Kick-Start Your Composable Business Journey With 2 Key Strategies

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Initiatives: Applications and Software Engineering Leaders

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.

Additional Perspectives

- Summary Translation: Kick-Start Your Composable Business Journey With 2 Key Strategies (08 February 2021)

Overview

Key Challenges

- Few application leaders give strong-enough signals to prioritize an API-first approach to product design, which means it takes longer for their organization to increase its application agility.
- Application leaders who fail to exploit the composition capabilities of existing technology unnecessarily delay available upgrades to the resilience of their applications.

Recommendations

As an application leader seeking to kick-start efforts to turn your organization into a composable business, you should:

- Enforce composable application design by ensuring application development teams use available external and internal API products as precursors of packaged business capabilities (PBCs).
- Educate your teams about how to exploit existing applications and platforms for composability by using application APIs and low-code development and integration platforms.

Strategic Planning Assumptions

By 2023, 60% of all access to SaaS business will be via APIs, sidestepping vendor-provided UIs.

By 2024, four out of five leading low-code application platforms will support codeless API integration.

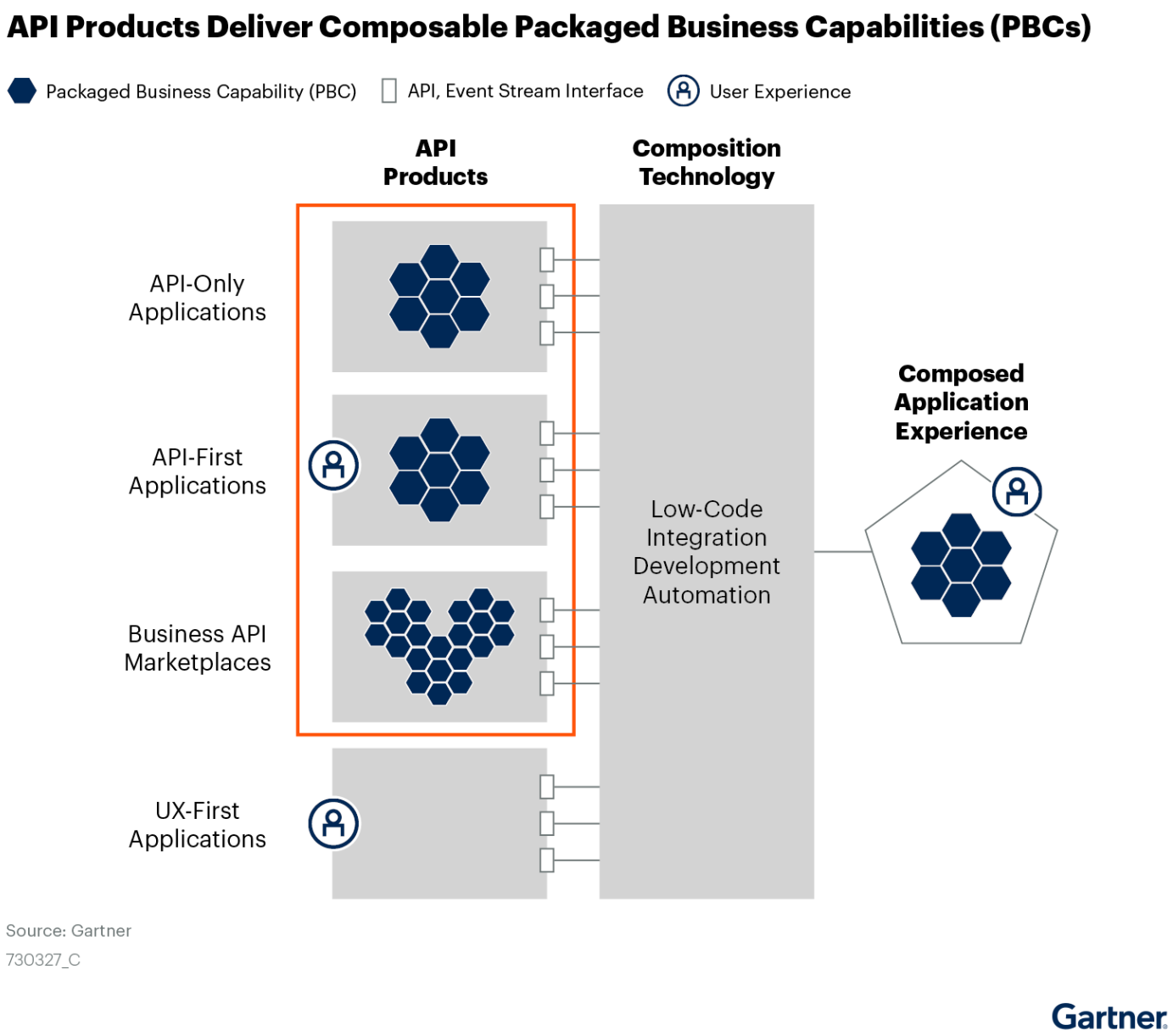
Introduction

Businesses are increasingly dependent on IT innovation and have a growing sense of the urgency of change. Findings from the 2021 Gartner Board of Directors Survey suggest that a majority of businesses are increasing their spending on technology as a result of the pandemic, and most respondents include digital technology initiatives among their top strategic priorities (see Survey Analysis: Board Directors Say Pandemic Drives Increased Investments in IT). But for many organizations the inertia of familiar practices inhibits innovation, and some essential new approaches are therefore delayed.

Visionary application leaders, seeking to support their organization's progress toward becoming a composable business, often struggle to introduce composability to their software engineering environment. How can organizations improve the composable agility of their applications and services, given the seeming lack of technologies dedicated to the future composability model?

Multiple technologies and approaches that are already available — including API products, democratized integration and development tools, and externalized business application APIs or event streams — are strong precursors of the architecture of composable applications (see Figure 1). The composable approach is a natural evolution of existing best practices used for application architecture, such as the introduction of microservices, API mediation, API-centric integration and mesh app and service architecture (MASA). Application leaders should use existing resources to introduce composability to their business application environment now, and prepare for strategic composition modeling in the future.

Figure 1: API Products Deliver Composable Packaged Business Capabilities



Analysis

Use API Products for Composable Application Design

In the search for greater agility, application designs have evolved from user-experience-only (UX-only, no API) monoliths into API-only composable API product suites. Organizations are increasingly retiring and replacing UX-only applications because of their lack of agility and openness. That said, most business applications used by mainstream organizations today were designed from a UX-first perspective: They prioritize direct access by business users, while offering some externalized APIs as a secondary and optional access method. These APIs have typically monolithic architecture behind them. The most recent application designs tend toward the API-first approach. Here, applications are designed as collections of business APIs, bundled with (often optional) UIs. Well-designed business APIs form API products that deliver clear and well-encapsulated business capabilities. API products are precursors of PBCs (see Use Gartner's Reference Model to Deliver Intelligent Composable Business Applications).

Deploy API Products as Building Blocks of Your Composable Enterprise

API products offered by application vendors, other third parties and your own applications already function as the precursor PBCs necessary for composition. There is therefore no need to wait for next-generation applications and tools. You can use the API products available to you now to begin your progress toward a composable business experience (see The Evolving Role of the API Product Manager in Digital Product Management).

API products offer well-defined business capabilities, packaged and instrumented for composition. Gartner defines such PBCs as the building blocks of a composable application architecture in Innovation Insight for Packaged Business Capabilities. Composable applications are constructed as collections of composable building blocks (API products and PBCs), instead of being "sealed" business software products. They are aimed at business unit technologists serving as application "composers," instead of directly at business end users. Although API products are accessed via APIs (or event streams), the programmatic interface of the APIs is secondary and the business capability primary in an application's design and its architecture.

> **To empower composable architecture, APIs must transcend their technical origins (as "programmatic interfaces") and become business capabilities, packaged for composition (PBCs).**

API startups like ShipEngine and Plaid have already disrupted traditional application markets by offering API products (also known as "API-centric SaaS," "headless SaaS" and "business microservices"), instead of traditional monolithic applications. Some API products are API-only. Others include a UI (API-first). But in both cases the primary interface is programmatic. Among many other examples are Alpaca (equities trading), Noyo (health insurance), Contentful (content management), Mambu and Treasury Prime (banking), Snipcart (digital commerce), Duffel (travel), Twilio (communications), Stripe (payments) and Scale AI (AI). Their growth is a response to the increasing demand for agility and the increasing technical skills available to business units. Venture capital has been flowing into API-centric startups to accelerate their growth further. [1]

In more advanced organizations, application leaders build or package their own API products, fully suitable for composability. In well-designed modern applications, APIs are separated into inner and outer types (see Mediated APIs: An Essential Application Architecture for Digital Business). Outer APIs, intended for external access, are good candidates for packaging into API products as they are designed for external business-demanded use. Over time, applications can be modernized for composable enterprise architecture by isolating and encapsulating outer APIs as PBCs with measured degrees of autonomy and discoverability.

Application leaders seeking to advance toward the benefits of composability must use all existing composition opportunities, including internal and third-party API products, the PBC components of composable applications and, where necessary, basic application APIs.

Most business organizations in most industries can find available API products, useful for their current and future business and technology innovation, in leading-edge API vendor offerings or modernized internal applications.

Adopt API Marketplaces to Discover and Catalog API Products

API marketplaces can be great places to discover API products (see How to Derive Value From APIs Using API Marketplaces). Organizations derive different benefits from API marketplaces, depending on their control model. Some marketplaces have open membership, others limit participation to a defined ecosystem (a "walled garden"), and some operate exclusively inside a single organization (internal).

Open API marketplaces (for example, ProgrammableWeb, RapidAPI and PromptAPI) act mostly as directories, helping application leaders to search multiple sources for needed functionality. The API products listed there are not coordinated in their operation, protocols or data models, and there may be little or no runtime support. If API consumers wish to use an API that they find in the API catalog, they access it via a "pass-through" model. That is, they sign up with the API provider directly, through the API provider's own API developer portal.

Open API marketplaces will help you find some API products, and will point you to their procurement and deployment elsewhere. Use them to locate specialized business capabilities that are typically not parts of large application collections.

"Walled-garden" API marketplaces (for example, BBVA API_Market, Temenos MarketPlace and Twilio Marketplace) are each controlled by a vendor. Membership rules are dictated by that vendor, thus creating a "wall" with a managed "gate" to control admission. API products share some or all of their data model and have some degree of coordination on formats and protocols. They are populated by the controlling vendor's products and its authorized partners. Because the marketplace's membership and the architecture of the API products are supervised, offerings are better positioned for shared composition and include some common runtime governance as well. The business capabilities in such marketplaces typically cover the business operations of one business area, such as banking or healthcare.

Walled-garden API marketplaces are useful for customers already engaged with the API products of the controlling vendor. Use them to look for third-party business capability add-ons and opportunities to compose new application experiences around a familiar application base.

Internal corporate API marketplaces (such as BNY Mellon's NEXEN) are typically based on API platform technologies (see Magic Quadrant for Full Life Cycle API Management). They are intended for access from within a single organization, for which they manage internal and, in advanced cases, third-party API products. These marketplaces may not include support for the monetizing function, and sometimes are referred to as merely catalogs. Based on API platforms, they provide a significant set of functionality, including access security, versioning support, tracking and logging of activity, and, in advanced cases, AI and other optimization (see Critical Capabilities for Full Life Cycle API Management).

An internal API marketplace is essential for any strategic implementation of composable business. It provides the central platform for an organization's practices of composition, discovery and governance of a portfolio of composable business capabilities.

Use Legacy Applications' APIs to Participate in Composition

Composable business need not involve a radical change to current practices in most mainstream organizations. Investment in modularity has prepared many existing applications and tools for this development. To achieve composability, most current and modernized production applications expose APIs, so the culture of managing and using APIs is increasingly common. Integration is pervasive. Collaboration between business and IT teams on application design is growing, as is the use of low-code integration and development tools.

> **For many organizations, basic composability is not a radically new approach but a natural evolution of their current best practices for application design.**

Most current business applications, internally designed or purchased, expose APIs. Some are well-designed into separate inner and outer categories. But often these APIs are limited, added over time to a UX-first application and not fully representative of the functionality of the underlying application. Still, these APIs can be managed by an API management platform, along with API products and PBCs. Older applications that expose APIs will not become agile in their own operation, but can participate in composable designs by listing their business APIs, along with PBCs and API products, in an internal marketplace.

When there is an opportunity to modernize these older applications, application leaders should invest in separating their inner and outer APIs. They should turn the outer APIs into API products, implementations of PBCs, by designing in modularity, autonomy, and the ability to be orchestrated and discovered (see Toolkit: Composable Business Index From the 2020 Gartner IT Symposium/Xpo Keynote).

Identify and Mitigate the Potential Risks Posed by API Startups

Application leaders sometimes fall into the trap of adopting third-party API products without oversight, with insufficient built-in monitoring and governance. Although outages, service-level breaches and

service discontinuations by API startups are relatively rare, they do happen and can impact an organization in unexpected and debilitating ways.

To mitigate these risks, application leaders should do the following (see also Managing the Consumption of Third-Party APIs):

- Control dependencies on external APIs by using API mediation, including in particular API gateways.
- Register the third-party APIs consumed by their organization in an API catalog, alongside internal APIs, so that they can be discovered, monitored and used together.

Use Existing Applications and Platforms for Composability

Future application composition platforms will offer broad collections of capabilities, but just three platform services are fundamental requirements for composition:

- **API-centric integration and process automation** (also known as composition).
- **A business API marketplace (catalog)** where composable components (PBCs, API products and event streams) can be registered, maintained and discovered.
- **Multiexperience development** to deliver composed business capabilities to end users.

One overriding requirement must also be met. The composition tools in a composable business must serve "fusion teams," whose work involves collaboration between business technologists and technical professionals (see Fusion Teams: A New Model for Digital Delivery). Not just professional software engineers but also business technologists within an organization's business units must be able to participate in, or even control, the composition of application experiences. Therefore, the tools for implementing the preceding three requirements must be at least partially democratized and include support for low-code design.

The good news is that the precursors of these capabilities and tools already exist, and most organizations already use them, though usually not in an integrated manner. Application leaders should use the following current technologies to form composable application experiences today and prepare for the next generation of composition tools tomorrow:

- **For assembly and composition of application experiences:** low-code integration, process automation and development tools.
- **For development of new user experiences:** multiexperience, low-code or UI-specialized pro-code development tools.
- **For management of a marketplace (catalog) of PBCs and API products:** API management platforms or advanced event brokers.

- **For development of new PBCs and API products:** low-code or pro-code development tools.
- **For governance of PBCs and API products:** API life cycle management platforms.

Evidence

[1] Alex Wilhelm and Lucas Matney, Investors, Founders Report Hot Market for API Startups, TechCrunch, 8 October 2020

Recommended by the Authors

Use Gartner's Reference Model to Deliver Intelligent Composable Business Applications

How to Derive Value From APIs Using API Marketplaces

Application Leaders: Master Composable Enterprise Thinking for Your Post-COVID-19 Reset

2021 Strategic Roadmap For The Composable Future Of Applications

Innovation Insight for Packaged Business Capabilities and Their Role in the Future Composable Enterprise

Toolkit: Composable Business Index From the 2020 Gartner IT Symposium/Xpo Keynote

The Applications of the Future Will Be Founded on Democratized, Self-Service Integration

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