

Ten Hurdles Slowing the Transformation

11/05/2023 Artificial intelligence: How managers can clear the path faster for innovations.

Machines that can learn, analyses of complex information with the help of big data, and key collaboration with digital assistants—companies and organizations are grappling with these innovations in the midst of a transformation. Hardly any sector can get away without doing so. In the future, tasks that are hazardous, highly labor or time-intensive, or burdened by huge volumes of data will be handled by automated systems supplied with artificial intelligence (AI).

Marching to the beat of digitalization, there is no alternative to this dynamic transformation. Managers seeking to create value to meet their competitive needs will have to anchor artificial intelligence in their value-creation processes and develop it further on a continuous basis. This is the only future path that can significantly increase efficiency and productivity. It is also the only way to ensure overall quality satisfaction on the part of customers—especially in highly competitive markets.

International experts consider the introduction of artificial intelligence to be as ground-breaking as the

introduction of electricity, which was first put to practical use around 1600. Today, however, everything moves at a much faster pace—including the rate of progress. The online marketing industry is already advanced in its use of artificial intelligence, especially for analytics and optimization. Various other branches, by contrast, lag far behind. Why is that so? Formidable obstacles clearly stand in the way of digitalization—some within the companies themselves, but others having to do with the market or regulatory constraints.

An interdisciplinary team from the Porsche Consulting management consultancy composed of AI experts with a wide range of industrial experience has examined cases in practice. They have thoroughly analyzed the most common hurdles and formulated realistic approaches to overcoming them. The team has been applying these methods successfully with both domestic and international clients.

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Hurdle 1

Hype: It inhibits the ability to reflect

At many companies, artificial intelligence is overestimated as a miraculous cure for complex problems. The hype accompanying this new technology can lead top decision makers to pursue it without sufficient critical reflection.

The Solution:

“The most important principle for all organizations and companies is to gain a sound understanding of the uses, capabilities, and limitations of AI methods by means of targeted further training on the management level. The training should be precisely tailored to specific purposes and will lay the foundation for managers to make the right decisions—decisions that make an enduring contribution to further increasing AI development. Let’s take predictive maintenance as an example of how to critically examine the hype. If an AI model is to predict acute maintenance needs with sufficient accuracy, it needs to have observed precisely those same system errors often enough in the past. But what is the point of prediction alone? If an error occurs ever more frequently, it makes more sense to eliminate the source instead of simply predicting it. This becomes clear if you apply the same reasoning to health—it’s better to improve your health than just to predict diseases.”

Hurdle 2

Focus: When the view isn't sharp

Most applications for artificial intelligence add little or nothing to the bottom line. This is because they're not focused on decisions with the greatest financial consequences for the company.

The Solution:

"In our management consultancy practice we often see use cases with expectations that have not been sharply formulated. Based on a store of existing data, managers take a wide-open view of what analytics might generate for a decision-making process. That's the wrong approach. When choosing applications, we recommend starting by systematically focusing only on the most expensive decisions. And then defining precisely what is needed. For example, determining which data points of which quality, at which frequency, and in which structure are needed, and which analytical approach is best suited to support the company's decisions. The technology can then make measurable contributions to the results and rapidly boost the business in valuable ways."

Hurdle 3

Data governance: Unordered data are useless

It's a mistake to think the mere existence of data is an asset or strategic resource.

The Solution:

"In order to fully exploit the value of data as an asset and strategic resource in the potentially conflicting contexts of compliance, security, data architecture, data quality, tools, processes, roles, tasks, and responsibilities, it's becoming all the more important to have a future-oriented form of data governance. Porsche Consulting recommends that companies position themselves here early on to ensure that individual data-driven use cases don't remain in the island stage but can be scaled up in useful ways. This is especially true for use cases in the fields of AI and advanced analytics."

Hurdle 4

Data protection: Regulations and their limits

Legal requirements like the European Union's General Data Protection Regulation (GDPR) safeguard personalized data and limit its use. But companies seem unsure how to apply these requirements. On

the one hand they fail to see protection-related risks. Yet they also overlook valuable permissible ways of processing data which then remain unutilized.

The Solution:

"It's very clear—you can only exploit the full potential of artificial intelligence and data analytics if you're really sure how to apply the laws and regulations. In addition, the requisite expertise is the only way to avoid risks that might result in substantial business losses, penalties, or damage to the company's reputation. Porsche Consulting therefore recommends investing in solid and ongoing further training for all decision makers right from the start."

Hurdle 5

Acceptance: Even the best methods depend on trust

Digitalization won't work if the people aren't on board. The best AI methods are only as good as their level of acceptance in an organization. Black-box applications like ChatGPT, for example, show astonishing levels of expressive and other powers. It is difficult, however, to check the correctness of their results and to comprehend the associated decisional bases. If a digital model is not sufficiently explainable, this will inhibit trust and acceptance on the part of important decision makers.

The Solution:

"For all AI projects, Porsche Consulting places a premium on the ability to interpret and confirm the results of the respective model. To promote acceptance of solutions in an organization, we always recommend that our clients involve as many stakeholders as possible as well as specialists with the relevant domain expertise early in the design stages. Shared efforts and exchange of information right from the start help people understand the project better, identify with it, and contribute to its quality."

Hurdle 6

Expertise: Is sufficient specialized knowledge available?

Many companies have recognized the relevance of artificial intelligence. On closer inspection of their resources, however, they often lack internal know-how and sufficient expertise for the technology to become effective and sustainable. It is also rare to find a company with a comprehensive AI organization. These are typical reasons why AI initiatives do not develop sufficient capacity or achieve their goals.

The Solution:

"To develop AI and put it into practice, specific knowledge and skills are required for every aspect of the applications and their implementation. Especially complex AI models like deep learning require the attention of specialists. Top-level managers also have an important task—they need to determine ways of securing expertise within their companies' strategic frameworks. That includes developing internal resources, such as centers of excellence, partnerships, and the purchase of external AI services. Our direct experience in management consultancy shows that if companies concentrate from the start on a small number of well defined and clearly delineated projects, and then develop and implement them together with strong partners, this will lay a strong foundation for further AI solutions and a step-wise increase in well-founded know-how. Real competitive advantage is one of the measurable results of this approach. With its consolidated skills and knowledge from a wide range of industries, Porsche Consulting's AI and data analytics team can provide support in all areas here—from managing projects and structuring organizations to putting AI models into practice."

Hurdle 7

Transparency: If data management is weak

If a company's internal data management is weak, for example if the data are inconsistent or difficult to integrate, this can greatly limit the potential of AI and advanced analytic applications.

The Solution:

"To fully utilize the potential of AI, companies have to ensure good data management and transparency both internally and in B2B contexts. The foundation consists of generating data transparency on a company-wide basis. This can take the form of a central data catalogue. It has to secure not only an automated supply of data for specific use cases, but also the ability to apply the generated data or results to downstream systems. This is particularly relevant for data in B2B settings. Porsche Consulting supports companies in establishing good internal data management and transparency early on, so they can pursue use cases sustainably and scale them in advantageous ways."

Hurdle 8

Collaboration: If information is not shared

Different expectations and approaches to work within project teams can prevent data analytics or AI from yielding the desired results. The teams end up recommending data analytic solutions that do not

address clients' real pain points. That in turn leads to unrealistic expectations on the part of clients and within the project teams.

The Solution:

"To design a successful project in artificial intelligence and data analytics, experts have to be involved from the start. This is the best way to achieve realistic and superior solutions for the client. Expectations are met and a realistic timeline is drawn up. In all of its projects, our team at Porsche Consulting focuses on people—because success is based on coordinated and productive exchange of information and methods between consultants and data scientists."

Hurdle 9

Responsibility: Who has the big picture?

The wrong project set-up makes it hard to break up silos in organizational structures, processes, and data. That in turn makes effective overall analyses nearly impossible. We observe individual departments using AI solutions to optimize their own areas, while companies as a whole neglect to improve their core processes in general.

The Solution

"To ensure effectiveness, the major impetus for applying data analytics and AI should come from the individual responsible for the process. Not the IT experts or data scientists. We support management personnel in clearly defining the tasks and establishing the data owners who need to ensure high levels of data quality in their respective functions. We make sure that a sustainable organizational foundation is laid for applying artificial intelligence. AI projects should be set up as classical end-to-end processes with all relevant stakeholders constantly involved."

Hurdle 10

Infrastructure: Groundwork prevents bottlenecks

Disappointing results from data analytic and AI projects often have the same simple cause. Expectations cannot be met because the infrastructure groundwork hasn't been done. That quickly leads to bottlenecks in project routines.

The Solution:

“Ever greater volumes of data, high query rates, insufficient real-time capabilities, and the confluence of multiple data sources can lead to bottlenecks in the data infrastructure. The infrastructure needs to be sufficiently dimensioned for short-cycle analyses or model iterations. Whether in cloud or edge computing contexts, when setting up a sustainable analytic infrastructure the big picture always needs to be considered, from the data sources to the intended analytic use cases. This is the only way to ensure that all requirements are integrated and the systems are powerful enough to handle them. For instance, companies have long been interested in predictive maintenance. But unfortunately, they have only rarely invested in the edge infrastructure for networks in their factories.”

Info

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