

# Product + Service + Data Integration

## How Integrated Are Products, Services and Data in Your Business?

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PRODUCT+SERVICE+DATA INTEGRATION N P S D P S

# HOW INTEGRATED ARE PRODUCTS, SERVICES, AND DATA IN YOUR BUSINESS?

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PRODUCT + SERVICE + DATA  
INTEGRATION PROJECT



INDUSTRIENS FOND

# ABOUT THIS BOOKLET

This booklet has been developed as part of a three-year research project on “Product+Service+Data Integration” – in short, P+S+D Integration – at Copenhagen Business School. The project investigates the level of integration of products, services, and data as well as P+S+D strategies and initiatives in manufacturing firms in Denmark. The project is part of a larger initiative, Servitize.DK, which aims to enhance Danish firms’ abilities to successfully compete by providing service offerings. The project is financially supported by The Danish Industry Foundation.

## WHO IS THIS BOOKLET FOR?

This booklet is written for decision-makers in manufacturing firms who want to analyze the status of their organizations’ product, service, and data integration strategies and initiatives. The booklet offers tools useful for reflecting on and analyzing this issue. As such, it provides executives with an opportunity to understand their current P+S+D integration situation.

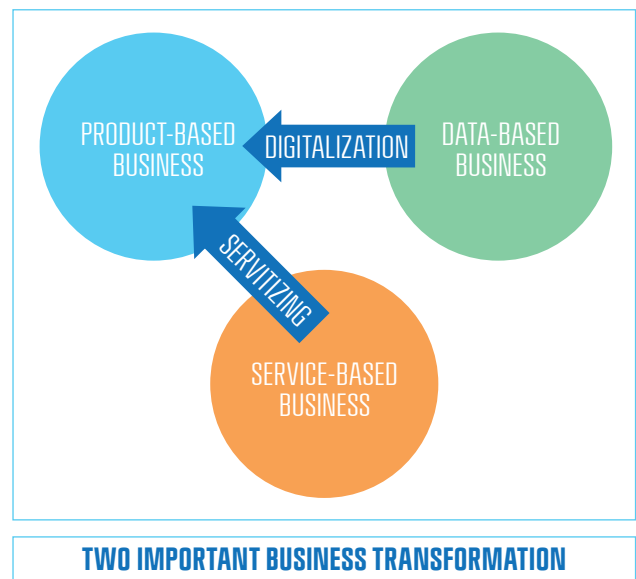
# TWO IMPORTANT BUSINESS TRANSFORMATIONS

Among other important topics, such as climate change and political instability, two key challenges have kept business leaders on their toes over the past ten years: digitalization and servitization.

**DIGITALIZATION** covers “the application of digital technologies – in our work related to the application in businesses.”<sup>1</sup> Businesses have developed numerous digital products (e.g., digital handbooks and web-based instruction), digital services (e.g., remote monitoring of equipment), and digital interactions (e.g., web shops and chatbots). Many of these initiatives have been introduced to better serve customers and respond to their emerging demands, while simultaneously decreasing costs and increasing efficiency.

**SERVITIZATION** is about competing through value propositions that integrate services with product offerings.<sup>2</sup> It predominately refers to how manufacturers are progressively moving towards offering customer-focused combinations (or “bundles”) of goods and services in order to increase their competitiveness.<sup>3</sup> Recently, the definition of “servitization” has been extended to include digital services (or “digital servitization”) by emphasizing value creation that occurs through the interplay of products, services, and software: “To gain value from digital servitization, firms must capitalize on three dimensions of digital offerings (i.e., products, services, and software), which should work together.”<sup>4</sup>

Much of our research has been aimed at product-based businesses that have transformed their business models towards service (servitization) and the utilization of digital technologies (digitalization). Often, these two business transformations are undertaken concurrently but in isolation from one another (i.e., in different departments without coordination).



- <sup>1</sup> Ritter, T., & Pedersen, C. L. (2020). Digitization Capability and the Digitalization of Business Models in Business-to-Business Firms: Past, Present, and Future. *Industrial Marketing Management*, 86, 180-190.
- <sup>2</sup> Avlonitis, V., Frandsen, T., Hsuan, J., & Karlsson, C. (2014). *Driving Competitiveness through Servitization: A Guide for Practitioners*. CBS Competitiveness Platform Booklet, Copenhagen Business School, Frederiksberg, Denmark.
- <sup>3</sup> Vandermerwe, S., & Rada, J. (1988). Servitization of Business: Adding Value by Adding Services. *European Management Journal*, 6(4), 314-324.
- <sup>4</sup> Kohtamäki, M., Parida, V., Oghazi, P., Gebauer, H., & Baines, T. (2019). Digital Servitization Business Models in Ecosystems: A Theory of the Firm. *Journal of Business Research*, 104, 380-392.

# ANALYZE YOUR BUSINESS

## Transformation Status: Which statement describes your situation best?

Please give examples and illustrations for our judgement. Different areas and units in one organization can have different status.

	Servitization	Digitalization
We have <b>not started</b> this transformation.		
We have <b>just started</b> this transformation.		
We are well <b>underway</b> with this transformation.		
We have <b>transformed</b> our business and engage in these activities every day.		

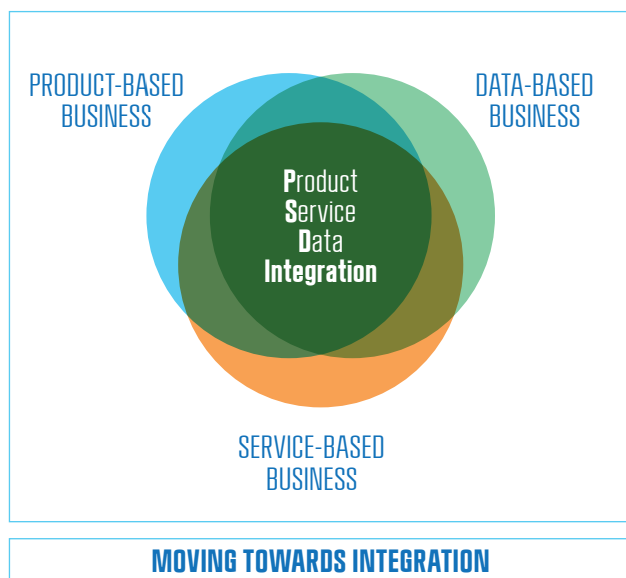
### Reflection Questions

	Servitization	Digitalization
In which year did you <b>start</b> this transformation?		
How much did your organization <b>invest</b> in this transformation over the past five years?		
Which <b>key projects</b> did your organization undertake to drive this transformation?		
What are the <b>achievements</b> so far?		
What <b>challenges</b> has your organization experienced?		
What are your plans for <b>investing</b> in these transformations in the next two years?		

# ON PRODUCT+SERVICE+DATA INTEGRATION

Customers experience all elements (product+service+data), and they evaluate the combined and integrated properties of an organization’s total market offering<sup>5</sup>. Similarly, the servitization and digitalization transformations affect the same business model. Thus, by definition, they are integrated, but exhibit different levels of efficiency and effectiveness. Put simply, demand for – and the complexity of – integrating products, services, and data are facts of business life. The distinguishing factor is whether this integration is managed successfully. Integration has been defined in the following way<sup>6</sup>:

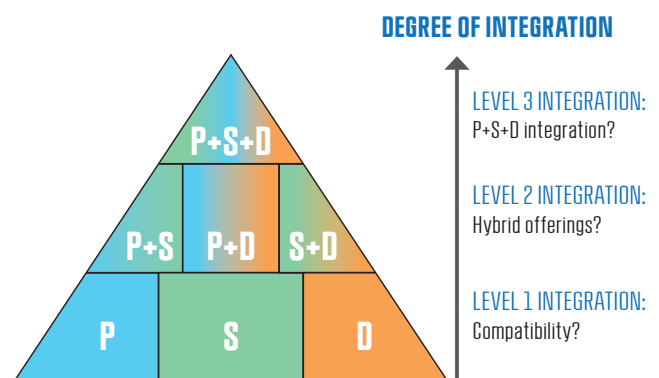
**INTEGRATION: the action or process of combining two or more things in an effective way.**



As such, we posit that P+S+D integration entails the combination of product(s), service(s), and data into a single customer solution. Such a frontend, customer-oriented integration also necessitates an integration of the back-office, i.e., workflows, processes, and technical backbone. We are convinced that integration will increasingly be required in the future, and that P+S+D integration has the potential to create a competitive advantage for those organizations that excel in it.

The figure below illustrates that the foundation of P+S+D integration lies in excellence in three elements: products, services, and data. In addition, the three elements must be compatible, and organizations need to be capable of combining them internally.

On Level 1, the three elements are not integrated, but they can co-exist and co-create value, as opposed to competing with each other. On Level 2, two of the three elements are integrated. For example, digital technologies may be embedded in services to enable reporting on service activities. Finally, Level 3 features full P+S+D integration. On this level, all elements are combined and integrated – products may be installed with sensors that produce data, thereby enabling service schedules to be tailored to actual needs and, consequently, enhancing performance.



<sup>5</sup> For an in-depth analysis of market offerings, please refer to: Ritter, T., Pedersen, C. L., & Andersen, P. H. (2022). Analyzing Market Offerings. P+S+D Integration Booklet, Copenhagen Business School, Frederiksberg, Denmark.

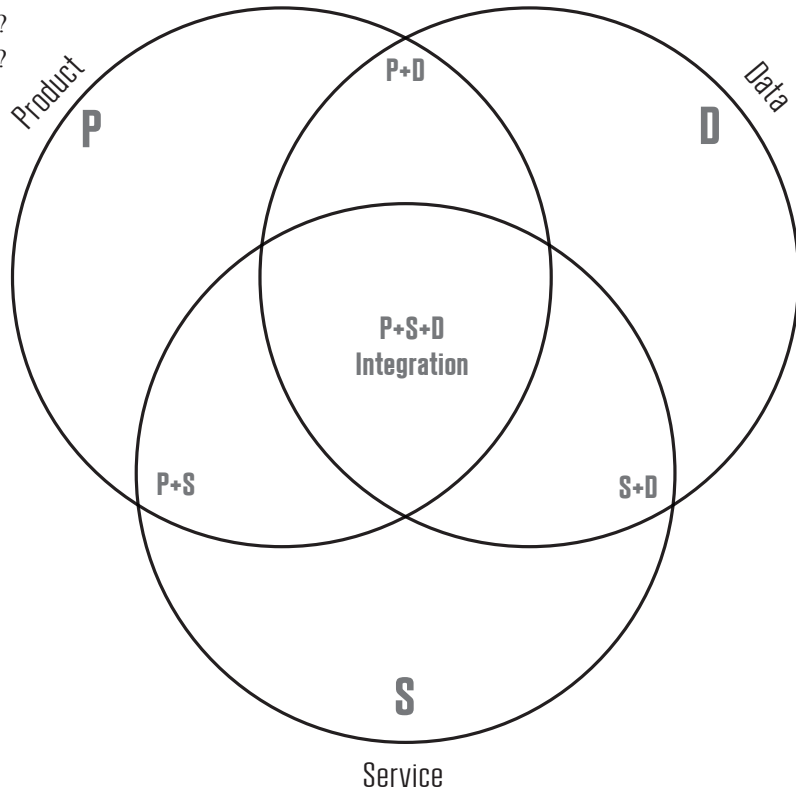
<sup>6</sup> <https://dictionary.cambridge.org/dictionary/english/integration>

# ANALYZE YOUR BUSINESS

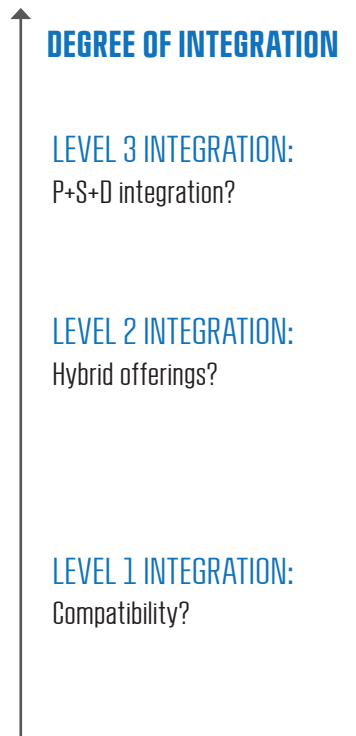
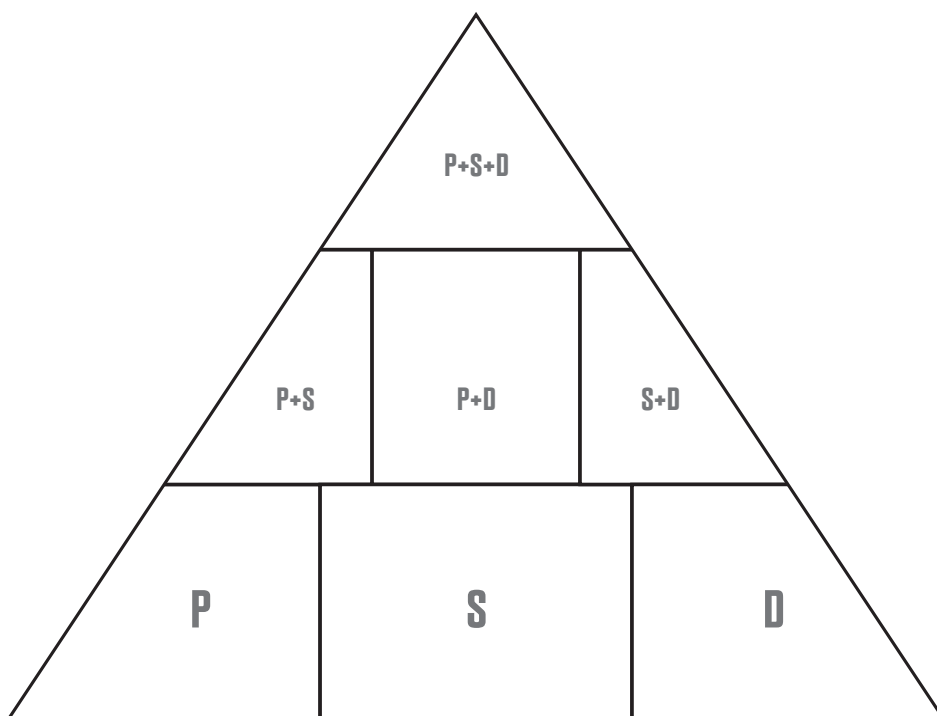
How was your revenue distributed in 2021?

What will your revenue look like in 2022?

What will your revenue look like in 2025?



What level is your organization on?



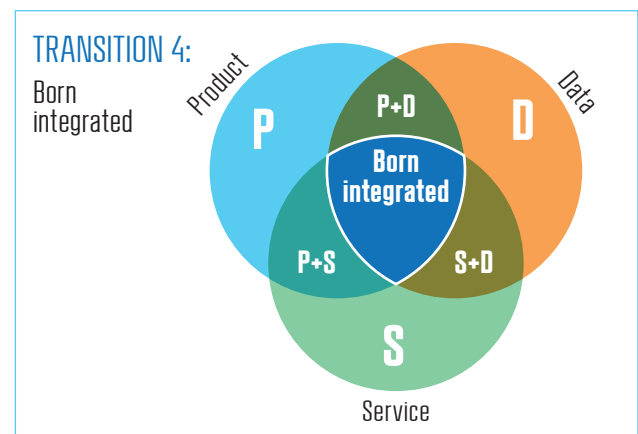
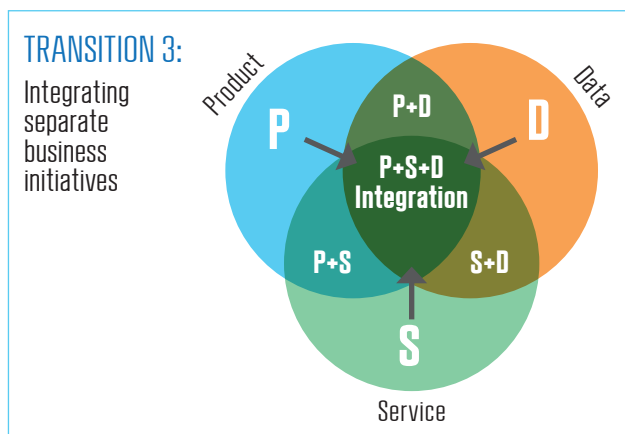
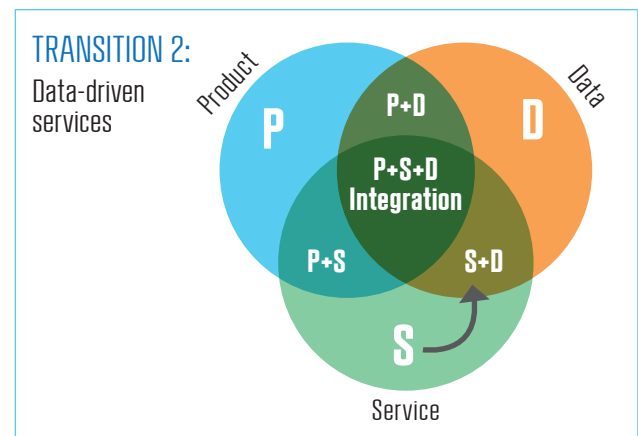
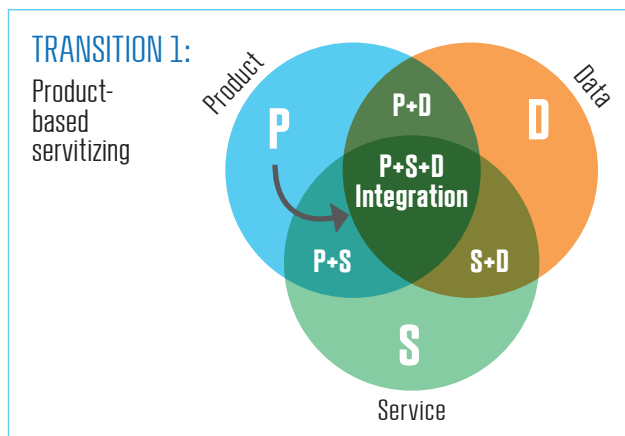


# THE FOUR TRANSITION PATHWAYS

Our discussions with executives have revealed four typical P+S+D integration pathways:

- 1 The organization has historically had a strong product focus, which is enlarged by engaging in service delivery. The organization then applies digital technologies to optimize and further develop the business model.
- 2 The organization has historically been a service provider. It later optimizes its service business through the use of digital technologies. Then, the organization starts developing its own products, often based on deep customer insights and technical expertise.

- 3 The organization has strong business units in products, services, and digitization. All units develop their own agendas. However, over time, they recognize that they must integrate their efforts in order to realize the full business potential.
- 4 The organization was “born P+S+D integrated.” It has never operated in any other way. These organization were typically founded after 2000, and launched their operations in a world with available digital technologies and in which customers demanded services along with products.

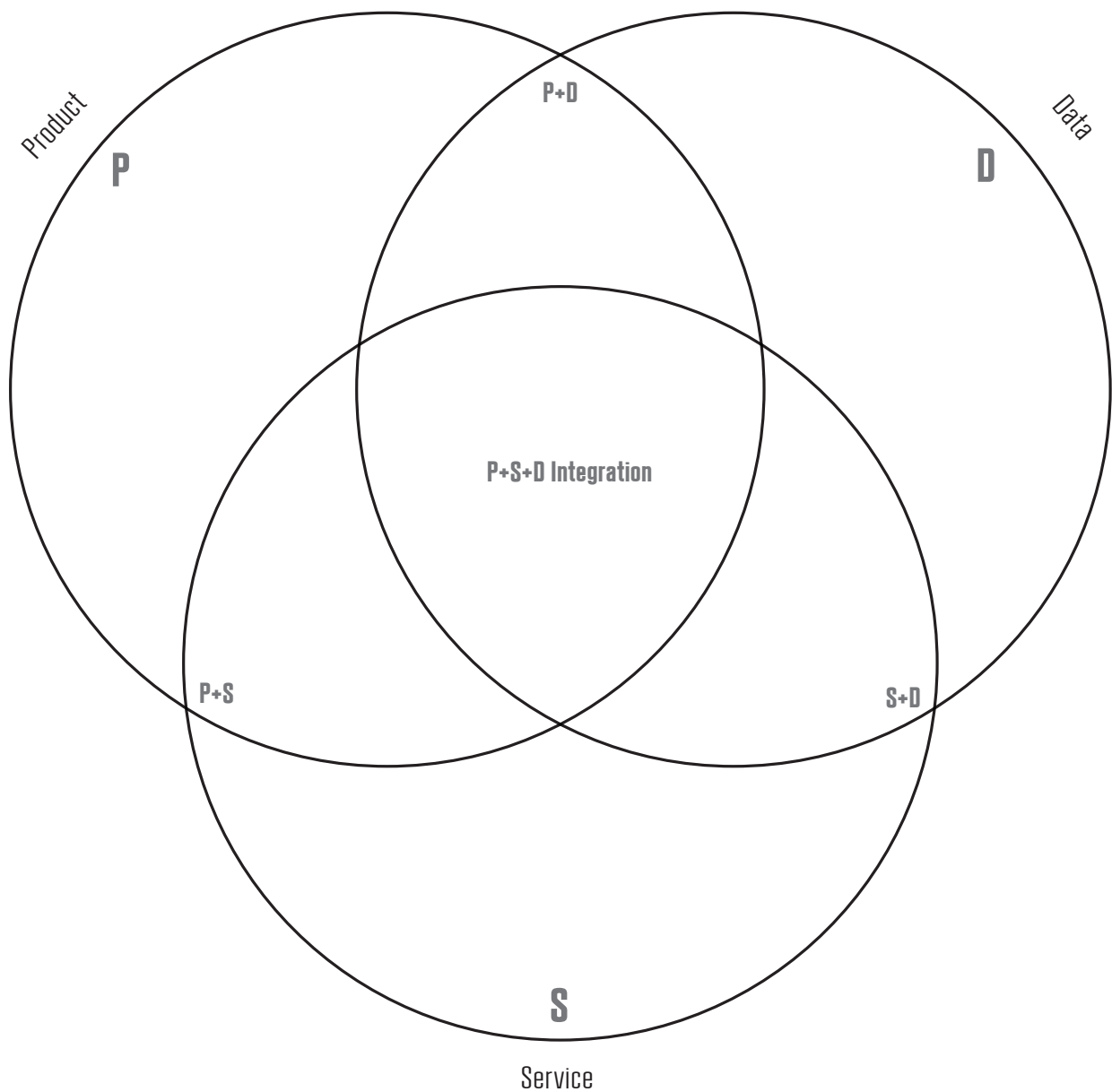


# ANALYZE YOUR BUSINESS

Where did your organization start?

How did your organization's business evolve over time?

Please consider your P+S+D integration journey.



# BARRIERS TO P+S+D INTEGRATION

We have identified four barriers that often hinder P+S+D integration (see figure below):

- 1 No or weak inspiration – a lack of ideas;
- 2 No or a weak strategy – a lack of direction;
- 3 No or a weak business model – a lack of clarity on operations management; and
- 4 No or weak pricing approach – a failure to capture the fair share of value created.

The first barrier pertains to a lack of inspiration, which results in a lack of ideas. One way to overcome this barrier is through employee autonomy – that is, employees can be allowed to make decisions on their own without approval from their managers. Autonomy is related to intrinsic motivation, which, in turn, fuels creativity and ideas. Autonomy also makes it possible to test and assess the relevance and viability of various ideas through experimentation. However, autonomy on its own is not enough. Managerial guidance is also needed to ensure corporate alignment. Hence, companies can overcome this barrier using tools for guided autonomy.

The second barrier relates to a lack of direction. What is the organization's target? What does it want to achieve? Which position in the market does it wish to reach? Without direction or – in other words – without a clear strategy, transitions become random at best and contradictory at worst. In times of innovation and change, role models and best cases are often missing. Consequently, defining a strategy becomes an even more important task. To imagine possible futures and to

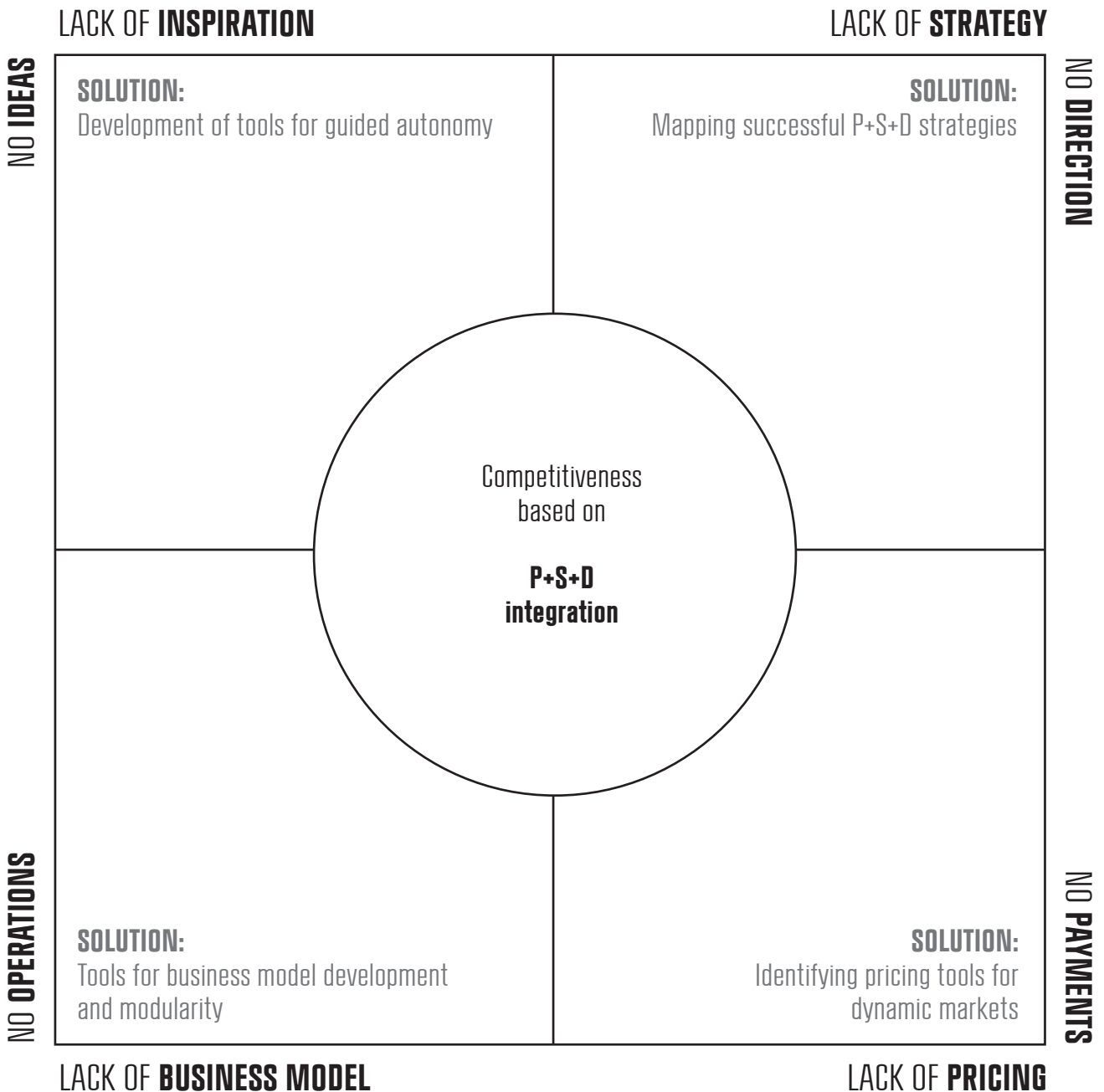
effectively allocate resources, a strategy must be developed in order to establish strategic goals and directions.

The third barrier relates to the lack of a business model and operations management. Based on the development of innovative solutions and strategies, firms must configure (and/or re-configure) their business models to enable competitive operational excellence in delivering solutions. Manufacturers should ask the following questions: How do we operationalize our business-model innovation in terms of our product+service+data integration strategy? What trajectories should we pursue to implement our desired operational model?

The fourth barrier relates to finding an effective pricing strategy. The pricing strategy must ensure that the firm can capture a fair share of the value it creates for the customer. The first step is making sure there is a fee for provided services. If customers are accustomed to receiving services at no cost, then it will demand deliberate actions to convince them to pay. The second step is identifying customers' pain points and knowing how the firm's P+S+D integration approach addresses customers' needs, and thereby derive a price that is commensurate with the value delivered. The third step entails knowing when it is best to adopt a cost-plus, competition-based, or value-based approach as part of the pricing strategy. Different approaches may be appropriate for different customer segments. The fourth step is using data analytics to inform the metrics being used and to price the performance enhancements being delivered to customers.

# ANALYZE YOUR BARRIERS

Please give examples of these barriers in your organization.  
Please give examples on how you overcome these barriers in your organization.



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