DATA DRIVEN ORGANIZATIONS

Boosting change success with data

CONTENTS

FOREWORD CHANGE STUDY

Alex sighs. The status meeting didn't go well for him. Once again, the project sponsor wanted to know where they stand in terms of their change ambition and whether the project is still on track. Alex gives it a long thought and concludes that he could just ask a couple of people from his department. What is one more email. The colleagues surely don't have a problem with taking some time out of their day for it ...

Does this fictional scenario sound familiar? We encounter the question of the measurability of change in almost every change project. Data-driven business, data-driven organizations and the use of data in our private lives have by now become a commodity. However, as soon as it comes to data-driven change management, the room often gets very quiet. Is it even possible, how does it work and what is allowed? These are precisely the questions that we constantly encounter and that have brought us to the topic of this year's change management study.

We wanted to know: Where do organizations stand in terms of data-centric action, how is this applied to the management of change and – most importantly – how does data-driven change management affect change success?

It was important for us to establish a validated connection between the data maturity of a company, selected mediating factors, such as leadership or trust, and change success. We succeeded in doing so, and the results are encouraging.

The use of data in change management has great potential that has not yet been sufficiently exploited. In our study, we show the added value of data-driven change management and what companies can do to successfully set it up and implement it. We are convinced that data-driven change management makes change processes more measurable and more successful. Not least through greater transparency, more opportunities for participation and a greater sense of control among those involved.

Not quite convinced yet? Gain a first-hand impression by reading our results or contact us directly. We look forward to the dialog with you!

We would like to thank all study participants, especially those who were available for a personal interview, as well as our study team Antje Peters, Jakob Teubert, Hannah Pitacas, Svenja Stegemann, Lukas Binder, Nicola Aumüller, Hendrik Gräfe, Hannah Louis, Svenja Berg, Julian Schabio and Nathalie Miesch, without whom this study would not have been possible.

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I. OBJECTIVES, APPROACH AND PARTICIPANTS

The heat is becoming more and more unbearable. We're not talking about climate change, we're talking about data. In 2020, more than 64 zettabytes of new data were created on Earth – that's 64,000,000,000 terabytes. For comparison, if the Earth stood for one petabyte, the sun would be equivalent to one zettabyte. That's more than a million times more voluminous. So we terrestrials, courtesy of machines, have created 64 suns of data in just one year. The human brain has a theoretical storage capacity of 0.000,01 zettabytes.

If we wanted to store the 181 zettabytes of data forecast for 2025 in our heads, it would require 181 million human brains – for example, those of all the inhabitants of France, South Korea, Colombia and Portugal.

If you've broken a sweat, get ready because it's getting hotter every day. The International System of Units (SI) has already named the next highest data dimensions: Yottabyte (= 1,000 zettabytes), Brontobyte (= 1 million zettabytes) and Geopbyte (= 1 billion zettabytes). Relief in the face of this feverish agglomeration of data is provided by the certainty that the growing volume of data is not indomitable. Companies are using increasingly sophisticated methods and tools to process, display and analyze data. And the larger the knowledge base, the easier it is to predict future events. For executives, this is the information that really matters. After all, despite the big-bang like expanse of the data universe, it is only the raw material from which smart managers forge their company's future.

Using data to drive change

This leads directly to change management. Previously, it was driven by the change vision as well as the goals and measures derived from it. The new, data-driven change management integrates an additional layer of information. Data provides compelling arguments that executives use to prove the need for change and the use of the chosen means. The likelihood of gaining broad support for change up front is significantly higher in data-savvy organizations. We can prove this with our current study (see page 16). In those organizations, five out of six employees (83 percent) see the change project as being supported by a broad coalition. In companies without comprehensive data analysis, this is considerably fewer (57 percent).

However, data can be evaluated in many directions using complex procedures. But whose requirements are the yardstick – those of society, those of the legislator, those of the shareholders pushing for market success or those of the employees who feel uncomfortable? Once this has been clarified, data-driven change management sets the guard rails and directs the process. The insights gained in the course of the change are taken into account in the subsequent decisions.

Decision-makers acting on the basis of data create markets that did not exist before. On top of that, data may also point to business areas that do not promise long-term success. At the push of a button, data – automated, aggregated, analyzed – paints a high-resolution picture of exactly what needs to be done. And what follows from it are for example insights on where and why resistance in the workforce is to be expected. Preventive measures can be derived from data. After all, it's possible to learn without failing first.
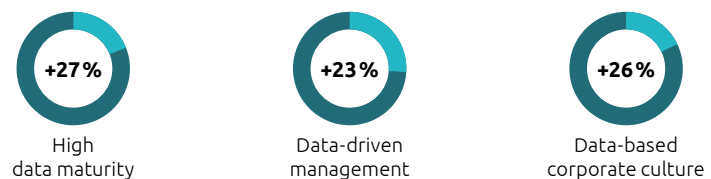
Attitude is strong. Facts are stronger

Everyone has an opinion about change. But few utilize backward chaining. Data indicates the effect of initiated measures in real time on two levels: Is the change project running as planned? And how does it affect the core business? Change managers in data-savvy organizations who stringently answer both questions can more easily build a coalition for change and convince top management. Our study also shows that they can successfully manage the transformation process. For data-driven companies, the probability of successful change is on average between 23 and 27 percent higher than in other organizations.

Fig. 01 This is what comprehensive data analysis delivers . . .

+19% Degree to which employees are informed

+20% Professional change communication

+18% Trust in the company

Fig. 02 The success of change increases through . . .

+27% High data maturity

+23% Data-driven management

+26% Data-based corporate culture

Two birds with one stone

Change managers are in a sandwich position as they are challenged in two ways. As those responsible for the success of the change process, change managers have to meet the targets set by the board and management. To achieve this, they need the commitment of the employees to the change, and ideally their proactive action as well. Easy to see, hard to get by: Change managers are twofold under pressure. Data can provide relief twice over. On the one hand, they can use it to immediately identify and objectively justify acute problems, escalate if necessary and accelerate decisions. On the other hand, it demonstrates to employees the necessity of the change and the measures introduced.

Data-driven arguments cushion potential resentment in both directions. They also give employees the certainty that the change will promote their personal advancement. Five out of six change experts we spoke to for this study agree with this. (see page 20) Provided that companies use comprehensive data analyses to improve the change experience for those responsible for change – and for the employees involved in change as well.

Data-driven Change Management for data-ready organizations

When markets demand and reward data-driven decision-making and action, it is obvious to trim the company to peak performance in terms of information technology. This by no means requires the immediate hardware and software upgrade of the organization. But the company must have a certain degree of maturity in handling data. This implies that it has mastered the effective handling of data and knows how to use it efficiently for corporate management and transformation.

But in fact, only 61 percent of the executives we surveyed for this study say they rely on comprehensive data analytics for decision-making. That's why, in this year's Change Management study, we dived deeper into the state of data maturity in companies and how the purposeful application of data impacts transformation success.

To do this, we focused on three things: the data-driven organization, data-driven change management, and the role of culture and leadership in a data-centric environment. We wanted to know what the interaction between people and data should ideally look like. In addition, our study provides insights into the way in which change measures work in a data-mature and people focused organization.

Without leadership's willingness to transform and intelligent change management, there will be no success. Since 2003, we have regularly offered deep insights into this topic, most recently focusing on dexterity[I]. Companies with a high level of dexterity also have a high level of data literacy. We therefore assume that change management will receive a decisive boost from the sound analysis of anonymized employee data and will transition into a new era of data-driven transformation.
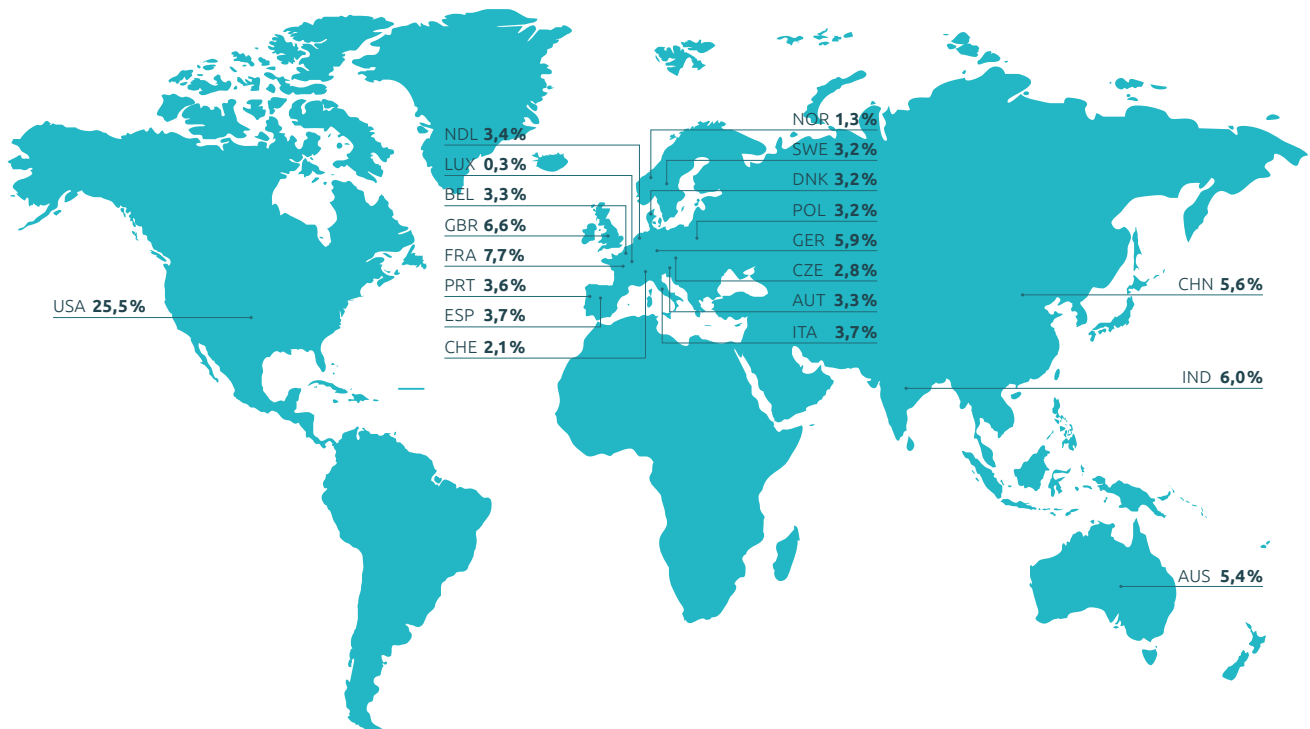
Key data: How did we proceed, who did we interview?

We chose a two-stage approach as our data collection method: Face-to-face interviews with selected participants, enhanced by the analysis of an internationally rolled-out online questionnaire. Last year, we conducted 21 qualitative in-depth interviews with change managers, data scientists and HR managers. We've been looking intensively into the state of data maturity in the company and had participants describe the characteristics of data-driven change management to us. Our question about which measures have proven to be particularly effective was answered with an impressive number of best practice examples. We also discussed the challenges that our interviewees had to face on their way to data-driven change management, some of which they are still facing. We quote some of the statements from the personal interviews in the following chapters.
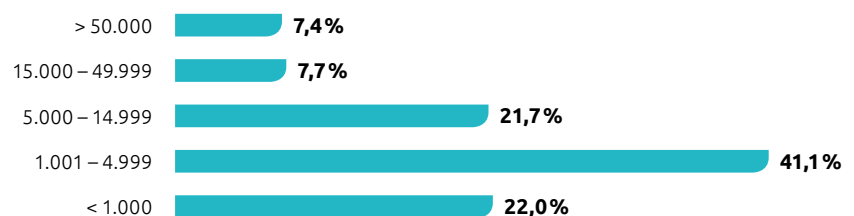
To deepen the gained picture, we globally rolled out a detailed questionnaire and asked professionals from different industries and functions to share their experiences with us. Nearly 1,200 participants from around the world contributed to our quest to find out exactly how the transmission belt between data-driven change management and the success of change projects works.

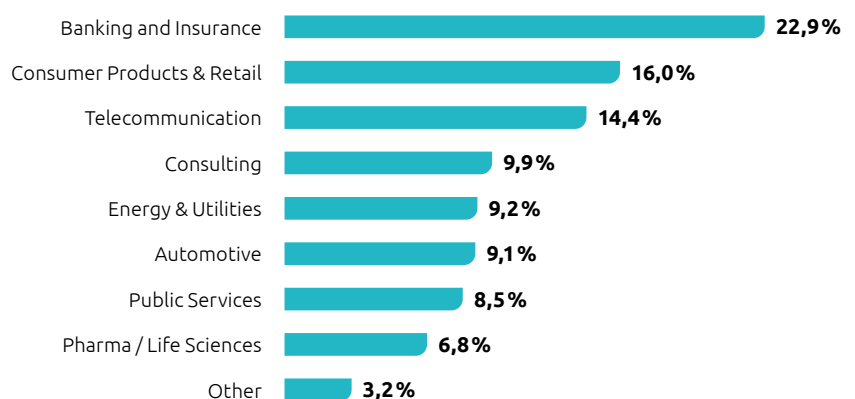### Structure of the companies analyzed

675 professionals and executives from Europe, 300 from the USA and 200 from the Asia-Pacific region were surveyed. At country level, the largest proportion of the sample came from the U.S. (25.5 percent), followed by France (7.7 percent), the UK (6.6 percent), India (6.0 percent), Germany (5.9 percent), China (5.6 percent), Australia (5.4 percent), Spain and Italy (3.7 percent each), Portugal (3.6 percent), the Netherlands (3.4 percent), Belgium and Austria (3.3 percent each) and Sweden, Denmark and Poland (3.2 percent each), (Fig. 3).

Fig. 03 Participants per country

NDL **3,4%**
LUX **0,3%**
BEL **3,3%**
GBR **6,6%**
FRA **7,7%**
PRT **3,6%**
ESP **3,7%**
CHE **2,1%**
USA **25,5%**
NOR **1,3%**
SWE **3,2%**
DNK **3,2%**
POL **3,2%**
GER **5,9%**
CZE **2,8%**
AUT **3,3%**
ITA **3,7%**
CHN **5,6%**
IND **6,0%**
AUS **5,4%**

The participating companies are representatives of the economy's full spectrum. Almost one in six survey participants (15 percent) come from a corporate group with more than 15,000 employees. Medium-sized companies (1,000 to 4,999 employees) are particularly well represented, accounting for around 41 percent. Companies with less than 1,000 employees and firms with 5,000 to 14,999 employees each account for just over one-fifth of the survey participants (22 percent).
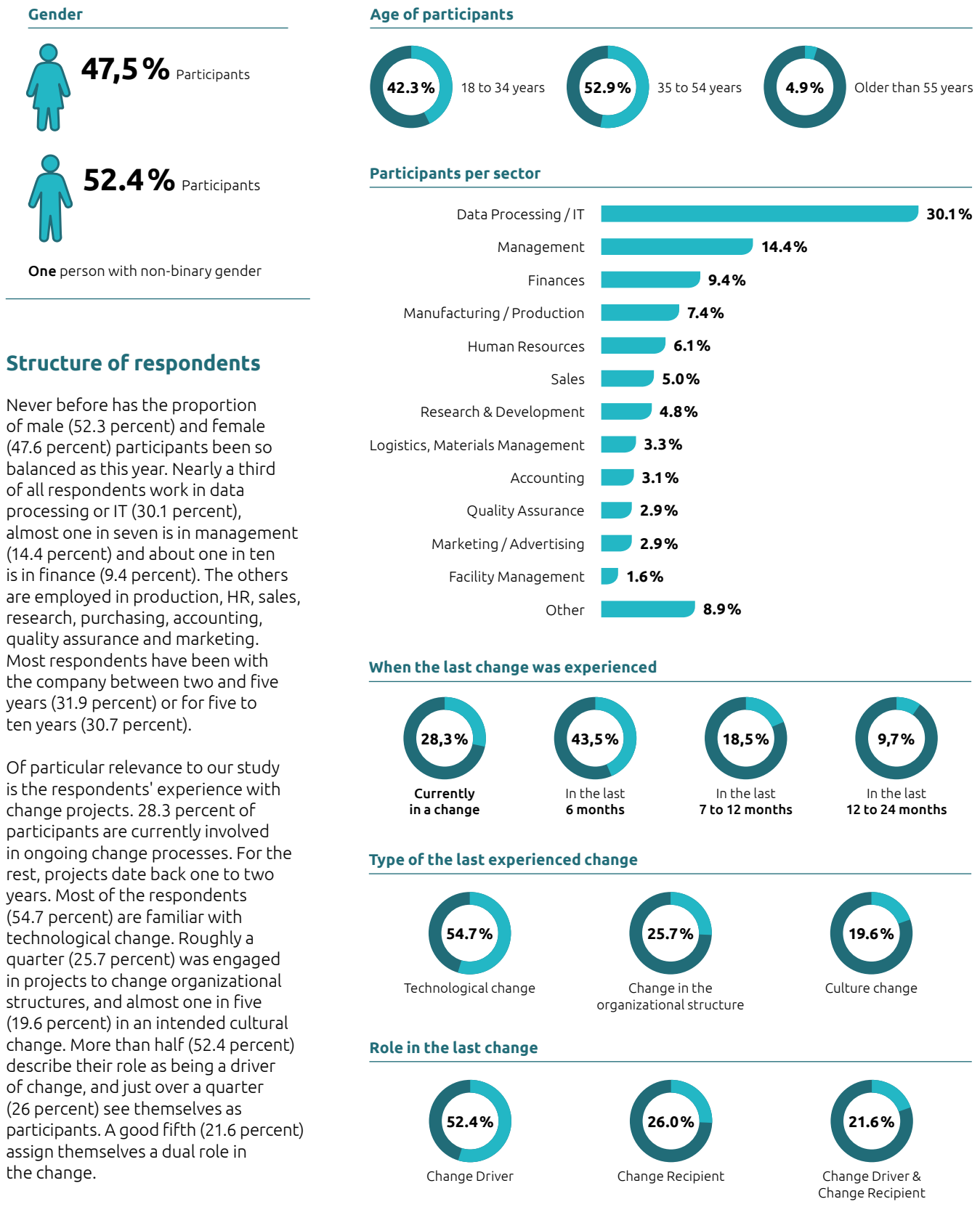
The industry distribution emphasizes the great pressure for change in all sectors of the economy and supports the representativeness of the study that we were aiming for. At 22.9 percent, participants from the banking and insurance sectors dominate. They are followed by consumer goods & retail (16 percent), telecommunications companies (14.4 percent), energy and utilities companies (9.2 percent), automotive industry (9.1 percent), public administration (8.5 percent) as well as pharmaceuticals/life sciences (6.8 percent), (Fig. 5).

Fig. 04 Company size by number of employees

> 50.000	**7,4%**
15.000 – 49.999	**7,7%**
5.000 – 14.999	**21,7%**
1.001 – 4.999	**41,1%**
< 1.000	**22,0%**

Fig. 05 Sector representation

Banking and Insurance	**22,9%**
Consumer Products & Retail	**16,0%**
Telecommunication	**14,4%**
Consulting	**9,9%**
Energy & Utilities	**9,2%**
Automotive	**9,1%**
Public Services	**8,5%**
Pharma / Life Sciences	**6,8%**
Other	**3,2%**

Fig. 06 Participant gender, age, management responsibility and role information

Gender

47,5 % Participants

52.4 % Participants

One person with non-binary gender

Structure of respondents

Never before has the proportion of male (52.3 percent) and female (47.6 percent) participants been so balanced as this year. Nearly a third of all respondents work in data processing or IT (30.1 percent), almost one in seven is in management (14.4 percent) and about one in ten is in finance (9.4 percent). The others are employed in production, HR, sales, research, purchasing, accounting, quality assurance and marketing. Most respondents have been with the company between two and five years (31.9 percent) or for five to ten years (30.7 percent).

Of particular relevance to our study is the respondents' experience with change projects. 28.3 percent of participants are currently involved in ongoing change processes. For the rest, projects date back one to two years. Most of the respondents (54.7 percent) are familiar with technological change. Roughly a quarter (25.7 percent) was engaged in projects to change organizational structures, and almost one in five (19.6 percent) in an intended cultural change. More than half (52.4 percent) describe their role as being a driver of change, and just over a quarter (26 percent) see themselves as participants. A good fifth (21.6 percent) assign themselves a dual role in the change.

Age of participants

42.3 % 18 to 34 years

52.9 % 35 to 54 years

4.9 % Older than 55 years

Participants per sector

Sector	
Data Processing / IT	**30.1%**
Management	**14.4%**
Finances	**9.4%**
Manufacturing / Production	**7.4%**
Human Resources	**6.1%**
Sales	**5.0%**
Research & Development	**4.8%**
Logistics, Materials Management	**3.3%**
Accounting	**3.1%**
Quality Assurance	**2.9%**
Marketing / Advertising	**2.9%**
Facility Management	**1.6%**
Other	**8.9%**

When the last change was experienced

28,3 % Currently in a change

43,5 % In the last 6 months

18,5 % In the last 7 to 12 months

9,7 % In the last 12 to 24 months

Type of the last experienced change

54.7% Technological change

25.7% Change in the organizational structure

19.6% Culture change

Role in the last change

52.4% Change Driver

26.0% Change Recipient

21.6% Change Driver & Change Recipient

Glossary

Business Analytics
... is the analysis of data aimed for designing future scenarios in order to evaluate and prioritize current options for action.

Business Intelligence
... is the analysis of past and current company data.

Data Analytics
... refers to the process of exploring, transforming and analyzing data to find trends and patterns that provide meaningful insights and lead to efficiency gains. A distinction is made between descriptive, predictive, prescriptive and diagnostic analytics.

Data Team
... provides the data infrastructure and supports the targeted use of data for business.

Data-based change management
... extends traditional change management to include integrated processes of data collection, acquisition and analysis that provide directional support for shaping change as a basis for decision-making.

Data-based corporate culture
... reflects the beliefs of the company and its employees that availability, understanding and use of certain types of data and information play a critical role in the success of their organization.

Data capability
... describes the competence of an organization to collect, procure, analyze, and use data efficiently, effectively, sustainably, and responsibly.

Data-driven leadership
... means that managers make their decisions based on data, communicate them, and encourage and support their employees to also work in a data-oriented manner.

Data maturity
... indicates the capability of an organization to make proper use of data. It is the sum of data capability, data-based corporate culture and data-based leadership.

People Analytics
... describes the analysis of employee data in order to gain insights and make decisions.

II. SPEED UP YOUR CHANGE WITH DATA

Data streams have always paved the way for transformation processes. Radio and television made information globally available, and the internet has multiplied the amount of new data being added every day. Supposedly, it was during a lunch in the cafeteria of computer manufacturer Silicon Graphics in the mid-1990s that computer scientist John Mashey predicted that computers would soon reach their limits in processing data because the volume was growing exponentially and the variety of data categories was simply exploding. For the first time, the word "Big Data" came up. A revolution with seven letters that is also driving major transformations in companies. And the upstream and downstream thinking done by people reliably ensures that change actually happens.

Data teams as an interface that makes companies smarter

Companies' data teams make use of this revolution, with both data and business specialists working together closely. Data analysts master the handling of huge amounts of data. Business analysts know what management needs to make decisions. Together, they provide valuable information for optimizing existing processes. To filter and classify the information and extrapolate it into the future, which is the dream of every business-minded person, companies are specifically turning towards analytics. This involves explicit measures to identify patterns, correlations or causalities hidden in the vast amount of data. Equipped with those insights, they safeguard their decisions and put themselves ahead of the competition.

Companies are spending a lot of money on this. According to the International Data Corporation (IDC), global spending on big data and business analytics (BDA) in 2021 grew more than ten percent to USD 215.7 billion within a year. And that's just the beginning. By 2025, the compound annual growth rate (CAGR) will jump to 12.8 percent. "As executives seek solutions to enable better, faster decisions, we're seeing relatively healthy BDA spending across all industries," said Jessica Goepfert, Program Vice President of Customer Insights and Analysis at IDC. "Leveraging data for insights into everything from internal business operations to the customer journey is top of mind and of strategic importance." As an example, IDC cites companies in the service industry that are using Big Data and analytics to support their 360-degree customer and client management and – watch out! – project management initiatives.
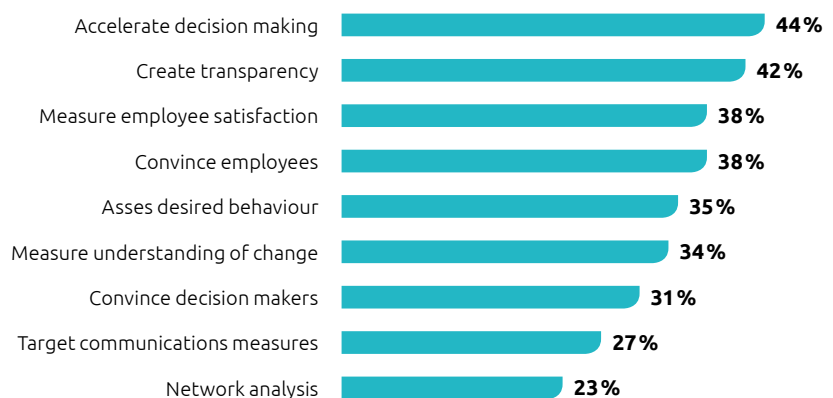
From data analytics to data-driven Change Management

Corporate strategy, marketing, sales do it, and product development even more so: They all use business intelligence to keep an eye on past and current business developments. The pioneers also use business analytics to identify the future impact of their decision options today and act accordingly (see glossary, page 9).

For change managers, data available in real time serves both as a safety net and as a telescope into the future. It establishes a broader and denser information base for upcoming decisions and their expected effects, optimizes the success monitoring of change measures, and shortens the reaction time for necessary adjustments. This control panel is the added value of data-based change management.

However, even digitally savvy change managers know that in order to move safely and skillfully from good to great, they need the intrinsic approval of the employees for change. This, in turn, is heavily determined by the corporate culture.

Fig. 07 What companies want to achieve with data-driven change management

Accelerate decision making	**44%**
Create transparency	**42%**
Measure employee satisfaction	**38%**
Convince employees	**38%**
Asses desired behaviour	**35%**
Measure understanding of change	**34%**
Convince decision makers	**31%**
Target communications measures	**27%**
Network analysis	**23%**

Here, people join in enthusiastically; there, they are secretly stonewalling. That's why, according to our study results; the establishment of data-based change management is aimed at accelerating decisions (44 percent) and creating more transparency (42 percent) as well as employee satisfaction (38 percent). Remarkably, two-thirds of the highest-priority goals are directed at employees' readiness to change (Fig. 7).

We already argued in favor of dexterity in our 2019 Change Management study[II]: maximum flexibility for companies while increasing job satisfaction.

That's why data-driven change management focuses primarily on the economic benefits for companies, while also being aware of the leverage effect of higher employee satisfaction. Apparently with success:

In organizations where employees rely on data to make decisions, 83 percent feel they have an impact on change. In organizations without this need for data, only 48 percent do.

See data with new eyes

Status quo reporting, diagnosis, decision support, forecasting – data analytics can do all that. In every company, there is a vast amount of inventory and process information about customers and employees from purchasing, production, service and logistics, from financial accounting, human resources and marketing. Ideally, the contents of various departmental platforms are combined in an enterprise resource planning system (ERP).

The challenge for change management is to find the relevant information that suits the current change project among the huge amount of available data. It is not a matter of indiscriminately accumulating tons of data. Rather, those who want to successfully change their business must use the appropriate data.

Where it is not yet available, it must be gathered. The following questions point the way: What data do we need? Can it be extracted from the ERP with the help of the data team, purchased from somewhere, or generated ourselves?

For example, change managers can use network data analyses to examine communication channels within the company in order to identify silos and change agents. In most cases, a few multipliers are enough to reach a large number of employees. Evaluated data such as click rates measured by web servers and actively collected data from employee surveys and feedbacks are suitable for this purpose. The former show to those responsible for change which areas of the company, departments or teams need to be persuaded in the long term. The latter provide clues as to why employees are hesitant. This knowledge makes managers more confident in their decisions about target-oriented measures.

Data-based change management makes the blind spots and cause-and-effect relationships in processes, decisions and corporate culture visible. In this way, it widens the view for new options. An example: A sluggish transformation process could be due to the fact that parts of the workforce are covertly resisting the change. Could be ... but how can this be verified? And if it is confirmed: What's the reason? Lack of appreciation? Burden's too high or too low? Inadequate expectations? In our study, 53 percent of the participants from companies with a low level of data analysis skills assumed that the skills of the employees in the organization were unknown. In contrast, in data-savvy companies, only 23 percent expressed this opinion.

Is your company ready for data-driven change?

The advantages of data-based change management become more pronounced the higher the level of data maturity of a company. But even with less distinct data maturity, initial, important insights can be gained. It's better to start small than not at all. Advanced organizations use consistent, high-quality data managed by a data warehouse. They use processes and methods such as data mining and artificial intelligence, supported by well-educated and competent IT and management staff. In addition, the maturity level is determined by the skills and knowledge of the employees in handling the data.

For data-driven change management, this is proving to be a serious hurdle. In a global study on data maturity[(III)] by Accenture and Qlik, 79 percent of employees concede not being fully confident in their data literacy skills. Subsequently, only 4.8 percent of companies describe themselves as data mature. 46 percent describe themselves as data-empowered, and 45.8 percent attests themselves basic competencies.

Companies are not willing to accept this. By analyzing more than 48 million job advertisements, the Bertelsmann Stiftung[(IV)] shows that employers are attaching increasing importance to the skill of data literacy. Compared to the previous study from 2018, business demand for employees who are adept at handling data has increased by 62 percent. This is the second-highest increase for a single employee skill, behind the evergreen "prudence" (+ 73 percent). In a corporate culture where data is viewed at best as an ex post justification, not an ex ante actionable metric, this desired competency will admittedly not be easy to convey.

Fig. 08 Data maturity per department

Department	Value
Data Processing / IT	4.20
Manufacturing, Production	4.14
Management	4.13
Facility Management	4.09
Research & Development	4.03
Human Resources	4.02
Finances	4.00
Marketing / Advertising	3.99
Logistics, Materials Management	3.97
Accounting	3.95
Quality Assurance	3.84
Sales	3.75
Others	3.86

Measured on a scale from 1-5, where 1 represents a low level and 5 a high level of data maturity

There is still room for improvement in data maturity

Bear in mind: Data reduces uncertainty and increases the probability that the right decisions will be made. Provided that data is integrated comprehensively and in compliance with the law into all processes, activities and decision-making processes, it delivers tangible business benefits and supports transformational leadership. This is how change managers turn the risk potential of data into a promise of success.

Only a few European countries and industries are succeeding in delivering on this promise[V]. With eight percent of companies, Great Britain leads the way, while five percent in Germany, Austria and Switzerland have sufficient capabilities to fully exploit their data. The industry leader is the financial services sector at ten percent, with telecommunications second at seven percent. This is pretty much in line with the results of our study (see page 16). Only the pioneers are able to extract meaningful information from continuous insights into their data and use it proactively and in the appropriate context throughout the company. In addition to high data quality and the application of analytical methods, companies that are already data-driven have in common that they sensitize and train their employees in the comprehensive use of data, both individually and as part of multidisciplinary teams. After all, a data-driven company requires far-reaching skills in many areas of technology. And not every company is up to the challenge.

Leadership in a transformation culture driven by data

Recent advances in data analytics are of paramount importance for modern change management. People – investors, customers, employees and other stakeholders – are the key success factors for companies. This has accelerated the development of analytics to help them better understand their key stakeholders and communicate the meaning of change. Change leaders with an affinity for data can take advantage of this.

Among the greatest challenges on the path to a data-driven transformation culture are isolated solutions that do not involve all organizational units, as well as a lack of a culture of trust. Uncertainty and mistrust put a strain on the self-efficacy of people and teams. Central to the use of business analytics in promoting change processes within the company is the behavior and credibility of managers. Both decisively determine employees' trust in the organization as a whole and their enthusiasm and commitment to change.

Fig. 09 Data maturity per management responsibility

Category	Value
> 1,000	4,38
> 1,000 aber < 1,000	4,26
50 – 100	4,23
20 – 49	4,17
10 – 19	4,04
5 – 9	3,91
1 – 4	3,80
0	3,82

Measured on a scale from 1-5, where 1 represents a low level and 5 a high level of data maturity
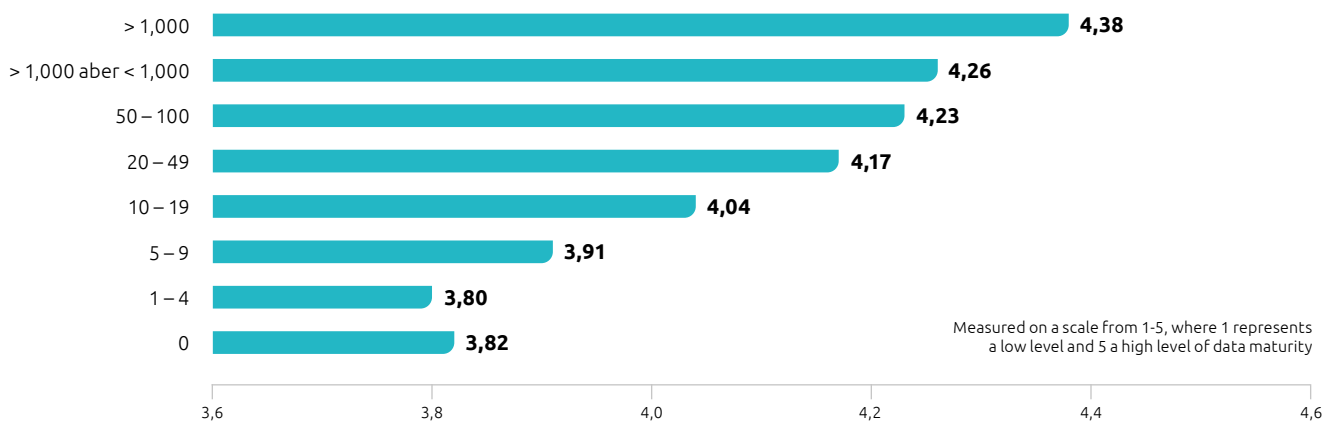
III. THE STUDY FINDINGS IN DETAIL
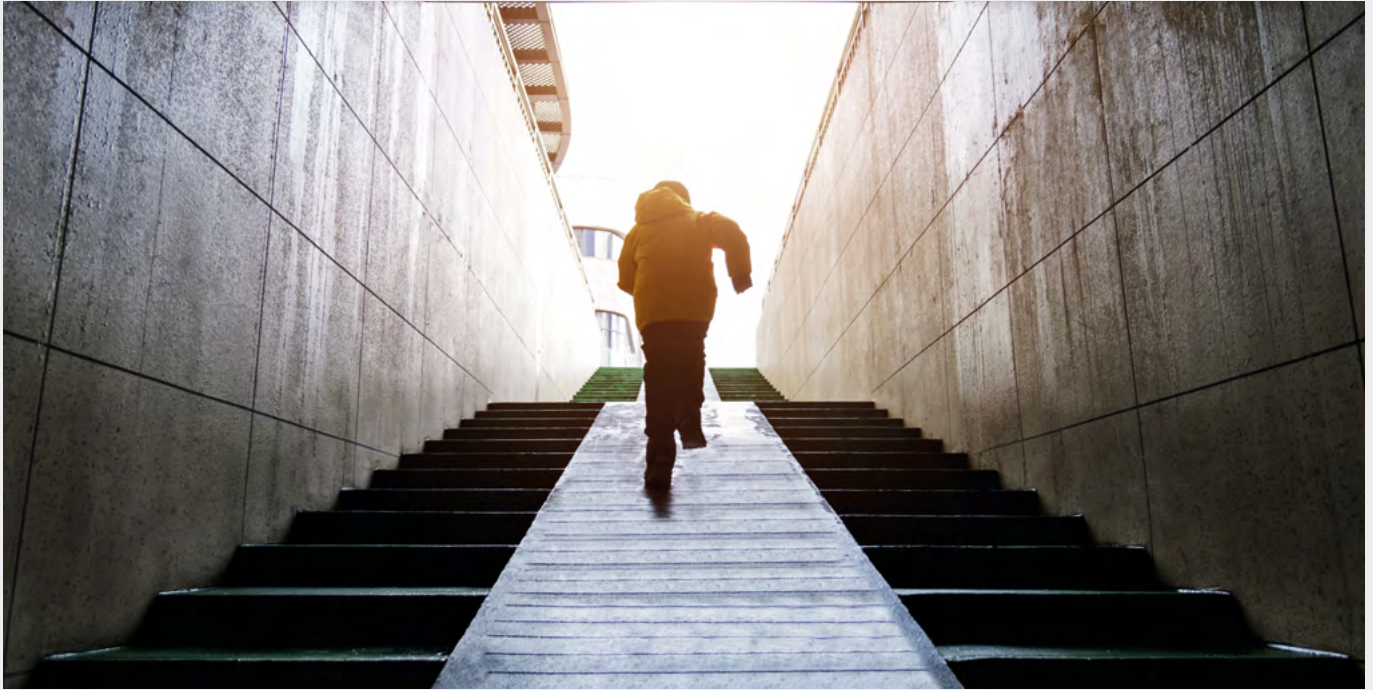
The outbreak of the Covid-19 pandemic has ruthlessly exposed the failures of the German economy in terms of digitization. However, quite a few companies have also risen to great heights during the crisis.

Unsurprisingly, these are primarily those organizations that have had the foresight to digitize their offerings and services as well as their internal processes. This is evidence of far-sighted navigation by decision-makers in a highly volatile economic environment. And that hints at a growing level of data maturity in organizations. More and more companies actually recognize that data is one of their most valuable resources, align their leadership and corporate culture accordingly, and therefore adapt more quickly, substantially and sustainably to the demands of the markets. This electrifying insight inspired us to the present study. With the increased use of business analytics in formulating and pursuing their change strategies, there is evidence to suggest that this is the case.

Fig. 10 Interdependencies in data-driven change management
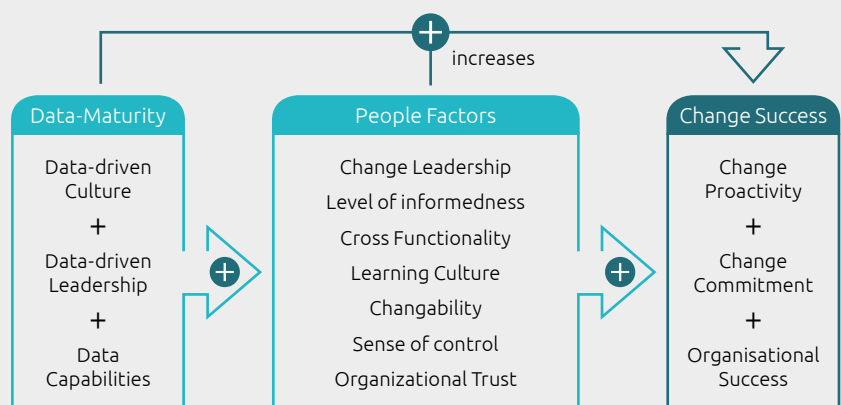
That alone does not necessarily mean that an organization's data maturity has a direct impact on its ability to change. This connection didn't seem to be that simple after all. Yes, data is undoubtedly an important ingredient for success. But how it is collected and used is still decided by learning, knowing, trusting, collaborating, and leading individuals.

Our model (Fig. 10) indicates the indirect relationship we assumed between data maturity and change success by assigning the human factors the central place in any change – kind of like a transmission belt.

Why data maturity is the precondition for change success

Change projects rarely run smoothly. At times you are behind schedule, elsewhere the left hand doesn't know what the right hand is doing, behind closed doors decisions are picked apart, and anyway: Who says that the change is *really* necessary? In case of doubt, the data. Data-mature companies read a lot from it, about the past, the present and, what matters most in change, about the future. They have adopted a **data-driven culture**, based on a shared understanding among executives and employees about the possibilities and limits of data use. Data is handled openly, transparently and trustfully as the basis for decision-making. But people should always retain primacy over technology. "The change of corporate culture can be seen as a prerequisite for successful data-driven change management," confirms a change management expert. "Data is like a control tool and supports the success of one's work."

The promotion of a data-based corporate culture is a task for **data-driven leadership** which is interdependent with the unique culture of the company. Mid-level managers in particular are relentless in informing, arguing, and persuading, thereby strengthening employees' confidence in the meaning of transformation and the use of data that it requires (see page 5). "We need to look at people first and then bring in data," says a participant who works in the triangle of organizational development, human resources and change management, adding conclusively: "If data is going to do anything, people need to see the value added." Linking that to change is a leadership task of top priority. In organizations with comprehensive data analytics, employees are 18 percent more likely, on average, to trust the company

The third element of data maturity is **data capability**. By this we mean the effective, efficient, responsible and sustainable handling of data. The overriding goal is to have a high level of skills and competencies with a maximum of data security. In the case of change, this implies the greatest possible transparency as to where the project and those involved in it stand at any given time. The visualization of data is helpful. But: "A dashboard alone is not enough," says an expert in data-driven organization. "Data needs

to be understood and actively built into decision-making processes." That secures decisions, uncovers disruptive factors early on, and points to proactive measures. "Divisions that are at the beginning of data maturity react rather than act," deems a people analytics specialist. While looking in the rearview mirror only allows for corrective intervention, looking through the windshield enables forward-looking action.

Business analytics make a company data-enabled – all the more so in change projects, where a challenge could lurk around every corner. Our study shows that companies with comprehensive data analytics are rated by respondents as both more adaptable (15 percent) and more financially successful (87 percent).

This triad – data-driven culture, data-driven leadership, and data capability – determine an organization's data maturity. Two of them, culture and leadership, directly impact those involved in change. Let`s see how this works.

How people factors transform data maturity into change success

This hypothesis was confirmed. Data maturity is the necessary condition for successful change, while its affirmation and mediation by people is the sufficient condition. At the top of the list, according to the unanimous opinion of the study participants, is **change leadership** (Fig. 11). This refers to the ability – some say the art – of successfully implementing change in such a way that processes and structures improve and that the people in the organization develop. What makes change leadership so challenging is that these tasks must be tackled simultaneously. Due to the strength of feedback effects, you can't have one without the other.

This is in line with the findings of our 2015 change study[VI]. The study concludes that change leadership holistically addresses all the levers of change. Depending on the requirements, it must address the vision, goals, structures, processes, culture, managers and employees in order to successfully conclude the project.

Since change has become a permanent condition for companies, change leadership and leadership have become congruent. Today, every manager is a change leader.

Even if it sounds platitudinous, change leadership ensures that employees believe and trust that everything will be all right in the end. Just as on a ship the crew and the captain need to know that they can rely on each other to navigate, employees should also be convinced that the leadership of change projects is on the right course. According to our study results, a high degree of maturity in handling data contributes to a high level of **organizational trust**. This, in turn, pays dividends in terms of employee commitment and engagement, and

benefits transformation results. If only because the probability that change progress is carefully communicated by management is 20 percent higher on average in organizations with comprehensive data analysis.

As a data-friendly corporate culture requires transparent handling of information, the information is repeatedly questioned by project participants as to its quality and meaningfulness in relation to the challenges being addressed.
At first glance, this may take time and be annoying: Do we really have to discuss this over and over again? But if you delve into it, you will gain more and more confidence in the reliability and meaningfulness of data and in data-based management. When the first compasses were used for navigation on the seas, many a sailor will have quibbled with the captain's decision to tie his life to the functioning of a magnetized iron needle. But only until the crew had solid ground under their feet again.

Arriving safely at the destination is always a joint success of leaders and team. In order for data maturity to deliver its full benefits, leaders' thinking, structures, and processes must be aligned for collaboration. Looking at the benefits of one's own silo is fine – but certainly not in change projects. According to our study, the probability of change success increases by 28 percent on average. Provided that cross-functional teams have been established.

**Fig. 11** Data maturity and change leadership
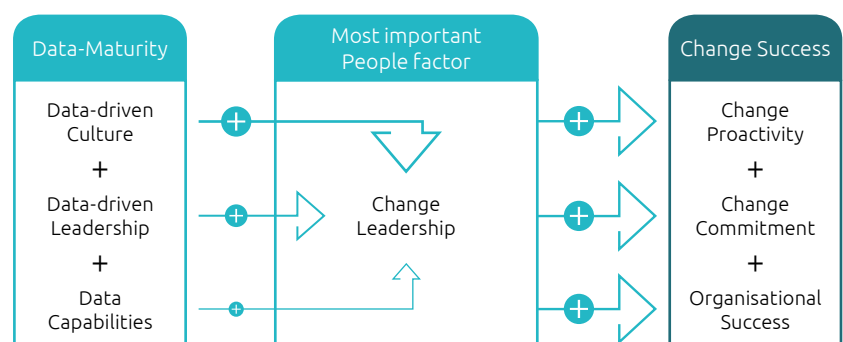
Boundless data flow

This is what the study participants told us: For the collection, analysis and application of data for decision-making, this means not holding back the flow of data or insights at any point with unnecessary barriers. Otherwise, the quality of data will be doubted. Even worse, already mentioned above, stakeholders will lose confidence in the integrity of data-driven decisions. These risks are mitigated through cross-functional collaboration **(Cross Functionality)**. "IT, HR and senior management need to work together because the data needs to be linked to business goals," says one data platform building expert. "That's why we need cross-functional teams to break down silos and work in an agile way."

As our study indicates, a high level of data maturity has a positive effect on change success in the field of cross-functional collaboration, precisely because it strengthens the commitment and proactivity of those involved (Fig. 12). 83 percent of study participants from companies that already conduct intensive data analysis feel encouraged to ask for company-wide support. For less data-savvy companies, the figure is only 56 percent. It's a pity, because those who know the numbers from the department next floor can set things into context more easily and increase collaboration. Especially if it helps them to solve their own tasks.

Fig. 12 How data maturity and cross-functional collaboration impact change success
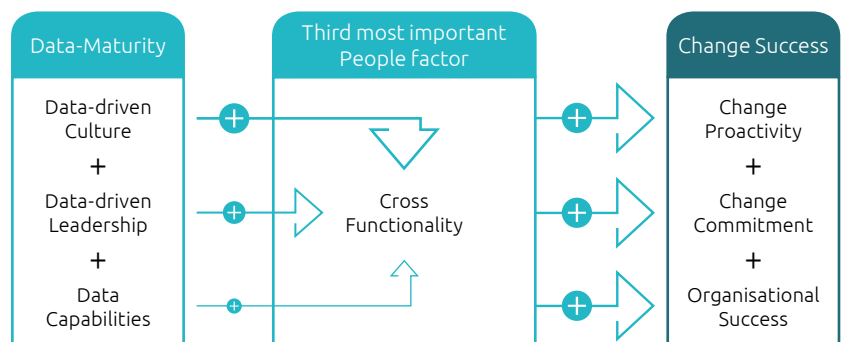
Finding 1

The key for success in any transformation is **change leadership**. When leaders explain the benefits of using data and lead by example, they increase employees' willingness to work in a data-driven way. Simultaneously looking at processes, structures and the people involved builds the **confidence** of organizational members to change for the better. **Cross-functional collaboration** is a compelling framework for this. When all three factors come together, change success is greatest.

Knowing what´s going on provides certainty that things are moving

Viewed in isolation, numbers and data have no value. But they can be used to inform employees about the goals and actions of change projects. Our study proves: A higher level of data maturity in the company has an indirect but unmistakable effect – namely via the **level of informedness** – on the commitment and change proactivity of those involved. This has a significant impact on change success (Fig. 13).

In order for this mechanism to take effect, management must lead the way. We often heard this from the change experts we interviewed. Even if they are not always aware of it, managers make a decisive contribution to whether and to what extent employees believe they are comprehensively and truthfully informed about the progress of the project. "Data can be used well to communicate, for example by backing up success stories with figures," recommends one change manager. Then those involved gain confidence in the process and feel secure. Or they don't – which is responsible for the failure of many a project.

In our view, one of the more surprising study findings is that the degree of informedness has only a minor impact on the stress employees are exposed to as a result of change (see box right). However, if data-driven work is firmly embedded in the corporate culture, and managers proceed accordingly and keep employees continuously informed, then the level of informedness increases organization-wide. The river of data thus becomes a broad stream that pulls the entire organization into the flow of change.
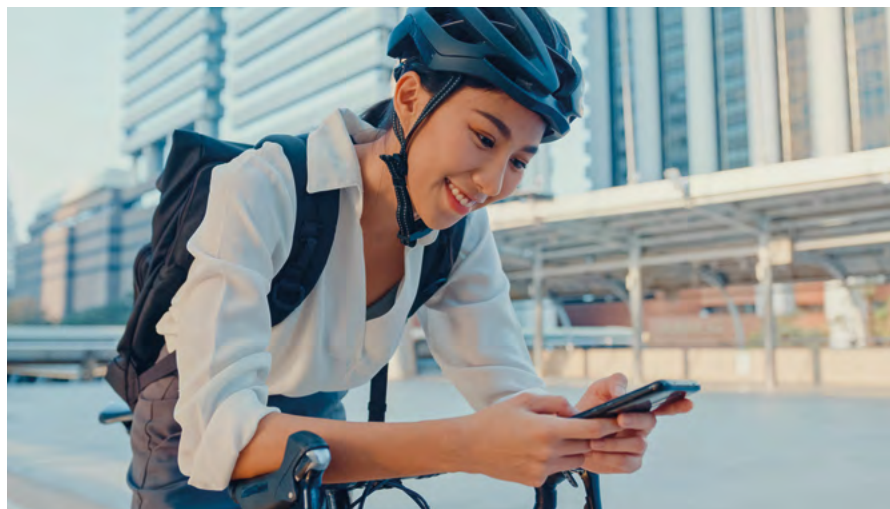
Fig. 13 How data maturity and perceived level of informedness affect change success
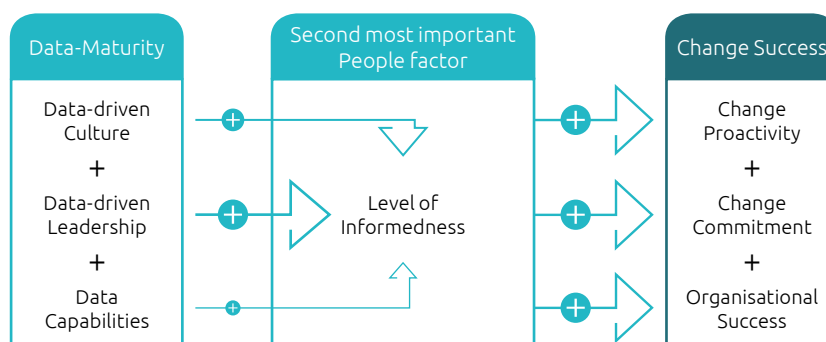
Stress in change projects

Experienced change managers know that every change project entails tension and an additional burden for managers and employees. In addition to the uncertainty about what will happen next, the restructuring measures associated with every transformation put a strain on day-to-day business. When preparing our study, we optimistically assumed that a high level of data maturity would have a positive effect on the stress associated with any change. This assumption was only partially verified. Two out of three elements of data maturity, namely data capability and data-based leadership, actually raise the stress level perceived by employees slightly. However, we're happy to present one bright spot: a data-friendly corporate culture reduces individually perceived stress. "No one likes going through change," an expert in workforce transformation and change management sums up. "You have to understand what it means to you personally. That's why employees want to get data." By fulfilling this desire, leaders build employees' confidence in change. And if unexpected hurdles arise, they must assume anyway that this is unlikely to go unnoticed by employees.

The commitment of all those involved in the change increases according to their **sense of control** over the process. Being sure to understand and meet all the requirements, they are motivated to perform and achieve results with which they and their superiors are satisfied. In doing so, they definitely have their own career in mind. Our study confirms this most impressively. 85 percent of the participants in companies where extensive data analysis is part of their daily business are confident about their professional prospects.

This characteristic of change success is closely related to the level of informedness. And this puts subjective perception on an operational footing. After all, the key to ensuring that employees have a positive sense of control is up-to-date, well-visualized information about the project's progress. Leaders' affinity for data reinforces leverage. According to our study, employees are on average 19 percent more likely to feel well-informed during change in organizations with comprehensive data analytics.

Their behavior gives employees security and confidence, and that accelerates the more data-driven the managers' work. This positive correlation emerges clearly from our study. Moreover, when employees are empowered to perform what the data-driven organization expects of them, their self-confidence grows even more.

How to learn to love change

We are almost, but not quite, at the end of our specification of the transmission belt "people factors" (Fig. 10, page 16). Our hypothesis is that, starting from the data maturity of an organization, the thinking, feeling and behavior of all those involved in change determines the success of the change. This was confirmed by the interview partners as well as the almost 1,200 participants from all over the world who answered our questionnaire.

Managers from companies where learning is encouraged and nurtured report higher commitment and greater change proactivity among their employees. Where data-driven change management has already been implemented, new tools encourage further learning. Why not nudge learning? Employees use search engines to get missing information on their screens. With micro-learning they receive small learning snippets tailored to their specific tasks on their smartphones. What's more, learning from colleagues will become much more important in the future.

Data-driven leaders play an important role in establishing and sustaining an inspiring **learning culture**. Empowerment is good, but it needs a secure foundation. What's the status quo of our employees, and what do we want them to know and to do? In companies with comprehensive data analytics, more than three-quarters of respondents (77 percent) say their company knows the capabilities of its employees. In companies without comprehensive data analytics, only
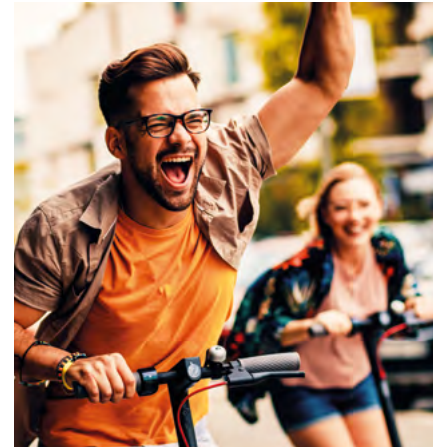
47 percent believe so. Companies that maintain an up-to-date database of their employees' skills are, on average, 31 percent more successful in implementing change.

Another finding of our study is that when companies encourage employee development, they are on average 25 percent more successful in implementing change. If they also encourage the workforce to request support across departments, the probability of change success increases by 30 percent on average.

Ideally, managers use the empowerment lever when they specifically promote the ability of employees to use data in a self-determined and self-responsible manner to perform their tasks. "A true data culture requires the empowerment of employees," asserts a change manager. "Empowering leadership therefore provides a framework for personal responsibility." A data platform building specialist recommends: "It's important to teach how people can interact with data, how data is governed, and how they can switch their way of working to use data from the platform." In a data-driven learning culture it is self-evident to align the organization to constant change. That's why transformation projects stay on track.

Finding 2

Transparency about the data used in the change process, i.e. how and for what it is used, strengthens employees' confidence in the path taken and the effectiveness of the measures taken. Our study proves: The better informed employees are about the progress of the change, i.e. the more they know something, and the more they are convinced that they have **control over the process**, which means the knowledge is accompanied by a good feeling, the greater the change success.

Culture + Leadership = Changeability

This must be the claim, because for companies the **ability to change** ("changeability") has become an existential question. The more profound the technological change and the associated challenges, the more the general transformation capability of the organization determines the success of change projects. In companies with comprehensive data analytics, five out of six employees (83 percent) see the change project as being supported by a broad coalition in leadership. This is where the circle closes. Our study proves that data-driven culture and change leadership have a direct impact on the ability to change. Where comprehensive data analytics is already in place, 86 percent of respondents see their leadership carefully communicating the progress of change, compared to just 60 percent elsewhere. No coincidence: 88 percent of the study participants consider their company to be successful in managing change. With limited data use, the figure is only 55 percent.

In companies where data is used to enhance communication efforts in the change process, the percentage of employees who rate their company as successful in managing change increases by 13 percent. Example: If information about change measures and successes has previously been provided in newsletters, but the data shows that these are read by only a few recipients, then additional information channels are necessary.

When leaders consistently use business analytics and share the data it generates with employees, things really start to shift within the company. "Convincing people that change is good is the most important thing," explains an expert in organizational development, human resources and change management. "If the effectiveness of actions is measured, you can use other change methods faster if need be."

Fig. 14 Data maturity and changeability
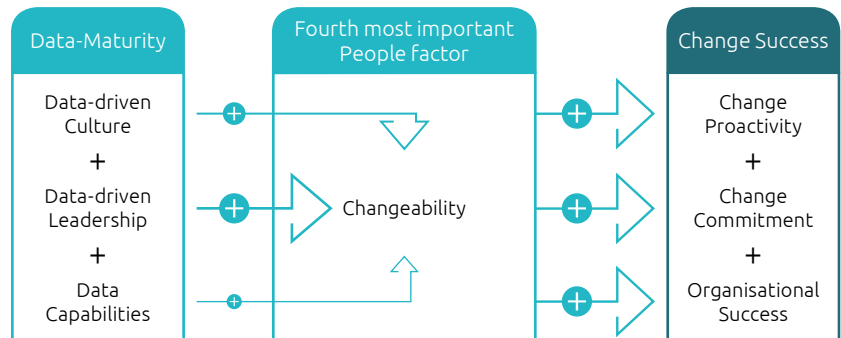
Finding 3

Our study proves that high data maturity significantly increases the **learning culture** in the company. This benefits change because the will to learn dissolves resistance and opens up the organization to new things. The use of data proves to be the linchpin here. The learning culture is an important characteristic of a company's general **ability to change**. It determines the degree of commitment and change proactivity with which managers and employees intrinsically support and drive change.

This speaks to the desire to be flexible in the choice of means. Rightly so, as our study confirms the positive correlation between data maturity and change capability on one side as well as commitment and proactive action by employees on the other – and therefore also the success of the organization in transformation processes (Fig. 14).

Data maturity and people factors make change manageable

The study results show that we were right with our hypothesis. Only in the case of change stress did we have to correct our assumption (see page 20). The analysis of the interviews and the quantitative study prove that data maturity gives companies a considerable advantage in change processes. We even say: it contributes significantly to the success of transformations.

But only under the condition that leadership allows itself to be supported by data and consistently transfers this open-mindedness into the organization.

It requires a strong and empathetic leadership for this mechanism to work. Change demands a great deal from all those involved. Employees want to be guided fairly and informed comprehensively. They want to feel and experience that all parts of the company are moving in the new, the right direction. Neither silo thinking nor evasive answers are appropriate when colleagues ask questions that reveal uncertainty and concern. The biggest challenge for change managers is not to lose sight of any of the aforementioned aspects. In this context, data maturity functions like a radar system that enables change management to arrive safely at its destination under (almost) all weather conditions.

Our study confirms the positive link between a company's data maturity and the success of its ongoing or recently completed change projects. However, we did not stop with this generic confirmation of our hypothesis. In order to verify the preceding considerations and to determine the probabilities of success in more detail, we conducted various cluster analyses, according to, among other things, company characteristics region and industry, as well as according to departments and management ranges of the participants.

Regions and countries

As expected, the analysis of the individual clusters shows a high degree of dispersion. This is primarily due to the varying levels to which the three determinants of data maturity are expressed. Although the use of business analytics is on the rise world-wide, the largely digitized companies from the global growth regions are the ones that dominate. They are the most likely to have realized a data-driven corporate culture and aligned their leadership accordingly.

It is hardly surprising that data-savvy companies in the countries of the Asia-Pacific region (APAC), above all in India and China, show the relatively greatest corporate success in change projects. The high level of data maturity among these companies can be explained by their unconditional desire to grow, supported by a young, IT-savvy population and a dynamic economy. Unfortunately, it is also due to a low level of data protection, because in many Asian countries there are hardly any limits on the collection and analysis of personal data. The APAC countries are followed by the USA and, about twice as far behind the Far East leadership, the European economic area (Fig. 15).

The outstanding position of German companies in the overall European analysis is essentially due to high intraorganizational approval ratings for change (Fig. 16).

Change commitment is not only driven by leadership and corporate culture, but also by an understanding of the need for change.

Fig. 15 Organizational success in the regions

**Fig. 16** Change commitment in the regions
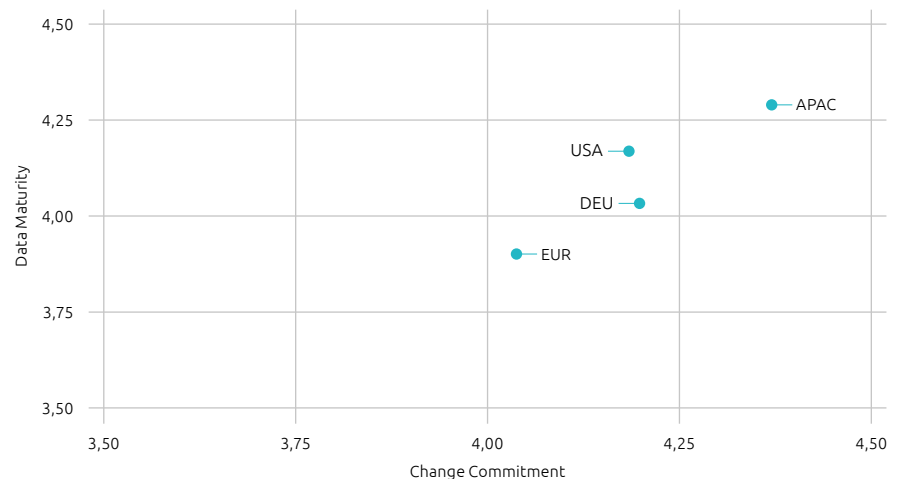
Industries

When we look at the different sectors of the economy, the uncompromising digitizers from telecommunications, automotive, banking and insurance are at the top of the list (Fig. 17). There is no doubt that these sectors are ahead in IT-driven transformation[(VII)], and the reason for this is obvious: For companies competing on a global scale, there is simply no alternative to a high degree of digitization and a willingness to embrace continuous change. In the middle of the pack are the energy and utilities industries, consumer goods and retail as well as consulting, all of which are sectors on the verge of entering the data-driven world. In many cases, public authorities with an assigned clientele (still) feel unchallenged and are only hesitantly confronted with private competition. Here, the close connection between data maturity and change success becomes unmistakably apparent.

Departments

The analysis by business departments reveals little at first glance, but at a closer view it is quite surprising. Let's start with the obvious. Measured by their level of data maturity, IT and management are the most willing to actively promote change. It could be assumed, and is confirmed by the participants, that the high level of commitment has a positive impact on the company's success (Fig. 18). If management succeeds in extending the commitment shown in these departments to the other areas, a good deal would be gained. This is where persuasion is needed, especially in less digital savvy companies. After all, IT, management and production are generally more advanced in the use of data than departments whose value creation is strongly determined by customer knowledge. In sales, for example, the strength of personal contacts is often weighted higher than the efficiency gains that can be achieved with the help of Big Data.

Fig. 17 Organizational success in the industries
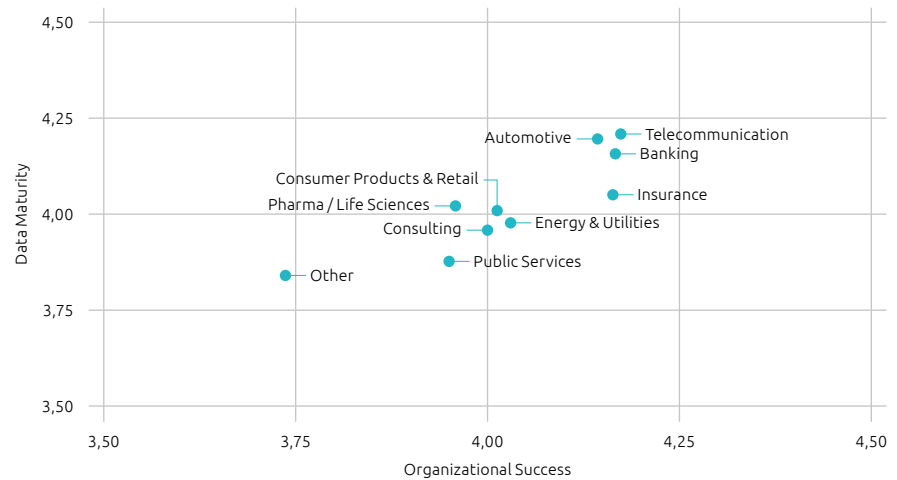
Fig. 18 The connection between data maturity and change commitment by departments
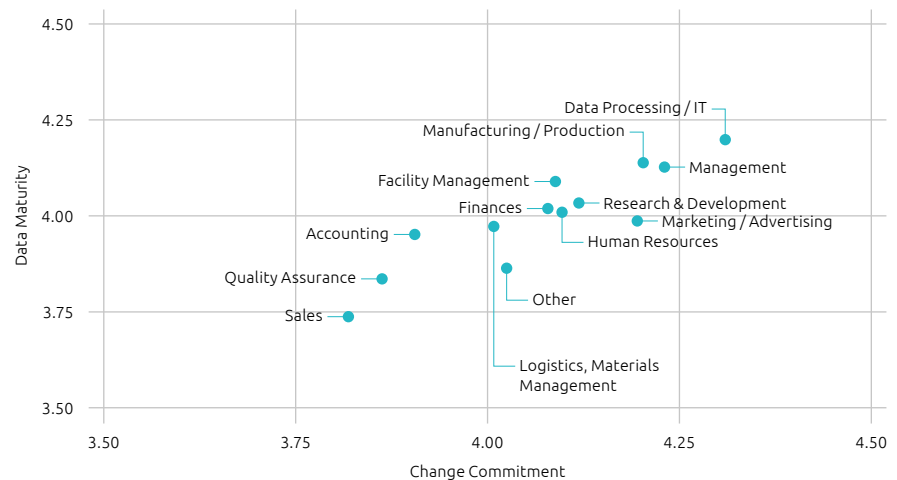
To measure the success of sales measures, one could use data such as click rates or conversions or AI-based customer analysis.

The middle position of facility management in terms of commitment is critical, although it ranks high in terms of data maturity. The slowdown in commitment could be explained by the fact that this department is confronted with two enormous challenges at the same time: the imperatives of sustainability and energy conservation. This is a good point to start, because the management of complex office and commercial space is indeed tailor-made for the use of information technology. It is quite reasonable to assume that increasing digitization in building logistics has added an important corner stone to corporate success. According to our study, research & development and human resources are also well on the way to data maturity.
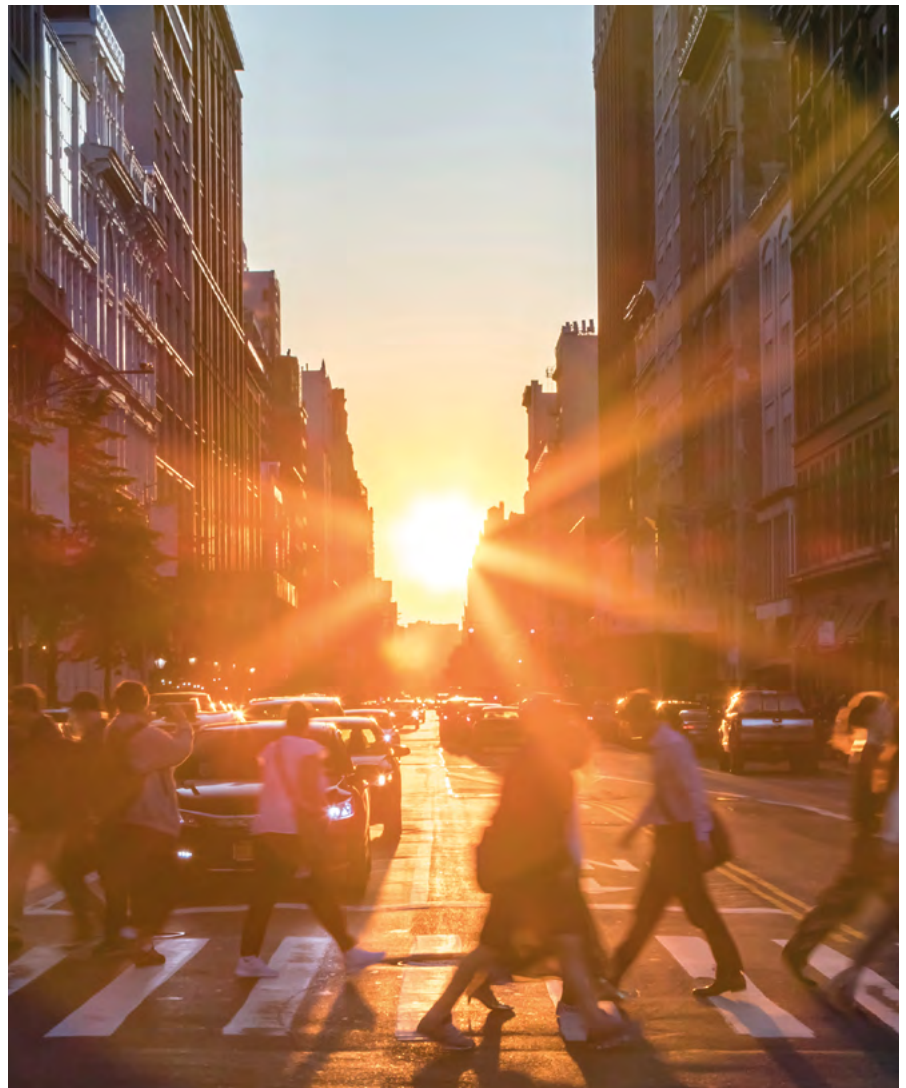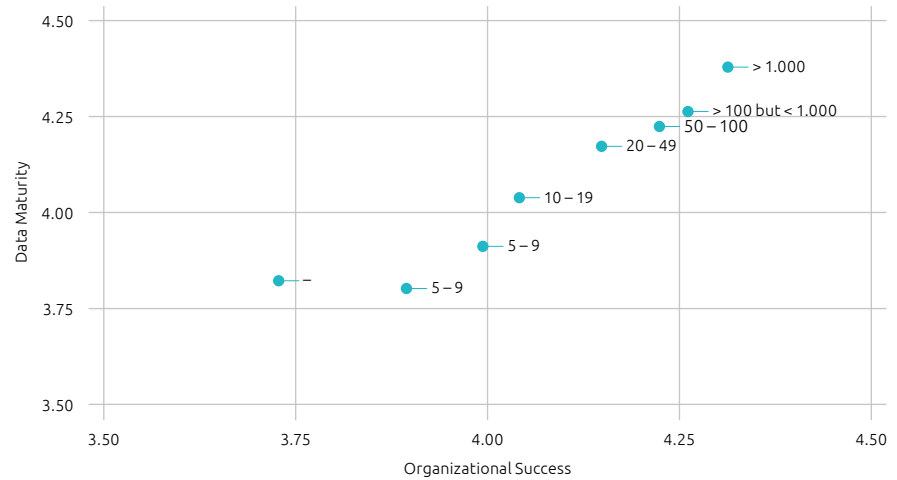
Management range

The higher a company's data maturity, the better its prospects of bringing the transformation process to a successful conclusion. This was our initial hypothesis. In fact, there is an almost linear connection between the data maturity of an organization and its corporate success (Fig. 19). We see a comparable connection in change commitment and change proactivity.

Managers who lead more than 1,000 employees rate both the data maturity of their own company and its success highest. This is followed by a management range of 101 to 999 and only then by the much smaller range of 20 to 49 employees. In our analysis, we assume that management directors, board members and the heads of very large divisions are better informed about the use of data in their organization and therefore realistically assess the data maturity of the divisions they lead.

A new era of data-driven transformation

We all generate, use and spread a wealth of data every day. But when it comes to accompanying transformations through change management, still far too few figures, quantities, values and algorithms are used. Because, as we ourselves keep pointing out, success must be thought of and triggered by people, and this seems to contradict the use of cold, abstract data? We wrote in our Change Management study of 2015[VIII]: "Employees, above all those of the younger generation, want to be involved: they want to contribute their thoughts and ideas; to have a say in processes, decisions and actions. Without their genuine, inner consent, no restructuring project will work." Even though we strongly advocate data-based change management, we stand by this statement. Only we add to it the plea for the application of modern analysis techniques. What's wrong with doing one thing without leaving the other? Change management itself is open for change. So let's set off into the new era of data-driven transformations.

Fig. 19 The relationship between data maturity and organizational success by management responsibility

IV. HOW TO ACHIEVE DATA-DRIVEN CHANGE MANAGEMENT

Most companies are well positioned when it comes to leveraging their business intelligence data. However, our study has shown that the crucial step for implementing data-driven change management has not yet been taken. Change managers only hesitantly recognize the benefits of data-driven scenarios for decisions in change processes. The brakes are being put on by a lack of knowledge – how does it work? –, doubts about effectiveness – what's the point? – and uncertainty: what data is necessary, already available or can be obtained in a data protection compliant manner? Speaking of procurement: What does the technology cost us? Do we have to hire dozens of IT specialists for it, who are not available on the labor market anyway? Last but not least, the term people analytics evokes an instinctive shyness. Is the workforce, are our staff members on board?

Our study indicates that many companies find it difficult to adopt a data-driven mindset in their corporate culture.

Yet, managers in particular swear by data! However, the opportunities of data-driven change management are still often underestimated. Of course, management always works and makes decisions based on data, but similar to benchmarks, mostly with data from the past or the present. Thanks to predictive analytics, managers gain a large-scale and at the same time detailed picture of the future actions and behaviors of their customers, suppliers and employees. Only then it is possible to act with foresight and analytically secure knowledge of the most probable results. Given the clear business benefits of these techniques, we believe that there is still great potential to be tapped here.
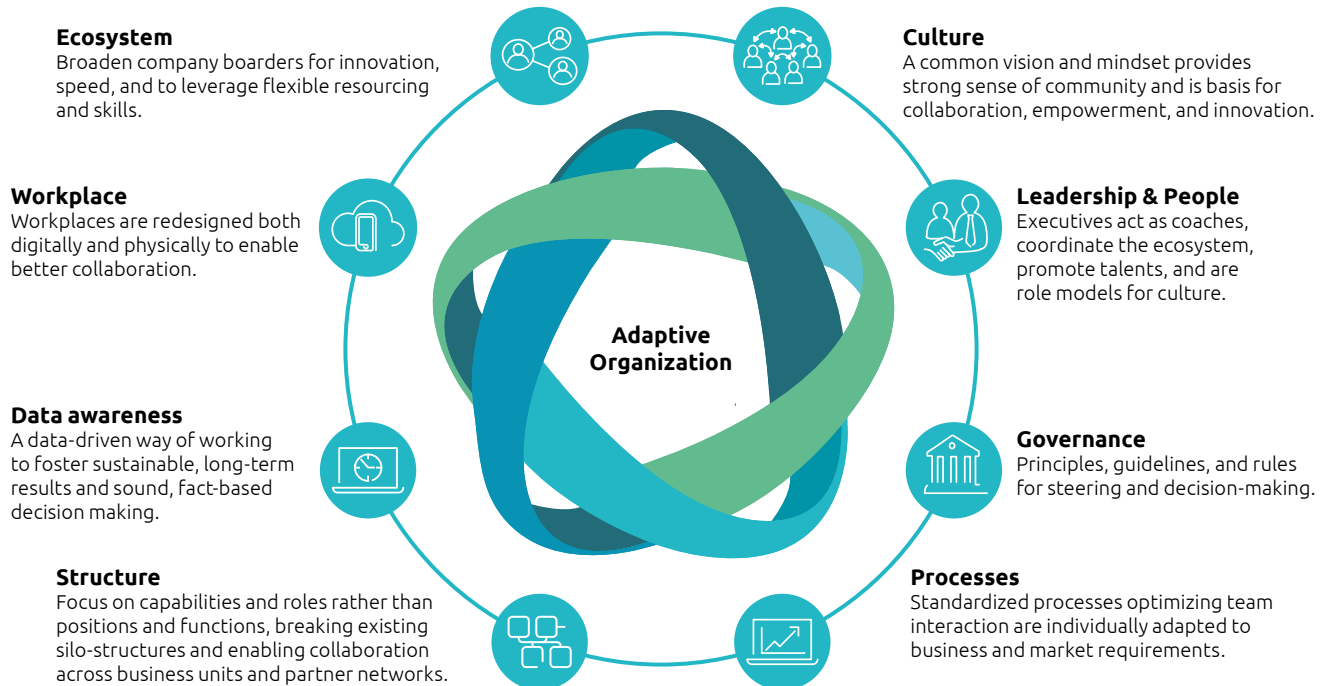
This is supported by the strongest argument of all. If you can leave it to technology to navigate faster and with a greater likelihood of success, then you should. Let data do the work. The most efficient way to do this is to build a data team of data architects and business analysts (see page 10).

Data-based Change Management boosts existing levers

Our 8-lever model (Fig. 20) illustrates how to develop and implement data-driven change management as part of a holistic strategy. Any changes to one lever inevitably impact how the others work, so side effects and consequences must always be considered. Below, we provide some guidance on how change management can use data to amplify the power of the levers.

The first and most important lever for successful implementation of data-driven change management is **corporate culture**. The entirety of shared values, norms and attitudes determines how people work together. Managers and employees can usually give a good description of the culture and what it should ideally be like. But for change management to be able to intervene in a targeted manner, it needs more than just a vague gut feeling that things are not going as they should. It needs objective, reliable data that is collected at regular intervals and shared with employees. Only then can it steer change in the right direction.

Fig. 20 8 Levers of an adaptive organization

Ecosystem
Broaden company boarders for innovation, speed, and to leverage flexible resourcing and skills.

Workplace
Workplaces are redesigned both digitally and physically to enable better collaboration.

Data awareness
A data-driven way of working to foster sustainable, long-term results and sound, fact-based decision making.

Structure
Focus on capabilities and roles rather than positions and functions, breaking existing silo-structures and enabling collaboration across business units and partner networks.

Culture
A common vision and mindset provides strong sense of community and is basis for collaboration, empowerment, and innovation.

Leadership & People
Executives act as coaches, coordinate the ecosystem, promote talents, and are role models for culture.

Governance
Principles, guidelines, and rules for steering and decision-making.

Processes
Standardized processes optimizing team interaction are individually adapted to business and market requirements.

(center) Adaptive Organization

People & Culture already has a lot of data, aggregated across the entire workforce or individual departments, for example the number of internal and external job applications, sickness frequency and duration, the fluctuation rate, participation in voluntary social events, evaluated opinion surveys or anonymized statements from HR interviews. Some companies regularly ask employees for their impressions, feelings or attitudes toward certain measures. The participation rates indicate the extent to which employees are convinced that their opinions are valued. In others, a "mood barometer" is posted on the virtual bulletin board, where all employees voluntarily can mark their opinion. People analytics can be used to pinpoint exactly what is going great or what may still be lacking. The goal is always to systematically transform moods into measurable characteristics. After all, how could we ever manage something that isn't being measured?

Leadership is closely linked to corporate culture. Where decisions are made in a data-conscious and transparent way, hegemonic knowledge and sensitivities lose their significance and make way for understanding and agreement. Anonymized surveys, summarized analyses of performance reviews, pulse surveys and 360-degree surveys provide scalable data and targeted information for change. In addition, they provide impulses for personnel development and training. Finally, an important part of the leadership function is to develop employees. This includes enabling them to work independently with data and make decisions based on it (see page 13).

In a way, designing **processes** is a home game for data-based change management. This is because processes are based on data from workflows, predecessor-successor models, dependencies and interactions. In order for this data to be shared, used and compared across departments, it must be sufficiently standardized. The change team and the specialist departments central to the respective phase need sufficient freedom to evaluate additional data sources and implement suitable ad hoc measures. Of course, the assignment of access rights to the data must take data protection into account.

Data awareness is the key to smart change

A high level of **data awareness** that is widespread throughout the company is indispensable for making good, fact-based decisions. Managers thus increase the weight of their arguments and gain promoters for efficient and sustainable solutions; the reason of some measures becomes clearer to employees. And the future is becoming more manageable. The Big Five[IX] companies and numerous start-ups are emphatically proving that business models based on the collection, analysis and processing of data are among the big winners on the market. The intelligent use of algorithms promises new business opportunities by filtering out the really relevant information from the mass of data.

If change management becomes the champion of a high level of data awareness in the company and pushes for appropriate training, it is likely to win the approval of the corporate functions. At the same time, it facilitates work, because data-aware employees get to the point much quicker. This, in turn, points the way forward for change. In 2019, we stated in our Change Management study[X]: "The more carefully data is interpreted and processed, the more valid the decisions made on this basis will be and thus ensure sustainably better results."

Governance should be ethically unassailable, data-aware, transparent, and communication-oriented, thus acting as an indirect lever for change. We have seen it in many change projects: When governance fosters better quality decisions that are accepted by all, the change team's chances of success increase tremendously. It is similar with the **structure** of the company, which reflects positions, functions and roles of managers and employees. If we expand this description to include behavior in the dynamic web of relationships and the data-affinity skills of organizational members, the importance of structure for the success of data-driven change management becomes apparent.

In smaller organizations, the structures are usually more flexible than in large companies. On the other hand, they often lack the money or the willingness to take risks to invest in the development of business analytics. Large companies find it easier than smaller ones to introduce a data-driven organization and thus also data-based change management. The following applies to both: Only a **workplace** with time- and location-independent data access for all project participants ensures the cross-functional and cross-hierarchical exchange of data and information that is critical to success. At this point, we do not want any misunderstanding to arise. Technology in no way replaces the individual willingness of employees to cooperate! The success of change management stands or falls by the commitment of the people involved. But an increased awareness of the value of data and its specific use makes it easier to get people's commitment.

This also applies to the company's **ecosystem**. Companies are connected to their stakeholders through a multitude of relationships. This means that interactions with the transformation are unavoidable. As an accompanying measure, it is therefore advisable to integrate external parties such as customers, suppliers and cooperators into the network, at least perspectively. In this way, both partners can generate new, valuable data. In addition, changes in wording or KPIs associated with the change can be cushioned at the interfaces. Another argument is provided by politics. A data ecosystem facilitates compliance with the EU taxonomy, as mapped, for example, in the German "Act on Corporate Due Diligence Obligations in Supply Chains" (Lieferkettensorgfaltspflichtengesetz, LkSG). It stipulates that larger companies (from 3,000 employees in 2023, from 1,000 employees in 2024) must comply with environmental and social due diligence obligations throughout their supply chain. Without at least a partial data link to customers and suppliers, who in turn often have to fulfill the same regulatory requirements, it is unlikely that such a guarantee can be provided.

Pushing sustainability with data

One burning issue to all companies is the shift toward sustainable business practices. In one project, we investigated for a customer what effect certain measures have on the sustainability goals they are striving for. For this purpose, managers and employees are continuously surveyed. The results, stored in a data system developed by us, are evaluated as well. At the push of a button, it is then possible to see which measure can be used to achieve a specific target value, for example the approval of employees for decisions made in favor of greater sustainability. In addition, dedicated teams can find contact persons within the company if they are faced with comparable tasks and would like more detailed information.

The following two-step process is recommended for many subjects. In the first step, the need for action is evaluated and possible measures are developed. In the second step, these are prioritized according to their effectiveness. Measures that meet several needs for action are placed higher on the list than those that meet only one need. The trick is that the recommendations improve over time. This is because they take into account the effectiveness of the measures taken. In other words, if something hasn't worked as well as expected, the tool "learns". This ensures that the most effective measures for achieving as many goals as possible are recommended and implemented by the change team or the corporate departments.

Knowing what it's about. There are various positive effects on success if employees in change projects feel informed about progress, i.e., about milestones reached, but also about setbacks. This prevents rumors from germinating and promotes commitment and proactive action. Technical tools for visualizing team goals and progress in real time have long been established. It is also helpful to analyze the communication channels preferred by employees ("channel utilization"). Dashboards can be used to share information quickly in a comprehensible way – for example, the accomplishment of interim goals or tasks that are still open. Valid statements about the degree of information can be made by measuring the click rate of data dedicated to the project. Recorded over time, the average reading time indicates increasing, constant or decreasing attention to the change. This data provides the change team with information on communication measures that may be necessary. And managers learn from this indirect feedback whether they should sharpen their role as promoters of change.

Feeling safe. While working with corporate data is part of everyday life for most employees, they often react skeptically when it comes to using people analytics. This is due to how little they know about its potential uses and limitations ("transparent employees"), which leads to building up internal resistance. In order to motivate people to change their behavior, they need to feel in control of the change process. A practical example that provides both security and promotes learning is to set up a "Data Consultation Hour". Data analysts offer their colleagues from the business departments fixed consultation hours during which they can turn to the data experts with their questions and problems. This way, they find out whether and how their tasks can be solved with the help of data.

Change ahead?
Pay attention to
the people factors

The more data-mature a company, the more leaders can focus on the critical success factors of transformation. These include employees' trust in the organization, their use of data, their level of informedness about change, their perceived control over the data used and the processes based on it, as well as the learning culture. It is well known that people are sensitive to change. As traditional change management is aware of this, it focuses on people factors.

Gaining confidence. One in four people are afraid of taking a plane. Some only get to their destination thanks to sedatives. For this reason, airlines offer Fear-of-Flying seminars to instill more confidence in people. The basic idea is simple: what you understand, you no longer fear. Companies are also taking advantage of this and combine this approach with gamification or other fear-reducing methods. Confidence can be gained when you offer a protected space to safely try out new things.

Being eager to learn. In a world of volatility, uncertainty, complexity and ambiguity – VUCA for short – companies are lost without a learning culture. This is especially true for change processes, because it is imperative that employees acquire knowledge and new skills. But even that is not enough. A learning culture provides answers to the following questions: Are suggestions and ideas generally welcomed? (Yes!) Do we encourage and reward further training? (Yes!) Do we make a distinction between formal and informal learning? (No!) Do we sanction mistakes that result from eagerness to learn or work? (No!) Does our organization learn from mistakes? (Yes!) Do we have a data storage system where our learnings are saved and retrievable? (Yes!) Our study results suggest that we should ask these questions. Participants in organizations with comprehensive data analytics are, on average, 24 percent more committed to a culture that emphasizes people development.

Two factors promote a good learning culture: low-threshold offerings tailored to specific employee groups, and clearly defined time slots made available for learning. One of our customers set up a so-called Escape Room, which employees are only to leave after solving puzzles with the help of data analytics. In doing so, they learned in a playful and at the same time instructive way how data

can help them to approach tasks in a structured manner. In another company, an online adventure game in which tasks also had to be solved using data proved to be very successful. Games with a learning character are excellent for breaking down fear of first contact. They can also be simply differentiated into learning paths to address company-specific target groups.

Data ownership: Who has access to which data?

Data forms its own ecosystem, which should be mapped in a data model for the entire organization. Not every employee needs to know who generates, uses and manages which data. But everyone should know who they can turn to when they need data. "The biggest challenges are the lack of control over projects and the lack of commitment to data," confirms a change manager. To ensure that everyone knows who is responsible for what data, data ownership must be clarified. Risk management, compliance and data protection officers all have a say in this. Ideally, the company should appoint a data owner who determines which data all employees may access. In addition, department-specific data owners are appointed. "Data is created in processes, and you need experts who know which data can be used for which tasks," explains one participant. The IT department, in turn, knows the technical architecture and how the data flow corresponds with data governance.

Fig. 21 Our data-driven change model
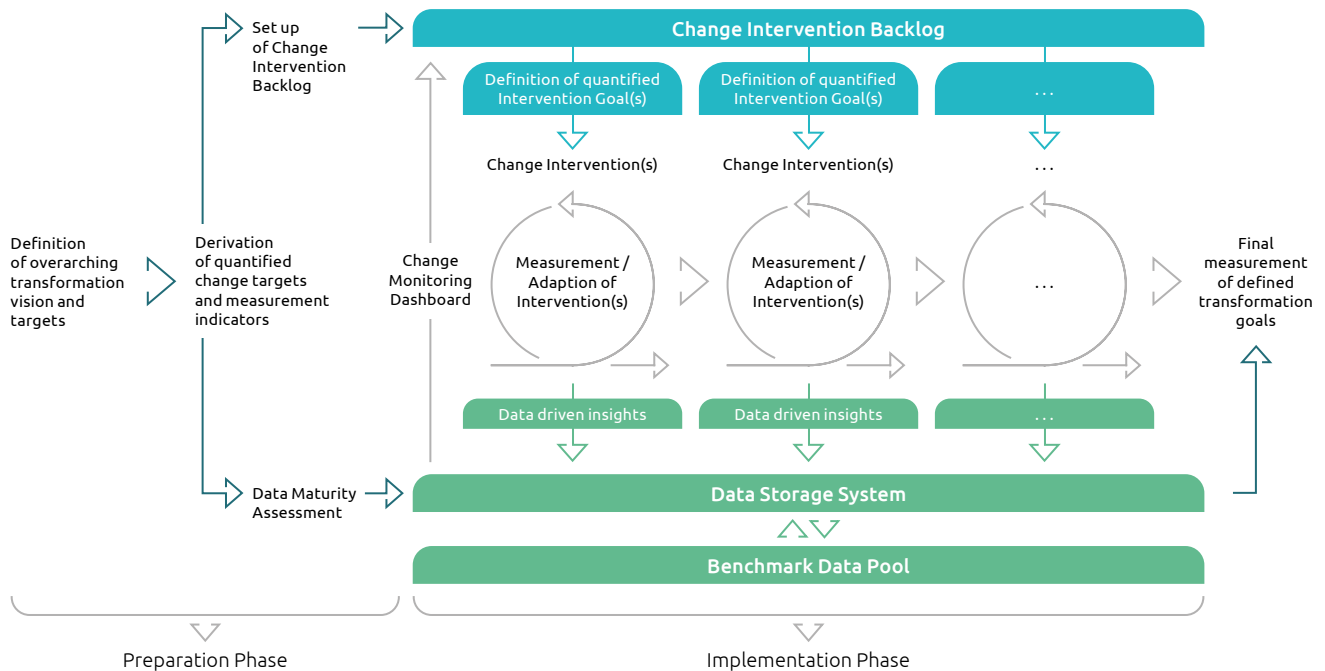
Our data-driven change model

For a better understanding of how data-driven change management is implemented, we have expanded our proven and tested change model (Fig. 21). As before, it shows the change process divided into the preparation phase (left) and the implementation phase (right). We added a data level (in the figure highlighted in green). The insights gained on the data level support change managers on the action level (in the figure highlighted in blue). Where traditional change management only focuses on the change process from vision to performance review, data-driven change management continuously expands the view to include project-relevant data on demand and in real time.

In the **preparatory phase**, management works out the goals of the transformation with the vision and, after determining the actual values, defines the target values. This is how Netflix proceeded in the early 2010s with its change from DVD rental company to streaming provider. For the new business model to work, the number of subscribers had to increase dramatically. It succeeded despite initial difficulties: Between 2011 and 2019, the number of subscribers increased sevenfold to 163 million – far more than all cable TV providers in the U.S. combined.

The vision shines on the horizon, but the path to it must be well illuminated. Thus, in the next step, the change team defines specific sub-goals and suitable indicators and measurement methods, similar to a balanced scorecard. Not as fixed KPIs ("82 percent"), but as KPI target corridors ("from 80 to 85 percent"), in order to secure flexibility in the use of the available resources and efficient in terms of revenue and expense.

For example. If, due to training efforts, the data competence of a defined group of employees has reached 80 percent, then increasing it by the remaining 20 percent requires considerably more resources than is economically worthwhile (Pareto principle). However, if the increase in data competence is of paramount importance for the overall success of the change project (which goes without saying in data-driven change management), then the effort is justified. It always depends on which goals are most important for the change project. This also determines what data is required to measure success. And whether the data is already available in the company or must first be obtained or collected.

Qualitative information is often not available in the form of data. However, it can be generated, for example, in order to find out about stakeholders' attitudes about the change project. The recording of response rates of customer and employee surveys, the standardized evaluation of annual performance reviews, or the click rates of social media posts are suited for this purpose. Repeatedly conducted, such a change readiness analysis makes shifts in attitudes toward the project visible and enables change management to develop communication measures tailored to the target group.

In most companies, much more data can be generated internally and externally than there are skills and resources to exploit the potential that lies dormant within. And while we're at it: To which questions and challenges could Big Data provide us with entirely new answers and solutions?

This is where the data maturity assessment (Fig. 21, page 32) comes in. This is the entity of data capability, data-driven corporate culture and data-driven leadership. With respect to data capability, it is necessary to examine which skills and resources are available for obtaining and using data for change (see page 17). It should also be examined whether management and corporate culture are already aligned with the accumulated data intended to successful change as well as to the core business.

From change intervention backlog to benchmark data pool

The **implementation phase** follows the agile way of working and provides for an iterative process combined with a sequence of control loops with measures, success monitoring and readjustment. Not only are the actual and target values of the respective measure compared, but also the KPI target corridors defined for the overarching transformation goals.

At the beginning of the transformation project, the change team collects and prioritizes the most important measures (Change Intervention Backlog). They are implemented in the order of their probability of success. Change monitoring continuously tracks the status of goal achievement based on incoming data, and the project team visualizes it on a dashboard. Surveys of people involved in the transformation serves as a supplementary "mood barometer". In this way, everyone directly involved in the change has the same information at all times. Transparency ensures the necessary level of informedness and the employees' sense of being in control of the change process. This ensures commitment and proactive action.

If the target values defined at the beginning of a measure are missed, the change team can readjust in order to implement it after all. However, the data analysis may also reveal that the changes targeted by this intervention are not contributing enough to achieving the overarching transformation goals. In the Change Intervention Backlog, the change team reviews the pool of measures that have not yet been implemented, adds new ones if necessary, sets corresponding goals and repeats the procedure. This iterative process is continued until the transformation has been successfully completed.

The change team saves the collected findings on the correlations between measures and target achievement in a data storage system. The company can access this data during the course of the change project or for future transformation projects. In this way, the organization validates and improves its database in the long term and gains benchmarks for future change projects.

V. PLANNING THE NEXT STEPS

The dynamic events in recent times should have proven that change is not just on the agenda every few years. Standing still is a step backwards. Companies have to change constantly to stay on top of their business. Change may be strategically justified. But it is also part of the operational business. For executives, this means to keep an eye on the broad picture. Let's listen to Carsten L. Pedersen and Thomas Ritter, economists at Copenhagen Business School: "Doing business today means navigating a complex landscape of interconnected and interdependent issues, each having multiple stakeholders and agendas."[XI]

Navigating this landscape safely is the task of the command bridge. But finding the best route to get there is the responsibility of change management. As the traffic situation is constantly changing, it has to steer accordingly. To fellow travelers this may look like a zig-zag path. But pointing to the objective navigation data, the steering team will succeed in convincing the doubters.

Ten years ago, many change managers were ahead of their time. We quote from our 2012 Change Management study[XI]: "While there is a gradual rethinking of how change managers are hired and how change is evaluated, companies continue to rely on familiar and proven recipes. It won't remain that way. Thanks to digital platforms, knowledge can be easily shared, stored and recombined. In order not to lose connectivity, change management requires increased sensitivity as well as structures that do not want to avoid surprises, but expect them. This opening and new access to knowledge will alter change management itself in the medium term."

And that's where we are now.

Successful transformations require active input from employees. That's why change managers spend a lot of their time explaining, arguing and dispelling internal resistance. Why have we set this goal? Why did we decide to do this or that? Why are we convinced that the planned measures will take us further? And in countless peer-to-peer discussions: How does the employee benefit from going along with the change? Data is useful in all these unavoidable discussions. At the beginning, it clarifies the meaning of change. Being on the road, it indicates our position. If we're off course, we need to redirect, develop new metrics or measures, and explain them to employees. Due to modern analytics, data has become indispensable assistance to change. It gives managers the freedom to convince employees, which is never in vain and is often even necessary.

To be fair, data-driven change management does not work overnight. Complex analyses require intensive work with data analytics. It's tedious at first, but in the medium and long term it promises to relieve those responsible of their core task – stirring the crew's enthusiasm for the change journey and keeping its momentum alive all the way to the finish line. "You need a strong advocate from leadership to invest in technology and people and to be an ambassador to really drive data," urges a people analytics specialist. But how do you get that done? "It is about emphasizing the benefits of business analytics." We couldn't agree more.

Why data-driven change managers move forward more easily

For David Groombridge, VP of research at Gartner, the main themes for 2022 were: building trust, shaping change and accelerating growth. For this year, he foresees these highlights: generative artificial intelligence, data fabrics as a flexible form of integrating data across platforms and business units, and the distributed enterprise, i.e., companies where employees are spread across home offices instead of the traditional, office-centric organization.[XIII] This means that data-driven change management is not only in line with the trend, but also seems to be tailor-made for the coming developments.

However, implementing vision and strategy through change management needs commitment. "Data can help us find out what people think about change," an expert in building data platforms tells us. "For example, we use algorithms that search for keywords in discussions on social media. That's how we find out whether we're getting attention and engagement on the new topic."

Momentum is crucial, as for many companies it is not only important but also urgent to initiate change now. Given the high level of relevance, change managers are called upon to deliver verifiable successes as quickly as possible. Plainly speaking, most change leaders are under pressure. The fact that they are dependent on the understanding and cooperation of their employees doesn't make things any easier.

We also highlight the enormous benefits of data-driven change management with the results of our latest study (see page 16). Don't managers have enough backpacks to shoulder already? Do the drivers of change, ideally front runners with strong communication skills and outstanding leadership abilities, now have to become shrewd data analysts as well?

All-clear: No, they don't. This task can be delegated to data-savvy members of the change team. Alternatively, employees from the data team can be delegated to the change team. In any case, leadership should familiarize themselves with the possibilities, effects and benefits of data analytics. They do not need to know all details. In oder to assess which data is needed and which tools are helpful, it is sufficient to have an overview of the topic and to distribute the tasks intra- and cross-functionally. Sort of traditional management, so to speak.

More time for people

Even professionals with years of change experience back up their gut feelings with data sheets, graphs and analytics when they need to make decisions. Descriptive data reflects the status of the transformation. Where do we stand? Extrapolations specify the target. Where do we want to go? Prescriptive data analytics indicates the path. In which direction do we need to steer? Our research demonstrates that data-driven organizations bring about change better and faster. Change managers have already given us evidence of this[XIV]:

- ✓ Data-mature organizations are **more agile**. Of the organizations where data is trusted, 79 percent consider themselves more agile, and 62 percent say they can access data as quickly as needed.

- ✓ **Cross-functional collaboration** benefits from this. It makes the work of managers easier and increases the prospect of success.

- ✓ Data analytics sharpens the view ahead, especially when it comes to transformations. Data-driven change management thus **removes uncertainty** from decision-making.

- ✓ Data-driven change management provides more **transparency** in the implementation and achievement of measures, throughout the organization. This reinforces the purpose of the change and gives employees the feeling of being informed and having control over the process.

- ✓ This in turn increases **commitment and proactivity**. When change managers present a clearly defined path, their team and the business departments gain confidence in the strategy. Measurable actions reinforce this effect and increase the willingness to participate. A double benefit: less resistance and a strong tailwind drives the pace.

What to do now

The challenge of data-driven change management is to use data intelligently[XV]. To do this, leaders need (1) a clear data strategy, (2) confidence in data across the enterprise, (3) a state-of-the-art data landscape, and (4) data-driven decisions to take the most effective actions (Fig. 22).

Develop a clear data strategy.
Change managers should be aware of the learnings their companies have already gained so far in dealing with data. And they should understand what data analytics (and data teams!) can do. Both combined grant them a strategic edge. Almost all organizations have a data strategy, but it has hardly ever been used for change. Particularly in change projects, it is important to harmonize people and data. This will be achieved by aligning the data strategy with the goals of the change.

Fig. 22 Steps to data mastery

Source: Capgemini Research Institute Analysis

❶ Strategize	❷ Entrust	❸ Modernize	❹ Activate
Create a data-driven strategy driven by the overall business goals	**Bridge the date trust gap**	**Revamp your data landscape**	**Drive date-powered decision making and actioning**
Align your data strategy with the business strategy	Invest in trusted data availability	Prioritize values streams	Create a streamlined data organization
Have a forward-looking data collection strategy	Etablish guidelines for trusted AI	Decommission legacy in phases	Facilitate data-powered innovation across the value chain
	Focus on data democratization	Migrate to cloud and integrate multi-cloud	Foster a data-powered culture across all levels of management
		Customize data-discovery tools as initiatives scale	
		Accelerate innovation with DataOps	

Building trust in data. Employees' confidence in data and its use is not just a question of technology. There is no doubt that the investment in the availability of trustworthy data is worthwhile. However, whether employees regard data as a tool that can potentially be used against them or as an objective source of information has a lot to do with corporate culture and the credibility of managers. As soon as employees notice success in data-driven change, their confidence in the integrity of data use and change management practices grows. This is a self-reinforcing process – but it also works vice versa. It is equally important that those responsible for the change project keep their employees fully informed: What data will be used? Which tools will be used to collect and process it? How does this pay off in terms of the change project's goals? Various measures and channels are available to provide answers, from personal meetings in small groups to blogs or vlogs in which information is provided about the status of the transformation. The traditional newsletter is suitable for this purpose as well.

Establish a state-of-the-art data landscape. The existing systems and software solutions should fit the data analytics needs of the change team. This can be determined and often achieved with minor technical changes if the team's data analysts discuss their respective goals intensively with their colleagues from IT. IT wants to remain as unaffected as possible by the change. But for change to succeed, identifying, collecting and analyzing the relevant data is crucial. Understanding the special tasks often leads to technical solutions that are comparatively easy to implement. Such as reporting dashboards. Ideally equipped with AI functions, they make a decisive contribution to identifying and implementing the most effective measures.

Making data-driven decisions. If the change team can make a tick mark behind data strategy, trust in data and a modern data landscape, the project is on the right track. Over time, the database becomes broader and deeper, decisions – including those made by employees! – become more well-grounded. And the change journey proceeds smoother. Thus, change leaders become pioneers of a new, data-competent corporate culture.

Our many years of working on transformation projects have shown time and again that leadership and a culture of change have a lasting impact on the entire company. Its resilience grows with the increasing self-confidence of managers and employees in dealing with change. This delivers on the promise of data-driven change management: arriving safely in a turbulent environment.

ENDNOTES

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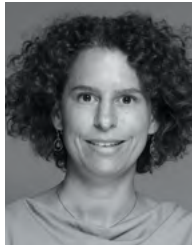outperform their competitors, p. 3.

LIST OF FIGURES

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