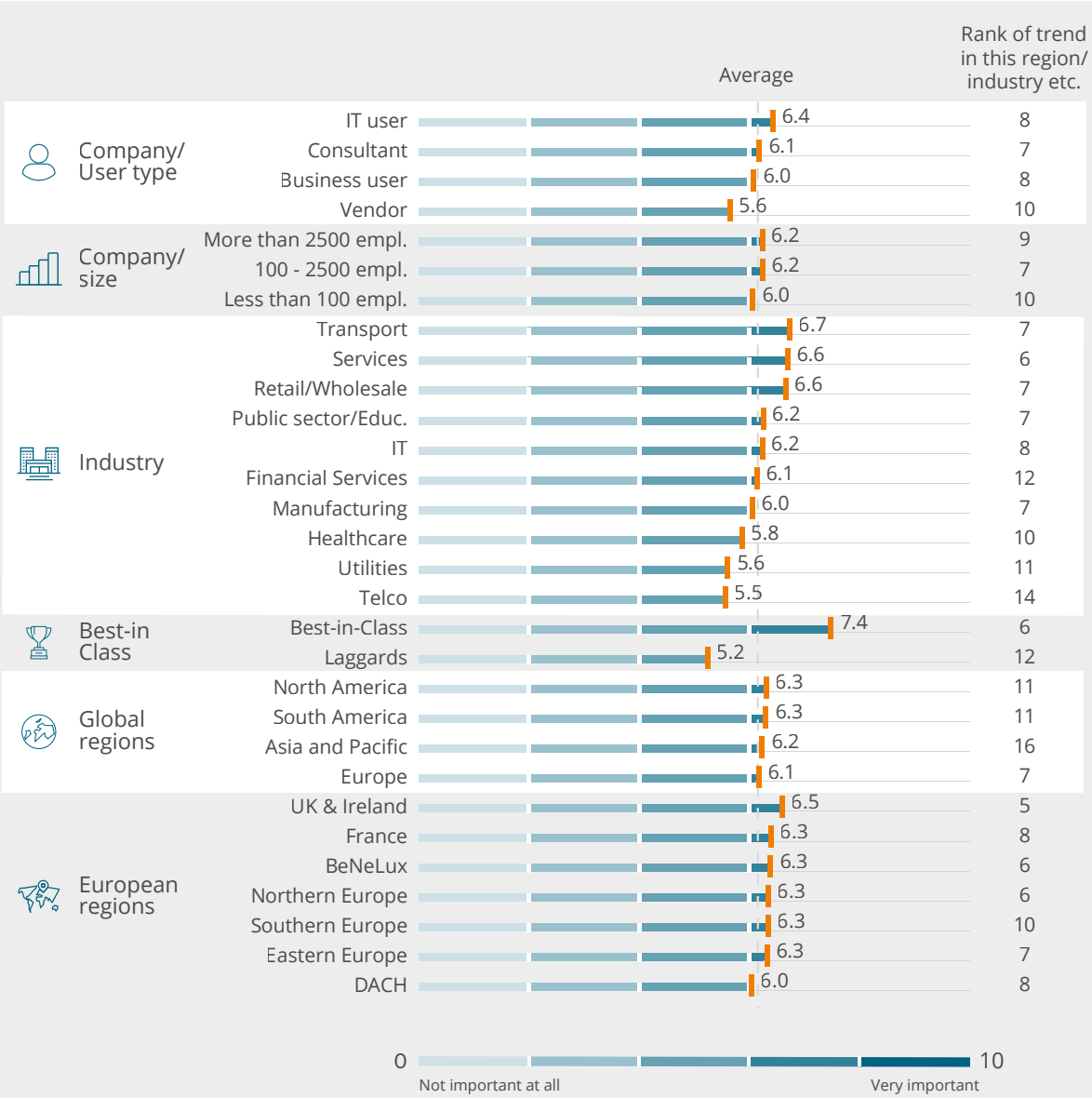
Advanced analytics uses machine learning and mathematical and statistical algorithms in order to generate new information, identify patterns and dependencies, and calculate forecasts. There is a major drive to completely automate specific decision processes with AI, leveraging new hardware and cloud services designed and optimized to run machine learning and AI solutions. This is accelerating the speed with which new AI solutions can be deployed within businesses.

'Generative AI' has had a huge impact in the last year. It describes new types of large pre-trained AI models that are focused on creating new content such as text, pictures, audio and sound. Innovation is booming in this area and we anticipate a slew of fascinating advancements in the months and years ahead. The potential use cases are wide-ranging, and all aspects of content creation can be greatly accelerated and optimized.

Decision-makers must prioritize use cases, determine the company-wide importance of advanced analytics, identify necessary roles and capabilities, and choose suitable technology. Addressing bias and ethical standards in algorithmic decision-making is also increasingly crucial. Many companies are progressing from AI experimentation to deployment, aided by DevOps, MLOps and streamlined cloud services.

Data Warehouse Modernization

Best-in-class companies value data warehouse modernization much more than laggards do



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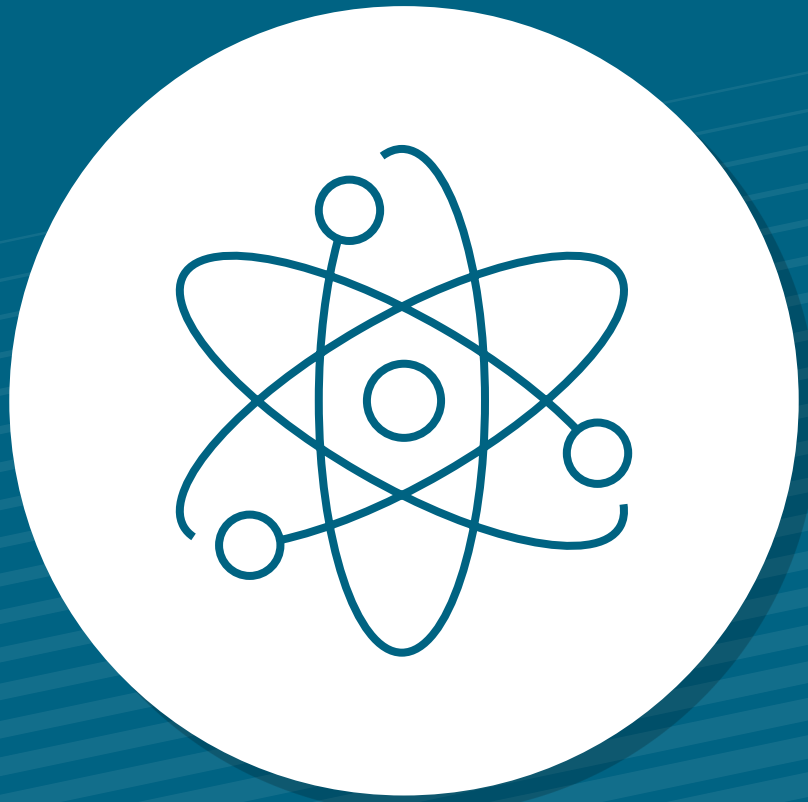
BARC Viewpoint

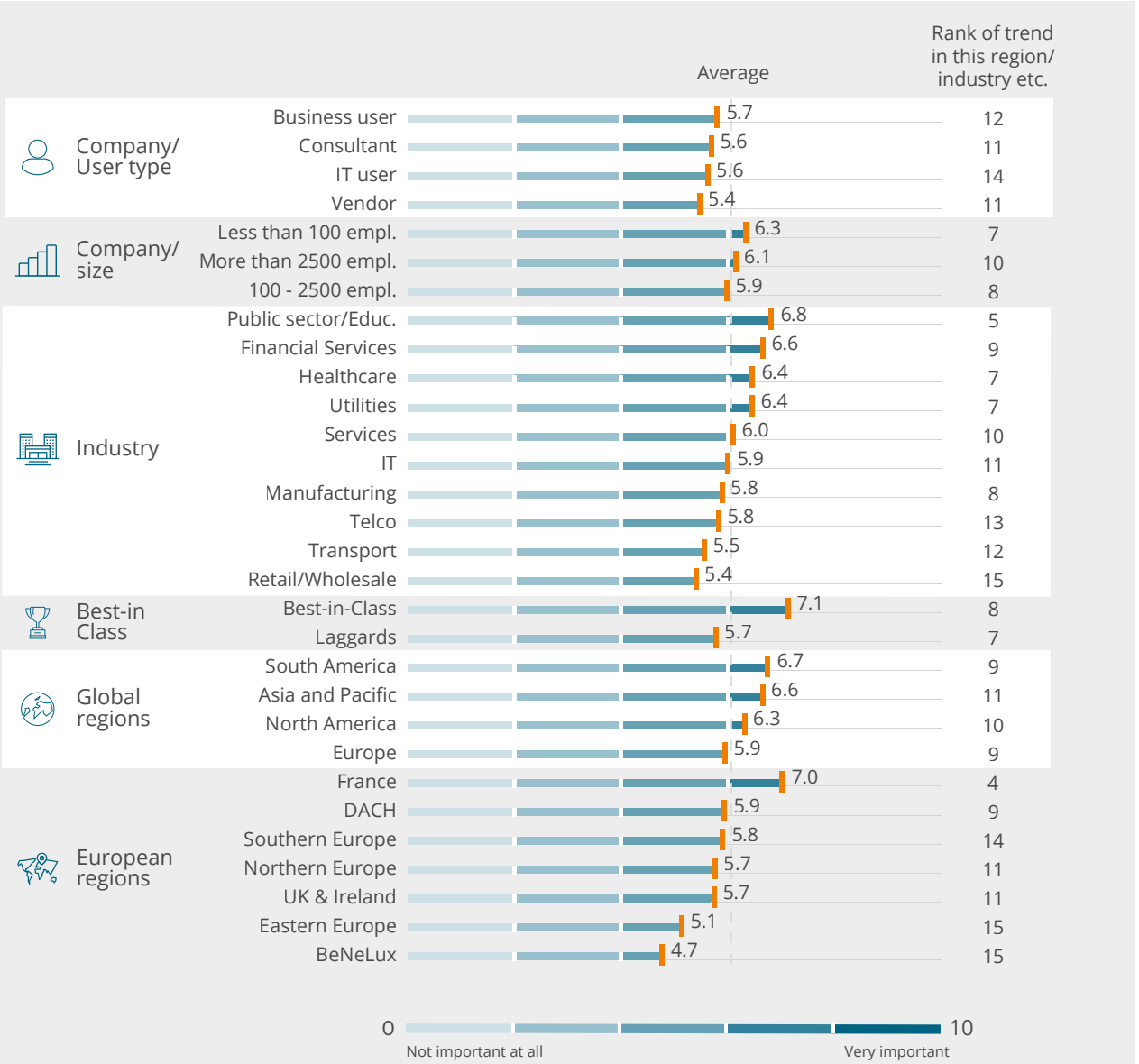
Older data warehouse landscapes have become too complex to support agile development, or too expensive to have their functionality extended to accommodate modern analytics requirements. The type of implementation for which many data warehouse landscapes were originally designed and optimized does not cover the way analytics is currently moving forward in the direction of exploration and operational processing alongside classic BI requirements.

Now, organizations are beginning to understand the new challenges that arise from the increasing demand for flexible data access in complex data landscapes. They are starting to realize the potential of alternative methodologies, architecture approaches like data lakehouse and data fabric, and utilizing other technical options such as in-memory, cloud data platforms and data warehouse automation tools. IT must be prepared for fast-changing analytical requirements and extensive self-service analytics in the line of business. Collaborative approaches are needed to meet the increasing expectations of the business to pull maximum value from data. It is now time to assess historically grown data warehouses against current demands and evaluate how updated hardware, technology and architecture approaches could make life easier.

Data Preparation by Business Users



Best-in-class top the charts for data preparation. BeNeLux and Eastern European countries are less sold on the trend



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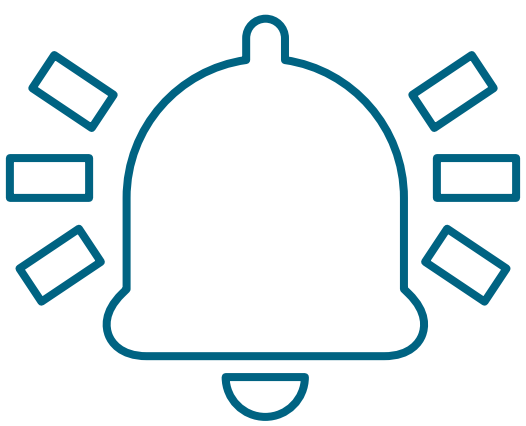
BARC Viewpoint

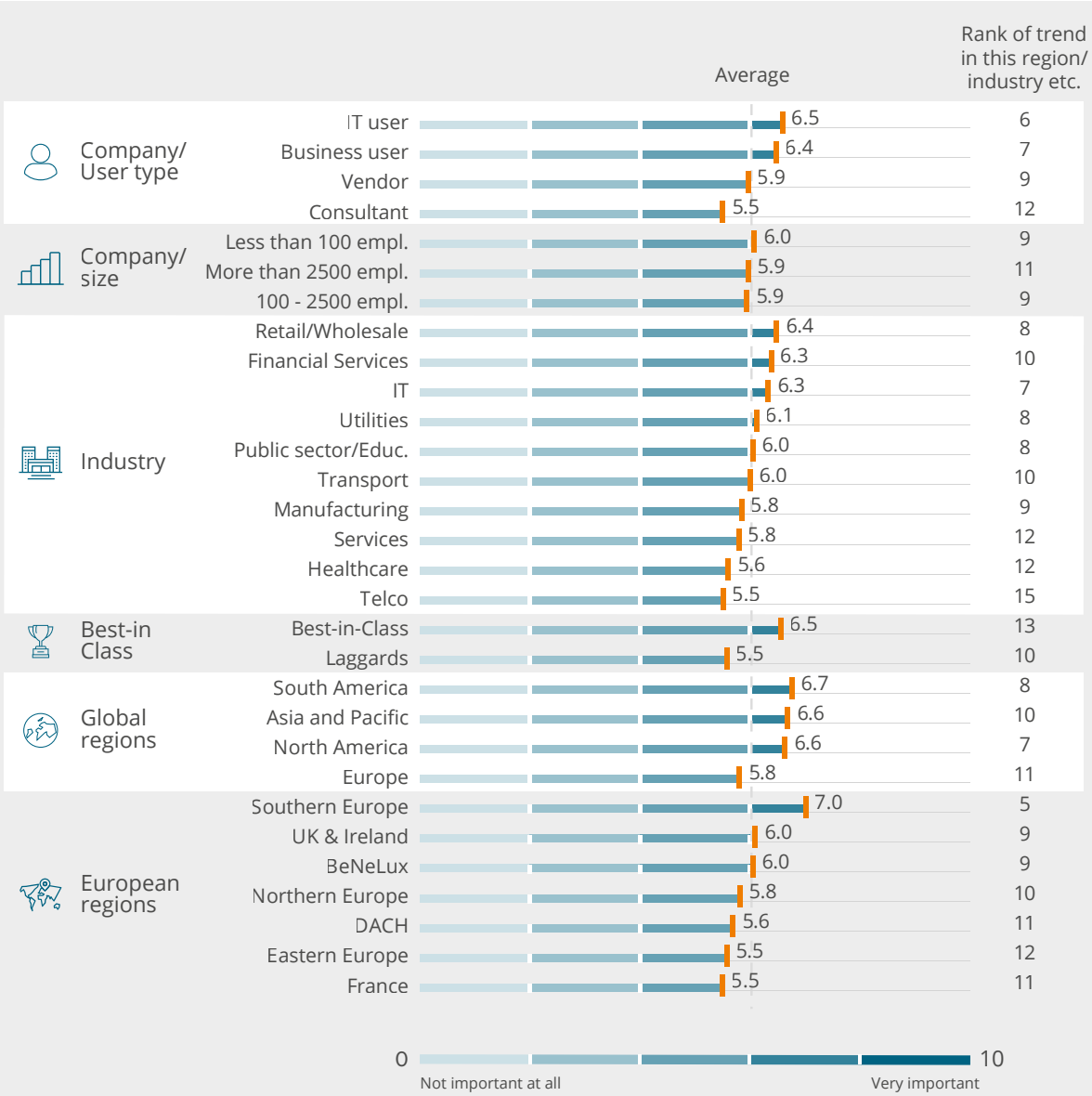
Data preparation encompasses profiling, cleaning, structuring and enriching data by business users for use in analytics. Its goal is to build valuable assets from raw data to help answer business questions though analytics. Achieving agile data preparation at scale is of utmost importance in today's volatile economy. It enables businesses to leverage enterprise and external data to inform decisions, automate processes and monetize data.

Increased agility is achieved by shifting the task of shaping and enriching data from IT to business users. Easy-to-use and intuitive tools with sophisticated user guidance and automation powered by machine learning are the foundation to infuse efficiency and quality into data preparation efforts. They empower business users to prepare data flexibly and anywhere. The governance of distributed data is therefore of high importance to ensure the quality of results and to avoid pipeline proliferation. Monitoring and collaboration between IT and business are also key elements for a successful data integration and preparation strategy. To promote flexible, democratized access to data, a balance between agility and governance has to be found. However, providing the systems and tools should only be one part of an overarching data access strategy that also needs to align with use case requirements, people and organization.

Alerting & Triggers



Alerting is prominent in Southern Europe, but less important for consultants and in the telecommunications sector



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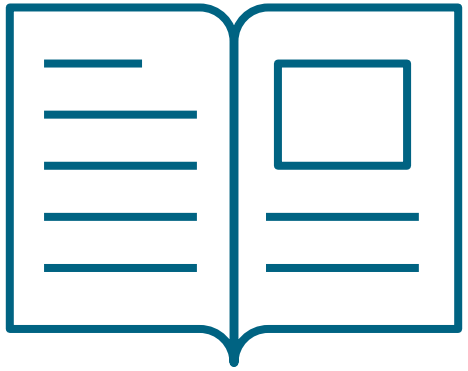
BARC Viewpoint

Alerts and notifications in BI and analytics save valuable time by drawing business users' attention to what really matters through personalized alerts or by delivering relevant content based on recent events.

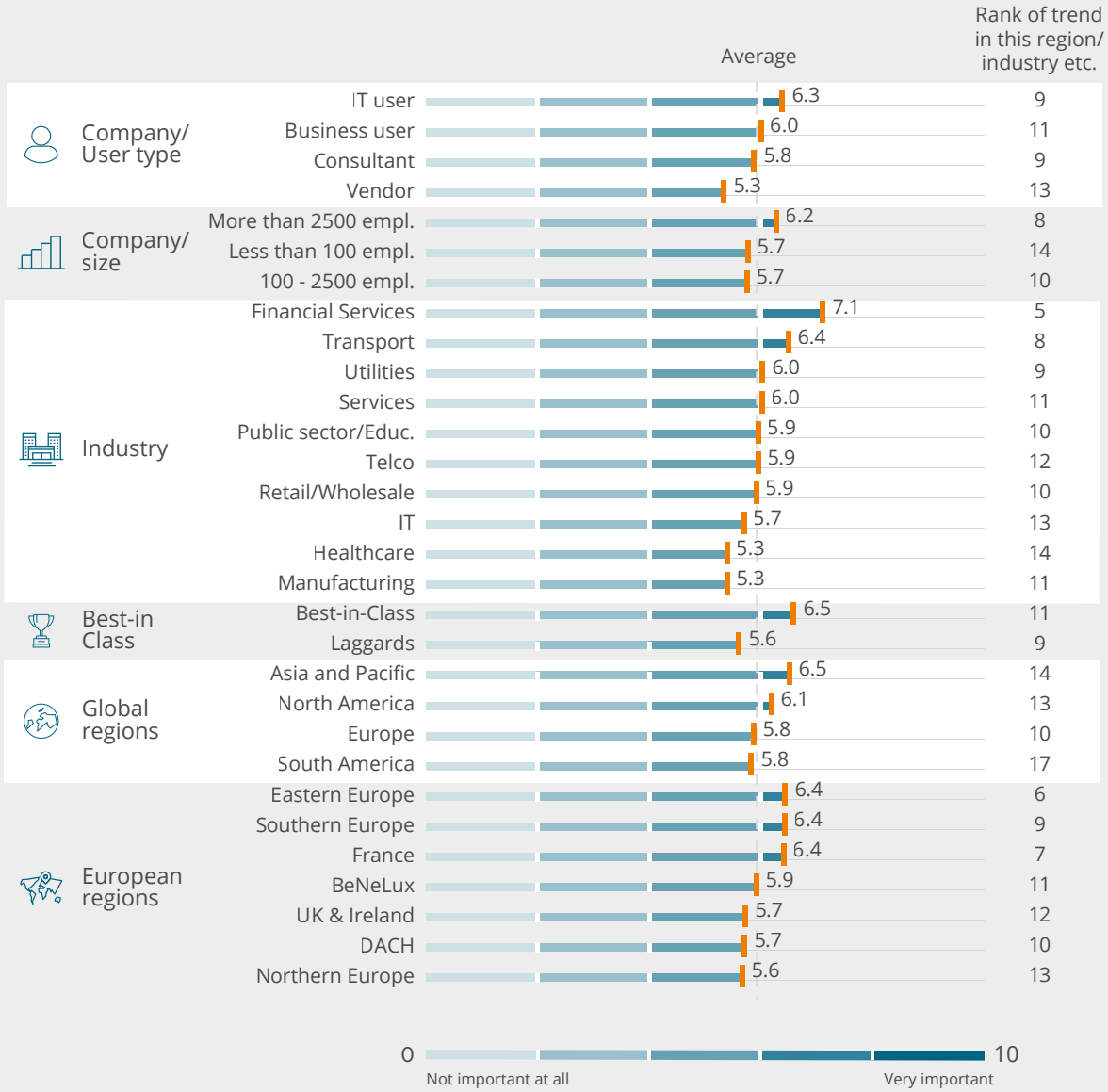
In the past, traditional approaches involved defining what was important up front, such as choosing KPIs and establishing thresholds. However, they often fell short of their promise, failing to capture impactful changes and, in other cases, overwhelming users with information due to false positives.

More recently, alerts have moved from being predefined to recommendations powered by machine learning, informed by usage patterns or outliers in the data and presented with context produced by natural language generation. Machine learning is used in leading tools to focus user attention on trends and outliers that they were not previously looking for – similar to the application of automated insights (augmented analytics). Alerts not only notify users of important changes, but can also trigger automated processes that span multiple business applications, from sending reports to initiating corrective actions. Today, alerts are often used to detect events on real-time data streams. This illustrates the tremendous impact of BI and analytics on business success and data monetization.

Data Catalogs & Data Intelligence Platforms



Very important in best-in-class companies. Less important in the manufacturing sector and for vendors



n = 2,216

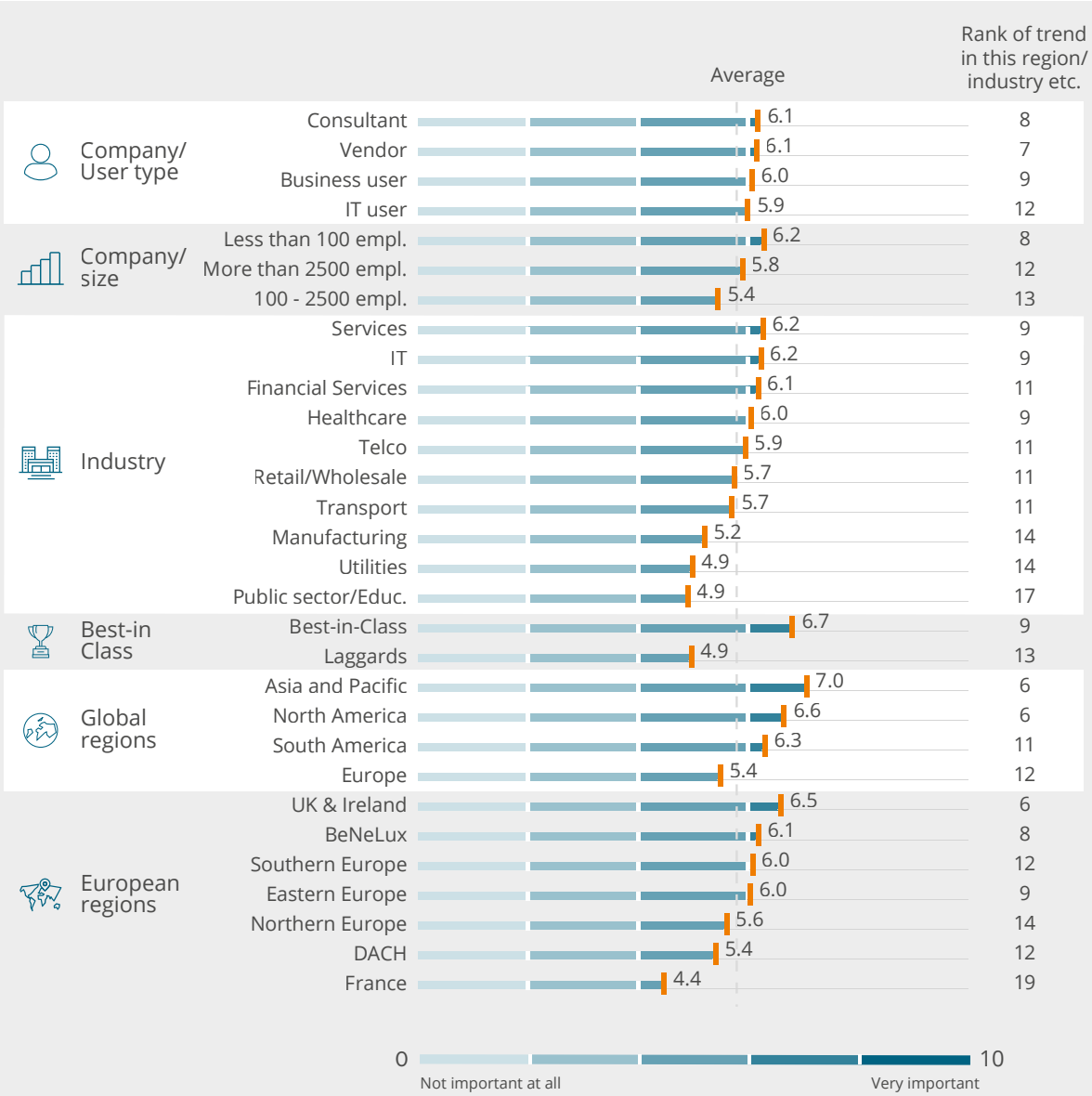
BARC Viewpoint

The biggest challenge for data consumers today is finding, understanding, trusting and using relevant data. Analysts spend a lot of time searching for the right data and analysis and repeating work that has already been done, which impacts their productivity.

A lack of available documentation and detailed knowledge stands in the way of achieving these goals. Such detailed knowledge is available in the organization in the form of metadata. However, metadata is rarely collected and brought to life using analytics and machine learning in any consistent way. Data cataloging embraces the systematic collection, linking and analysis of metadata with the goal of creating a better understanding of data. The use of a data catalog, however, requires a different way of thinking and an awareness that data catalogs must be actively maintained. Technology can assist in this process with connectors to different types of sources; workflows, analysis and collaboration functions; as well as the automation of time-consuming tasks such as metadata ingestion, linkage and preparation. While a data catalog provides access to linked metadata, a data intelligence platform goes a step further and provides additional advanced functionality to activate metadata in different use cases like data governance applications or to support data product thinking. However, building a data catalog or a data intelligence platform and keeping it alive is much more of an organizational challenge.

Cloud for Data & Analytics

Asia & Pacific and best-in-class companies regard cloud for data & analytics as very important. France is some way behind



n = 2,197

BARC Viewpoint

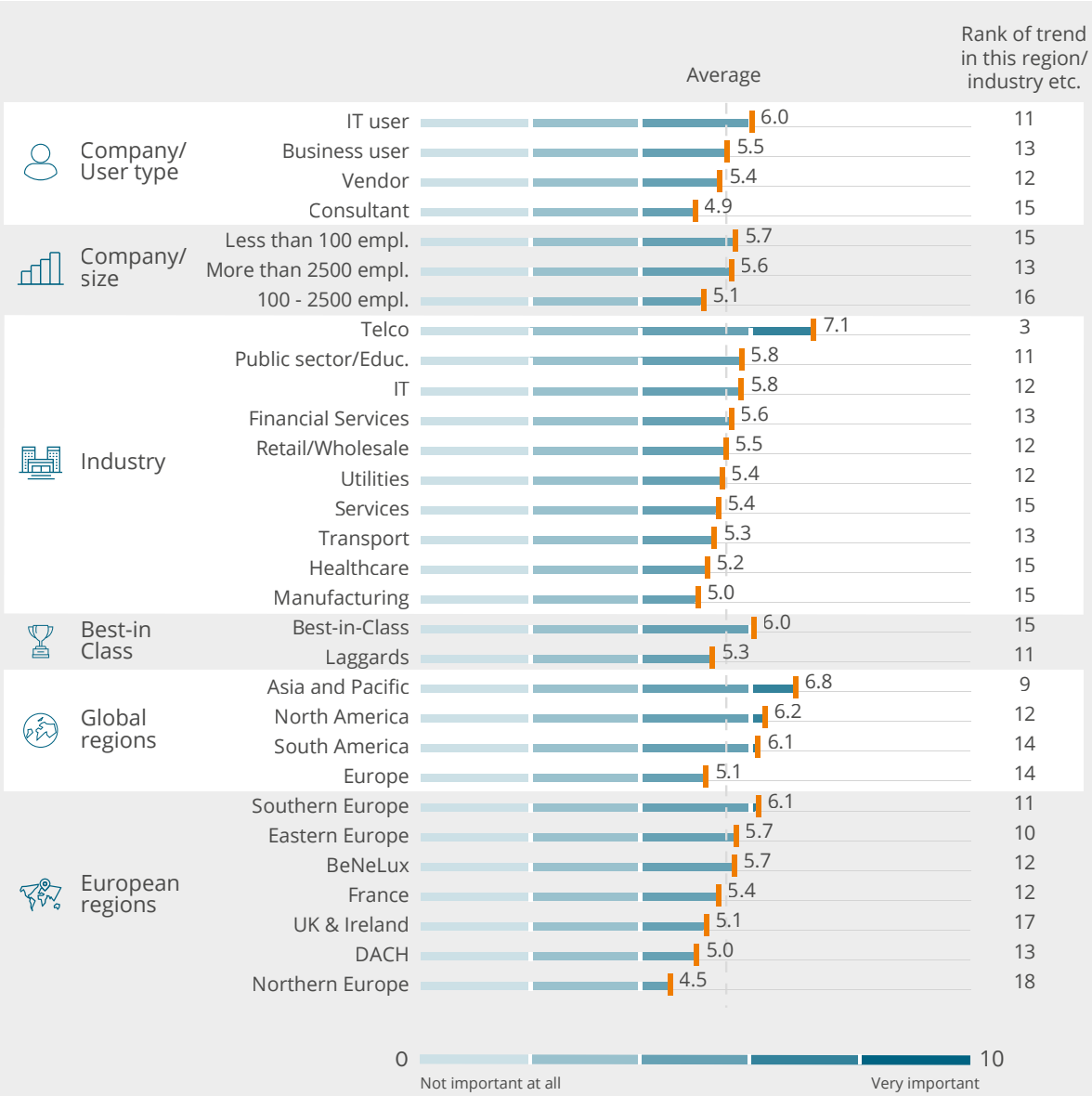
The global trend of running applications in a cloud environment started to branch out into the analytics domain about fifteen years ago. Start-ups were founded to disrupt the established vendors with a platform or software-as-a-service business model. The incumbent vendors, who typically generated their revenues from on-premises implementations, followed suit and now more or less every vendor offers a cloud-based solution.

As many software vendors offer their products “cloud only” or “cloud first”, cloud products often provide more functions than their on-premises equivalents. In our experience, this is a major reason why almost all companies opt for cloud-based solutions in new projects, provided there are no legal concerns standing in the way.

However, the adoption rate for cloud analytics and data management deployments is still at around 36 percent of all projects due to a very large, established base of existing on-premises installations that are reluctant to migrate to the cloud. Often, existing on-premises license agreements are much cheaper and the benefits of cloud-based use are considered too marginal to make the switch.

Real-Time Analytics & Streaming

Very popular in Asia & Pacific and the telecommunications sector. Its relevance is much lower in Northern Europe



n = 2,226

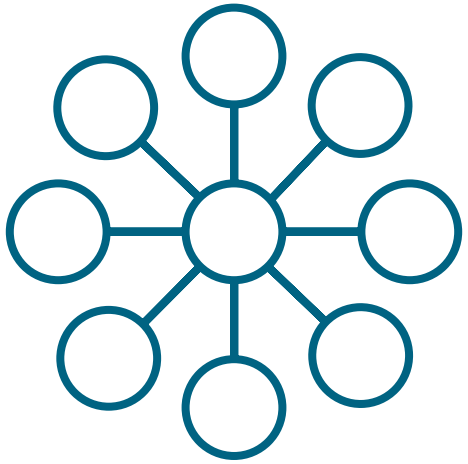
BARC Viewpoint

Faster reporting and analysis of data, not only in terms of query performance (which is still one of the biggest problems users experience with their BI tools), is a challenge in many companies. There is an increasing need to make data from transactional systems available immediately to support faster and fact-based operational decision-making.

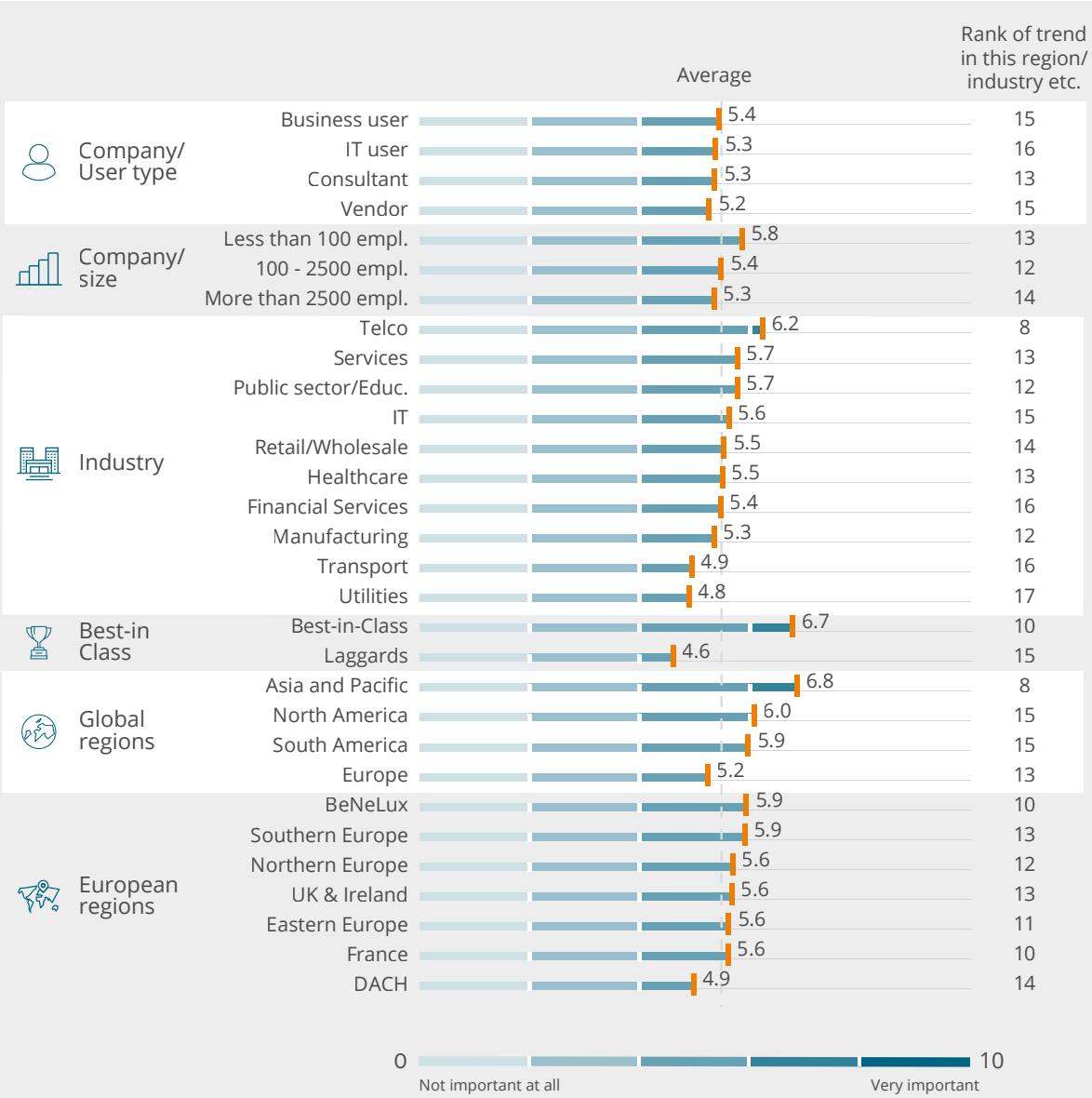
Analytics with real-time data refers to the near-immediate processing and provision of information about business operations in transactional systems (i.e., streaming). Real-time analytics is about catching events or other new data immediately after their occurrence and processing them for alerting (e.g., in an operational dashboard) or triggering pre-automated events (e.g., an algorithm detects certain problems during the manufacturing process of a given batch and recommends or automatically triggers counter-measures).

Like visual BI and predictive analytics, analytics with real-time data can complement an organization's existing analytics strategy to optimize certain business processes. As real-time analytics is nearly always tightly interwoven with a given business process, it is therefore even more important than in standard analytics projects to always have the entire process that is to be adapted and/or optimized in mind.

Integrated Platforms for Performance Management (PM) & Analytics



Best-in-class companies are much more aware of the value of integrated platforms for performance management than laggards



n = 2,184

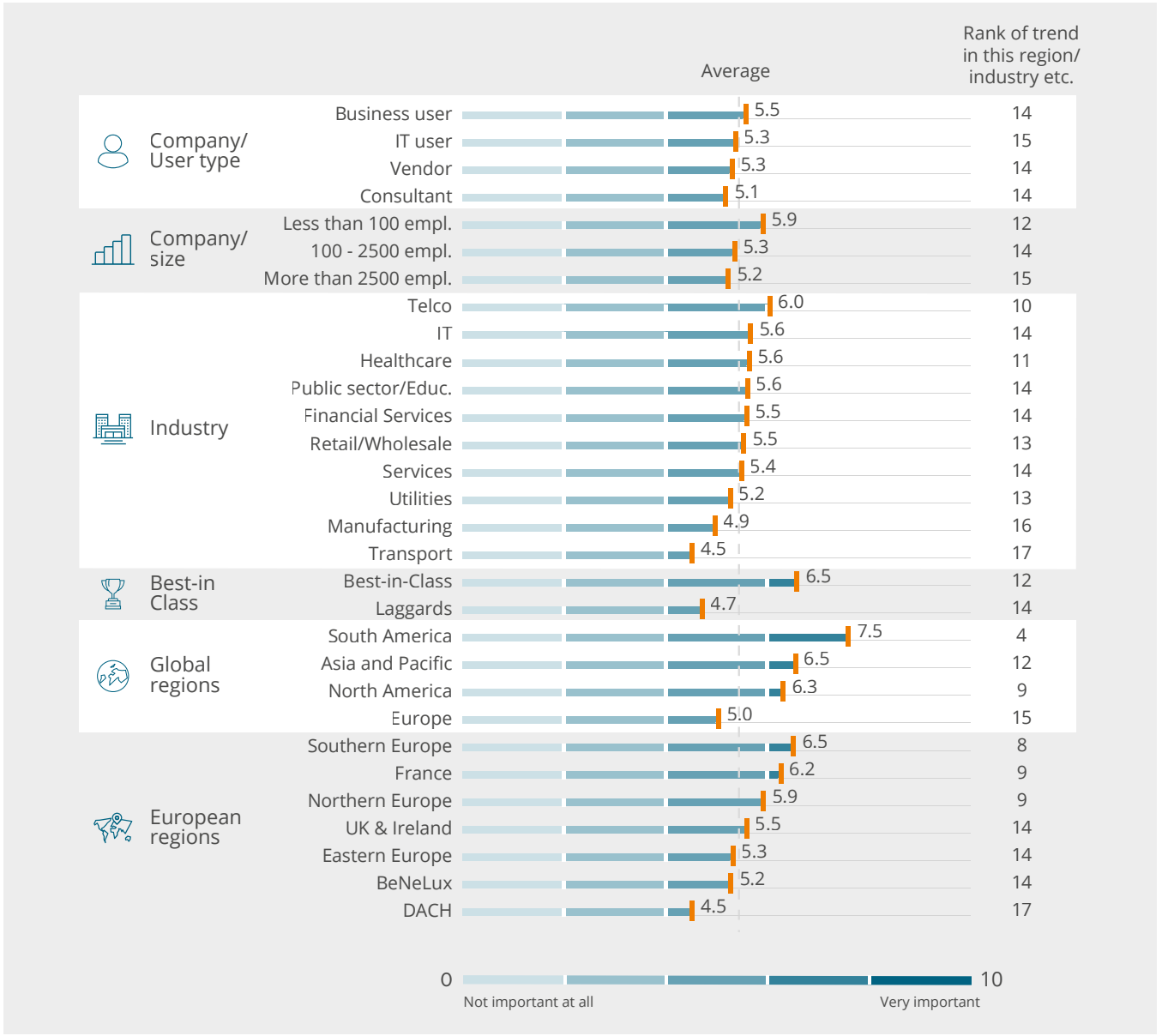
BARC Viewpoint

Decision-making in an increasingly complex and volatile world requires transparent plans and data analyses. The seamless integration of performance management (particularly planning) and analytics functionality helps to support decision-making processes optimally. Best-in-class companies and users know that there can be no transparent decision-making without supporting functionality for planning, reporting, analysis and dashboarding as well as financial consolidation. Having all these options in one common and integrated platform is a decisive factor for sustained success. This integration has been one of the most stable and relevant trends in the market for years and vendors are equipping their software tools accordingly. The integration of planning and analytics functionality is particularly important for leveraging modern planning approaches such as predictive planning and forecasting based on statistical methods and machine learning.

Integrated platforms for performance management and analytics are equally relevant for all companies. Best-in-class companies in particular have invested heavily in specialized software solutions to unify performance management and analytics processes. The benefits from this effort have been empirically proven. Supporting performance management and analytics on an integrated data platform with an integrated tool is a goal worth investing in.

Decision Intelligence

South America values decision intelligence much more than Europe, especially the DACH region



n = 2, 141

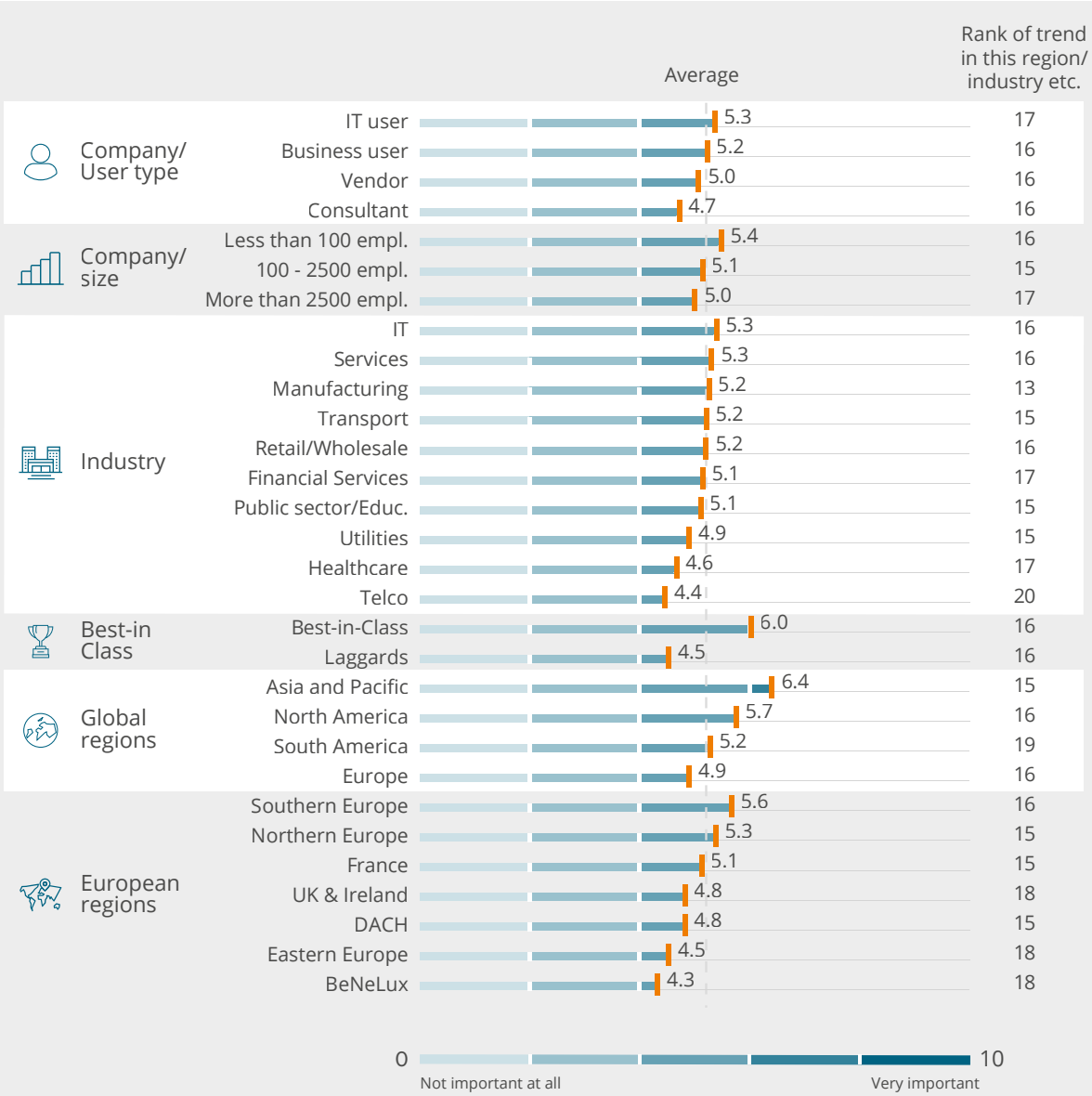
BARC Viewpoint

The fundamental objective of employing data and analytics is to empower decision-makers to make more informed and effective choices. However, we are encountering a growing number of scenarios where it is impractical or impossible for individuals to make decisions. Such situations arise when an overwhelming number of decisions must be made in a limited timeframe, the volume of data required for these decisions is exceedingly vast, or the intricacy of the factors influencing a decision surpasses human cognitive capabilities. Initially, this affects rather simple operational decisions that have to be made within a clear framework of a few decision options. The basis for this is a set of rules or, increasingly, models that can be built up using statistical or machine learning methods.

Examples of automated decisions already exist today in the detection of fraud in financial transaction data, dynamic pricing in online retail and in the scheduling of orders in service, production or logistics processes. In these examples, the shift of the human role from decision-maker to creator and supervisor of decision models has already happened.

Embedded BI & Analytics

Asia & Pacific leads the way. This trend is much less important in the telecommunications industry and in BeNeLux countries



n = 2,204

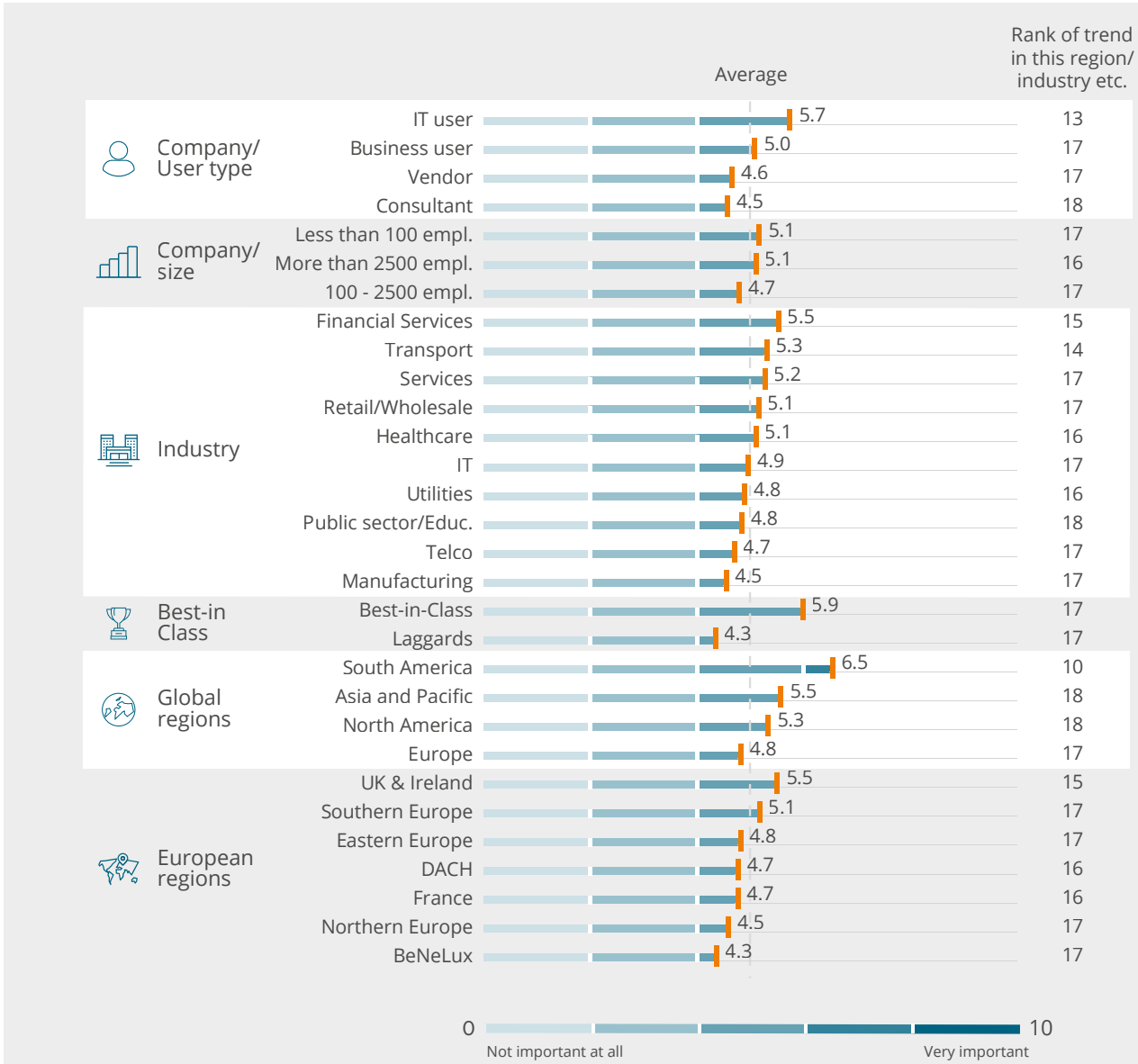
BARC Viewpoint

Embedding intelligence in operational applications is growing steadily in popularity. From dashboards to prediction and optimization models, users get data and insights directly in their specific work environment and can act on the findings – closing the classic management loop from information to action.

Embedded BI and analytics enables users to derive information rapidly by themselves without having to involve the IT department or power users. In effect, many more people gain access to information and BI capabilities, making BI more pervasive or 'democratic'. It even allows for automated processes where no active user request is needed to initiate data analysis or where actions are based on data-driven decisions. However, this operationalization of BI and analytics has various implications. For example, (1) clarifying the responsibilities of the BI/analytics and application teams; (2) integrating operational BI in a holistic data and analytics strategy that also includes classic and explorative BI; and (3) deciding whether to "make or buy" embedded functions. Also, the broad approach of automating decisions through embedded models and rules brings about completely new possibilities and challenges.

Data Products

Data products are prominent in South America, but less important for laggards and companies in the BeNeLux countries



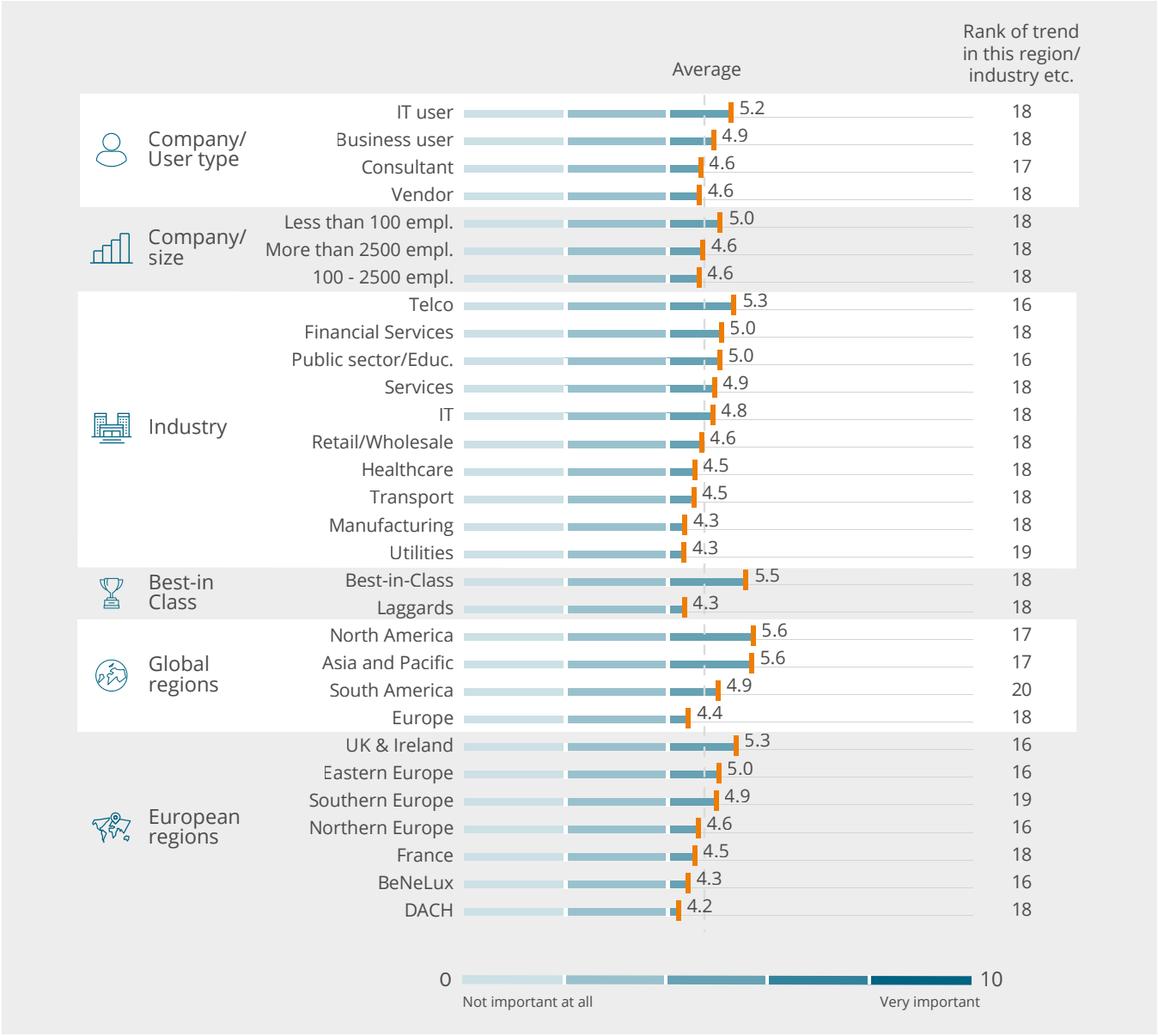
n = 2,107

BARC Viewpoint

A data product conceptualizes data as a tailored asset designed for specific needs, emphasizing its entire lifecycle from conception to eventual evolution or retirement. This philosophy champions principles such as data ownership, quality assurance and continuous iteration based on user feedback. Essential attributes that define a high-quality data product are its value (utility and relevance), desirability (alignment with user needs) and feasibility (technically and economically viable to create and maintain). This approach is not just about collecting data but managing and refining it to remain pertinent across various sectors, from analytics dashboards to AI training. By integrating the lifecycle perspective, data products undergo periodic evaluations and enhancements to stay relevant. The data product concept underscores the significance of focusing on user needs throughout this lifecycle, promoting reliable and refined data that fosters informed decision-making and instills trust, thereby amplifying the data's strategic role in an organization.

DataOps & Observability

DataOps is most relevant in North America, but less important in the DACH region and in the utilities sector



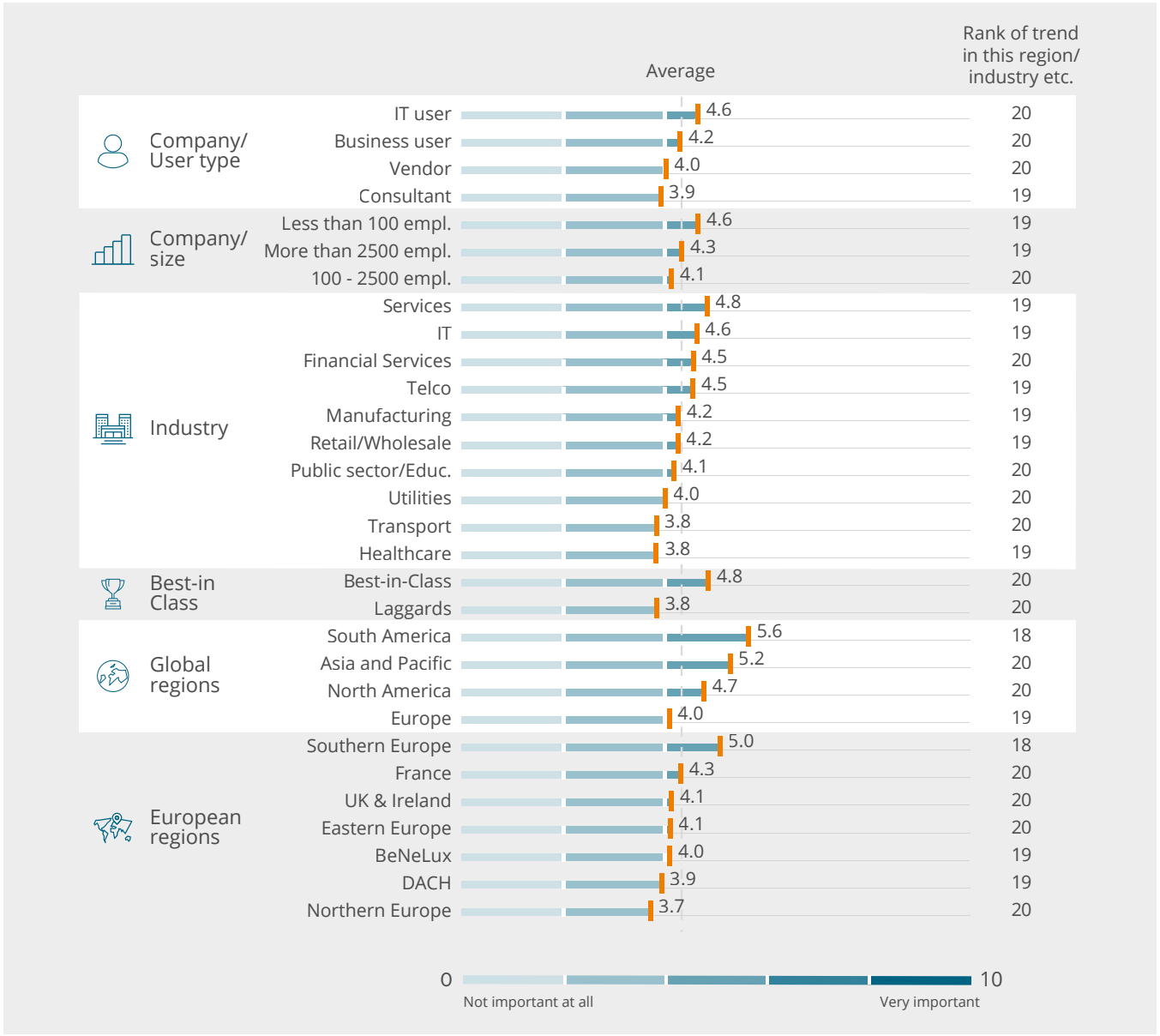
n = 2,096

BARC Viewpoint

DataOps is a methodology that combines data engineering and operations to streamline and automate the entire data lifecycle, from data ingestion to analytics. It draws inspiration from DevOps practices, applying them to data-related processes. Key principles of DataOps include collaboration among cross-functional teams, automation of repetitive tasks to reduce manual errors and accelerate data delivery, and agility by allowing rapid changes and iterations based on version control for reproducibility and traceability. On the other hand, data observability focuses on monitoring and understanding the health of data pipelines. It offers insights into data lineage, quality and anomalies, facilitating a transparent view of the lifecycle of data. Primary applications involve quickly diagnosing pipeline issues, tracing data origins and transformations, and ensuring data quality for analytics. The significance of these concepts lies in their ability to bolster data-driven decisions. By adopting DataOps, organizations can streamline data processes for faster and reliable insights. With data observability, they gain comprehensive insights into data health, ensuring that decisions are grounded on accurate and timely information. Together, they minimize the business risks of faulty data-driven decisions.

Data Lakehouse

South America sees data lakehouse as an important trend. Northern Europe and the healthcare sector do not rate it so highly



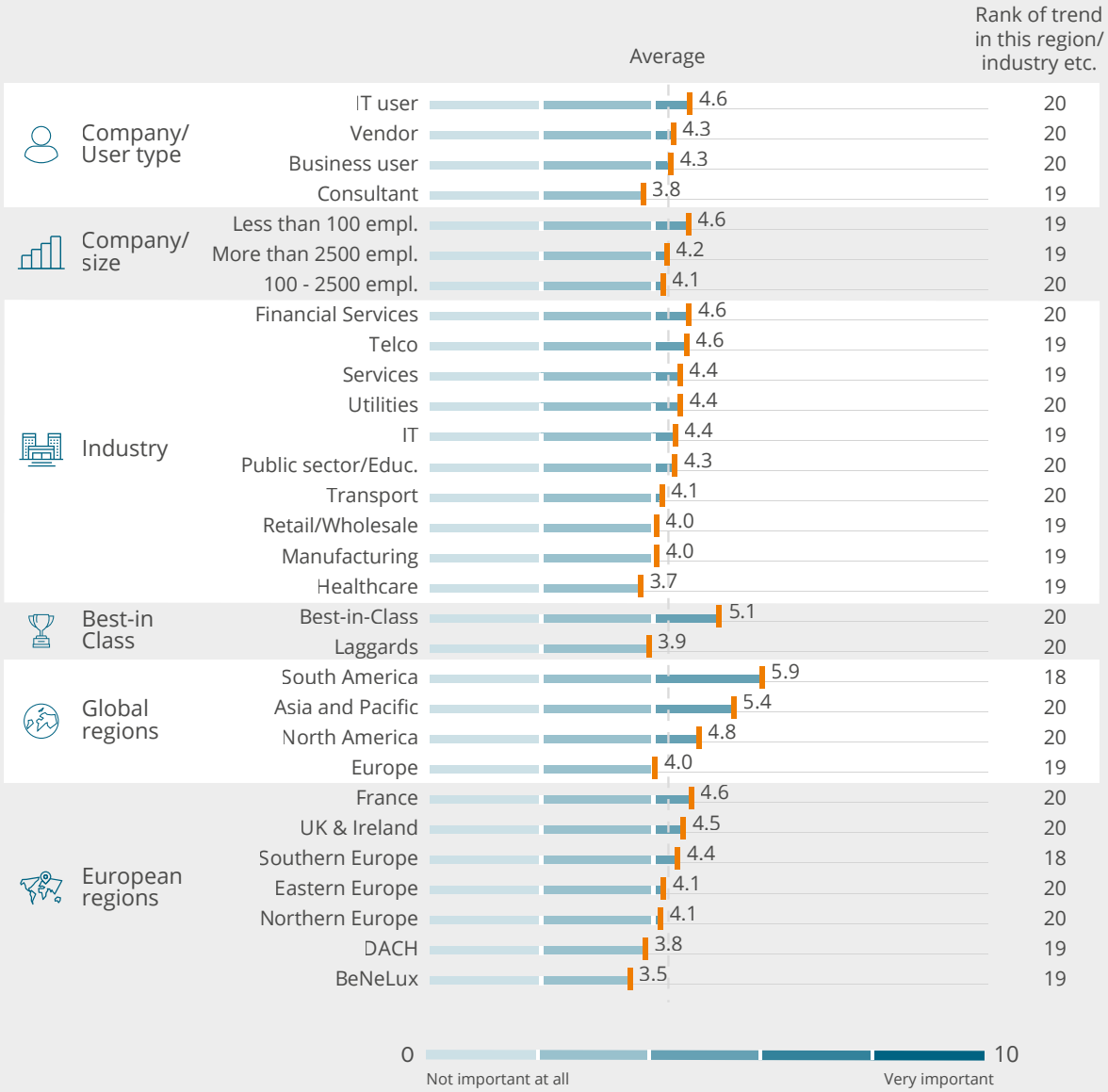
n = 2,111

BARC Viewpoint

A data lakehouse merges the attributes of data lakes and data warehouses, offering the storage flexibility of lakes and the structured querying capabilities of warehouses. This hybrid model aims to deliver a unified platform for both extensive analytics and machine learning. It facilitates analytics on a vast range of data sets, from raw to structured, without the need to relocate data. Core use cases include streamlined analytics across diverse data, machine learning with ample raw data, and business intelligence derived from aggregated data sources. The significance of adopting the lakehouse approach lies in its ability to minimize the challenges associated with managing separate raw and processed data storage. It boosts cost-effectiveness and supports a leaner data infrastructure. By embracing the lakehouse model, users can attain real-time insights from various data types more efficiently. Similar to data warehouses and data lakes, data lakehouses have limitations including data quality challenges, complexity, potential query performance issues, and the need for robust data governance and security measures. Their common centralized approach to data management is becoming less viable in an increasingly distributed data and application landscape with growing data volumes.

Data Mesh

Data mesh is a minor trend across all demographic groups, especially in the BeNeLux countries



n = 2,067

BARC Viewpoint

Data mesh is primarily an organizational and conceptual idea that revolves around four essential pillars. These describe a focus on data products and the decentralized creation of and responsibility for data products in the line of business, which are based on a self-service data platform and federated data governance with a high degree of automation. The approach is intended to address the two central challenges – a lack of scalability and domain expertise – often encountered by mostly centralized data and analytics teams.

Data as a product refers to treating data as a valuable offering, packaging and delivering it for specific uses, often with associated services, for internal or external data consumers. Domain-oriented data ownership assigns responsibility for data management to specific business domains or units, ensuring clear accountability and alignment with organizational goals and data needs. A self-serve data platform empowers business teams to create, access, manage and use their domain-specific data products independently, fostering data democratization and agility. Federated computational data governance is essential to empower domain-specific data teams while maintaining overall governance standards and ensuring data quality, security, compliance and interoperability within a decentralized data ecosystem.

Recommendations

Recommendations

BI/analytics and data management have been among the most important IT-related topics in the business world for a long time. The rising importance rating of many of the trends covered in this report also supports this observation. And with digitalization as a primary strategic initiative for many companies, analyzing and managing data has become even more vital. After all, data and analytics are at the core of the digitization of processes and business models. Based on our survey findings, we have seven recommendations on how best to embrace the trends described in this study:

1 Venture into trending topics

The best-in-class companies in this study show that there are substantial benefits to be attained from adopting data and analytics trends. Start with pilot projects that can show the value of new approaches to data and analytics. Besides technical pilots, do not underestimate the importance of investing in your data culture, security, quality and literacy. Venturing into these long-term projects is not as straightforward as software implementations, but the pay-off will be measurable.

2 Enable your staff

Start enabling your existing staff while scouring the labour market for technical and analytical expertise. While new technologies and applications require specific resources and know-how, a data-driven organization as such also requires data-literate employees in its operational processes. The success of digitalization also depends on an openness and culture to embrace new use cases for data and analytics. While it is still important to find highly skilled employees within and outside your organization, enabling all types of employees in your company to work with data and to source, handle and apply it carefully has the potential to increase the quality of day-to-day discussions and decisions.

3 Pay attention to data governance

Organizations seem to be aware that the best-looking dashboards and statistical models are worth nothing if the data represented is flawed. Business intelligence and analytics does not make a lot of sense without comprehensive data integration and data quality initiatives, but these have to be backed up with the right level of attention, resources and funding. Organizational backing of data quality by implementing data governance concepts such as data ownership and stewardship processes are just one example of this.

4 Implement data governance

Enabling your business user community through self-service BI and possibilities for reporting, analysis, data discovery and visualization is a good idea, as long as there is an agreed data and tool governance framework. Ideally, IT departments or BI units should align very closely with key and power users across the organization to introduce the trusted and accepted governance of data and analytics. The growing wave of decentralized ownership of data products and other assets is increasing the demand for change in governance models (e.g., with the demand for federated computational governance in the data mesh concept).

Recommendations

BI/analytics and data management have been among the most important IT-related topics in the business world for a long time. The rising importance rating of many of the trends covered in this report also supports this observation. And with digitalization as a primary strategic initiative for many companies, analyzing and managing data has become even more vital. After all, data and analytics are at the core of the digitization of processes and business models. Based on our survey findings, we have seven recommendations on how best to embrace the trends described in this study:

5 Modernize your information architecture

Organizations should review their existing information architecture to ensure it can support the level of agility required, handle large volumes of poly-structured data (also in real time where needed) and support rapidly growing demand for advanced analytics/AI. Data warehouse modernization is obviously an important trend. Despite all the hype around new topics such as data lakehouses and advanced analytics, the harmonized and quality-assured data foundation data warehouses bring is still required but, in many cases, the technology and processes need to be modernized. Similarly, the study shows that an integrated platform is also important for analytics and corporate performance management.

6 Playtime is over! Is it?

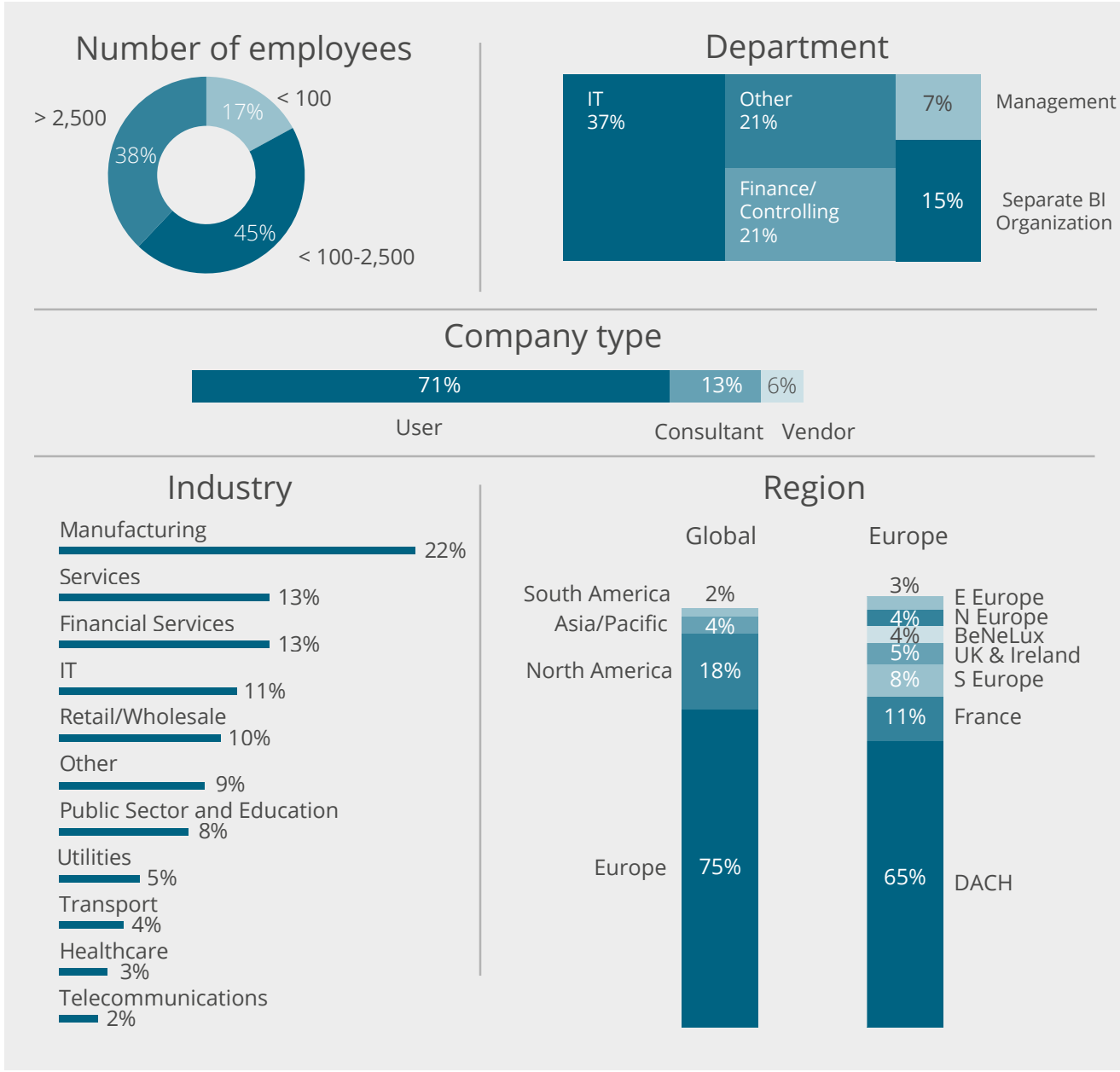
One year after generative AI's hockey stick moment, companies around the world are trying to find ways to incorporate LLMs and other tools to their advantage. Building prototypes with different solutions is the only way to find out which technologies have a true impact and are viable in a company setting. On the other hand, do not over rotate and stop investing in traditional AI. In the context of decision-making and process improvements, AI has reached such a level of maturity that it is now an important part of supporting or even automating decision-making in many companies. Follow the question of tangible value creation from a solution rather than just knowledge gain when you develop or implement such a solution. Here, playtime is clearly over, and the focus should be on operationalization.

7 Get ready for a data-driven culture

Establishing a data-driven culture has to be supported by the six pillars laid out in the BARC Data Culture Framework: Leadership, data strategy and data governance are the most important facilitators, while data access, data literacy and data communication are the outstanding enablers. Organizations must be aware that an in-depth cultural change is time-consuming and will probably face resistance. However, without a positive data culture, a data and analytics initiative will fail or at least not provide the benefits intended.

Sample

2,398 participants in total. Wide coverage of different industries, company sizes and regions



Information on the survey

The data used in the Data, BI and Analytics Trend Monitor 2024 was sourced from an online user survey conducted worldwide in the summer of 2023. BARC promoted this survey on websites, at events and in email newsletters. After data cleansing, a total of 2,398 survey responses remained. Respondents came from a wide range of industries, countries, professional backgrounds, company types and sizes.

Participants were asked to rate each trend on a scale from "very important" (10) to "not important at all" (0). We use a weighted scoring system (from 10 to 0) to derive a composite score for each of the trends based on their level of importance. It is a dimensionless number with an arbitrary value, but as long as the weighting system remains constant it can be used for comparisons between segments of the sample, such as the sample for industries or regions, to name just two.

'Best-in-class' companies comprise the top 10 percent in terms of achievement of specific BI-related business benefits (e.g., "Faster reporting, analysis or planning" and "Increased competitive advantage") in this survey. 'Laggards' represent the lowest 10 percent.

BARC Company Profile

BARC

BARC is the leading analyst firm in Europe for technology and the successful use of data & analytics. Our BARC Digital Workplace division complements this focus with expertise in ECM, BPM, CRM and ERP.

Research

BARC user surveys, software tests and analyst assessments in blogs and research notes give you the confidence to make the right decisions. Our independent research gets to the heart of market developments, evaluates software and providers thoroughly and gives you valuable ideas on how to turn data, analytics and AI into added value and successfully transform your business.

Consulting

The BARC Advisory practice is entirely focused on translating your company's requirements into future-proof decisions. The holistic advice we provide will help you successfully implement your data & analytics strategy and culture as well as your architecture and technology. Our goal is not to stay for the long haul. BARC's research and experience-founded expert input sets organizations on the road to the successful use of data & analytics, from strategy to optimized data-driven business processes.

Events

Leading minds and companies come together at our events. BARC conferences, seminars, round-table meetups and online webinars provide more than 10,000 participants each year with information, inspiration and interactivity. By exchanging ideas with peers and learning about trends and market developments, you gain new impetus for your business.

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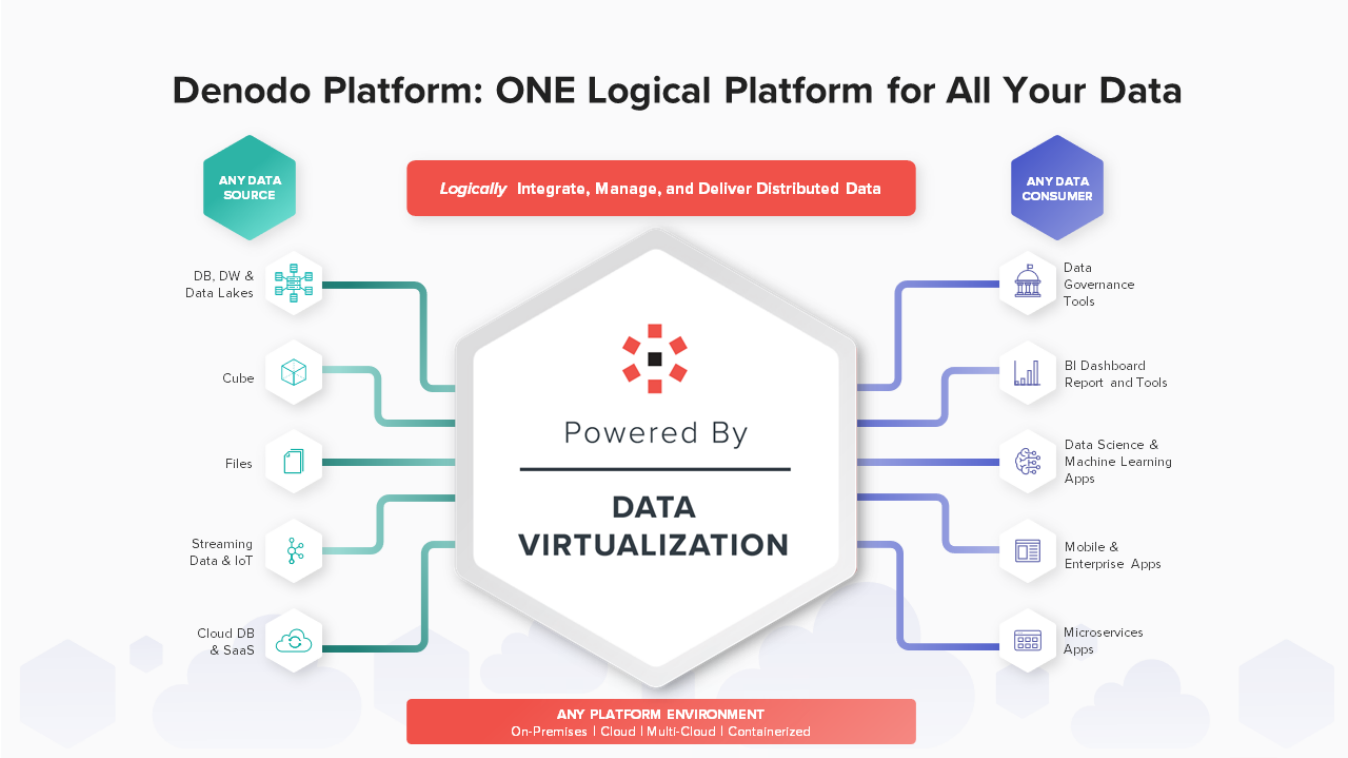

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