

Becoming Composable: A Gartner Trend Insight Report

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By Analyst(s): Yefim Natis, Janelle Hill, Partha Iyengar, Gene Alvarez, Jennifer Loveland, Chris Howard

Initiatives: [Executive Leadership: Enterprise Strategic Planning and Execution](#); [Applications and Software Engineering Leaders](#); [CIO Leadership of Innovation, Disruptive Trends and Emerging Practices](#); [Data and Analytics Strategies](#); [Enterprise Architecture](#); [Executive Leadership: Data and Analytics](#); [Government Digital Transformation and Innovation](#)

Incorporating composability into digital business enables the enterprise or public agency to change and grow despite persistent uncertainty. Instead of avoiding the risk of change, executive leaders must reinvent their thinking to see change as a well-trusted tool for business resilience and growth.

Additional Perspectives

- [Summary Translation: Becoming Composable: A Gartner Trend Insight Report](#) (26 October 2021)

Overview

Opportunities and Challenges

- In times of turbulence, every business is at a fork in the road: Drive change or have change imposed on you. The difference in outcomes can be vast.
- Disruption challenges business conventions. Visionary leaders use it as an opportunity to reinvent their business thinking and grow through the turbulence.
- Reinventing business thinking is the beginning of new leadership; it forms the strategic cultural foundation for many decisions that lie ahead.
- The risk of change is amplified by entrenched business designs and practices. Mastering change increases leadership options and reduces the barriers to reaching untapped value triggered by the disruption.

What You Need to Know

- Just reinforcing stability in a turbulent world is a losing strategy.
- Composable thinking recognizes opportunity where others see only the risk of change. Executive leaders use the core principles of composability to accelerate their business and thrive in a new and more turbulent environment.
- Composable business designs prepare leaders to make decisions that would have been too risky without the architecture of composability.
- Composable thinking and composable architecture can only succeed together. An architecture investment without clarity of the mission will not deliver the transformative experience of the composable digital business.

Strategic Planning Assumptions

By 2024, 20% of Global 2000 CEOs will report an increased appetite for risk and improved resilience, both attributed to modular business redesign.

By 2024, the mantra for new SaaS will be “composable API-first and API-only,” relegating traditional SaaS vendors as “legacy.”

Insight From the Experts

This document was republished on 22 September 2021. The document you are viewing is the corrected version. For more information, see the [Corrections](#) page on gartner.com.

Composable Thinking Overcomes Business Uncertainty

Dear Readers,

Preparing for change is insurance for future business viability. And, as with all insurance, the costs can feel too high ... until it's needed, when it proves to have been a bargain. Composability makes change easier, faster, safer and thereby less costly. It is a model worth the investment for those that expect demand for change to continue to increase.

Being prepared for change is a strategic imperative in turbulent times. Preparing to change enables both proactive and reactive behavior. Organizations will benefit from mastering change to the degree that allows them to initiate it in pursuit of an opportunity, not just stand by until external events impose the need to change.

To adjust and flourish in the face of uncertainty and opportunity, leaders must begin to reinvent their business thinking. Composability starts with a mindset shift from change is a threat to change is an empowering and familiar tool. Untapped value comes from embracing and mastering change.

“The greatest danger in times of turbulence is not the turbulence; it is to act with yesterday’s logic.”

— Peter Drucker

Composable thinking, composable business architecture and composable technology are the three pillars of composable digital business. The leaders in the industries where change is most urgent, like commerce, manufacturing and healthcare, are practicing it today.

Rather than just keeping pace, leaders set the pace. Leading organizations will mark the 2020s as the era when they reinvented their business thinking to embrace change and accelerate their transition to digital business by applying the core principles of composability.

Business and technology leaders can use Gartner’s research to begin their journey to composable business. This document provides an overview of composable business and a guide to Gartner research, containing important concepts, insights and best practices.

Sincerely,

Yefim Natis, Janelle Hill, Partha Iyengar, Gene Alvarez, Jennifer Loveland and Chris Howard

Executive Overview

Definition

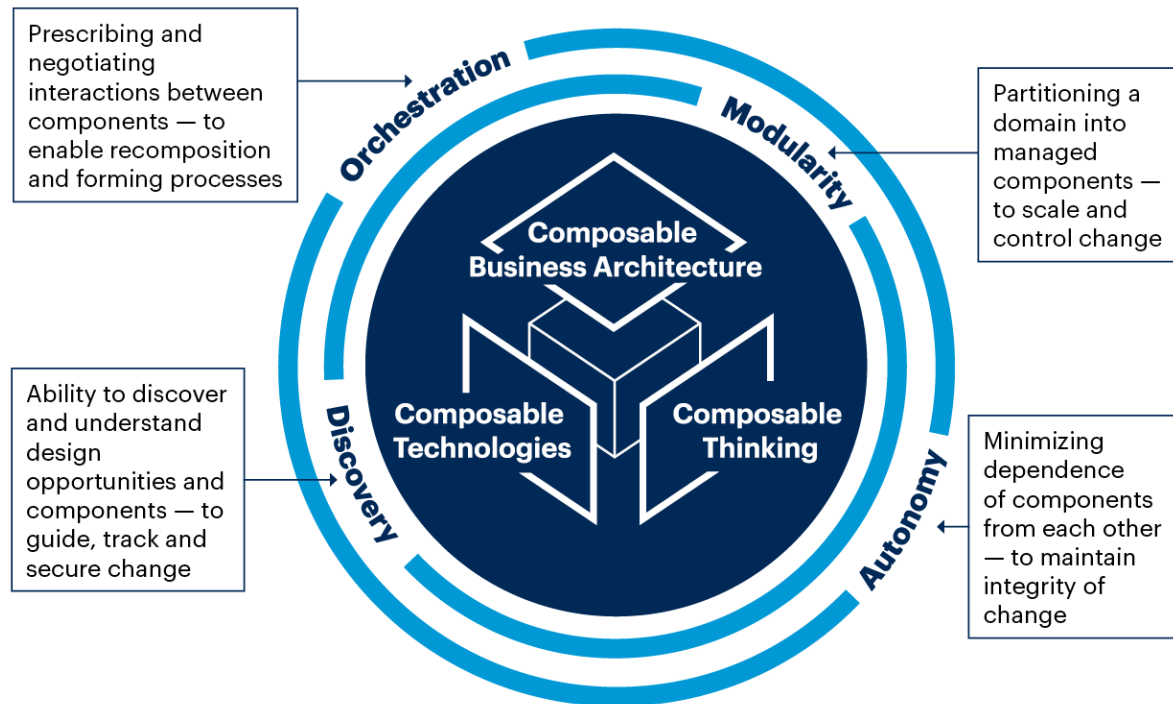
A composable digital business applies the core principles of composability (modularity, autonomy, orchestration and discovery) to the foundations of its business architecture (the business model, enterprise operations and strategy) in order to master the risk of change and reach untapped business value.

Figure 1 introduces the core design principles for composability. Use them to frame the strategy of modularization and rules of composition for your specific context, such as:

- Supply chains dynamically recomposed using the registry of preapproved suppliers.
- Ad hoc project teams custom-composed from a pool of individuals with diverse skills and experiences.
- Custom applications composed using software components sourced from business API marketplaces.

Figure 1. The Core Design Principles of Composability

The Core Design Principles Of Composability



Source: Gartner
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The first areas to modernize for composability are those areas of the organization's business and technology architecture where preparedness to change is most urgent. A top-down or bottom-up approach can work, depending on the organization's leadership culture:

- **Top-down** begins with composable thinking at the executive leadership tier of the organization. Composable thinking promotes creative use of the design principles throughout the organization. Different subordinate segments of the organization apply composable thinking in their own contexts and repeat the top-down approach in their own domain.
- **Bottom-up** begins with applying the design principles of composability to technology within the organization and then promoting the tenets of composable thinking up through the organization in order to accelerate the business effects of the initial technology investments. As technology leaders encourage their business peers toward composable thinking, they begin to apply its principles to business architecture and executive leadership strategies.

In either case, the early innovation investment can be small, and modernization of the business architecture and the technology base can be gradual. Even a limited investment, when paired with composable thinking, will provide a notable improvement in resilience, adaptability and readiness to change. Early success stories will help ignite the transformation and lead the organization toward reinventing its business thinking. These stories encourage organizations to master the risk of change and to seek change as the engine of business growth.

Additional research by Irving Tyler.

Research Highlights

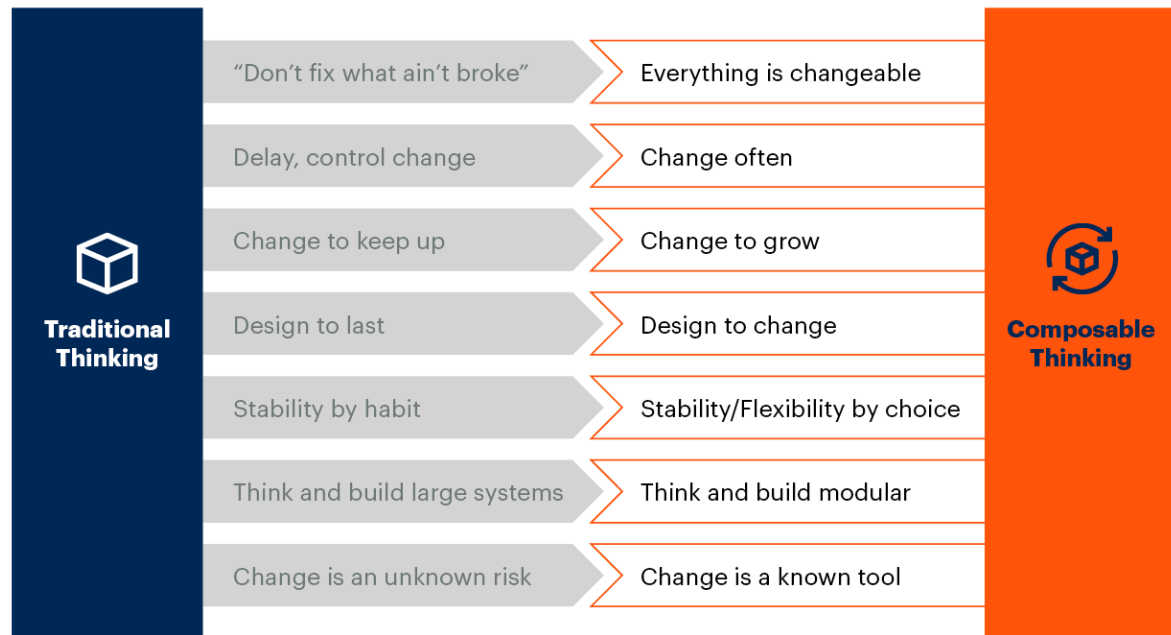
Begin With Composable Thinking

The journey to composable business begins with leaders and decision makers embracing a new way of thinking — the seed of cultural change that manifests in a new character of emerging business strategies (see Figure 2):

- Everything is seen as modular and changeable; change is seen as an essential tool, no longer a threat or burden.
- “Don’t fix what ain’t broke” is out. Everything that’s not changeable is a business or technical “debt,” a barrier to vitality of the organization that’s facing turbulence and uncertainty.
- Everything is designed to change, and change is considered often, to achieve large and small outcomes, eyeing both growth and resilience.
- More change is introduced, driven and anticipated by the business; less is imposed on it.
- The new way of thinking, applied to people, systems, processes and business architecture in similar ways, forms a pervasive new culture and fosters new behaviors.
- A new balance of stability (repeatable behavior) and agility (a changed behavior) emerges through composability, as business leadership gains control of the risk of either.

Figure 2. Adopting Composable Thinking

Adopting Composable Thinking



Source: Gartner
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Everything is planned with a modular architecture; autonomy, orchestration and discovery of the modules are the design principles and the guardrails for the quality of outcomes. By partitioning the business architecture into modular components that can be changed one at a time and autonomously, composability prepares the organization for faster, more efficient and safer change.

There are two reasons business leaders typically turn to composability:

- **Defense:** Some may have missed a business opportunity because they could not make the required change. Or they have failed to adjust in time to a business or cybersecurity event that disrupted their business. They may have had these experiences, or they may be anticipating them. Learning to change faster and safer is a good defense against disruption, and composability is the means to that end.
- **Offense:** Others do not wait for opportunities; they seek to create them. They target the untapped potential that emerges when they master greater degrees of risk. The risk of change cannot be eliminated, but modularity can be a tool to mitigate the increased risks of strategic change.

As the organization successfully exercises composable thinking, the early prevalence of the defensive motivation gives way to the mindset of growth and the aim for more competitive and higher outcomes.

Related Research

[Rethinking IT-Business Engagement](#)

In this presentation, CIOs will learn about how IT's engagement posture with the business must change given the rise of fusion teams and technology producers outside of IT.

[Quick Answer: What Does It Mean to Be 'Composable'?](#)

Enterprises aim to be more adaptive to their customer needs and market dynamics while staying resilient by becoming "composable." However, many IT leaders are unclear on what composability means and on how to apply it in an organization. This Quick Answer provides guidance on those questions.

[Architect for Adaptability to Build a Resilient Enterprise](#)

In times of uncertainty, an organization's business strategy focuses on becoming adaptive and resilient. To do this effectively, enterprise architecture and technology innovation leaders must architect to be adaptive, from the underlying technology platform through to business and operating models.

[Business Composability Helps You Thrive Amid Disruption](#)

Business composability combines mindset, practices and tools to accelerate digital business. Gartner's primary research found some enterprises used composability to beat competitors during the pandemic. The results show CIOs how to write a business case for investments in composability.

[Compose Agile Budgets That Dynamically Adapt to Change](#)

CIOs are struggling to get approval for inflexible, fixed technology budgets against uncertain business forecasts. This research explores how CIOs can break through legacy waterfall budgeting and other outdated habits to reach more-profitable agreements on technology spending.

[Top Technology Trends in Government for 2021: Composable Government Enterprise](#)

Governments struggle to adapt to accelerated demands and opportunities due to fixed, siloed approaches to operations. CIOs of composable governments must take a flexible, modular approach to business- and technology-enabling configurable common capabilities to continually adapt and deliver value.

[General Manager Insight: Be a Trusted Composable Business Partner to Your Customers](#)

Composable business enables enterprises to thrive in an accelerated digital future, while dealing with uncertainty. Technology general managers need to position their organization as a trusted partner for their customers during moments of composability.

[Emerging Trends: Critical Insights on Composable Business for Product Leaders](#)

Composable business is a specific and accelerated form of digital business impacting all facets of tech providers' business. Product leaders need to embrace the principles of composable business to capture growth and secure competitive advantage.

[Adaptive EA Governance: 4 Styles That Enable Digital Delivery](#)

To deliver digital at speed, enterprise architecture and technology innovation leaders can no longer rely on a one-size-fits-all approach to enterprise architecture (EA) governance. This research examines four styles of EA governance and the building blocks necessary to execute adaptive strategy and deliver a composable enterprise at speed.

[General Manager Insight: The Future of Applications — Delivering the Composable Business](#)

A composable business is more resilient and adaptable to change and disruption. Technology general managers have an opportunity to position their portfolio to help accelerate the customer's journey to composability.

[Composable and Agile: Progressive Application Leaders' Priorities, 2Q20](#)

The priorities of progressive organizations are an invaluable resource that organizations can learn from and benchmark against. Application leaders can use this algorithmically generated report to learn from their most progressive peers, and improve their short-term plans and long-term roadmaps.

[Fusion Teams: A New Model for Digital Delivery](#)

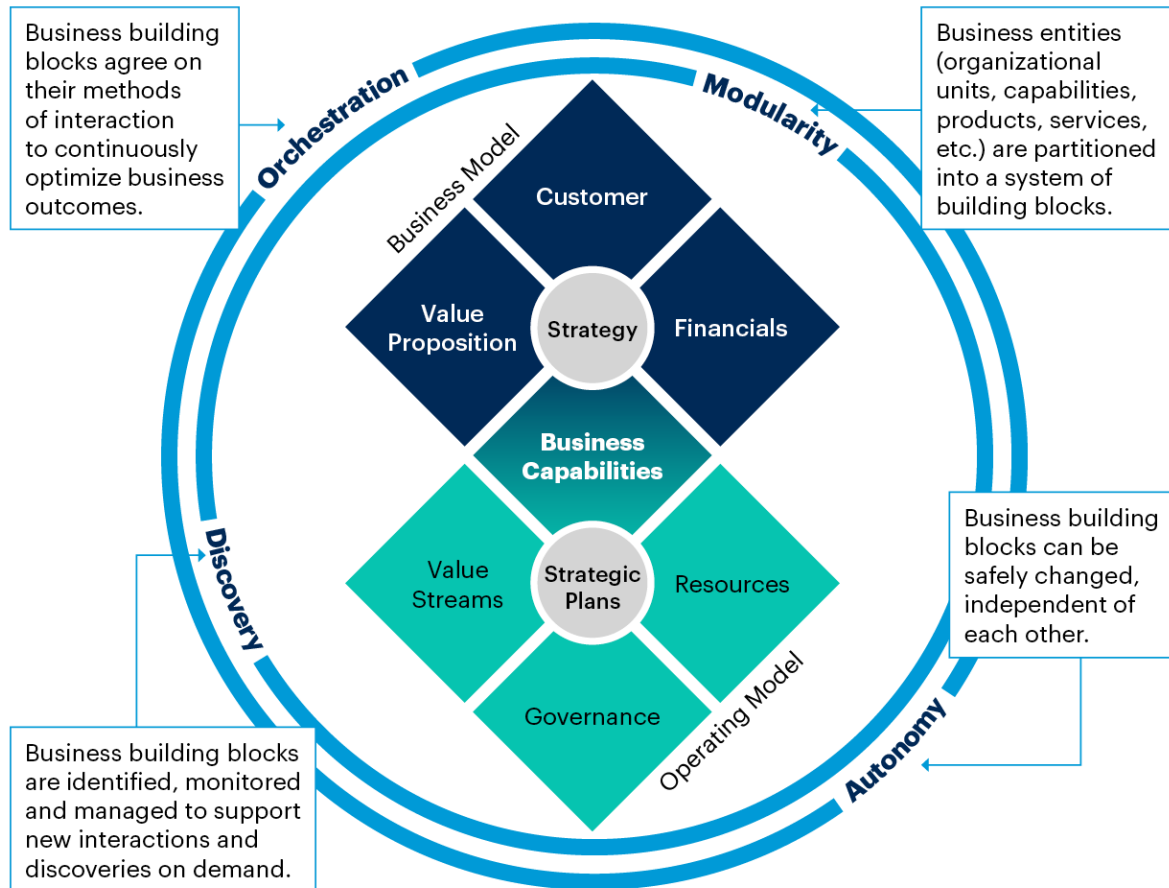
Multidisciplinary digital business teams — or “fusion teams” — are critical to success in digital transformation. Progressive CIOs foster rather than fight the rise of the distributed digital delivery model and maximize value by focusing on the human aspects of managing digital business risk.

Apply Composability to Accelerate Your Digital Business

Composable business enables executive leaders to plan more significant business changes more often, and better track the changing needs of customers or constituents. Even digitalized business processes are challenged to match the pace of the new business thinking. In a digital business, the physical and the digital worlds are fused. No longer independent, they rise and fall together. To meet this existential challenge, organizations across industries are turning to the core design principles of composability and applying them to their business model, enterprise business operations and their strategies (see Figure 3).

Figure 3. Core Principles of Composability Applied to Business Architecture

Core Principles of Composability Applied to Business Architecture



Source: Gartner
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Gartner

A composable business turns strategies, processes, organizational structures and the ways people work from fixed and planned for the long term to flexible and continuously reviewed. The policies are no longer immovable; they are actively updated, replaced or retired. The security and integrity of operations becomes more dexterous as the addressable (and protectable) business capabilities are finer grained to support the composable modularity principles.

Today, the industries where change is the most urgent, such as healthcare, retail and finance, are the most invested in composable thinking applied to their applications, solutions and initiatives.

This section highlights some of the recent Gartner research that tracks digital business strategies across industries.

Related Research

[Industry Insights: 2021 Top Digital Transformation Trends for Retail](#)

Digital transformation is accelerating rapidly across the retail industry, requiring retailers to build adaptable, composable business models to scale in disruptive environments. Strategy leaders can use these seven trends to help inform technology investments and other strategic decisions.

[Toolkit: Product Leaders' Guide to Meeting Healthcare Providers' Composable Business Needs](#)

Use this Toolkit to meet healthcare providers' changing composable business needs. Leading healthcare providers are adapting an open and agile approach to their data management, application experiences and partnerships that will help them transition into health orchestrators.

[Innovation Insight for Composable Business for Manufacturers](#)

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.

[Quick Answer: How to Implement a Composable Finance Applications Strategy](#)

A composable finance applications strategy is vital for organizations looking to become future-proof, integrated, effective and transformative organizations. This research outlines the top approaches that application leaders can take to select applications that fit into a composable strategy.

[Tool: U.S. Healthcare Payer CIO Executive Presentation for Building the Composable Payer Business](#)

Healthcare payers must adapt their business and operating models to diversify their ecosystem roles and deliver more value in a disrupted market. CIOs should use this presentation to socialize composability and attain buy-in to reorient their technology strategy to focus on achieving adaptability.

Revamp Your HCM Technology Strategy to Support Continuous HR for Composable Business

Application leaders supporting HR transformation must regularly update their organization's human capital management (HCM) technology strategy to address the downstream impacts of the future of work, improve agility via continuous HR processes and better support emerging composable business requirements.

Compose New Payment Strategies to Succeed With Digital Acceleration

Composing a payment strategy demands integrating new business contexts with engagement and value exchange models. Bank CIOs must clarify with business peers on whether they are prioritizing the right initiatives, and whether they have the right capabilities to support digital transformation.

3 Ways Software Engineering Leaders Can Use Modern Finance Management Solutions to Drive Innovation

The changing nature of financial management systems to a composable architecture offers unprecedented opportunities for software engineering teams. Software engineering leaders can use this research to deliver competitive advantage with the next generation of finance solutions.

Quick Answer: How to Implement a Composable ERP Strategy?

Composable ERP is an adaptive technology strategy that enables the foundational administrative and operational capabilities for an enterprise to keep pace with change. CIOs must go through seven strategic phases to develop this strategy to modernize their enterprise operations.

Accelerate Digital Transformation With an API-Centric (Headless) Architecture for Enterprise Applications

Digital transformation accelerates demand for innovative UX and custom integration in enterprise applications such as CRM, commerce and ERP. Application technical professionals responsible for enterprise apps use agile API-centric architecture to compose superior UXs and custom integrations.

Prioritize Composability in Your Application Architecture

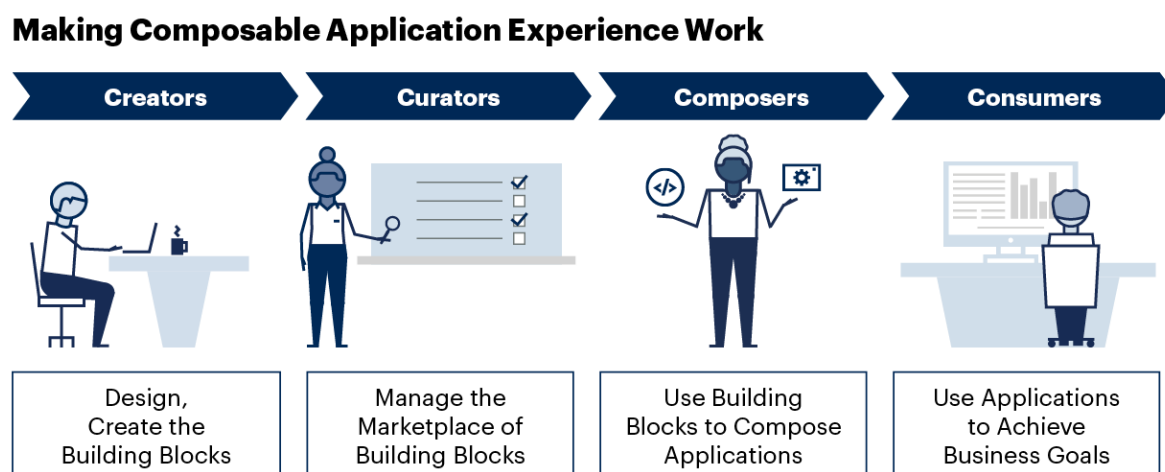
Although after 25 years of service-oriented architecture (SOA), ¹ modularity is a familiar concept for application architects, the transition to modularity in composable software design still poses challenges. The main cause of the difficulties is that modularity now has to serve a new audience — the new multidisciplinary, democratized “composers” who work in fusion teams. This democratization of technology delivery and leverage requires a new organization, new processes and new thinking.

The focus on business-IT fusion teams shifts application modularity from technical APIs to business capabilities (and API products). This change creates new opportunities for creative reuse. A clearly defined autonomous business capability, packaging a clear business value, is a lot more likely to be reused for new business designs than the technical APIs of SOA.

Neither business practitioners nor IT professionals can match the accelerating pace of business change alone. Many organizations form fusion teams to bring their business and technology expertise together for faster and better technology-enabled business capabilities, products and decisions.

Composable architecture helps organizations distribute responsibilities in a way that brings business and technology into an organic continuum (see Figure 4).

Figure 4. Making Composable Application Experience Work



Source: Gartner
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- **Creators** implement composable modularity by encapsulating business capabilities into packaged software building blocks, then registering them in the central catalog/marketplace. These are often application providers or internal IT using professional software engineering tools and/or advanced low-code tools.
- **Curators** manage the catalog/marketplace by implementing policies and standards to ensure a safe level of quality and integrity for the composition process.
- **Composers** create the composable applications by using the registered building blocks, developing and integrating new processes and user interfaces to deliver application experiences to end users. These are often fusion teams using democratized application building tools and techniques.
- **Consumers** use the composed applications to pursue their business objectives, make some limited adjustments and work with the Composers to keep their digital experiences always current.

The roles of the Creator, Curator, Composer and Consumer do not necessarily map to an organizational structure: some individuals may play multiple roles and fulfill multiple responsibilities. For example, Consumers also may be Composers, and Composers also may be Creators. However, the responsibilities of each role remain distinct.

Composable technology architecture is a foundation for digital enablement of business. This section highlights recent Gartner research that expands on the best practices on applying the principles of composable thinking to design and modernization of business software.

Related Research

[Top Strategic Technology Trends for 2021: Intelligent Composable Business](#)

Organizations are increasingly demanding capabilities that speed up and make smarter decisions that meet business conditions. IT leaders require a new approach across data, analytics and applications that will adapt their organization to become an intelligent composable business.

[2021 Strategic Roadmap for the Composable Future of Applications](#)

Future application experiences will be built from composable business capabilities that can quickly enable new business scenarios. Application leaders should use this roadmap to navigate from static application experiences to this new dynamic paradigm.

[Kick-Start Your Composable Business Journey With 2 Key Strategies](#)

COVID-19 and other disruptions have made business resilience a priority for most organizations. Application leaders who apply the model of composable business to their use of existing technologies will boost the agility of their applications and the resilience of their business.

[How to Design Enterprise Applications That Are Composable by Default](#)

Composable enterprise applications deliver business adaptability, but design of composability is not well-understood. Applications and software engineering leaders aiming for business agility should use the Gartner Composable Business Index to assess and advance the agility of their applications.

[Innovation Insight for Application Composition Technology](#)

Application composition is challenging, as it requires a combination of different technologies. Software engineering leaders should use Gartner's capability framework to evaluate technologies and products, and implement them via a modular approach that maximizes business value and minimizes risks.

[To Create a Successful API-Based Ecosystem, Look Before You Leap](#)

Implementing an API-based ecosystem without well-defined and measurable business objectives can result in low traction and disappointing ROI. Software engineering leaders must understand the business steps necessary to make the ecosystem successful — before they create one.

[Emerging Technologies: Defining Composable Security](#)

Security product leaders must develop a composable security strategy to remain relevant in a market where security capabilities and product integrations support digital business new requirements. This document explores how this emerging trend will affect the future of security technologies.

[Choosing Data-, Event- and Application-Centric Patterns for Integration and Composition](#)

New design patterns are emerging to meet today's evolving and increasingly complex integration use cases. Application technical professionals should use this research to select the right patterns to deliver modern, scalable and composable enterprise applications and systems.

[Top 10 Things Software Engineering Leaders Need to Know About APIs](#)

APIs have become highly integral parts of mission-critical business capabilities, differentiating customer experiences and software engineering architectures. It is critical for software engineering leaders to balance the technical and business goals of APIs by incorporating these top 10 aspects of APIs.

[Top Trends in Data and Analytics for 2021: Composable Data and Analytics](#)

Organizations need more advanced and flexible analytics capabilities to support, augment and automate decisions. Data and analytics leaders should move to a composable architecture, enabling users to assemble the needed packaged data and analytics capabilities that may exist from multiple vendors.

Gartner Associates Supporting This Trend



Yefim Natis



Tomas Nielsen



Janelle Hill



Dennis Gaughan



Partha Iyengar



Gene Alvarez

Related Resources

Webinars

[Re-Compose Your Future Business With Today's Enterprise Architecture](#)

[Impact CX With the 3 Building Blocks of Composable Business](#)

[Build a Strategic Enterprise Roadmap With IoT for Composable Business](#)

[Drive Digital Transformation Using a Composable Government Enterprise Roadmap](#)

[Use Composable Data and Analytics to Generate Business Value](#)

[Composable Business enables digital acceleration in an uncertain world](#)

[Design Top-Rated Composable Applications to Drive Business Success](#)

Videos

[Client Question Video: What Is Composable Data and Analytics?](#)

[Expert Insight Video: How to Launch a Composable ERP Strategy](#)

Peer Connect

[How do you go about supporting the internally composed digital solutions?](#)

Our health system has begun to transition from projects and vendor-app-enabled solutions to capabilities we compose in-house. We have begun to stand up IT Service Lines and move to what Gartner now calls Fusion Teams. I am hoping for insight from those of you who are ahead of us in the transition.

Evidence

¹ [“Service Oriented” Architectures, Part 1](#), Gartner Blog Network.

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