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At the Organization's Driver's Seat with a Digital Twin

Digital Twins of an Organization (DTOs) have garnered increasing attention among IT leaders across the world. Originally adopted from its ancestor, the *Digital Twin*, DTOs provide promising benefits for the management and steering of organizations, including the identification of bottlenecks, reduction of productions costs, improved quality of outcomes, and a suitable vehicle for breaking up silos and driving the transformation of a firm. In this article, we will introduce you to the cockpit of such a vehicle and provide guidance on how to realize your DTO.

What is a Digital Twin?

The concept of digital twins has been around for three decades. Initial ideas and implementations occurred in the early 1990s.¹ Typical use cases are often found in engineering, namely in the form of CAD² models and process simulations. The beauty of the concept, however, not only lies in having a digital representation of physical entities, but also in having a data flow between the real and digital world. This data flow enables users to better understand and learn about the current real-world entity, plan and simulate novel designs, and re-apply such designs to reality. This, of course, produces obvious benefits: the identification of bottlenecks, a reduction in production costs, and an improved quality of outcomes.

What is a Digital Twin of an Organization?

A Digital Twin of an Organization expands the existing concept of digital twins. The increasing interconnectedness of in-house IT, cloud systems, and IoT³ allows organizations to gather and integrate data from a wide variety of digital endpoints to create a digital representation of their organization and its interfacing ecosystem—from the first supplier to the last customer. Increasing interconnectedness, along with the benefits of digital twins, led to a surge in adoption of DTOs during the past five years towards its preliminary peak. It does not seem to have stopped here.

DTOs help solve the challenge of opening organizational silos. Problems related to organizational silos are well-discus-

sed in theory and practice. Resolving organizational silos, towards holistic end-to-end management and execution, is certainly a challenging task that is part of every transformation agenda. However, how do you overcome organizational silos? DTOs provide an understanding of how an organization functions. Moreover, the transparency of DTOs sheds light on organizational grey zones and black boxes. Thus, leaders can re-design the existing organization by integrating functions and streamlining delivery to reduce information- and production-flow bottlenecks. The results of implemented changes once again become visible by the DTO, effectively empowering management by providing a closed-loop, data-driven tuning tool. This enables leadership to reap the same benefits as realized by adopting the original concept of digital twins: a reduction in production costs and improved quality of outcomes. Furthermore, the identified potentials often pave the way for a new level of alignment via interdisciplinary collaboration to ultimately boost a company's digital innovation capabilities.

DTO as a Vehicle Towards Success

Creating, maintaining, and driving a high-performance vehicle requires the interplay of various elements. Gartner⁴ boils these elements down to **destination, map, performance, situation, and value**.

The **destination** of an organization is described by its strategic management. Vision, mission, strategy, and business models can be used to define a broad target to which your organization should be driving.

¹ see i.a. Hillel (1991): "Mirror Worlds: or the Day Software Puts the Universe in a Shoebox."

² Computer Aided Design

³ Internet of Things

⁴ see Gartner (2021): "Market Guide for Technologies Supporting a Digital Twin of an Organization."

The Building Blocks of a DTO

Destination:

Information about your desired destination and when you would like to arrive there.

Map:

A guide showing how to reach that destination – your organization's GPS will only be as good as its map database.

Performance:

An Indication of how far along you are on your journey.

Situation:

Situational Awareness (i.e., organizational awareness of roadblocks and challenges on the road ahead).

Value:

Accurate Information on your organization's progress and situation to enable informed decision making.

The **map** is provided by an organization's EAM⁵ function. EAM provides an overview of the paths, streets, and traffic lights, capabilities, value chains, and ecosystem interfaces, that you should consider or want to create while driving towards your destination.

The **performance** of an organization is measured in kilometers per liter or miles per gallon. Portfolio management provides transparency regarding what portfolio items are transforming which aspects of the map,

⁵ Enterprise Architecture Management

⁶ see Parmer et al. (2020): "Building an Organization Digital Twin."

including how far we plan to go and how far we have come. Financial management defines how big our gas tank is, our fuel consumption, when we should refuel, and what options we have for refueling.

The **situation** of an organization is made transparent by human resource and supplier management, and provides answers to questions like *do we have the right skill and sourcing mix to steer the vehicle? What organizational dependencies slow us down while driving? What leadership models should we adopt to overcome recurring roadblocks?*

The **value** can be measured in two ways and depends on whether you take on an internal or external target and perspective. On your road trip, you can either let the business hop on and measure how internal demands have been fulfilled and outcomes have been realized, or you can transport external customers and users of digital products and services, which then provide you with feedback in the form of how many booked and joined a trip and how they enjoyed it.

The Path to DTO

As DTO adoption continues to surge, science increasingly reflects on the topic. In their article "Building an Organizational Digital Twin," Parmar and colleagues⁶ propose five steps for a path towards creating a DTO:

1. **Start with what you have**
2. **Set the data free**
3. **Move the digitization frontier**
4. **Seek new digital opportunities**
5. **Increment the models**

In the following, we will summarize the core insights.

1. **Start with what you have** describes that for building a DTO you should review the available data and data sources of the area that you want to start with. Existing templates and consultancies can be used to review the existing data and sources and to integrate them in a common model. It must be clear that this “[...] does not result in a complete representation of the organization [...]” (Parmar et al. 2020). The urge to create a complete representation right from the start should be resisted as a DTO “[...] cannot be fully crafted but will emerge gradually [...]” (ibd.).

2. **Set the data free** aims at the fact that most data are locked in organizational silos. This data needs to be extracted, integrated within a DTO and then made available to stakeholders to unleash the potential and draw interest to integrate further data.

3. **Move the digitization frontier** means that all potentially valuable data is not necessarily digitized right of the bat and aims at “[...] assets and processes within the organization that are either only partially digitized or not digitized at all [...]” (Parmar et al. 2020), local legacy, for instance.

4. **Seek new digital opportunities** rests on the foundation that has been created up to this point. The integrated data within the DTO opens the door for new opportunities, either, as it becomes increasingly reasonable to integrate further areas or to realize new use cases with the existing data.

5. **Increment the models** describes two key activities to further broaden the scope of a DTO. First, the DTO must be maintained and, second, as the organization grows and evolves, the DTO's scope must be actively extended to match reality.

Digital Twin of Your Organization With Bee360

Bee360 provides you with all of the required **building blocks of a DTO**. Moreover, Bee360 puts a holistic perspective on an organization's operating model at its heart. It combines strategic management, enterprise architecture management, financial management, project and portfolio management, human resource management, supplier management, and demand and agile product management. This combination provides your organization with everything required for defining **destination, map, performance, situation, and value** (see Gartner 2021, above).

The **path to DTO** should begin small and **start with what you have** (see Parmar et al. 2021). Bee360's modular approach makes it easy to focus on a certain management area and continue from there. Furthermore, a template can boost your journey towards a DTO. The Bee360 standard provides a template for DTOs and facilitates extracting and integrating data from your organization to **set the data free**.

Starting from an initially established management area, we often **move the digitization frontier** as desired by our customers and as required by their organization. With our customers, we follow the approach of second best of breed but best of integration to continuously **seek new digital opportunities** that we can share across the community. We forge long-lasting partner-like relationships **to increment the models** on both levels (i.e., individual customer DTOs and our Bee360 standard). If you are interested, we are always happy to discuss your individual journey to DTO, as well as where and how to start. You don't need to reinvent the wheel.

About the Authors:



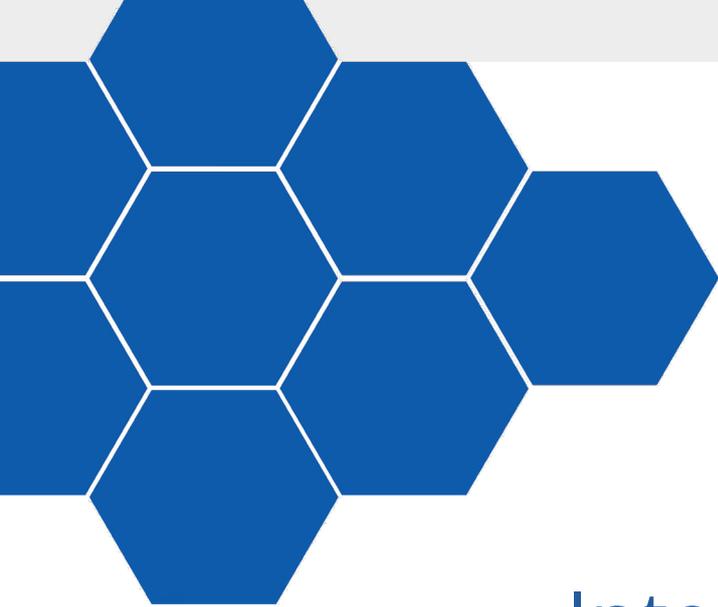
Dr. Corvin Meyer-Blankart

Driven by his genuine interest in technological advancements, Corvin is motivated to establish new ways of working to leverage digital innovation. His experience spans from vision and strategy to support, from local SMEs to globally active corporations, and from B2B to B2C industries. This contextual in-depth knowledge enables him to identify and communicate organizational, technological and processual requirements to drive a departure from the traditional towards an agile and customer centric approach.

Uwe Herold

Uwe has an excellent command of developments in the industry, and how enterprises should best exploit them as they move toward rapid digitalization. He has been in charge in the CIO role at Brose Automotive, SAP and Heidelberger Printing. Since 2014, Uwe is SVP for Information Technology at Miele & Cie. KG. In this role, he is responsible for the group's global internal IT and, together with the Smart Home division, for Miele's digital products for consumers. At Miele, he is particularly committed to transforming the company into a real-time networked digitalized Miele organization.





Interested in Learning more about DTOs?



Watch our WeBeenar: "Achieve Holistic IT Management With a Digital Twin of Your Organization".

In this WeBeenar, Bee360's Chief Sales Officer Philipp Hansert presents how you can define and realize DTOs.



Watch the WeBeenar [here](#)

Bee360 is your partner for holistic management. We stand with you in your transformation journey and deliver the right software for an effective execution. We deliver step by step to the desired maturity degree.

