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Innovation Insight for Composable Business for Manufacturers

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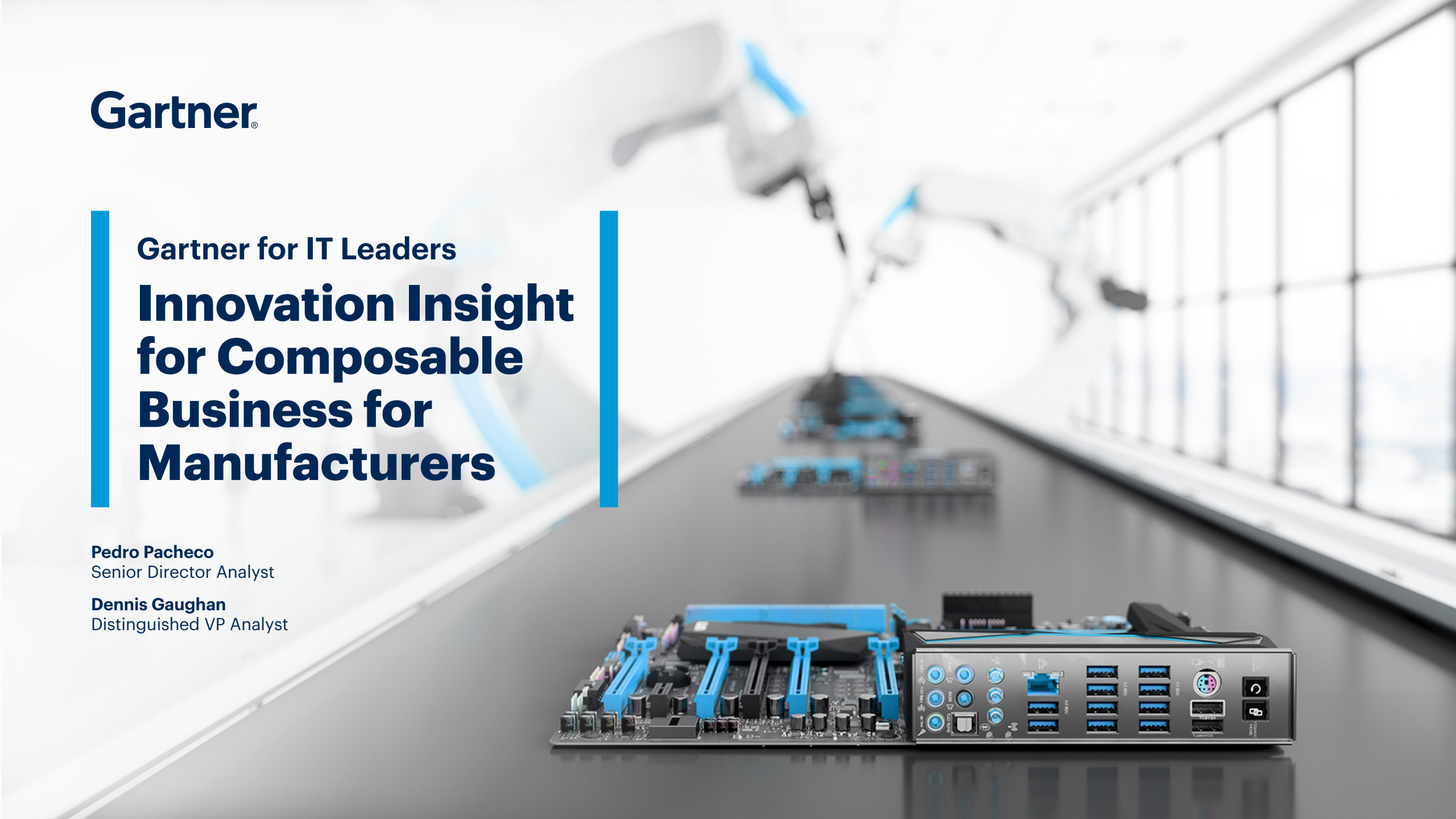

COVID-19 prompted a call for reinvention and has exposed the organizational sluggishness of many manufacturing companies. The postpandemic strategic reset is an opportunity for CIOs to deploy the concept of composable business, aiming at greater organizational agility and cost-efficiency.

More on This Topic

This is part of an in-depth collection of research. See the collection:
Becoming Composable: A Gartner Trend Insight Report

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Overview

Key challenges

- Many manufacturing organizations see their efforts to digitally transform their businesses hampered by rigid architectures and organizational structures.
- Digital innovation and transformation should be companywide initiatives, but instead, are being driven in silos by different functional areas.
- The resources and capabilities of manufacturing organizations are clinched by units and departments under the current decision processes. This makes it hard for those capabilities to always be used where they are needed the most.
- Agents of change are often blocked by organizational politics, interdependencies, and complex or arcane decision processes.

Recommendations

Manufacturing CIOs seeking digital transformation and innovation must:

- Redefine the company's structure and processes under the premise that disruption is the norm, to shrink the time between the detected need for business change and the response.
- Orchestrate the mix and match of different business areas to achieve transformational goals by developing cross-functional teams focused on jointly delivering business outcomes.
- Create a business architecture featuring modular digital capabilities that can be flexibly deployed as demanded by the need for business change.
- Create mechanisms to support agents of change in quickly turning ideas into proofs of concept and, once vetted, moving them into implementation.

Introduction

The pandemic exposed the weaknesses of manufacturing companies as they were quickly forced to respond to disruption. For these asset-intensive organizations, agility is something of a major strategic importance due to their greater inertia. Factors like a complex geopolitical “chessboard,” natural disasters, pandemics and financial instability create an increasingly unpredictable future. This means manufacturing companies must build a reset strategy that redefines their structure, processes and governance in a bid to build greater foresight and agility to quickly adapt to changing conditions.

Besides operational disruptions from external factors, manufacturing companies also need to enhance their ability to deliver disruptive innovation. This means, if we use the analogy of “Apple vs. Nokia,” being the company that delivers the “iPhone moment,” rather than just launching “a better Nokia.” The manufacturing sector is also seeing a growing number of startups that come up with radically different approaches to producing things — a number of these companies will become big players and agents of disruptive innovation.

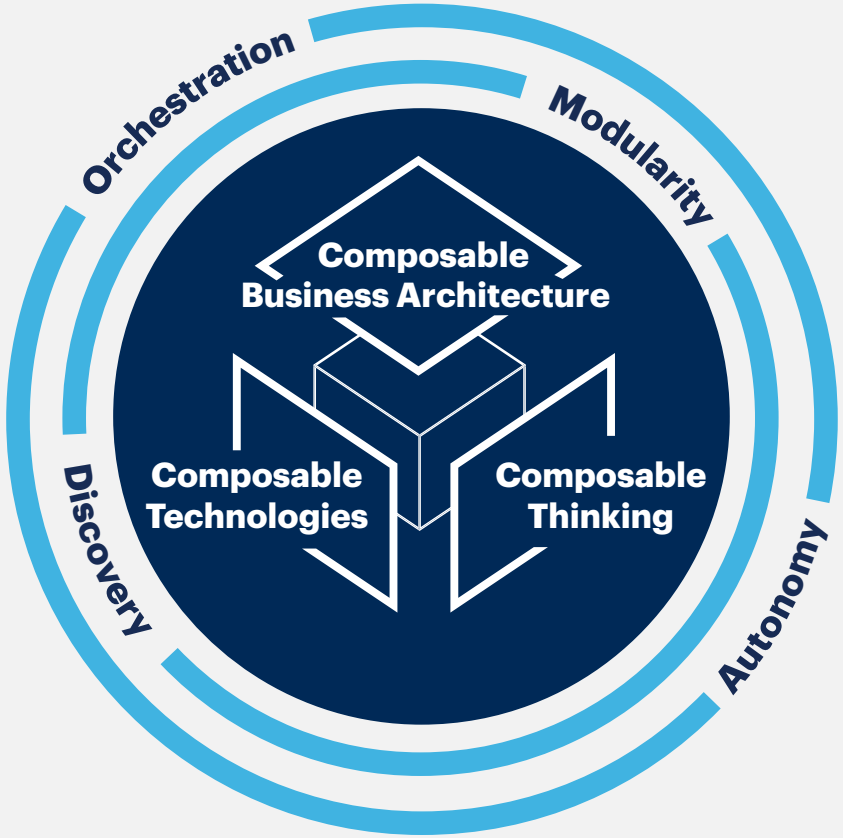
The solution for manufacturing companies lies in the concept of “composable business,” as shown in Figure 1. This organization is built around:

- A modular corporate mindset and capabilities
- Efficient orchestration of those capabilities to achieve goals and adapt quickly
- The foresight to identify opportunities for disruptive innovation
- The autonomy of different parts of the organization to trigger that disruption

Description

A composable business is an organization that delivers business outcomes and adapts to the pace of business change by adopting composable thinking, a composable business architecture and composable technologies.

Figure 1: The Key Components of Composable Business



Source: Gartner

Key Components of Composable Business

Overall, a manufacturer that wishes to transform into a composable business needs to change its mindset and build a set of capabilities that can be swiftly allocated throughout the organization when needed:

- Composable thinking
- Composable business architecture
- Composable technologies

Composable Thinking

It all starts with a corporate culture and mindset where the creation and usage of capabilities and resources are not blocked by silos, profit and loss (P&L) priorities, or organization charts, but are geared toward continuous change. This mindset must lead to the redefinition of the company's structure in much the same way that microservices are a recomposition tool for enterprise software.

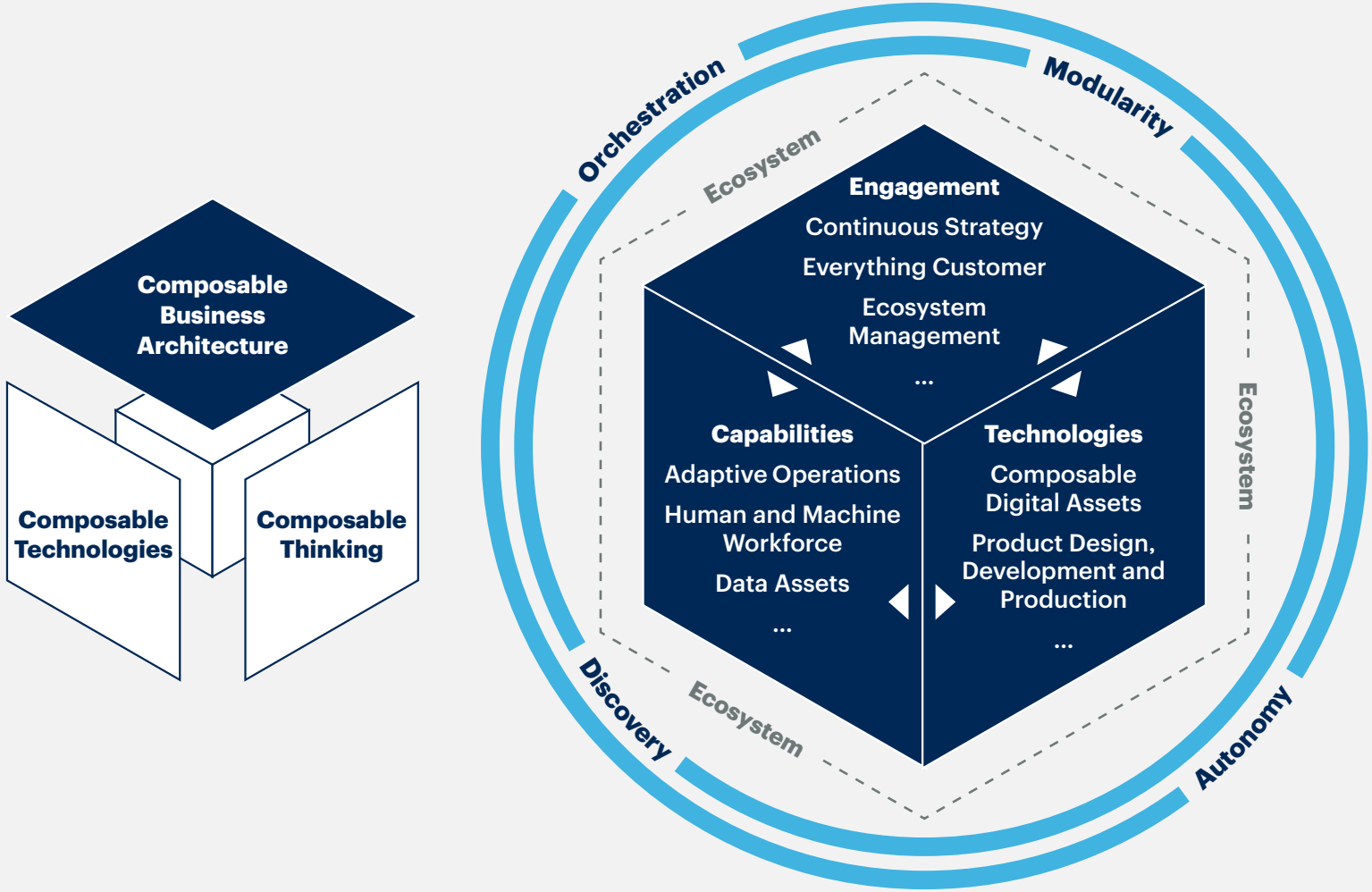
Composable Business Architecture

This is a new approach to the company's current business architecture that helps identify and implement the changes required to maximize the benefits of digital acceleration. Using composable thinking, it will help organizations accelerate the transition to new models that maximize digital transformation or resilience. This is not simply a business model, nor an organizational structure, but more like an approach that can adapt to new models in a more fluid way.

A manufacturer wanting to evolve its digital maturity depends on a finite set of resources to do so. Rather than allocating those resources to a specific structure, the manufacturer must bake in another approach. The manufacturer doesn't link people or equipment to a particular organizational silo, but allows those resources to be fluidly allocated to different parts of the company as the need for digital disruption is identified. In addition, it is also about the ability of those digital resources to work closely with multiple internal teams to achieve key disruptive goals.

A composable business architecture enables a faster response to disruptive digital business needs. At the same time, it avoids the implied cumbersomeness when every unit or department needs to justify capital expenditure (capex) and headcount, which often turns into a failed business case or a less efficient use of resources. This is possible by allowing allocation of resources to be more fluid, according to disruption needs, and not to be blocked by organizational barriers (see Figure 2).

Figure 2: Three Dimensions of the Composable Business Architecture



Source: Gartner

Composable Technologies

A part of the composable business architecture, these are digital assets packaged as discrete components delivering independent, clear and complete business value, and are designed as building blocks for assembly and reassembly of business processes and application experiences. For instance, a company can build or outsource capabilities to deliver on several disruptive digital technologies like artificial intelligence (AI), Internet of Things (IoT) or blockchain. Such capabilities don't need to be attached to a particular unit or P&L or cost center. Actually, the capabilities can be allocated fluidly to work fully embedded as part of disruptive "tiger teams" created to quickly tackle external disruption or produce disruptive innovation.

Guiding Principles

In addition to mindset and composability of resources and capabilities, the composable business needs to adopt guiding principles that help the organization to best utilize its composable building blocks at all times:

- **Modularity.** The company's structure and processes need to prioritize the ability to thrive from disruption. This principle avoids rigid structures in favor of a fluid structure that is geared around disruption, rather than resisting it. For many manufacturers, the journey toward composable business begins by defining a roadmap to modernize existing monolithic ERP systems to create a more modular set of capabilities.
- **Orchestration.** Business functions, instead of operating in silos or confined to particular business units, must be incentivized to organically discover and join around multiple change management teams with the purpose of delivering transformation. The main goal of these business functions is, therefore, not to support the status quo, but to work as enablers of change.
- **Discovery.** Rather than shutting down disruptive change, the organization must, in fact, continuously discover within itself new opportunities for disruption. This means units, departments and associates must be rewarded for not only identifying disruptive opportunities, but also driving those forward.
- **Autonomy.** Business units must be given the autonomy to quickly harness adisruptive opportunity and drive it forward, rather than remaining "handcuffed" by a cumbersome decision process. This means reshaping the usual approach of business case definition and approval for capex and headcount. A team wanting to create disruption should be given the opportunity to put that in practice by starting small and failing fast — meaning, quickly learning with failure and improving on that. This, however, should not be understood as letting everyone do what they see fit. First, the organization needs to deeply root composable thinking into its culture. It must provide opportunities to the true disruptors within its ranks, rather than being sidetracked by individuals who opportunistically search for chances of career progression.

Benefits and Uses

The ability of a manufacturer to quickly embrace disruption and thrive from it is often hampered by culture, risk aversion and a structure that is organized in silos with limited cooperation. This is particularly true in most asset-heavy manufacturing companies with a long history, operating in greatly consolidated sectors. Often, these companies believe their formula for digital transformation and greater resiliency is something custom-made, while, at the same time, they do not enact top-down cultural changes. Also, their structure and processes remain essentially rigid. As such, composable business is a concept that manufacturing companies must embrace to increase their resiliency when facing disruption and to become more driven by disruptive innovation.

Manufacturing companies can apply the composable business concept across their entire operations. However, this should happen progressively. It is possible to start with subsidiaries or spinoffs as a way to pilot and perfect the mechanisms of composable business, prior to a broader rollout. Most organizations start their journey by focusing on areas where quick adaptability creates sustainable competitive advantage. Composability should never be the goal in itself.

Examples of Business Composability

FlexFactory

This is a joint venture between Porsche, its consulting company MHP and Munich Re. It aims to support companies by making the manufacturing of small series of products more flexible and cost-efficient. Each of the companies involved offers its composable capabilities to support clients. Porsche brings manufacturing expertise. MHP adds digital process optimization, and Munich Re contributes with finance and insurance capabilities.

CREMA

Cloud-based Rapid Elastic MAnufacturing is a collaboration between several manufacturing companies that uses the concept of the manufacturing cloud to simplify the deployment, management and adaptation of manufacturing processes. CREMA offers manufacturers several composable capabilities, even including production capacity as a service.

DHL Warehouse Robotics Platform

DHL worked together with Blue Yonder and Microsoft to launch a robotics platform for warehouses that it claims can significantly reduce the integration and programming time to deploy automation. The solution uses IoT and AI to focus on the concept of “plug and play,” also enabling more flexibility in the choice of robotic systems.

Haier Group

The Chinese appliance manufacturer anticipated in 2005 how customer demand would grow increasingly fragmented. The company reorganized its structure, breaking legacy functions into 4,000 autonomous teams called microenterprises (MEs) to meet specific customer needs. Haier’s leaders describe this reorganization with an analogy: An egg broken from the outside is food; an egg broken from within represents life.

In the ME structure, small teams have full autonomy and control over the P&L center to make rapid decisions with a priority on customer needs. To sense customer needs and perform mass customizations, the teams interact in an ecosystem microcommunity using COSMOPlat, a cross-industry, multidomain industrial IoT platform. This operating model has delivered many notable results. For example, Haier has shortened the product designto-deliver time by 35% in some new product lines. It demonstrates the power of combining modularity and autonomy with the microenterprises, and discovery and orchestration through the COSMOPlat platform.

Risks

Manufacturing companies' adoption of the composable business concept entails a number of risks for which CIOs need to prepare:

- **Executive sponsorship is essential.** This kind of structural change demands the highest possible advocacy directly from senior leadership. Any hesitation from them will most likely derail the chances of success. As such, the CIO needs to continuously prompt senior leadership to champion this initiative.
- **Temptation to apply composable business across the whole organization at once.** Trying to turn the entire structure into a composable business may prove to be a long, cumbersome and even frustrating process. Instead, the organization must focus on implementing composability in functions, areas or business units that are more critical to business value.
- **Communication issues.** Often, organizations driving major changes to their structures struggle with the fact that different individuals have (or prefer to have) different understandings of changes. This creates major inertia and internal tension. For that matter, CIOs must work closely together with senior leadership to make sure all plans and communications are simple and straightforward. CIOs must remove ambiguity, and go one small step at a time, rather than move forward with an intricate sequence of events. CIOs should reconfirm with the different layers of the organization to make sure the message has been understood.
- **Resistance to move from being asset-heavy to resource-agile.** Manufacturing companies often think in an asset-heavy manner, as they see the need for a manufacturing and supply chain apparatus as a basic need. However, a manufacturer can also outsource several capabilities. For instance, Apple outsources iPhone manufacturing to other companies, as this allows it to focus more on disruptive innovation. As such, the CIO driving composable business must shift cultural perceptions appropriately and away from long-established taboos and conventions. In line with the mindset of composable business, the company should gauge value not by its assets, but by its agility.

Recommendations

- Redefine the company's structure and processes under the premise that disruption is the norm, to shrink the time between the detected need for business change and the response.
- Orchestrate the mix and match of different business areas to achieve transformational goals by developing cross-functional teams focused on jointly delivering business outcomes.
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