

Industrie 4.0

PLATFORM ECONOMY: CONNECTING MARKET PARTICIPANTS

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Digital platforms are springing up everywhere in mechanical and plant engineering. They create the link between market participants online and they also create the infrastructural basis that enables business partners to interact with one another.

By Volker Schnittler

Digital platforms are standardized exchange formats for information, data security and data integrity. Data hosting, data analytics and tools that enable providers of products and services to design their individual ranges are also among the core, basic functions of digital platforms.

Platform operators give their customers an environment in which they can offer their products on the market in their own individual style, deeply integrated into their customers' IT solutions.

Different platform types

There are different types of offer on the market. The first category is online marketplaces. These link the offers of various products and services that are used by different market participants together or in a complementary fashion. Examples include machinery, tools, raw materials, loans for financing machinery and customer services. The primary goal of these market offers is to offer and sell physical goods, with the platform playing the role of matchmaker. The supply and demand sides stimulate one another, creating the network effect typical of business platforms.

Runtime environments and IoT platforms form the second category. On these platforms, providers offer infrastructure, standards and tools, enabling end-to-end business processes between the market participants. Information and performance characteristics are thus provided digitally; the consumer of these services can use them to optimize and expand his business processes. As a result, it is possible to position products on the market in a basic configuration. The provider delivers the product with the potential to use additional performance characteristics, which are then charged separately. It also enables the market participants to cooperate more closely and enhance customer retention.

Network effects create growth

One thing that all platform types have in common is their role as market players and hubs online. They create markets, connect market participants and form the basis for dynamic processes that create value. The network effects compared to classic markets are particularly noteworthy, generating lively growth for the platforms when platform users coordinate packages of services accordingly. As the number of participants grows, the platforms become more attractive and the transaction costs per interaction fall. The platform providers make sure that the barriers to entry for the users of their products and services are kept low. Strong growth is intended as the main driver of business success for the platform providers. Platform operators supplement this initial offer with premium services that enable users to achieve higher profits through additional applications thanks to a marketable price strategy.

In the final basic function of their platforms, platform providers standardize rules of behavior for business interactions and minimize risks through the transparency and bindingness of high-quality products and services. After all, connecting the information resulting from the interaction between market participants and interpreting it in a targeted way leads to new potential, which manifests itself in new products and services.

Platforms with a sector focus

Platforms can have different structures when it comes to how those involved access them. Open platforms are freely available to both customers and providers. Most cover a broad portfolio that appeals to a range of industries and markets. Platforms that are closed from the provider side are aimed exclusively at a provider's customers. They are focused on this provider's products when it comes to customer benefits, and offer the customer considerable network effects. A typical feature of this kind of platform is the location of multiple product platforms together on a single infrastructure platform - for example a provider of machine tools with a steel supplier, a logistics services provider or a financial services provider. Sector platforms, in which competitors from sub-sectors appear together, are less common.

Industrial ecosystem for the IoT

The type of platform that serves to implement Industrie 4.0 scenarios across different companies deserves special attention in mechanical and plant engineering. At their core is process integration between the users of machinery or systems and the manufacturers or service providers. This is relevant in the service and spare parts business, but also regarding the form of scalable performance characteristics on machinery or systems that users switch on or off depending on the use. If manufacturers are to be able to access users' operating and performance data, solution approaches like this could play a big role in developing and improving products. The architecture and role distribution in scenarios like this is defined as follows: Infrastructure platforms, which offer data management structures and design options via cloud services based in data centers, form the basis of a successful ecosystem. Providers of IoT platforms are becoming established on this basis, enabling connections between machines and offering associated digital services. Product and service platforms bring together developers and providers of applications, microservices and software solutions defined by specific functions. Machinery providers are also offering their products here. End customers can then use their machinery supplier's range of products and services via the platform as required.

Very dynamic trend

Industrial sectors such as mechanical and plant engineering have developed just as dynamically as consumer markets in recent years. The largest platform providers in the investment goods industry are already getting into position to conquer the market. To counteract this, platforms in collaboration with medium-sized companies have recently begun to spring up. This independent development centers around the idea of securing data sovereignty and data integrity for platform users.

Formulating standards

In this context, VDMA considers itself obliged to formulate effective, commercially-compliant standards and to establish them in a stable legal framework. ■

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