



▶ B2B Platform Play

Revolutionizing the rules of B2B industries
with platform business models

INSIGHTS

//01

B2B platforms are on the rise. Traditional industrial players need a suitable answer on how to deal with platform plays in order to maintain their competitiveness in the future.

//02

78% of B2B marketplaces and 94% of asset sharing platforms are currently driven by start-ups with significant VC funding. Incumbent players need to act now before the window of opportunity closes.

//03

Other than in B2C industries, the B2B platform play will not be a winner takes it all game. Even in the “contributor role” to leading industrial platforms, incumbent players can benefit.

//04

Now is the time for industrial incumbents to define their own platform play as the battle for dominant platforms is still at the beginning in most B2B industries. Driven by network effects, economies of scale, and built-in stickiness of platform models it will be exponentially hard to overturn the dominance once platforms in an industry found traction.

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01

The rise of B2B platforms

To streamline value creation and consumption, the world increasingly relies on digital platforms. Regardless if the value created is stemming from products or services, minimizing transaction cost to create value by matching demand and supply via digital platforms promises significant opportunities for all involved parties. This is why platforms arise in many—if not all—industries.

It is not new for consumers or businesses to identify places where supply and demand meet. City centers, weekly merchant markets, and trade fairs are examples of physical platforms where goods and services have been exchanged, prices compared, and the latest and greatest innovation discovered for centuries. Nowadays, the exponential development of digital technologies enabled supply and demand to break free from such physical constraints, allowing companies to conduct transactions online, at marginal cost.¹

Enter digital platforms

Platforms first originated in the industries with the lowest risk for (and requirements from) both parties of the value transaction: C2C (“consumer to consumer”), also known as P2P (“peer to peer”). On platforms such as eBay, for both, sellers and buyers the value created or consumed was clear and risks limited as platform functionality focused on the facilitation of basic transactions. As trust and volume on digital platforms started to grow, businesses identified the opportunity to serve additional demands by participating on these platforms or building new platforms themselves. Nowadays, the most valuable companies in the world are built on platform business models and have long since become an integral part of our everyday consumer life. With seven out of the ten most valuable companies relying on platform business models—B2C (“business to consumer”) platforms such as Amazon, Alphabet, and Tencent have proven superior value creation.²

The promising economic mechanisms underlying the success stories of these B2C platforms caught considerable attention and B2B players are increasingly trying to bring platforms into their industries to streamline value creation and consumption. Several B2B platforms have been around for a while, but most endeavors are in their infancy. However, with first signs of maturing and commercial success.

While all platforms—both within B2C and B2B industries—share the similarity that they fundamentally build on the economics of network effects as well as economies of scale,

the rationales for entering platform play in a capital goods context needs to be analyzed in more detail, as there are considerable differences from B2C. B2C platform success is undisputed but since there are still only a few successful B2B platforms, platform play should not be considered a panacea.

This Porsche Consulting strategy paper seeks to shed light on how the rise of B2B platforms will help redefine the rules of the game in industrial goods and services. After initially achieving a joint understanding of B2B platform plays,

▶ **Chapter 2** outlines the similarities and differences between B2C and B2B platforms.

▶ **Chapter 3** provides insights on how to capture the business value, including rationales of all involved parties of a platform.

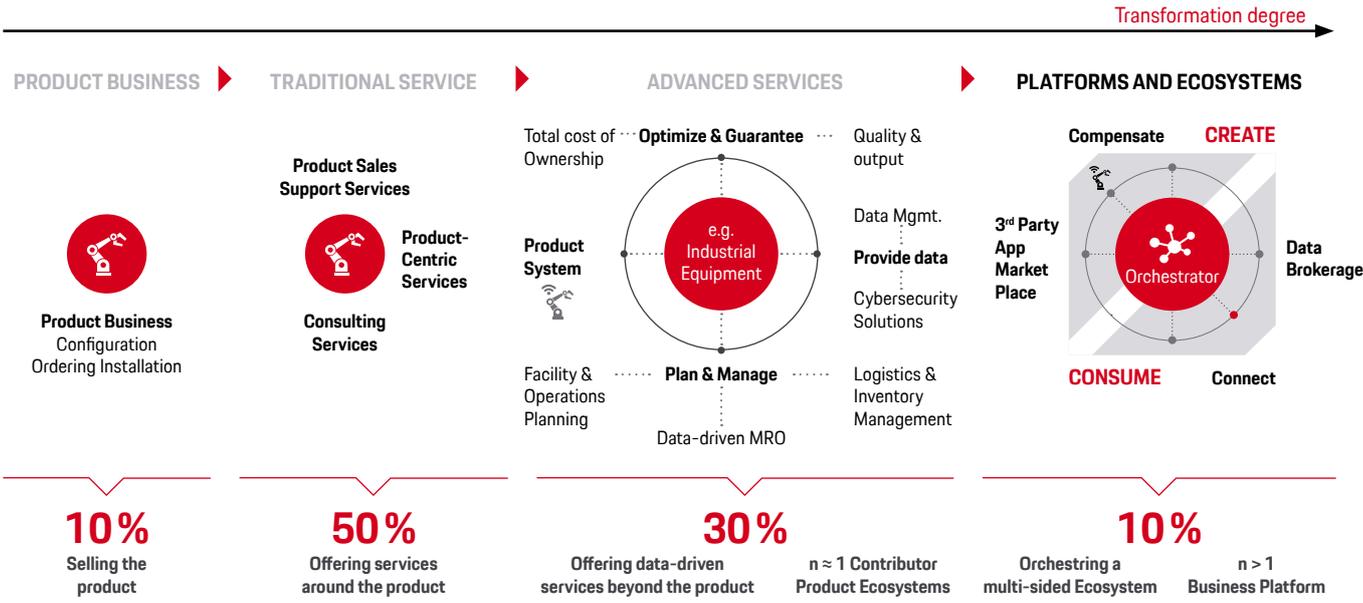
▶ **Chapter 4** outlines the key considerations to craft a winning B2B platform strategy, starting with the question when and if platform play is the right strategy. It further provides step-by-step guidance to determine options based on the position in the ecosystem to participate on platforms of others or develop one’s own platform.

▶ **Chapter 5** outlines how industrial goods players can operationalize their platform endeavors by building a suitable operating model along success factors from B2B platforms that have already gained traction.

▶ **Chapter 6** summarizes the strategic imperatives for executives of industrial goods players to navigate their “platformization journey.”

Porsche Consulting's understanding of B2B platform plays

As described in more detail in the Porsche Consulting publication "Beyond the product,"³ platform and ecosystem plays represent the most transformational stage of servitization strategies. While many players in the B2B space are tapping into new value pools by providing advanced services that go beyond their products, so far only a few bigger players have gone further to provide true business platforms.



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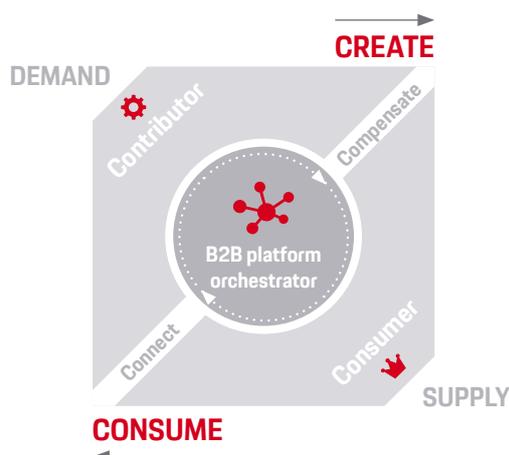
Fig. 1. Platform play as the most transformational step in the context of servitization strategies

The term platform is used in a variety of contexts and with a broad range of meanings. In the literature, platforms are defined as "two (or multi)-sided markets, [...] to enable interactions between two or more distinct but interdependent groups of users so as to generate value for at least one of the groups."⁴ Many definitions stretch the topics of "technology-enabled business models [...] built on a shared and interoperable infrastructure, fueled by data and characterized by multi-stakeholder interactions [...] to enable value exchanges throughout an ecosystem."⁵ In particular, there is a focus on the feature that "a key characteristic of platforms is that the value they create for an individual user increases with the total number of users"⁶ —in a nutshell, positive network effects for both the supply and demand side.

According to Porsche Consulting's understanding—and for use in this white paper—B2B platforms go beyond mere technical platforms, focusing more on the fundamental economic mechanism of two- or multi-sided business ecosystems.⁷

Following this view, B2B platforms enable transactions between several ($n > 1$) contributors on the supply side and multiple customers on the demand side ($m > 1$). In the industrial goods and services context, transactions covered by the platform comprises of products and services (including digital services) as well as bundles of product and services that allow new usage- or outcome-based business models. By this definition, platforms are different from typical e-commerce activities of industrial players such as online shops, or other B2B commerce solutions and in fact represent a new (digital) channel for existing product (or service) business. It is necessary to draw this line, as true (business) platforms allow tapping into different, but more complex, mechanisms for value creation and allocation between multiple stakeholders, which we shed light on throughout this publication.

B2B platforms as two- or multi-sided business ecosystems that provide value for demand and supply side by orchestrating creation and consumption



Orchestrating transactions in a two-/ multi-sided contributor-consumer ecosystem

Curating transactions

via audience building, matchmaking, and supporting fulfillment

Governing platform ecosystem

via providing rules and standards plus tools and services, and managing the community and partners across the platform tech stack

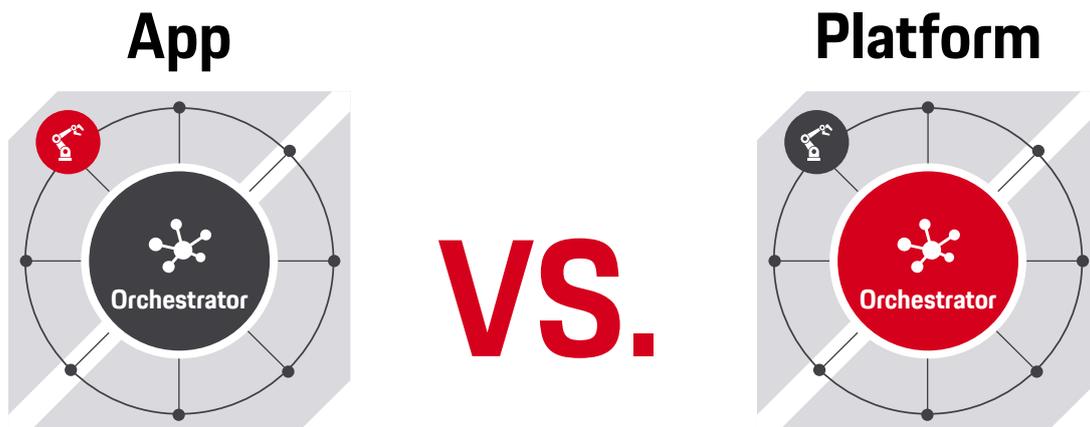
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Fig. 2. B2B platforms as two or (multi)-sided business ecosystems

As depicted in Figure 2, B2B platform value arises from a combination of creation, consumption by contributors and consumers, and curation by the platform orchestrator. The orchestration of value-adding transactions first requires curating the transactions, e.g., credentialing, cataloguing, and also building sufficiently large supply- and demand-side audiences. Second, matchmaking for single transactions requires, for instance, pricing, supporting comparability of an Stock Keeping Unit (SKU)-like offering, and metering as well as payment. Third, supporting fulfillment towards the demand side typically comprises logistics, customer support, mechanisms for dispute resolution, and often also community building. In addition, other services such as financing can be layered in. The platform orchestrator has the pivotal role in governing the platform ecosystem by defining suitable partners along the technology stack to do so—from the infrastructure layer to the applications and digital services on the software layer on top of it.

When shedding light on B2B platform play, it is key to address the strategic considerations for companies to define their competitive position in those industries where platforms rise. In a nutshell, this consideration and anticipation of market dynamics boils down to the decision of positioning as a platform (orchestrator) or being an app within another player's platform(s). The latter can also mean to integrate not only a single digital solution, but to seamlessly integrate an entire product ecosystem into a platform. Key determinants in these decisions are about existing relationships to (strategic) partners along the dimensions of control, influence, and dependency—either at present or in the future.

Virtually all industrial players are (or will be) confronted with the decision to focus on being an app or becoming a platform orchestrator



Platforms (now and in the future) are arising across virtually all B2B industries

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Fig. 3. Strategic decision: app versus platform orchestrator

Surely, the decision is not completely black and white as models are arising where significant contributors or customers of a platform get a seat at the table. But at its core, this decision has a huge impact on how companies should transform in order to remain competitive.

The decision to be an app on a rising platform might impose an extension of the (digital) product portfolio and the servicing of a new sales channel (where it is crucial to participate on

the platform that will prevail in the long run), whereas the decision to focus on being a platform has even further-reaching consequences. To offer a platform, an incumbent player needs to first be a software company that governs and services an ecosystem of partners and customers, rather than exploit the platform for incremental gains in the original core business. While these concepts sound simple on paper, they are very hard to implement in practice.

Dissecting B2B platforms

B2B platforms—on the rise, but not (yet) at the level of B2C platforms

With a volume of \$14.9 trillion in 2020, e-commerce in the B2B industry is over five times the size of B2C industries.⁸ Despite the fundamentally larger market, only a fraction of this transaction volume is currently conducted through multi-sided B2B platforms. This will change, as an increasing number of platform plays are gaining traction in B2B industries.

The Porsche Consulting analysis shows that up to 35% of the top 20 companies in the sectors of industrial machinery and plant engineering, agriculture and agrochemicals, and health-care and life sciences are driving platform business models.

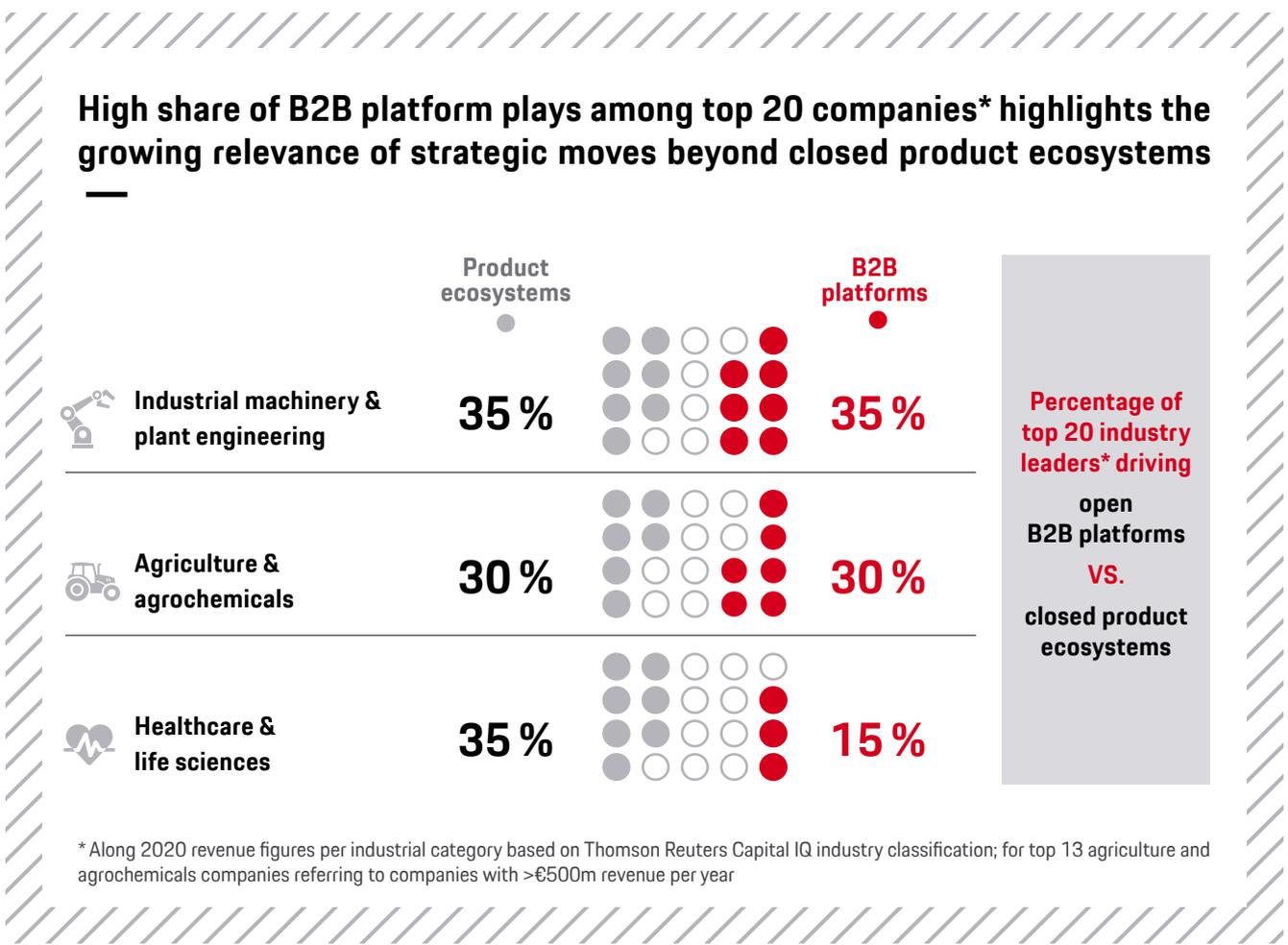


Fig. 4. B2B platforms are on the rise far and beyond the top 20 industry leaders

To understand the reason why platforms have not yet taken off in B2B and why they have a lower maturity compared to B2C platforms, it is paramount to understand the similarities and differences for platforms in a consumer and business context. Fundamentally, platforms, both in the B2C and B2B world, support aggregating the fragmented supply and demand

side and help participants benefit from economies of scale and positive network effects on the contributor and consumer side. These economic mechanisms result in a fundamental stickiness of platforms once a certain critical mass is achieved and build the basis for exponential rather than linear value development of such business models.

Once launched successfully, platforms can scale much faster than other governance models. Their modular structure, alongside clearly defined and stable interfaces, makes it easy for new participants to join and poised for rapid growth.

Moreover, an open platform helps attract smart people to build applications and their own businesses on the platform without the need to find and employ them yourself.

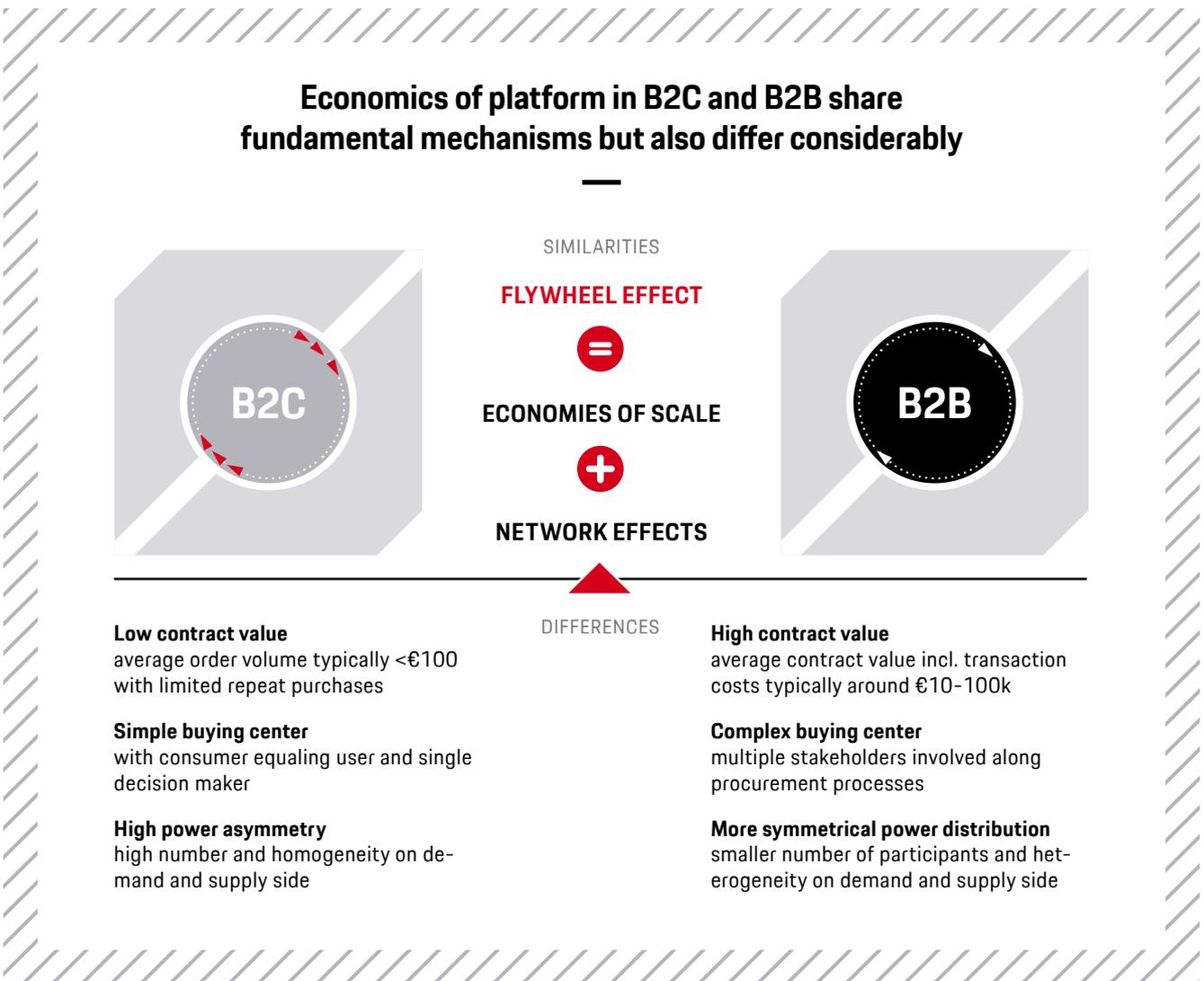


Fig. 5. Similarities and differences of B2B versus B2C platforms

There are nevertheless key differences to be considered that lower the impact of network effects compared to a B2C context, as depicted in Figure 5. The B2B setting is characterized by generally higher transaction values and transaction frequency, and consequently more sophisticated procurement

processes, with multiple stakeholders involved. Complex buying centers with multiple stakeholders govern the decision to join a platform, both on the demand and supply side. Such elaborate procurement processes—in contrast to more spontaneous decisions in our consumer lives—are required

to carefully consider dependencies and cater to the need for long-term economic stability to operate in more complex value creation chains. Compared to B2C, network effects and platform gravity are lower due to the more symmetrical power distribution between supply, demand side, and platform orchestrators. Generally, there is a much larger relative weight of single parties both on the supply and demand side, where companies can negotiate individual contracts more at eye level to the platform orchestrator. In addition, B2B players tend to avoid “bigger” dependencies by following dual- or multi-sourcing strategies when it comes to areas that impact their core processes and that could fundamentally alter their competitiveness.

Positive network effects and the intended flywheel effect⁹ are still the key rationale for B2B players to enter platform plays—when considering the power distribution in an endgame. To initially scale a platform to a critical mass and get the flywheel spinning, platforms need to create significant value for both sides of the platform AND sufficient incentive for the orchestrator. In short, platforms require a win-win-win value proposition to unlock the attractive benefits of network effects and economies of scale that lie at the core of a platform business model and differentiate those from traditional linear business models.



// CONTRIBUTORS

Contributors create the supply side of B2B platforms by providing their (digital) products or services via the platform. Platforms in this context help contributors tackle two fundamental challenges: efficient development and efficient distribution.

Standards embedded into the platform via a suitable platform architecture based on abstraction and configuration of interoperable micro-services build the basis for the efficient development of the supply side. Additionally, platforms help split the considerable investments required to build up a reliable and scalable platform

infrastructure, which a single contributor would likely be unable to bear. The efficient distribution enabled by platforms helps multiply the reach of the contributors and streamline procurement processes. Contributors may also leverage multiple platforms as additional new sales channels on top of their own to tap into additional reach at relatively low channel cost – often referred to as multihoming. For B2B industries that are characterized by complex sales channels, the lower transaction cost for acquiring new customers and expanding within existing customer accounts is a key value proposition.

// CONSUMERS

Consumers represent the demand side of platform plays by consuming available (digital) products or services and paying for them. Fundamentally, B2B platforms help consumers better conduct their business along three dimensions: efficient purchasing, decreased supplier lock-in as well as easier access to innovation. Platforms drive standardization.

By aggregating and “SKU-tizing” the supply side, they improve transparency (including easy comparability of price, quality, and

availability) and provide a larger offering of solutions for customers. Access to a broad portfolio of relevant applications, paired with lower effort for exploration, screening, and selection lowers transaction costs. In addition, platforms promote competition for innovation through the transparency they provide, rather than price-only competition within an ecosystem.

// PLATFORM ORCHESTRATOR

Orchestrators ensure that both contributors and consumers on the platform can realize the value propositions mentioned above and boost their efficiency and productivity. By curating both, the demand and supply side via credentialing mechanisms and by improving comparability of SKU-like offerings on a platform, the platform orchestrator lays the basis to enable transactions at minimal transaction cost. By managing the compensation for those transactions via standardized business models and billing procedures, the platform orchestrator itself builds the basis for monetizing the ecosystem. Ultimately, the value proposition for the platform orchestrator is to exploit and monetize the created network effect

on the supply and demand side. In general, the larger a platform, the higher the stickiness and the higher the monetization potential.

Drawbacks of platforms becoming too big and create undesired dependencies (such as shown in B2C¹⁰) will, however, most likely limit the magnitude of network effects in a B2B context. With more rational decision-makers involved, B2B platform orchestrators need to carefully weave trust mechanisms into platform design so as not to scare away platform participants in the first place.

A closer look at digital platform archetypes and how they differ from B2C equivalents

Considering a B2B platform play, it is key to understand the different digital platform archetypes that can be empirically observed in the market. This paper focuses on the three most important platform archetypes for industrial companies:

01

Industrial IoT platforms

... providing data-driven apps and services on a standardized connectivity architecture to manage plants and equipment

02

B2B marketplaces

... facilitating digital transactions of goods and services from multiple vendors and buyers with layered-in services

03

Asset sharing platforms

... matching asset owners, who sell access to underutilized assets, with companies with a lack of asset capacity

Industrial IoT platforms

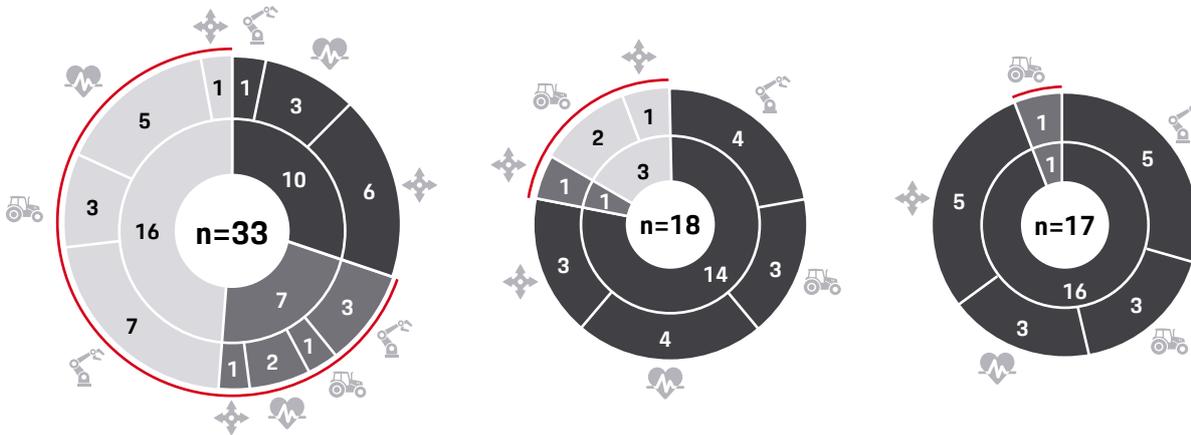
70%*

B2B marketplaces

22%*

Asset sharing platforms

6%*



*Percentage of incumbent-driven platforms

- Integrated into incumbent
- Spin-off of incumbent
- Start-ups

- Industrial machinery & plant engineering
- Healthcare & life sciences

- Agriculture & construction
- Other industries & industry-agnostic

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Fig. 6. Empirical analysis of platform ventures driven by incumbents and start-ups along market characteristics

Based on the analysis of 68 B2B platforms, predominantly from Europe and the US, Industrial IoT (IIoT) platforms are the key platform type considered by industrial goods and service firms across sub-industries that come from their historic product DNA (see Figure 6).¹¹ In contrast, B2B marketplaces and asset sharing platforms that consolidate the fragmented long tail of supply and demand in their industries are predominantly driven by start-ups, or—in a few cases such as

Chemondis (LANXESS) or Tapio (Homag Group)—owned by incumbent players but run as independent spin-offs. Figure 7 provides an overview of exemplary B2B platform plays that have gained traction in their respective markets. While the B2C space is dominated by U.S. players, European-heritage platforms in the B2B space are fighting for dominant positions within the industries or ecosystems they serve.

An increasing number of B2B platform plays gain traction across B2B industries



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Fig. 7. B2B platform plays across industries and the three archetypes

The platform types predominantly differ from the underlying subject for transactions, which builds the core of the platform value creation: traditional products or services, new digital services, or even a combination thereof, either offered as subscription models or longer-term contracts with new usage- or

outcome-based business models around sophisticated SLAs and performance KPIs. The following section describes the three types and their differences in more detail, together with concrete examples.

01 // Industrial IoT platforms

Gartner defines IIoT platforms as "... a set of integrated software capabilities to improve asset management decision making and operational visibility and control for plants, infrastructure and equipment."¹² Such IIoT technologies are specifically conceptualized and built for use within asset-intensive production environments. Within such environments, the IIoT platform takes care of the collecting, aggregating, and analyzing of data for improved decision-making, better process transparency and ultimately efficiency, productivity, and quality gains. IIoT platforms help to move beyond the inherited "break-fix-service" paradigm of reactive services towards a more preventive and predictive mode. Open IIoT platforms provide a standardized connectivity architecture that contributors can build their applications and services upon to achieve exactly this.

EXAMPLES

Companies such as Schneider Electric with its EcoStruxure platform have opened their IIoT technology stack and are moving beyond legacy automation and control systems and proprietary software suites. While Schneider Electric has previously built the foundation and a robust technological infrastructure with its own "advisors" (via a SaaS license model) and various digital services (as longer-term service contracts along SLAs), they now offer platform Application Programming Interfaces (API) to third-party Original Equipment Manufacturers (OEM), system integrators, and plant manufacturers. These APIs comprise technical basic functionalities such as identity and access management, or fundamental analytics capabilities and are offered in a bundle: the PaaS (platform-as-a-service) business model.

Industrial goods and service players such as DMG Mori have extended their proprietary software suite, MyDMG Mori, via their Werkbliq platform, which allows management of machine parks from different vendors. DMG Mori is also active in the ADAMOS platform, an industry syndicate for mechanical and plant engineering aimed at creating standards and allowing solution providers to set up the digital offer portfolio.

Within agriculture, open platforms can be observed such as 365 FarmNet, which originated from the German agricultural machinery manufacturer CLAAS as another IIoT platform example. More recently, the industry also pushed forward the DataConnect endeavor. It ensures interoperability of proprietary telematics platforms through standardization across the big players (such as John Deere's Precision AG and CNH Industrials, which should rather be viewed as product ecosystems)—at least on the data side.

In the healthcare space, Brainlab founded their Snake OS platform in 2020, a digital B2B surgery platform as an operating system for third-party development, providing the infrastructure for safe and secure access to anatomical, spatial, video, and statistical data around surgical procedures.

Vgl.:

<https://www.se.com/ww/en/work/campaign/innovation/platform.jsp>

<https://de.dmgmori.com/service-und-training/kundenservice/my-dmg-mori>

<https://www.365farmnet.com/en/>

<https://www.brainlab.com/about-brainlab/companies/>

02 // B2B marketplaces

B2B marketplaces cater to convenience, speed, and transparency needs we know from our consumer world experiences. Nevertheless, they go beyond typical e-commerce endeavors of industrial goods players setting up an online shop mainly focused on their own products or services. B2B marketplaces bring together multiple B2B sellers, process transactions online, and typically layer-in additional services for both the demand and supply side. Such layered services range from superior fulfillment with short cycle times, 100 percent real-time transparency via track-and-trace functionalities, financial services, to even automatic inventory management that steers reordering of parts and consumables.

In contrast to equivalents in the B2C world, B2B marketplaces need to consider quotation and tender processes, sampling processes, an ability to accommodate bulk orders as well as more complex payment types, or the ability to process international payments and deal with established sales territories mandated by OEMs. This need for integration into processes means managing a high level of complexity to cut down traditionally longer B2B purchase cycles.

EXAMPLES

In contrast to the rise of a seemingly almighty Amazon Business as a platform providing a very broad product portfolio of commodities and business supplies, other B2B marketplaces that are currently arising are by far more vertically specialized. Examples include:

- ▶ **SPARETECH.io** // A start-up aiming to build the world's availability platform for industrial spare parts
- ▶ **Chemondis** // An independently run spin-off of chemical player LANXESS, disrupting the fulfillment of chemical supplies
- ▶ **Wucato** // A craftsman supply procurement spin-off driven autonomously by the Würth Group
- ▶ **Klößner.i** // A steel industry platform run by Klößner

Such platforms compete by providing best-in-class user experience, such as industry specific language, regulatory compliance services, and a comprehensive offering to enable transactions and integration into industry-specific processes and workflows. Typically, such marketplaces arise in more fragmented customer and contributor environments such as chemical suppliers, craftsmen, or brewers and try to address the specific needs with a broad and vendor-agnostic product and service offering.

Vgl.:

<https://sparetech.io/>

<https://chemondis.com/>

<https://www.wucato.de/en/wucato/startseite.php>

<https://www.kloeckner-i.com/en/>

03 // Asset sharing platforms

Asset sharing platforms are about turning existing market frictions of idle assets and low production capacity utilization into value for both the supply and demand side, similar to AirBnB or Uber in B2C industries. While in the B2C context a key value proposition for the customer side is about creating transparency over an easily comparable (commodity) product or service and consequently driving down cost, B2B asset and capacity sharing platforms typically provide a different form of value proposition. As with B2B marketplaces, they are less about singular one-off transactions, but they focus on enabling repeat transactions via the platform. This means accounting for seasonal variances, eliminating the risk of not fulfilling peak demand, as well as pricing risks. To do so, asset sharing platforms go beyond mere demand-supply aggregation towards a value proposition referred to as active matchmaking. This entails taking supply-demand and pricing risks onto the balance sheet of the platform orchestrator, but also offers higher margins.

EXAMPLES

Xometry, an on-demand industrial parts platform provider, highlights the need for active matchmaking that is typical for this platform type. As explicitly expressed in their IPO SEC filing, Xometry is "act[ing] as the seller to our buyers and [...] agree[ing] to pricing in advance of sourcing the order from a manufacturer [...] bear[ing] the risk that a buyer is not satisfied or that [they] are required to pay a seller more than anticipated to manufacture the order."¹³ Schüttflif, a platform in the construction industry that delivers bulk material such as sand, gravel, or rocks reliably all over Germany, provides required capacities for both consumers (= construction companies) and contributors (= logistics providers) balancing loads across regions and seasonal supply-demand fluctuations in construction. Similarly, logistics players such

as Sennder, Flexe, and Transporeon, also have to take on (financial and operative) risks on their own balance sheet to be able to provide logistics capacity in times of peak demand. Reliability is key for B2B players to shift a significant part of their business operations to a platform.

Vgl.:

<https://www.xometry.com/>

<https://www.schuettflix.de/>

Besides the three platform types, other platform types exist as well. However, these are out of scope for this study as they do not possess the key economic mechanism of network effects to the same extent. Such types not covered here include functional platforms focused on non-core, administrative processes such as procurement (e.g., mercateo and visable), HR (e.g., personio), data platforms

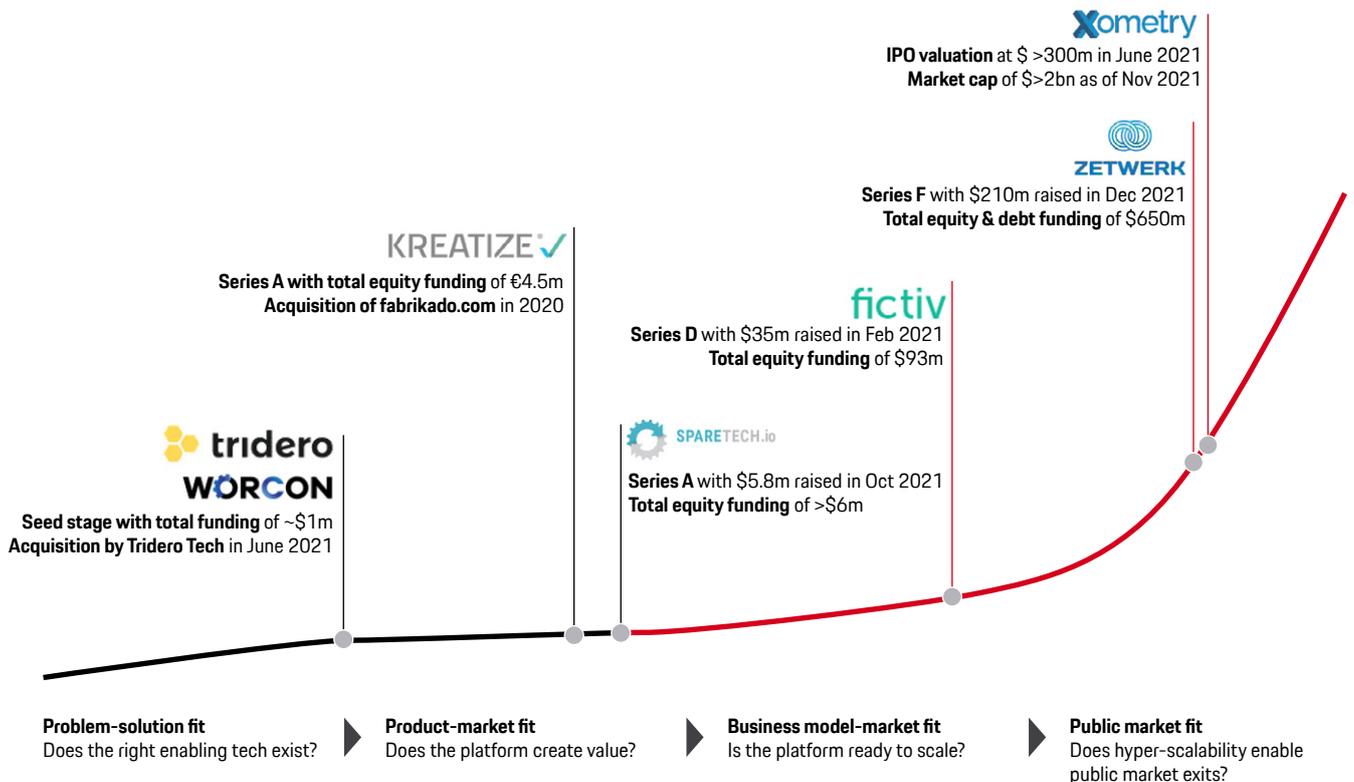
(e.g., Telekom Data Intelligence Hub), or technology platforms (e.g., RPA with UiPath or process mining with Celonis) that emerge. Undoubtedly, such platforms and technologies need to be considered within the corporate strategy of industrial companies by reflecting on their critical competencies to achieve a competitive edge, particularly with a focus on efficiency.

Why has the time for B2B platform play arrived?

Looking at the different industries in the B2B space, there are hardly any B2B platforms that have grown to the hyper-scale that is reality in B2C. Nevertheless, very successful ones with significant traction and promising monetization can already be observed. As shown in Figure 8, for instance in industrial

machinery and plant engineering, a first public market exists, and increasingly large-scale funding rounds of Venture Capital VC-backed start-ups confirm the opportunity seen in such B2B platform plays and try to address the specific needs with a broad and vendor-agnostic product and service offering.

Industrial machinery & plant engineering | Exemplary maturity of start-up-driven B2B platforms



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Fig. 8. Maturity B2B platforms driven by start-ups in industrial machinery and plant engineering

With an increasing number of B2B platforms gaining market traction and a maturing B2B platform environment with the first signs of consolidation, the time to reflect on B2B platform plays is now. Successful B2B companies are therefore carefully considering their strategic options on how they want to deal with platforms, not letting their industry and competitors determine their fate.

Through their network effects and economies of scale, the built-in stickiness of platform models will be exponentially hard to be overturned once platforms gain traction in a specific industry and reach a critical mass. Despite platform play in the B2B space will be less of a winner-takes-all game, it will still drive oligopolies and create economic moats. Even if the conclusion of a strategic discourse is not a position as platform orchestrator, it is key to consider which horse, or horses, to bet on and therefore understand the mechanics of B2B platforms.

Capturing the business value of platform play

Starting into a transformative endeavor such as platform play first requires a solid understanding of the business value and opportunities—as well as its limitations and risk.

The fundamental attractiveness of platform play depends on the role of the platform participants

So why do industrial incumbents or start-ups go for platform play and how do they plan to create business value? Based on the Porsche Consulting project experience as well as the exchange with experts and practitioners across various B2B industries, here is a brief summary of these findings.

Platform orchestrators

Expert interviews with both incumbents as well as start-ups driving platform plays in the B2B space point at the fundamental attractiveness of platforms at scale. Besides the margin attractiveness, the defensibility baked into the business model is crucial for the attractiveness—this is also why financial investors in venture capital (or private equity) are increasingly backing such endeavors. For incumbents, such as the Volkswagen Group with their Industrial Cloud (in collaboration with AWS and Siemens)—one of the biggest IIoT undertakings to scale smart factory use cases in discrete manufacturing settings—platform plays can also focus on capturing multiple benefits from taking on multiple roles at the same time. As part of the Industrial Cloud, Volkswagen on the one hand aims to scale proven use cases across all of its nearly 120 plants and its suppliers to reduce factory and supply chain costs by standardizing—thereby taking the consumer role. On the other hand, Volkswagen intends to monetize the platform as an orchestrator, offering proven IIoT solutions (also from proven third-party contributors) to external discrete manufacturing companies. Since platforms can only flourish once all involved parties win, it is necessary to look at the rationales of consumers and contributors.

Consumers

Top incentives for consumers mentioned by expert interview partners focus on efficiency. Procurement-related facets that go beyond cost-saving potentials include improved fulfillment times and a decreased need for inventory, quality insurance, or supply resilience. These incentives are typically complemented by the improved access to innovation—it is easy to discover, try out, and permanently include new digital

applications or services offered within a structured app marketplace.

Contributors

Key incentives for contributors are around driving top line, in the sense of easy access to more customers, faster go-to-market of their digital products and services, as well as around leveraging the data flows involved in platform transactions. Multi-homing, i.e., offering digital products and services on multiple platforms, is often also part of the equation in situations of competing platforms within an industry. Especially start-ups such as Heartflow, Arterys, or Zebra. All three are active in the healthcare space and deliberately decided to team up with all major competing diagnostics platforms, namely Siemens Healthineers teamplay, GE Edison, and the Philips HealthSuite. Such multi-homing strategies are more likely to be found in B2B than in B2C, where the big (single) platforms have emerged much faster. Modularity and standards, e.g., via an API layer that helps build marketplaces for such solutions, is therefore an essential design element.¹⁴

Beyond the rationales and intentions, it is crucial to take a closer look on how the business value can be captured and measured. Under the maxim of “scale fast—monetize later,” the success of platforms cannot solely be measured by traditional financial indicators. Alternative traction metrics are required until reaching the critical mass of a platform. Notwithstanding, B2B platforms do focus to a lesser extent on scaling only then in B2C industries. Typically, monetization will be part of the game from early on—in contrast to B2C platforms where platforms often reach scale without a clear (or even absence of a) monetization model.

Starting with revenue, it is key to differentiate between gross merchandise volume (GMV) or similar measures that characterize the value of transactions enabled by a platform, and the platform revenue in the narrow sense, which is directly captured by the platform orchestrator. The latter KPI is the pivotal success metric that points at the strength of underlying network effects. Such platform revenue typically stems either from take rates charged on the basis of single transactions, or in form of commissions charged for participating within a platform—typically charged to supply-side contributors.

When looking at KPIs in more detail and moving beyond financially focused ones as laid out in Figure 9, there is a fundamental difference between B2B marketplaces and asset

sharing platforms on the one hand and IIoT platforms on the other hand.¹⁵

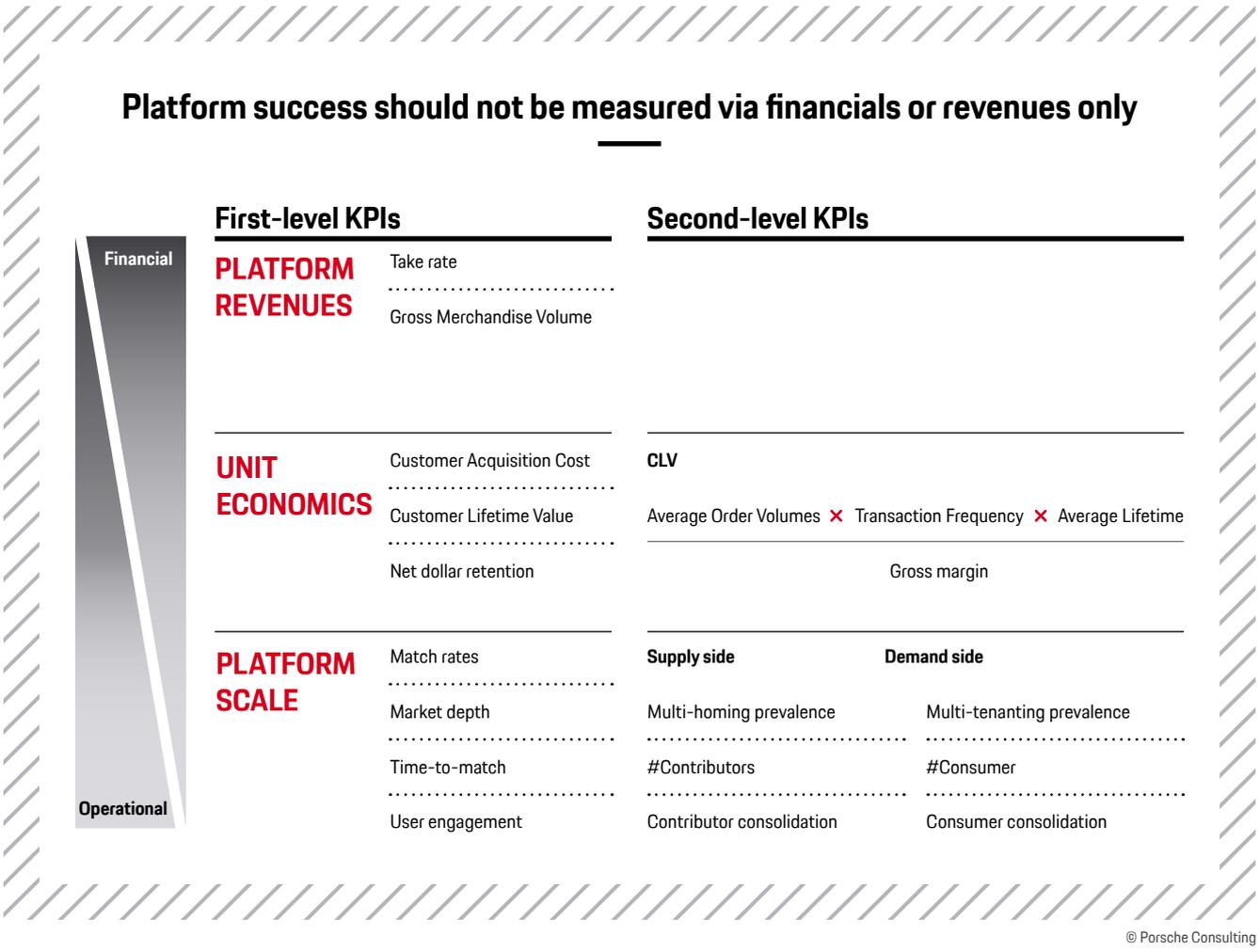


Fig. 9. KPIs for B2B platforms from financial to operational metrics

Starting with the first two platform types, eight strategic KPIs characterize the strength of a platform: (i) Unit economics—measured via the customer lifetime value (CLV),¹⁶ including customer acquisition costs (CAC) and also net dollar customer retention—bridge financial and operational level metrics. They give insights into how network effects translate into platform revenue and attractive margins. When considering the evolution of these metrics over time, they help assess how the strength of network effects changes once the platform

scales. Additionally, (ii) match rates—indicating at which rate the platform fulfills its key proposition of matching consumers with contributor offerings; (iii) market depth—the ability of the platform to sustain relatively large orders with no or only minor price movements, a key property for the user experience; (iv) time to match—calculating the time required to clear demand, thus being correlated to both breadth and depth of the platform; and (v) user engagement rates—measured in the number of daily or monthly users, often also zooming in on

existing power users,¹⁷ give insight into how well a platform works. Looking at the overall number and structure of participants, it is about (vi) concentration or fragmentation on the supply and demand side—measured as a percentage of GMV attributed by single players, since there is a risk that the exit of a single player will take a large share of transactions from the platform; (vii) prevalence of multi-homing—indicating the tendency and attributed switching cost for contributors on the supply side to offer their products, services, or solutions via comparable platforms; and lastly (viii) prevalence of multi-tenanting—approximating the share of consumers that are actively using similar platforms to fulfill their demand.

Looking at IIoT platforms—typically run by incumbent players—the set of KPIs used by management differ. A leading KPI that is used particularly in the initial scaling phase rather refers to the number of connected devices or assets under management by the platform, the number of contributors, and the number of active consumers as well as the usage of

applications. The differentiation between monitored customer assets, i.e., of which data are actively captured and monitored versus advised customers, i.e., who use different (digital) services, helps in assessing the relevance for third-party app developers on the IIoT platform.

Incumbent B2B companies often evolve their IIoT platforms from closed product ecosystems, such as Schneider Electric with their EcoStruxure. With this starting point they focus on providing a robust and scalable architecture, first with their own (digital) services and applications or phasing in the first batch of third-party app developers that are more closely controlled. In such instances, the focal KPIs are more about reaching scale than about fast (or even direct) monetization, which—in an early phase—can potentially kill platform growth on the supply and demand side and thus reduce the chance of success. Therefore, a key challenge is to create a solid understanding in C-level suites on how to replace or enhance traditional business case thinking.

Platform play is a long-term play

Going into platforms will rarely deliver short-term growth. Building up a functioning platform means building both the supply and demand side—something that cannot happen in the short run. Substantial marketing, brand building, and account-by-account acquisition of participants build the basis—and will usually require no less than three years in the B2B space with its slower-moving procurement processes. However, if successful, positive network effects and economies of scale will create a very robust and sustainable business model that competitors will be hard put to overthrow.

Designing your platform play strategy

To systematically reap the benefits of platform play, successful industrial goods companies take a structured approach to finding the right answer to the “app vs. platform” question. As it is a truly transformational topic, they stringently integrate the platform play as a priority in their corporate strategy to ensure alignment across all company activities and willingly accept potential disruption and cannibalization of their existing business.

Platform play is not for everyone—but everyone needs an answer on how to deal with platform plays

The five-step approach depicted in Figure 10 guides executives in determining how participating in platform play helps create long-term value in a world that increasingly relies on platforms—the following chapter also goes into further detail for every step along the way. It helps to systematically

find answers on how engaging in B2B platform plays can be transferred into business value and competitive advantage for their company within newly forming business ecosystems.



Fig. 10. Crafting platform strategies using a five-step approach

Step 01 // Analyze your industry and position

The first step in understanding the relevance of platform plays in your industry is to analyze whether platform play is a more proactive measure, i.e., an offensive platform versus a defensive move in scenarios in which answers for already arising platforms need to be found. Key considerations follow this set of questions:

- ▶ What is the likely scope of the ecosystem in which we will interact in the future?
- ▶ What are the pain points along current value chains and how will existing value pools shift alongside changes in the future product-service offering in the industry?
- ▶ Are there transactions that we could legitimately “own” in our broader ecosystem or a niche within this ecosystem?
- ▶ Which strategic moves of competitors need to be anticipated—both from traditional incumbents and newly emerging ones such as the big tech players, or start-ups?

Step 02 // Consider your rationale and ambition level for platform play

The second step to poise for a successful engagement in platform plays is about clarity on underlying rationales and calibrating your ambition level—a crucial step that requires full C-level involvement and alignment. Companies can't pull off an effective transformation if people have hidden agendas. There needs to be one vision and clarity on fundamentals. Bold performance aspirations often lead to greater outcomes. Therefore, depending on a company's positioning, market, and competitive environment, the narrative for a platform-driven strategy will differ.

A comprehensive overview of the value pools determined in the first step supports a productive discourse to focus resources and funds on the most promising opportunities. The clarity and consensus about what a company should not do are just as important. The following questions help guide the discussions:

- ▶ Do we intend to leverage B2B platforms to mainly drive growth, customer experience, or efficiency?
- ▶ What are the pain points along current value chains and how will existing value pools shift alongside changes in the future product-service offering in the industry?
- ▶ How bold is our platform ambition level in terms of per centage or absolute top- and bottom-line contribution to move the needle in a five- to ten-year time span?
- ▶ Do we accept or even actively support cannibalization and disruption of our own core business?

Step 03 // Define your role and positioning

The third step concerns choosing which (possible) roles to take in one or even several platforms: becoming platform orchestrator, being active as contributor, or participating as consumer of a third-party platform offering. Within a specific platform, the choice of how to position oneself along the technology stack needs to be taken from the infrastructure and connectivity layer, the technical platform in the narrow sense, and the application layer. Platform orchestrators here have the task to identify relevant players to build up the respective capabilities and, in addition, interact with stakeholders that are more indirectly involved such as policy makers. In a nutshell, it's about the following four questions:

- ▶ Do we want to take the role of a platform orchestrator, contributor, or consumer, or even multiple roles to achieve the defined rationales and ambition level?
- ▶ Do we have a right to win as platform orchestrator that could legitimately own transactions within an ecosystem or are there other potential winners to partner with?
- ▶ Which part of the contributor and consumer experience within the platform do we need to own?
- ▶ Which layers of the technology stack do we need to own versus where is it better to partner to integrate and to create external strengths in the platform ecosystem?
- ▶ Which other players need to be part of the platform ecosystem?

Step 04 // Craft the multi-sided value proposition

The fourth step is about crafting a win-win-win value proposition for all platform stakeholders that in the first place attracts but secondly also retains supply- and demand-side participants. Fundamentally linked to the value proposition is the openness paradigm baked into the platform design.

In line with the underlying rationale to drive platform play, the platform orchestrator navigates the openness paradigm. Particularly for an IIoT platform, this is about whether a machinery vendor-agnostic approach is mandated to attract sufficient participants both on the demand and supply side. In practice, this question is as explosive as it is crucial to not pay mere lip service to but to commit to bold ambitions required for platform business models as a highly transformational step. Key questions that guide this step are the following:

- ▶ How can services beyond the enablement of a single transaction support the acquisition and retention of platform participants on the demand side?
- ▶ How can services directed at the supply side of platform contributors improve participant acquisition, such as offering seamless integrations via APIs or Software Development Kit (SDKs) for developers?
- ▶ How should the curation and governing of the platform be set-up to strengthen the value proposition of the platform for the ecosystem?
- ▶ How to deal with other stakeholders on the platform such as infrastructure suppliers or regulatory bodies?

Step 05 // Identify and onboard partners as allies

As the fifth step for crafting a B2B platform strategy that is designed for successful execution, the strategic selection and onboarding of suitable partners is a key decision for the platform orchestrator. This means defining parties that provide their capabilities along the technology stack, as well as winning early adopters on the contributor and consumer side.

- ▶ Which core capabilities are fundamental for a successful platform orchestration play?
- ▶ To what extent are the necessary core capabilities available, need to be built-up, or expanded?
- ▶ Which partners are required to provide a robust and scalable technology stack from the device infrastructure, to the platform, and to the application layer?
- ▶ How do we structure the go-to-market model and which partners are required for successful marketing and sales on the supply and demand side?

04.1 | Analyzing your industry and position

Not only platforms are arising across B2B industries, but also the ecosystem within the industries are changing. Driven by big tech companies that have understood the value of platform approaches, (sub-)industry borders are blurring, and new ecosystems are forming. For instance, the consumer-driven world of sports and well-being and traditional healthcare delivery are converging.¹⁸ Likewise in agriculture, the boundaries between agricultural machinery producers, agrochemical providers, and distribution, or even IT players are blurring.

Thus, the first task is to deepen the understanding of the scope of the ecosystems an industrial goods player will be competing against in the years to come. This means framing which players can and should be considered in the broader ecosystem. For instance, in healthcare this means considering retail players such as Amazon (which acquired PillPack in 2019, continuously builds up the foundation of a healthcare-related platform play around Amazon Echo, leveraging Alexa skills both in a consumer and provider setting, or entering the stage as a healthcare provider themselves with

the Amazon Care offering), or Walmart, which has entered the stage of healthcare delivery.

The second question is about deciphering challenges in today's value chains. Any good strategy starts by working backwards from the (future) customer and their needs and challenges. Based on the gained insights, companies can create a deep understanding of a "value pool map" to link customer value with business value opportunities. As an example, the Porsche Consulting publication "Future Farming" gives a comprehensive overview of such value pools in agriculture, including planting-, fertilizing- and irrigation-related yield losses, underutilized agricultural machinery, and high transaction costs for farmers selling grain.¹⁹

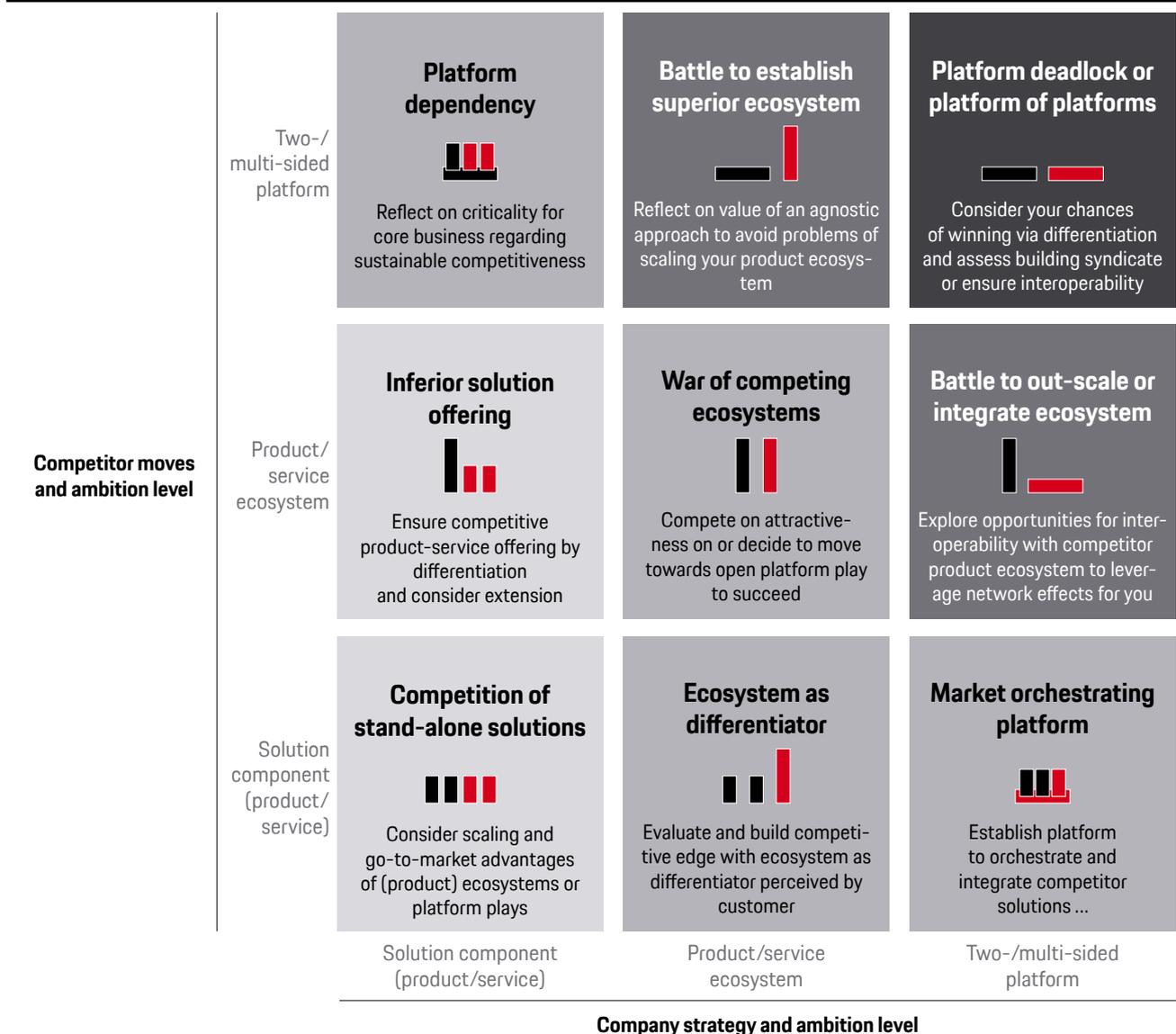
The third question is about transactions that can be legitimately owned. Typically, there is a trade-off between considering niche markets versus broader ecosystems. The former provides a higher likelihood to justify a "right to win," while by nature restricting market potentials and hence achievable ambition levels, while the latter oftentimes means en-

tering more competitive platform arenas with large-scale incumbents or even tech giants that enter the playing field. Returning to the agriculture sector as an example, this could mean that the scope of platforms built for farming will likely also include agrochemicals and seed producers, but could spare out of the aspect of selling grain.¹⁹ In this specific

niche area, Indigo Ag Inc., a U.S. -based grown-up founded in 2014 now funded with \$1.2bn equity, has created a large-scale marketplace for selling grain and removing frictions and cost at every step, including delivery and payment services.

Understand and analyze your industry and position along competitor moves

Step 01



Risk and required investments

Low
 Medium
 High
 Very high
 Company
 Ecosystem Competitors

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Fig. 11. War gaming of anticipated competitor moves

Ultimately, the key to understanding your position, no matter whether in a narrower industry or even a large-scale ecosystem is about thoroughly (and continuously) analyzing strategic moves of competitors—both traditional ones and potentially new emerging ones. As pointed out in Figure 11, it helps to reflect on potential positioning in platform or ecosystem plays and map out likely scenarios that inform your decision-making. The agriculture industry serves as a great example where the strongly brand-driven product ecosystem MyJohnDeere is competing with FarmNet365 as an open platform. Depending on the point of view, such a

situation is a battle for scale, in which either party could lose or win. Opting for interoperability, the two parties became the drivers behind the aforementioned DataConnect movement, which creates standards for telematics infrastructure in agriculture. Notwithstanding, there will still be competition between the two; an otherwise bloody battlefield for the predominance of two smaller pies is turning into a somewhat more friendly and collaborative setting that tries to grow the size of the overall agriculture pie, easing up the road to critical mass for both companies.

04.2 | Analyzing your industry and position

The rationale to enter platform play need to be closely interlinked with the overall corporate strategy, and thus should also be supported across C-levels.

Firstly, there needs to be clarity on the overall objective of whether top-line growth, and improved customer experience, of efficiency is the key incentive. Secondly, if the objective is about driving top line, the chosen monetization approach needs to be considered. It describes how and when the value created through a platform is captured by the respective participants—the platform orchestrator here has the pivotal role to define the basic rules of what such value capture may look like.

For GE Healthcare, their Edison platform is positioned as a crucial element in their Digital Solutions organization. The platform with an integrated marketplace gives hospitals access to 50+ intelligent applications such as automatic analysis of medical images to detect abnormalities in triage patients, help assess the progress of cancer lesions via auto segmentation, structured reporting, or visualizing blood flow through a patient's coronary arteries to support clinical decision-making for the most effective therapy for a patient. Nevertheless, the key focus of GE Healthcare at the current time is not built around directly monetizing third-party

applications via a revenue cut or charging on a transaction basis, but more indirectly to increase the attractiveness of the GE Healthcare product ecosystem spun around the platform as such. Monetization primarily happens via the offered healthcare IT systems with the workflow engine that helps orchestrate data and the use of applications in or throughout clinical workflows.

Different fundamental monetization models help translate the ambition level—as the third leading question—into practice. Figure 12 gives an overview of the general monetization models applied along the analyzed 68+ B2B platform plays across industries.

Define your rationales and ambition level and break them down into monetization models

MONETIZATION MODELS	B2B			B2C
	INDUSTRIAL IOT PLATFORMS	B2B MARKETPLACES	ASSET SHARING PLATFORMS	
Commission fees Take rate charged on transaction basis, including usage- or outcome-based fees	 ✓	 ✓	 ✓	 ✓
Subscription fees SaaS model charged on a monthly, quarterly, or yearly basis as license fees	 ✓	 ✓	 ✓	 ✓
Data monetization For instance for insight generation, typically charged on a subscription basis	 ✓	 ✓	✗	 ✓
Freemium models Free basic version either cut along features, number of transactions, or users with paid upgrade	 ✓	 ✓	✗	 ✓

✓ Often used (n > 5) ✓ Rarely used (n < 5) ✗ Not used (n = 0)

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Fig. 12. Monetization models for B2B platforms based on an empirical analysis

Recurring revenue streams stemming from subscriptions and commission based business models are particularly interesting for industrial companies—especially for incumbents with more product- or project-related one-off sales, such as machinery OEMs. In contrast to B2C platforms where data-monetization, e.g., via advertising revenue streams plays a major role, B2B platforms often have a rough vision on monetizing data directly or through data-driven products. Currently such monetization mostly relates to insights business: for instance, by providing transparency on-demand or price trends, which will usually be sold as a subscription to supply-side OEMs to help them plan their production accordingly. Freemium approaches that allow for more bottom-up B2B sales approaches that help win supply and demand side as they would in a B2C setting are rare. Nevertheless, if designed smartly, they have the potential to drastically decrease customer acquisition costs and scale quickly.

Lastly, it needs to be critically examined and discussed whether the cannibalization and fundamental disruption of the existing core business is accepted or even actively intended. Forward-thinking B2B players follow the logic that disrupting their own business proactively may be more beneficial than leaving a vacuum that might be closed by other players, for example by tech giants that lack industry expertise but know how platform business models and the technology work. It is about shaping industries and thereby defining the profile of new market segments before the rules have been written. For example, LANXESS deliberately opted to spin off the Chemondis platform and operate this as a separate company—a positive disruptive factor that helps increase the transformative speed of its core business.

04.3 | Defining your role and positioning in the emerging platform plays

Besides the underlying rationale, the choice of the platform orchestrator role (instead of “merely” becoming consumer or contributor) follows the more qualitative consideration of the legitimacy to own certain transactions within a broad ecosystem scope or narrower (sub-)industry.

Many B2B players tend to answer this question quite optimistically, as the platform orchestrator as “spider in the web” appears to be a tempting role to play. It is important to understand that the choice to be the orchestrator is not a unilateral one. There needs to be acceptance by the other players in the ecosystem, both on the supply and demand side.

To answer the legitimacy question truthfully, competitive dynamics, industry expertise and an existing strong position as an essential member of the ecosystem, with network access to the demand and supply side, a strong brand, or key capabilities that represent difficult to reproduce control points, need to be considered. For incumbent players, this existing network determines whether they can effectively coordinate the interest of other stakeholders as well as their own. Additionally, the platform orchestrator should be perceived as a fair—or even completely neutral—partner, rather than as a competitive threat. For B2B, an excessive imbalance of negotiation power could scare off potential platform participants. To pick up the example of Chemondis, signaling fundamental independence from the core business of an incumbent player is crucial for a credible positioning. For instance, by installing an independent management, Chemondis built the basis to be considered a vendor-neutral platform for the entire chemical industry and helped move to a current state in which only a very small single-digit of product and service listings originates from LANXESS. As building platforms often means bearing large upfront investments, it is also about being able to shoulder cash flows over a certain period.

However, it is also a highly valuable conclusion not to be the most valid platform orchestrator, but rather a contributor. This by no means implies commoditization, losing direct access to customers, or being blackmailed by another orchestrator. Rather, a contributor positioning can also help to hedge bets by participating in more than one platform, which is referred to as multi-homing. Being a contributor helps to lower the risk of upfront investments and failing with an own platform as a

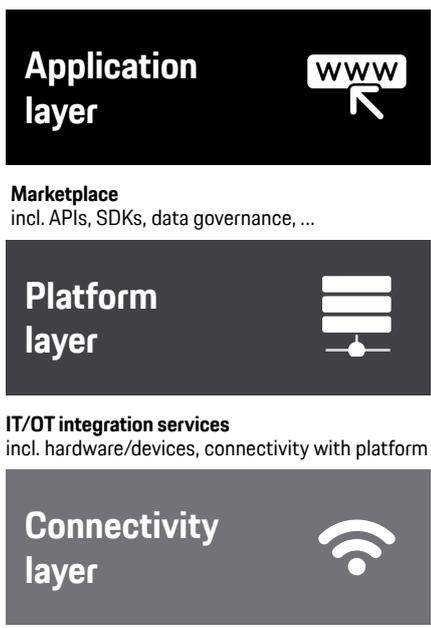
non-legitimate platform orchestrator that only reaches a sub-critical mass with its platform endeavor.

The third guiding question asks for clarity regarding which parts of the consumer and contributor journeys covered by the platform should be owned. Identifying relevant control points that are of major importance for the later overall customer experience is key. B2B platforms such as Xometry need to emphasize, for instance, the journey and underlying business logic (and technological implementation) of match-making for custom-made parts, while fulfillment could also be outsourced to partners.

The fourth guiding question concerns the issue of how to position along the technology stack, i.e., who chips in which capabilities. Industrial goods players typically come from their hardware and device business. Following a servitization logic—they evolve towards connected product business, adding new digital services on the application layer. Their key challenge in moving towards an IIoT platform business is about building a performant, robust and scalable technological backbone on platform technologies—on the platform and connectivity layer.

Define your rationales and ambition level and break them down into monetization models

IoT tech stack



Description

- Marketplace for digital services, applications, or solution to address (homogenous) use cases
- Enables data exchange and defines data ownership
- Provides AI/ML and advanced analytics capabilities
- Provides cutting-edge IoT and cloud/fog/edge services
- Connects hardware and devices to the cloud
- Bridges gap between IT and OT

Identify and govern partners or integrate in their offering portfolio via APIs or leveraging SDKs

Tech giants dominating PaaS due to economies of scale

aws, Microsoft Azure, Google Cloud, Alibaba Cloud, Tencent Cloud

Tech giants will not limit themselves to PaaS for larger verticals in B2B

Integrate hardware and devices via APIs to leading manufactures and decide whether vendor-agnostic approach is necessary

Key opportunities for B2B players © Porsche Consulting

Fig. 13. B2B platform positioning along an exemplary IIoT technology stack

As described in Figure 13, industrial goods players need to define their position along the technology stack. A major fact in this positioning is whether the relationship with tech giants is, or can be, a collaborative or a competitive one. The magnitude of the business opportunity directly influences the extent to which the platform orchestrator will be contested over time. While the attractiveness of niche markets is lower for tech giants that dominate the platform layer, in case of industries that represent large-scale opportunities such as scaling of industrial manufacturing, tech giants will in addition tap into the application or connectivity layer. Google Cloud, for instance, offers applications such as a visual inspection AI to reinvent quality control used, amongst other areas, in semiconductor or PCB manufacturing.²⁰ AWS, on the other hand, also moved downwards through the tech stack into the IoT connectivity layer, e.g., with their Industrial Machine Connectivity Quick Start offering, which lowers the entry barrier and proves immediate business value from an IIoT architecture via easy-to-conduct proof of concepts.²¹ The tech players have

extensive expertise in how to design the interfaces between the layers, for instance on how to design APIs, provide SDKs for marketplaces—or the IT/OT integration layer and connectivity. To compete, industrial goods players need to build up considerable capabilities in-house and leverage their domain expertise or existing hardware and devices installed base.

As the tech stack shows, it is typically about multiple stakeholders that need to work together. This is the reason for the fourth question of which other players need to be convinced to become part of the ecosystem around the platform. Fundamentally, it is about the breadth and depth of the demand and supply side that will likely be required to build a business that captures network effects.

04.4 | Crafting the multi-sided value proposition

A successful platform business model needs to work for all participants. This requires a breakdown into clear-cut value propositions crafted for both demand and supply—a key task that platform orchestrators need to think about and pragmatically validate.

On the demand side, consumers usually come for the tools and stay for the network. Saying that, the concept of network effects is often difficult to convey while easy to experience. Consequently, successful platform orchestrators that initiate their platform focus less on selling the network effect as such as a major part of their value proposition but create a convincing value proposition around the layered services—typically efficient processes with highly industry-specific optimized workflows. Creating a superior user experience is key, e.g., by helping users of B2B marketplaces conveniently navigate their customer journey from discovery to ordering.

Let's explore what this means by looking at Xometry, the leading on-demand manufacturing marketplace in the US, with its value propositions—or, as they put it: “why buyers win/ why sellers win” using the platform.²² Xometry offers buyers i) instant and competitive pricing and lead times; ii) ease of

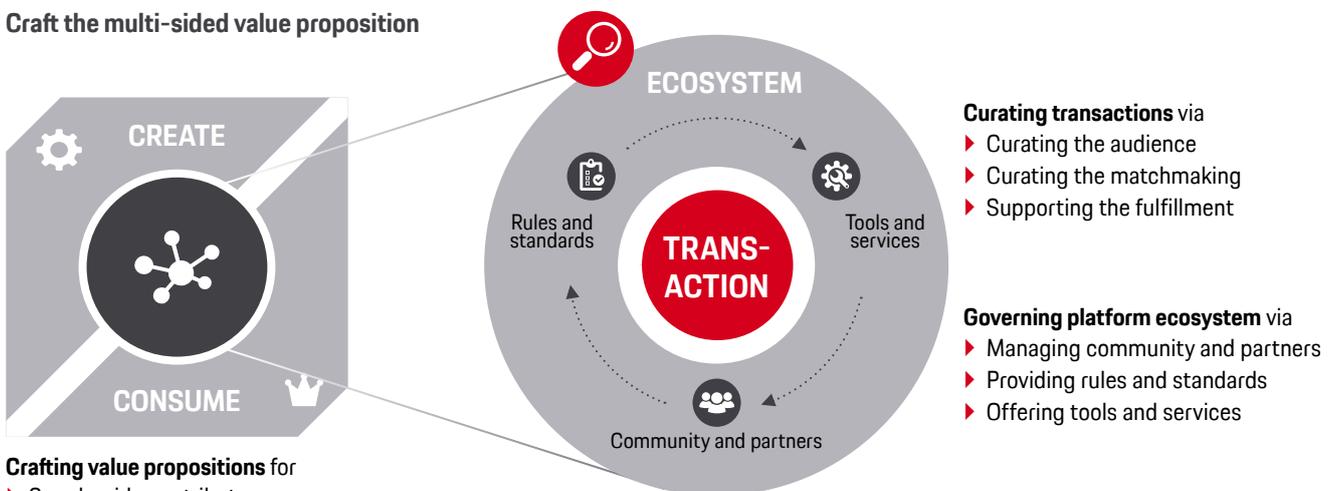
purchase, simplifying the procurement process along with an exceptional experience; iii) access to a massive network of sellers; iv) a broad suite of industry-specific solutions with dedicated playbooks per vertical served; v) reliability and quality guaranteed and monitored by Xometry; vi) environmental benefits as well as vii) production flexibility from one part to millions. To make the sellers' side win, Xometry offers i) cost-efficient, real-time new business generation; ii) repeat high-quality customers; iii) operational excellence for all seller workflows; iv) financial stability and security enhancing cash flows along invoicing and billing processes; v) increased utilization by accessing additional manufacturing opportunities with one click and offering vi) a seller community to better understand industry-wide needs. In particular, the multi-sided value propositions show how layered services such as an offering around maintenance, repair, and operations or financial and insurance services can reinforce the core value proposition and create additional stickiness.

Besides the direct value propositions offered to both sides of the platform participants, the orchestrator needs to continuously curate the enabled transactions as laid out in Figure 14:

Define your rationales and ambition level and break them down into monetization models

Step 04

Craft the multi-sided value proposition



Crafting value propositions for

- ▶ Supply-side contributors
- ▶ Demand-side consumers

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Fig. 14. Crafting value propositions extends to curating transactions and governing the ecosystem



Curating the audience// By trading off quantity versus the quality of demand and supply, platform orchestrators build and continuously monitor participants and their behavior. This helps avoid a phenomenon dubbed “the Chatroulette problem.” When left unchecked, a network of sufficient size will naturally deteriorate in its quality of participants and usage. Even though in B2B the problem will hardly be about naked people sitting in front of a camera, curation mechanisms help prevent negative network effects from occurring.

Curating the matchmaking// With the growing size of platforms, it is important to curate the matchmaking that happens via the platform. In situations of growing supply, it can become increasingly challenging for demand-side participants to find the right product, service, or app in a marketplace. To avoid this exploration conundrum, the platform orchestrator should put a laser focus on superior UX design and embedded algorithms that ensure high quality matchmaking—not only at launch.

Supporting the fulfillment// Value propositions that are not at the core of the matchmaking property of a platform can still be key to acquire and retain participants. As shown by the Xometry example, marketing the access to a massive network of sellers or access to additional manufacturing opportunities that are most relevant for the network effects as such are not positioned front and center. It is about layering in relevant value-add services regarding the fulfillment that tip the scales. Fast fulfillment times that reduce the need for inventory stocks, partially outsourced quality management, CO2 and sustainability tracking and offsetting for the demand side, or financial services such as factoring or insurances to support supply-side contributors are frequently observed layered services.

A fundamental aspect of the value proposition of platforms that could aggregate a significant share of a market is about its openness and fundamental neutrality to cater to an entire industry, as opposed to product ecosystems that are built around company specific product or service offerings. In the IIoT platform space, open platforms are, however, rarely the starting point. The Schneider Electric case highlights how formerly closed product ecosystems develop into open platforms. So why is the answer to the question closed vs. open ecosystem not static and typically evolves over time?

Technical stability, as well as a threshold utility of supply-side functionalities are a key criterion in B2B consumers and participants when deciding to join a platform. Nevertheless, executives of incumbent players should reflect on whether to progress towards a pseudo-open ecosystem that aims at primarily monetizing via own products and services, which will restrict the potentials. True openness should be regarded as a prerequisite for platform scaling and therefore as a means to tap into non-linear platform economics.

04.5 | Identifying and onboarding partners as allies

Designing a platform also requires governing the partner ecosystem as depicted in Figure 14. Who should build and own the technical backbone of the platform? Which key partners are needed to provide value within a platform ecosystem? These questions are directly linked to the underlying delivery model of the platform, and how value is created and sustainably delivered along the technology stack.

For IIoT platforms specifically, a key question concerns the platform layer and which of the leading cloud providers to choose. There is a trade-off between lock-in to a single provider or a multi-provider approach that requires abstraction to ensure that the technical platform can run on two or more of the leading platforms such as AWS, Microsoft Azure, or Google Cloud. Looking at the IIoT platform landscape offers different answers to these questions. Siemens Mindsphere runs on both Microsoft Azure and AWS, plus Alibaba in China, while other platforms such as Schneider Electric's EcoStruxure are hosted on Microsoft Azure only, and the Volkswagen Group's Industrial Cloud leverages the AWS platform stack as part of the close cooperation. The choice for one or several cloud infrastructure providers is less a technical question, but more a question of managing dependencies. A special case that has relevance for many industries is about the tech stack composition for the Chinese market. While Alibaba's or Tencent's cloud services may be the preferred choice here to fulfill regulatory requirements, a key point is about abstraction of the platform layer to the connectivity and application layer. In short, applications need to be able to be deployed globally ("cloud agnostic") without respect to the chosen PaaS offering in either of the geographies.

Looking at the application layer, the key challenge for platform orchestrators is about resolving the innovation challenge. How can third-party app developers with cutting-edge technology or specific domain expertise be attracted? Incumbents in competing platform ecosystems, such as GE Healthcare with their Edison platform, have implemented suitable answers. Via their Edison Accelerator programs, hosted in various top locations around the globe, GE tries to attract contributors that build, manage, monitor, and deploy applications first on the platform and thereby ensure sufficient relevant supply. Besides the technological basis with APIs, offering SDKs that help developers conveniently build their applications

including tools to create exceptional (end) user experiences, GE Healthcare also provides support with a structured program towards certification as medical devices and other market access-relevant topics.

In addition to partners that build the technology backbone and sufficient supply, it is crucial to think about partners that support the go-to-market: IT software vendors, system integrators, management and specialized consultancies, digital agencies, and distributors. Such partners are required when shifting from launch to the scaling phase of platforms. There is not really a one-size-fits-all answer but considering existing go-to-market routes is a good starting point. While de-intermediation means not giving away margins, adoption risk needs to be mitigated. Integrating stakeholders in the value chain early in the platform design might help avoid fighting lobbying and resistance within an industry.

Similarly, the role of policymakers should be considered for more regulated markets—such as healthcare, chemicals, or in politically fenced-off geographic markets. Varying data privacy regulations are just one example—but a pivotal one—of why platform orchestrators need to pay attention to this stakeholder group.

Successfully implementing your platform strategy

After successfully mastering the platform design strategy, the tougher part of the platform journey comes into play—implementing the platform. Porsche Consulting identified seven success factors that build the basis for a successful platform play:

- 01 | Navigating the underlying openness paradigm of the platform
- 02 | Building trust through governance mechanisms
- 03 | Determining monetization models for suitable value capturing and sharing
- 04 | Solving the chicken-and-egg problem
- 05 | Determining the right Minimal Viable Product (MVP) scope for platform launch and growth
- 06 | Adapting to complex B2B go-to-market realities to build momentum
- 07 | Retaining and reinforcing platforms at scale

01 // Navigating the underlying openness paradigm of the platform

One of the most fundamental questions—particularly for incumbents—is about navigating the underlying openness paradigm for the platform. For the operating model design of the platform, incumbents need to decide whether to run the platform within the existing core business (such as Siemens Healthineers) or to create an independently managed spin-off as a financial investment (for instance Wucato with its Würth heritage, Tapio with furniture machinery producer Homag Group as anchor investor, or the previously mentioned LANXESS spin-off CheMondis).

Access to the platform

Which individual contributors and consumers will be allowed to participate in the platform? What requirements do they have to meet to become part of the platform offering?

Commitment to the platform

Is there a requirement for exclusivity or are contributors able to multi-home on competing platforms?
What level of specific investments is required to participate in the platform play?

As already in the previous chapter, this is a key success factor as it (pre-)determines the achievable market breadth for the platform. Potential partners perceive independency as the ultimate signal that establishes trust in a neutral or vendor-agnostic approach and the ability to fight off mother ships' interest in times of potentially conflicting interests towards the contributors, which can and will often be competitors. In practice, navigating the openness paradigm further means answering the following questions:

Participation on the platform

Who has the final decision rights, especially to manage access, resolve conflicts or value distribution?
How transparent and stable are the terms for participating on platform?

02 // Building trust through governance mechanism

There is a need to manage drawbacks to the platform ecosystem model. By definition, a platform consists of largely independent economic players that loosely agree to collaborate.

This implies only limited control of the overall system by any single participant. Even the platform orchestrator faces limitations on how to enforce a certain behavior of partners,

compared with traditional models with a linear supply chain or a completely owned integrated model without significant third parties involved.

The challenge is about incentivizing the right behavior of external partners without full hierarchical power or control. The required governance needs to be carefully designed by the platform orchestrator through clear rules and standards, as well as by providing tools and services that establish a transparent, participative, and trustworthy way of interacting with and through the platform. Of course, such rules and standards can be adjusted as the ecosystem evolves, with some limitations—e.g., the stance taken on the openness of the platform. From strategic alignment to guide the evolution of the platform to more operative level mechanisms, governing the

platform ecosystem is about installing supporting processes to manage the platform community and partners. Processes such as dispute resolution address potentially ensuing conflicts early on. Successful platform orchestrators focus on integrating mechanisms that build trust wherever possible and cater to the need for stability and predictability. In the B2B context, building trust stretches out to transparency, and auditability. In particular, the factor of auditability is key for B2B industries, as both customers and contributors want to verify transactions, connected data flows including data (hosting) localization as well as cyber security demonstrated by compliance to standards such as HIPAA or GDPR—areas in which breaches can lead to substantial penalties and—even worse—reputation losses.

03 //

Determining monetization models for suitable value capturing and sharing

Besides the limited control over the participants, a key success factor in platform design is the question of how to capture value and how to share value beyond the participants. In other words: what to charge and whom to charge?

Not surprisingly, there is no one-size-fits-all answer. As described in more detail in Chapter 4, monetization strategies differ across the B2B platform types. However, compared to B2C, platforms in the B2B space focus on charging the supply side rather than the demand side. Asset sharing platforms such as Xometry, Kreatize, Chemdirect, or Sennder do not directly charge a margin or take rate. With their active match-making approach, they set prices for both sides and implicitly define margins for themselves on a transaction-by-transaction basis: a key ingredient of their secret sauce.

While monetization models set by the platform orchestrator define the rules of the game, it is also important to consider that it is not a one-off decision. Monetization models may (and mostly do) evolve over time. Open platform ecosystems, especially IIoT platforms, struggle to capture value directly from the start. Subsidizing transactions – especially right after platform launch – can help overcome the chicken-and-egg problem until network effects kick in. The orchestrator

can make it easier to join by providing free or subsidized tools and services for contributors. GE Healthcare with its Edison accelerator programs offers UX developer environments and additional value for market access, legal and regulatory clearance when developing medical grade applications on their platform.

Pivotal success factors around platform monetization logic are a fair split of the created pie. Other facets of value share that need to be carefully considered relate to data ownership and the allocation of (newly created) intellectual property rights.

A sustainable model to capture and share value helps avoid backlash initiated by the platform participants themselves. Such backlash can reach up to antitrust or data privacy-related court proceedings. Besides the economic harm caused, the huge reputational damage will be difficult to recover from. The most prominent example—from the B2C world—is Epic Games, the developer of the popular online game Fortnite. They recently filed antitrust lawsuits against Apple and Google, suing them for the misuse of their dominant market positions with their App stores, which require in-app payments to be processed via the App store billing systems.

04 //

Solving the chicken-and-egg problem

Probably the most prominent challenge of successfully launching platforms, the chicken-and-egg problem represents a coordination problem to acquire the first participants on both sides of the platform. Initially, the benefits to join a platform (yet without network effects) hardly exceeds the cost to do so. Oftentimes, the average participant of a platform (once at relevant scale) would not see a net positive

Targeting narrow user groups

Laser-focus on early adopters with more pronounced pain points can be a suitable means to overcome the chicken-and-egg problem. Starting from a very concrete understanding of the target customer and their needs to start concretely building the required supply side and growing it from there is key.

Leveraging own product ecosystems

Closely controlled product ecosystems can be leveraged to build a basic supply side and a stable technology backbone for the platform. The example of Schneider Electric's EcoStruxure highlights that the timing of converting a product ecosystem (with proven stability and certain scale in terms of connected devices) into an open platform is key. At a stage where the EcoStruxure had already more than four million connected devices, 50 percent annual growth, and a stable technology basis they took the step to open up the platform.

value at the start. Thus, it is of crucial importance to find suitable supply and demand side participants and convince them to join to break this inertia and reach a critical mass.²³

In B2B, when facing the question of whether to build demand versus supply side first, it is more critical to gain suppliers as partners. Growth hacks in B2B setting include:

Providing high single-user utility

Building up large-scale key accounts on the consumer side can be a feasible way to get to sufficient demand. In contrast to highly consolidated contributor sides—which then rather resemble product ecosystems—such highly consolidated demand sides are typically rather uncritical for the early growth of platforms. For instance, STRABAG, as one of the largest construction service providers, could particularly benefit from the value proposition of Schüttflifx to provide bulk material throughout Germany instead of having to work with multiple parties. Besides being a key customer, Schüttflifx also gained STRABAG as one of their investors.

05 //

Determining the right MVP scope for platform launch and growth

Analogous to launching successful digital products, platforms should also leverage an MVP approach—it is about defining and pragmatically validating the minimal viable platform scope.

This scope can be determined along different dimensions, most notably by restricting the participant and use case scope to provide a very clear and non-fuzzy value proposition. Additionally, the geographic scope is a key consideration. Network effects might be applicable on a local basis only, since supply and demand structures in B2B might differ on a country-by-country basis. While B2B marketplaces and asset

sharing platforms rely on the certain density of supply and demand within a certain geographic scope—rather than overall size across geographies—IloT platforms offering digital products or services are typically platforms with a global scale or at least multinational scope.

The geographic scope of network effects is also a key consideration for the growth of platforms. While the proof that a platform concept works in one geography is good, the value proposition, brand, and network are not necessarily easy to carry over into new geographies if there is no fundamental network effect at work.

06 //

Adapting to complex B2B go-to-market realities to build momentum

As platform business models differ considerably from an incumbent's core business, it cannot simply add "selling the platform" as a new task for the legacy sales force. Carefully crafted go-to-market strategies consider the more complex fulfillment realities in B2B business (e.g., more complex buying centers, completely different sales argumentation, other monetization options, required eProcurement integration) as they also consider resolving channel conflicts with sales reps or existing distribution partners.

Dedicated sales teams with a strong partner management and customer success team are required to manage the sales funnel on both sides of the platform. B2B platforms simply do not follow the self-service paradigm present in a B2C platform context, but require joint pilots, proper onboarding, and continuous optimization.

07 //

Retaining and reinforcing platforms at scale

From platform launch onwards, it is key to already anticipate aspects that are crucial to retain and reinforce the scale of platforms. Like a leaky bucket, it is much more difficult to

achieve (net) growth if participants quickly leave the platform. There are four basic mechanisms to be avoided that lead to a leaky bucket effect:

Disintermediation

Disintermediation occurs when participants of both sides of the platform bypass the matching platform, e.g., in context of repeat transactions, and connect to conduct a transaction directly without leveraging the platform. This means platform value is no longer created and no longer captured via the platform. B2B platform providers address this challenge by mechanisms that provide a superior user experience, for example seamless workflow integration and monetization with lower costs attributed to repeat business conducted via the platform. This means that platforms with a value proposition that are focused on competing in price only are more prone to disintermediation and thus face a fundamental challenge to get to and later sustain scale.

orchestrator should build in more subtle ways to increase switching costs. In B2B this is often around legacy platforms and access to data.²⁴

Disassembly into sub-platforms

Platforms compete for supply- and demand-side participants based on providing a maximum attractive value proposition just as other businesses and business models. A narrower focus on participants, e.g., a sub-market with specific pain points, can bear sufficient differentiation whilst a sufficiently large niche to justify an attack on a subset of platform users. Their specific needs can call for a separate ecosystem and take away market share from the original platform play.

Multi-homing and -tenanting

As mentioned before, multi-homing or -tenanting describes a situation in which contributors or consumers participate in multiple competing ecosystems at the same time or in which they can easily switch between ecosystems. Just as restaurants may find it attractive to offer their menu items on multiple food-delivery platforms, or consumers leverage various hotel-booking platforms to look for the best offering, B2B platforms should design mechanisms that create stickiness. While a general ban of multi-homing and -tenanting will hardly be accepted by participants on either side, the platform

Large-scale platform expansion

Finally—and often the biggest perceived threat of incumbents—is the scenario that converging platform ecosystems attract large-scale platform players to enter a neighboring domain.

In Brief

Guidance for future B2B platform plays

How can industrial goods executives navigate their journey towards successful B2B platform plays? Let the following summary guide your way to look beyond the buzzword and intensively evaluate how they might be the best solution for your challenges.

01 Understanding how to capture the business value of B2B platforms

B2B platforms are on the rise across all industries. Other than in the B2C arena, the B2B platform play will not be a winner-takes-all game. Nevertheless, the change of value creation will be substantial. With 30 percent of the identified and relevant IIoT platforms, 78 % of B2B marketplaces and 94 % of asset sharing platforms are currently driven by start-ups with significant VC funds and not by incumbent players. There is pressure to act. Successful industrial good players take proactive steps to shape the future of their industry before the new rules of the industry are written by others.

02 Crafting your B2B platform strategy

To systematically reap the benefits of platform play, successful industrial incumbents take a structured five-step approach to determine if the strategy is to become an "app vs. platform". As it is a truly transformational topic, they stringently integrate the platform play as a priority in their corporate strategy to ensure alignment across all company activities. To poise for success with platforms, incumbents need to willingly accept the potential disruption or even drive cannibalization of the existing business before others do. True openness in this context is a prerequisite to scale and move beyond product ecosystems.

03 Successfully implementing your B2B platform strategy

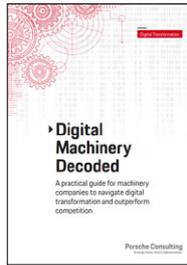
The tougher part of the journey building a platform is about execution. Seven success factors guide your journey from fundamental design choices to launching a platform, growing it, and retaining scale. Along this journey, it is fundamental to understand platform play as a transformation process that will require time. As with every transformation, the impact will tend to follow an exponential rather than a linear form. A solid strategic anchoring and dedicated operating model builds the foundation for sustainable transformation success.

It's time to get moving and unlock the potential of platforms in B2B!

Further reading



Beyond the Product



Digital Machinery Decoded



Future Farming



The Future of Construction Machinery Manufacturers



The Art of Building Customer Ecosystems

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Strategic Vision. Smart Implementation.

As a leading consultancy for putting strategies into practice, we have a clear mission: we generate competitive advantage on the basis of measurable results. We think strategically and act pragmatically. We always focus on people—out of principle. This is because success comes from working together with our clients and their employees. We can only reach our aim if we trigger enthusiasm for necessary changes in everyone involved.

Appendix

Sources

(01) *The ongoing digital revolution brought us billions of mobile devices and sensors, connectivity, and processing power—all at low cost. The unprecedented opportunities for ongoing data capture, technological advances in cloud services, computing, combined with artificial intelligence techniques such as machine learning, have immensely increased prediction capabilities. Digital technologies enable individuals to connect with other individuals and organizations with minimal friction. This means that companies no longer need to do all their innovation themselves or own all the assets. Resources that reside outside the scope of the company can be exploited. Consequently, the main locus of value creation and value capture also shifts away from traditional business models with a linear supply chain to digital platforms. See also Gawer, 2020*

(02) 2021 Kantar BrandZ Top 100 Most Valuable Global Brands | <https://www.kantar.com/campaigns/brandz/global>

(03) See Porsche Consulting's (2021) "Beyond the product: How industrial goods providers improve their competitive advantage with servitization," <https://www.porsche-consulting.com/de/medien/publikationen/detail/strategy-paper-servitization/>

(04) Cp. European Commission (2015)—as cited in Gautis, Rimantas (2017): *The Rise of the Platforms: Business Model Innovation Perspectives*

(05) Cp. World Economic Forum / Tas, Jeroen and Weinelt, Bruce (2017): *Digital Transformation Initiative: Unlocking B2B Platform Value*

(06) Cp. Cennamo and Santalo (2013); Edelman (2015); Zhu and Iansiti (2012)—as referenced in Stallkamp, Maximilian, and Schotter, Andreas (2021): *Platforms without borders? The international strategies of digital platform firms*

(07) *Beyond the strategic view, we acknowledge that platforms can also be understood on a lower level, providing a suite of business and/or technology capabilities that other products or services consume to deliver their unique capabilities. Whilst such technology platforms are highly relevant in many industries, this view will not be the focus of this paper, since they follow the economics of traditional products or software business*

(08) Statista "B2B e-Commerce 2021"

(09) A "flywheel" effect arises when platform value, a relevant number of sellers and buyers, and data insights reinforce each other

(10) *Strong monopoly-like platforms can result in undesired hold-up situations for the entire ecosystem. For instance, around 40 percent of the venture capital invested in start-ups today ultimately go to Google and Facebook. The real genius of these companies is the egalitarian nature of their platforms, which—besides revenue cuts paid to the platform orchestrators—also came up with a de facto advertising duopoly in the online space. Effectively, the advertising battle does not provide true and sustainable differentiation but an arms race for marketing spends, thus representing a tax cut levied on the entire ecosystem. It remains to be seen how regulators globally will react. Nevertheless, also open outcry of a large part of the supply side of a platform can ultimately help limit the magnitude of the tax cut. In November 2020, for example, Apple slashed its App Store fees—at least for smaller developers—from a 30 percent to a 15 percent take rate, after a long-standing outcry by the app developer community and increasing scrutiny by antitrust agencies*
<https://www.wsj.com/articles/apple-under-antitrust-scrutiny-halves-app-store-fee-for-smaller-developers-11605697203>

(11) *Platforms included in our analysis are either driven by incumbents as spin-offs of incumbents or start-ups with traction metrics, or alternatively with a venture capital equity funding of above €1 million. Purely China- or Asia-focused B2B platforms were excluded from the analysis*

(12) See *Gartner Magic Quadrant 2020—Industrial IoT Platforms*. Software capabilities include analytics capabilities, data management, edge device management, integration tools and management, application enablement and management, as well as security

<https://www.record-evolution.de/en/the-industrial-iot-platform-insights-from-the-gartner-magic-quadrant-2020/>

(13) Xometry (2020): “We act as the seller to our buyers and we agree to pricing in advance of sourcing the order from a manufacturer. We bear the risk that a buyer is not satisfied or that we are required to pay a seller more than anticipated to manufacture the order”; July 2021 with a valuation of close to \$3 bn at revenues of \$141.4 million in 2020, with a 24 percent gross margin in 2020. With over 43,000 unique buyers on the platform, including nearly 30 percent of the Fortune 500, and nearly 5,000 unique sellers of all sizes, this shows the market valuation of platform plays also in a B2B context

(14) It remains to be noted that enabling true multi-homing, i.e., running one identical application or digital service across different proprietary ecosystems is today still a key challenge—not just in the above-mentioned healthcare diagnostics platforms space

(15) For a well differentiated view on general marketplace metrics derived from a B2C context see

<https://future.a16z.com/marketplace-metrics/>

(16) The CLV and its constituents such as average order size, number of repeat purchases (which can also be considered as stickiness rate), and share of wallet help steer platforms on a more operative level

(17) Looking at user engagement, at the operational level an analysis of customer acquisition and a lead funnel is also key. These KPIs are highly case-specific and range from organic to paid traffic, and conversion rates from discovery to check-out

(18) Please also refer to the Porsche Consulting publication “Well-being and Healthcare: A Converging Ecosystem on the Rise” for more details on this example of a technology-driven convergence of formerly distinct industries

(19) Please refer to the Porsche Consulting publication “Future Farming: About the Need for Game Changers in the Agricultural Industry” for more details, and value pools that create growth, an improved customer experience, and efficiencies along 35 use cases

(20) For more details, see <https://cloud.google.com/solutions/visual-inspection-ai> or

<https://metrology.news/google-clouds-visual-inspection-ai-reinvents-manufacturing-quality-control/>

(21) The IMC architecture includes AWS-managed IoT edge services and AWS-qualified edge hardware. For more details on the AWS offering, refer to <https://aws.amazon.com/quickstart/architecture/industrial-machine-connectivity/>

(22) Compare Xometry’s 2021 IPO prospectus retrieved via <https://investors.xometry.com/node/7186/html>

(23) The critical mass of a platform refers to the point where benefits for joining the network exceed cost for most potential participants from a broader target population. Once platforms reach a sufficient size, network effects start to pull in new platform participants on demand, and supply side growth reinforces itself

(24) Other examples that drive up switching cost in an industrial B2B setting include exchanged and stored raw or processed data and insights, personalized customer experiences built unique data insights such as customer usage patterns) insights, takeover of administrative processes such as billing on behalf of contributors, best practice sharing and benchmarking services, communities

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