Predicts 2023: Composable Applications Accelerate Business Innovation

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By Yefim Natis, John Santoro, **and 5 more**

To support the accelerating pace of innovation and change, businesses will prioritize modular applications that deliver their functionality as API/event-first business components. Technology and service providers will modernize their offerings to support composable application architecture.

Overview

Key Findings

- Most business organizations look for the ability to innovate faster and in more varied ways. They continue to use some of the fixed vendor-provided application processes and user experiences but add innovative new processesand experiences by using the available application APIs.
- Ubiquitous, and increasingly strategic, use of APIs, especially those published for external business access, creates a growing demand for governance in the form of marketplaces, portals and governance extensions to other platform technologies.
- Independent packaging of business capabilities in modern application architecture puts pressure on application providers to modernize their pricing strategies to reflect the modular application consumption.
- Business-IT collaborations lead to a new distribution of responsibilities in software engineering: “Creators” drive professional development of business-modular applications. “Composers” use the modular application components to create customized digital experiences. “Curators” use catalog/marketplace platforms to manage the consistency, compliance and quality of the components and compositions.
- The architecture of the dedicated roles and skills in business-IT collaborations creates the demand for a range of platform capabilities, including support for professional-driven development, business-driven composition and marketplace governance, offering new business and growth opportunities for TSPs.

Recommendations

Technology and service providers supporting emerging technologies and trends impact on products and services should:

- Modernize application products and services by adopting business-defined software modularity to support the increasing business demand for composable reuse of application capabilities.
- Support the growing business demand for composability by building up technologies and practices for governance of collections of composable software components.
- Build flexibility into product pricing strategies by offering several pricing options and experimenting with alternatives to prepare for modular delivery and fine-grain procurement of technology services.
- Form interactive relationshipswith business customers by building a product strategy that supports both technology- and business-centric roles in the design and delivery of application experiences.
- Redesign platform technologies to support the separation of roles and skills in a life cycle of a composable application by providing integrated but separate support for professional software engineering, business-driven application composition and governance via a component marketplace.

Strategic Planning Assumptions

By 2025, 60% of new SaaS designs will support both the UI-first and API-first access, making preparedness for composability a common cloud application trait.
By 2026, all the top 20 cloud platform and SaaS providers will offer component marketplaces to enable customers' composable strategies, differentiating by quality, convenience and security.
By 2026, revenue growth at leading enterprise software providers will slow as increasing adoption of composable application development shifts mainstream business investment to more modular providers.
By 2024, 50% of Industry Cloud Platform providers will use composability for creation of their vertical offerings as well as for enabling unique change-capable customer deployments.
By 2025, 60% of the new custom business applications will be built using reusable business services via a shared curated component catalog or marketplace.

Analysis

What You Need to Know

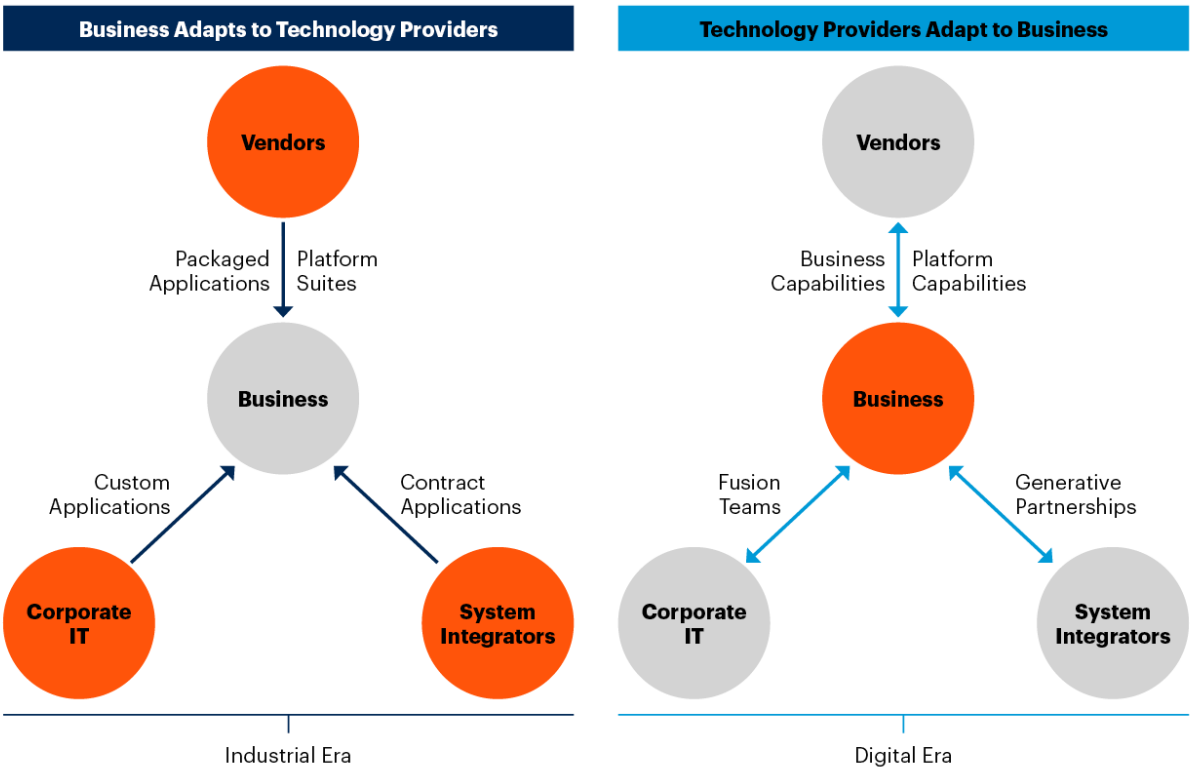
Digital business brings business closer to its technology providers. Increasingly well funded and skilled to make technology decisions, business leaders are no longer willing to delegate all digital innovation to technology vendors or to their own central IT. The business unit technologists are directed to provide users (employees and customers) with digital capabilities and experiences that best reflect their current and changing needs and likes.

To support the accelerating business appetite for targeted digital innovation, its technology capabilities must become flexible and ready for fast, safe, efficient and nuanced change. To that end, both technology providers and business users turn to reusable and composable modularity. Technology providers and business technologists take on complementary roles in the pipeline of digital business engineering.

The old one-way relationship of providers and users of technology must change to a bidirectional partnership in a business-IT collaboration (see Figure 1).

Figure 1: Product Leaders Must Support Business Customers Taking Charge of Their Digital Future

Product Leaders Must Support Business Customers Taking Charge of Their Digital Future



Source: Gartner
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Gartner

Traditional business models for technology acquisition have:

- Application vendors provide the complete, partly or fully monolithic "off-the-shelf" commercial application suites.
- Central IT or contracted systems integrators deliver (after significant application engineering effort) custom applications that also are monolithic and thus difficult to change.

In all these scenarios the business organization receives the finalized applications from the providers and, after some cosmetic customization, deploys them to the users requiring that they receive some dedicated training.
The empowered business organization, capable and funded for controlling its digital experience, engages in partnerships with all three types of technology providers, asserting its role and independence in the process:

- Corporate IT and business units form fusion teams to actively cooperate on the development of relevant and changeable application assets, processes and experiences.
- Systems integrators and business units engage in the generative production of solutions where business and the provider form a variant of a fusion team to cooperate on the full life cycle of design and development of new business software.
- Application and platform vendors deliver their products in a modular form designed and packaged for composition, often using API-first design principles, essentially serving the business as a partner development organization.

These business and technology partnerships enable the efficient and agile creation of digital business experiences for their customers and employees by transforming application products from fixed dedicated solutions to modular business innovation platforms. Low-code application, process or integration platforms and other automation tools are often used as the “last mile” composition platforms to deliver adaptive digital business processes and experiences. Advanced API marketplaces provide governance to assure integrity and efficiency of compositions.

A strategic change like that is as much cultural as it is technical or operational. Cultural changes take time and require determined leadership. Strategic leaders in IT, business and vendor organizations must recognize and welcome the new business dynamics in the transition from the slow and constrained business of application suites to the flexibility and openness of the modular architecture of composable application processes and experiences.

Procurement of technology products will increasingly include demands for reuse and continuous change. Product leaders should form new, more interactive relationships with their customers by adopting composable modularity in application and platform offerings. The product capabilities in demand for sustainable operation of a composable digital environment will include the marketplace services for assured governance, and the separation of engineering practices for business components and application compositions. Product leaders must prepare for the changing architecture and business models of their offerings.

Strategic Planning Assumptions

Strategic Planning Assumption: By2025, 60% of new SaaS designs will support both the UI-first and API-first access, making preparedness for composability a common cloud application trait.

Analysis by: Yefim Natis and Anne Thomas
Key Findings:

- Applications delivered either by the corporate IT or by technology and service providers (TSP) are facing the same new demands from business organizations: faster and more nuanced digital support of the increasing pace of business change.
- Business leaders are seeking a self-service ability to innovate with technology. Newer applications offer published, or even productized, business APIs, in addition to the traditional UI access. These enable faster composition of new processes and experiences by business teams, often utilizing low-codedevelopment tools.
- Increasing use of business APIs promotes the strategic API-firstmodel of application delivery and architecture (e.g., API-first digital commerce back end like Commercetools and API products like Stripe).
- Fully expressed, API-first application delivery packages a complete set of capabilities of the application in a cohesive published set of productized interfaces (APIs and event topics). The traditional UI-first application delivery represents the same complete set of application capabilities through its UIs.
- Both API and UI access to applications are required in modern application use; however, while UI-first has been the tradition for application delivery for decades, API-first is just gaining traction in mainstream SaaS applications to serve the increasing digital sophistication of the skills and use cases of modern business organizations.

Market Implications:

- The requirement for API-first application delivery will give an advantage to applications that have a more cohesive internal modular architecture, supporting modern cloud-native designs and posing a challenge to older application providers. This will further accelerate the transition of mainstream businesses from older application software to SaaS.
- The demand for governance of the growing use of business APIs will increase the role of catalogs and marketplaces, which will have to grow from the basic API supervision to advanced management of productized business application services (both request- and event-driven).Vendors that emerge as the leading marketplace providers will play a central role in the evolution of composable architecture to mainstream adoption.

- The increasing use of low-code tools to expedite the use of the new collections of business APIs will further accelerate the market of low-code platform technologies. Some will incorporate business API catalogs, others will rely on external catalogs or marketplaces. The interaction between the low-code development tools and business API marketplaces will alter the product strategies and architectures of both.
- The growing use of applications as business API back ends will provide vendors a new model for pricing their services. Business API access will likely turn out to be both more flexible for the users and more profitable for the vendors than the traditional UI-first.

Recommendations:
Product leaders at technology providers and central IT should:

- Change design practices for applications of strategic nature to emphasize complete and cohesive representation of application's functionality in programmatic interfaces, in addition to user interfaces.
- Productize programmatic application interfaces of the highest business value to facilitate cross application, cross-ecosystem and commercial use. Annotate these interfaces with metadata and other additions to support managed discovery, orchestration and governance.
- Balance the use of request-driven and event-driven interfaces to support a broader spectrum of the potential business use cases. Offer interfaces that deliver data support for business decision making, in addition to the operational functionality.
- Implement, by building, acquisition or partnership, a catalog/marketplace technology to ensure governance of the increasing internal and external use of the packaged and productized application interfaces. Reorganize and modernize the engineering and business processes to champion the culture of business modularization and reuse of digital business capabilities.
- Build preparedness for use of the published interfaces by different development, integration, automation and composition tools, including professional and low-code options. The tools are partly or entirely proprietary: select the preferred options that best fit the technology of the selected catalog/marketplace platform.

Related Research:
How to Design Enterprise Applications That Are Composable by Default

Quick Answer: How to Organize Roles for Governance of Composable Applications
Emerging Tech: Empower Composable Applications by Redefining Products, Ecosystems and Marketplaces
How to Create Shared API Services to Enable Composability
To Create a Successful API Marketplace or API-Based Ecosystem, Look Before You Leap
Critical Capabilities for Enterprise Low-Code Application Platforms
Case Study: Sustaining Enterprisewide Momentum for Composability (Merchants Fleet)
Strategic Planning Assumption: By 2026, all the top 20 cloud platform and SaaS providers will offer component marketplaces to enable customers' composable strategies,differentiating by quality, convenience and security.
Analysis by: John Santoro and Yefim Natis
Key Findings:

- To implement composable applications, customers need access to modular business capabilities, but many technology providers offer inflexible product packaging, and many do not provide packaged business capabilities (PBCs, particularly in the form of API products) to enable composition.
- Technology providers profess support for customers' efforts to build composable applications, but providers prefer a "walled garden" approach that makes it difficult for customers to consume components from other providers.

Market Implications:
Technology providers typically focus on delivering either packaged applications, the tools to build custom applications, or a platform on which to deploy applications. Enterprises aspiring to build composable applications need all three of these capabilities. As a result, their challenges will shift to areas not well addressed by technology providers today:

- Need for curated components to avoid searching for desired components
- Dynamic discovery, procurement and deployment of application components to reduce procurement time and effort
- Consistent, transparent and predictable licensing to manage cost risks
- Dependency management, security, networking to mitigate breaches and "Achilles' Heel" exposures

Addressing these customer needs provides a significant opportunity for providers, but doing so will change how they position their offerings and how they deliver them:

- Provider support of composability can be positioned as a competitive advantage today, but increasingly customers will expect it as a feature of any commercial product.
- With a wide range of low-code/no-code tools available to customers, cloud and enterprise application providers will feel pressure to support several of the more dominant tools rather than a single tool that is tied to their own platform.
- With so many available tools, content, rather than tool support, will differentiate providers in a competitive market.
- To improve the attractiveness of a component marketplace, providers will promote their curation of related content, including APIs for otherapplications, from partners and other parties.

Recommendations:
Technology product leaders should:

- Increase the flexibility and confidence with which customers and partners can compose applications by offering PBCs as API products, with more granular, value-oriented pricing, documentation, support, SLAs and product roadmaps.
- Enable application composers to easily discover and consume PBCs by curating a component marketplace with contributions from providers, partners and customers.

Related Research:
Emerging Tech: Empower Composable Applications by Redefining Products, Ecosystems and Marketplaces
Quick Answer: What Are the 3 Steps for a Successful API Product
Emerging Tech: How to Select a Pricing Model for APIs and API Products
Strategic Planning Assumption: By 2026, revenue growth at leading enterprise software providers will slow as increasing adoption of composable application development shifts mainstream business investment to more modular providers.
Analysis by: Jo Liversidge and Stephen White
Key Findings:

- Composability requires contracts that enable software components to be licensed flexibly and dynamically, for example, turned off and on frequently, de-

/reconstructed, moved, migrated and replatformed without prohibitive limitations, or long-term fixed commitments.

- The largest enterprise software vendors prefer to sell software in a nonmodular way, oriented to maximizing revenue, offering application suite bundles that position value by making the total package less costly than the sum of its parts. More modular options are offered, but typically at a significant (25% to 400%) premium. Application suite bundles may be convenient but may not offer best-in-class capabilities, which could be chosen a la carte if bought in a modular way.
- Large value contracts with restricted ability to reduce or exchange products within multiyear term contracts are an impediment to flexibility and agility, oxymoronic to composability.
- Smaller software vendorscontinue to emerge, selling in a more flexible, modular fashion, offering short-term (or no) contract commitments, enabling rapid adoption, reduction and retirement.
- Composable applications, workflows and business processes are increasingly being developed internally to fit use cases in an agile fashion in place of commercial off-the-shelf applications. This has been aided by the viability and increased use of low-code/no-code applications.
- Industry cloud platforms are at the forefront of offering composable sets of capabilities.

Market Implications:

- Clients will increasingly be motivated to pursue alternative vendors willing to operate as a partner and provide licensing and contractual models that support composability.
- Large application vendors, previously considered the path of least resistance by customers, are increasingly considered a commercial risk, due to their inflexible business models. These vendors will lose more business to competitors with specialized capabilities and more modular licensing, aligned to the client's requirement.
- Composable application development and DevOps drives a combination of low-code/no-code development tool usage, with applications run on cloud infrastructure and platform services.

- The growing number of smaller point solution providers regularly competing for business becomes targets for M&A by large enterprise application vendors seeking to sustain growth rates. Large enterprises themselves will compete to purchase niche vendors via “techquisitions,” so they are not beholden to the large players.

Recommendations:
Technology product leaders must develop closer relationships with their customers to understand their evolving needs and capabilities. They must prepare to meet the customers and prospects new technology adoption strategies.
Application strategy leaders should:

- Identify and select viable software application vendors that enable composability by incorporating assessments of their contract simplicity, flexibility and constraints on usage, including integration.
- Reevaluate and question incumbent software vendors by assessing their ability to enable a flexible and agile, composable infrastructure. If they fail to adapt, put them on notice that existing and future business relationships are at risk, and build out an exit or de-prioritization strategy.
- Plan to utilize low-code/no-code development tools increasingly and validate the chosen platforms are viable for expanded consumption.
- Choose software incorporating an assessment of the providers composably viable commercials alongside functional fit.

Related Research:
Composable Business Will Drive Changes to Software and SaaS Negotiation
Maverick Research: It’s Time to Fire Software Vendors With Complex Licensing!
Presentation Slides: How to Manage Software Megavendor Compliance Risks in the Age of Composability
Quick Answer: What Makes Industry Cloud Platforms Different From Traditional Cloud Offerings?
Harness the Disruptive Powers of Low-Code: A Gartner Trend Insight Report
Strategic Planning Assumption: By 2024, 50% of Industry Cloud Platform providers will use composability for creation of their vertical offerings as well as for enabling unique change-capable customer deployments.
Analysis by: Gregor Petri, Yefim Natis and Wataru Katsurashima
Key Findings:

- Industrial cloud platforms turn to composability to combine software-, platform- and infrastructure-as-a-service offerings with tailored, industry-specific capabilities to create a whole product offering and experience for enterprise customers. This ensures agility, innovation and faster time to market.
- Enterprises are embracing the principles of composable business to improve adaptability and resilience. Providers of industry cloud platforms must — together with their ecosystem partners — offer composability to enterprises by:
    - Offering packaged business capabilities through a marketplace
    - A datafabric with connectors to leading industry applications to mine existing data
    - A composition layer where PBCs and data can be orchestrated and automated for new digital processes and experiences

Market Implications:

- Industry clouds create value for businesses by integrating traditionally separately purchased cloud services into preintegrated but customizable (composable) industry-relevant solutions.
- Industry clouds turn a cloud platform into a business platform, enabling a technology innovation tool to also serve as a business innovation tool.
- Potential buyers should be aware of significant differences in what makes up an industry cloud platform offering between vendors, but also between different offerings of a single vendor.

Recommendations:
Application and product strategy leaders should:

- Use industry cloud platforms as an exoskeleton that complements existing product portfolios with new capabilities that add significant value, rather than merely replacing existing capabilities with solutions using newer technology.
- Build enterprisewideunderstanding and support for your industry cloud platform adoption by involving business technologists and fusion teams early in your composability journey.
- Set rules for when to deploy the capabilities of industry cloud platforms to optimize existing processes, and when to aggressively drive transformation and innovation initiatives.

- Develop business strategy options to match the emerging business practices for product procurement and pricing in the composable industry cloud environments.

Related Research:
Top Strategic Technology Trends for 2023: Industry Cloud Platform
Quick Answer: What Makes Industry Cloud Platforms Different From Traditional Cloud Offerings?
Market Guide for Digital Health Platforms
Create Differentiated Cloud Managed Services for the Banking and Investment Services Industry
Leverage Gartner's Vertical Strategy Framework for Composable Industry Cloud Offerings — Presentation Materials
Providers of Cloud Managed Services: Use Composable Industry Platforms to Productize Your Offerings
Build Product Teams That Can Drive Industry Cloud Offerings
Changes and Emerging Needs Product Managers Must Address in the CIPS Market
Hype Cycle for the Future of Applications, 2022
Strategic Planning Assumption: By 2025, 60% of the new custom business applications will be built using reusable business services via a shared curated component catalog or marketplace.
Analysis by: Paul Vincent, Saikat Ray and Yefim Natis
Key Findings:

- Business applications are increasingly built or finalized by fusion teams with business technologists using low-code technologies. These exploit abstracted development principles such as automated software development life cycle tools.
- Business services delivered as API products and API-first SaaS are created for business use by professional developers using API-centric back-end platforms. These provide a ready source of reusable services for other business applications, delivered primarily as REST APIs and accessed through conventional code, integration tools, business process automation and low-code development suites.
- The growing accessibility of an ever-increasing range of application components, through catalogs and marketplaces, is adding a new vector for application development productivity. Complex services can now be embedded in low-code solutions at ease through modular services delivered from internal and third-party sources.

Market Implications:
The increasing modularity and reusability of application services will accelerate their commoditization and reuse, and increase their value and ROI. Expect increased framework and platform support for enterprise applications, packaged business processes, API products and SaaS services.
Additional platform focus will also be given to the creation of these services, and this is already indicated through wide back-end framework adoption and the appearance of low-code service creation tools such as business process automation vendors creating API services.
Additionally, low-code development tools such as LCAP, iPaaS, RPA andBPA platforms will accelerate their catalog and marketplace support leading to partnerships between services and development tools, as well as the continued growth of SaaS as a Platform vendors such as Microsoft, Salesforce, SAP andServiceNow.
Recommendations:
Technology product leaders must develop a closer understanding of the evolving needs and capabilities of their customers and partners. The increasing practice of application composition will demand from most technology providers' participation through marketplaces and compatible development, composition and automation tools.
Business application strategy leaders should:

- Ensure existing as well as new application service investments are consumable by your business automation tools, as well as being documented for your professional developers, through proven REST APIs.
- Invest your enterprise architecture team to catalog and map your business capabilities in terms of existing services and capabilities, enabling you to understand the gaps and opportunities for reuse of services across the business.
- Consider developer tools, like backstage.io or blobr.io, to create a developer portal identifying the available APIs for services and to encourage their consumption by coders as needed.
- Promote the catalog curator roleto encourage API consumption and composability. This role can be recruited from your enterprise architects, API product managers and service owners.
- Ensure that any vendor selection for low-code tooling assesses the ecosystem aspects of catalog performance and ease of maintenance. This could include data fabric support for data abstraction from disparate services.

Related Research:
How to Create Shared API Services to Enable Composability
How to Design Enterprise Applications That Are Composable by Default
To Create a Successful API Marketplace or API-Based Ecosystem, Look Before You Leap
How to Implement Composable Technology With PBCs
Quick Answer: How to Organize Roles for Governance of Composable Applications
Case Study: A Business “Middle Platform” Helps Achieve Composability and Digital Success

A Look Back

In response to your requests, we are taking a look back at some key predictions from previous years. We have intentionally selected predictions from opposite ends of the scale — one where we were wholly or largely on target, as well as one we missed.
This report series is too new to have on-target or missed predictions.