The Composable Enterprise

Don Free
VP Analyst
“By 2023, organizations that have adopted a composable approach will outpace competition by 80% in the speed of new feature implementation.”

Source: Top Strategic Technology Trends for 2021 (G00735310)
What is the composable enterprise and why does it matter?

What is the roadmap to composable?
What is Composable Business?

- The composable business is a specific and *accelerated form of digital business*.

- The adoption of composable business in enterprises requires software providers to compete and *offer solutions at a more granular scale*.

- Composable business *expands the scope of digital business services* and will require integrated offerings.
Yesterday’s Logic

“Don’t fix what ain’t broke”
Avoid Risk
Think Large Projects
Protect Stability

Composable Thinking

Everything is Changeable
Use Risk
Think Modular Products
Choose Flexibility
“The greatest danger in times of turbulence is not the turbulence; it is to act with yesterday’s logic”

Peter F. Drucker
Why Now? Making Money is a Good Thing

BaaS

Manufacturer
- Payments
- Risk Profiling
- Loyalty and Offers
- AML
- Servicing
- Collections
- Underwriting
- Origination
- Digital Identity/KYC
- Card

Intermediary
- Marketplace
- Developer Portal
- Fintech Ecosystem
- API Gateway

Distributor
- Non-Financial-Services-Industry Participants
- Service Providers
- Software Providers
- Innovators

Regulated

Unregulated
- Neobanks
- Traditional Banks

Financial Institution

Fintech

Source: Gartner
Roadmap to Composable

1. The Composers
2. The Building Blocks
3. The Composition Pipeline
4. The Architecture
Fusion Teams Are the “Composers” in a Composable Enterprise
“84% of companies have set up fusion teams”
2 The Building Blocks
Packaged business capabilities (PBCs) are encapsulated software components that represent a well-defined business capability, recognizable as such by a business user and packaged for programmatic access.
Packaged Business Capabilities Are the Building Blocks of Composable Architecture

Key Types of PBCs

**Encapsulated Business Object**
- (e.g., Account Management, Purchase Order Management)

**Process Management**
- (e.g., Order-to-Cash, Credit Approval)

**Digital Twin**
- (e.g., Turbine Management, Elevator Management)

**Data Reference**
- (e.g., Exchange Rate Lookup, Keyword Search)

**Analytical Insight**
- (e.g., Sentiment Analysis, Credit Assessment)

Packaged business capabilities (PBCs) are encapsulated software components that represent a well-defined business capability, recognizable as such by a business user and packaged for programmatic access.
Software Architecture Evolves to Business Capabilities

Packaged Applications (Project-Style Delivery) → Packaged Applications (Product-Style Delivery) → Composed Applications (Catalog/Marketplace Delivery)

- CRM
- ERP
- ESB

2000’s

2010’s

2020’s

Conventional Application
Service/Microservice
Packaged Business Capability (PBC)
Composed Application
API
How to Design Top-Rated Composable Applications

**Modularity**
- Is the model of modularity clearly defined?
- Do components have singular, clear and complete business identity?
- Is the component data fully encapsulated?

**Autonomy**
- Is the impact of change well isolated?
- Is the component data integrity well internalized?
- Are components replaceable?

**Orchestration**
- Do component interfaces support all prevailing standards, protocols and architectures?
- Do they support access for tracking, governance and regulation?

**Discovery**
- Does component documentation and metadata support granular discovery and introspection?
- Is the metadata both machine and human readable?
- Is it accessible at runtime?
3 Composing the Applications
Making Composable Experience Work

**Creators**
Mostly professional engineers, using professional software engineering tools and/or advanced low-code tools

**Curators**
A special administration implementing policies and regulations for registered components to protect consistency of compositions

**Composers**
Mostly fusion teams, using low-code application composition tools and/or UI development frameworks

**Consumers**
Business users with some self-service ability to adjust the composition
## Composable Application Development Pipeline

<table>
<thead>
<tr>
<th>Software Engineering Technology</th>
<th>API Products, Precomposed or Modernized Applications</th>
<th>Component Catalog/Marketplace</th>
<th>Composition Technology</th>
<th>Composed Applications</th>
<th>Roles, Teams, Persons, Bots</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Creators</strong></td>
<td>Design composable application systems, Modernize existing systems, Use advanced and other software engineering technology and skills</td>
<td>Register, Certify, Secure, Track, Log, Optimize, Search, Version</td>
<td>Build UI, Composition, Integration, Process Orchestration, Events</td>
<td></td>
<td><strong>Consumers</strong></td>
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<tr>
<td><strong>API</strong></td>
<td>Business API</td>
<td>Packaged Business Capability (PBC)</td>
<td>AP – Traditional Application</td>
<td>IP – Integration or API Management Platform</td>
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</table>

*UI not depicted*

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The Three-Step Composable Application Experience

1. **Vendor Application (Precomposed)**
   - Application 1 PBCs
   - Application 2 PBCs
   - Application 3 PBCs
   - Custom PBCs
   - Serve All
   - Sales Business Unit

2. **Business Unit Fusion Team**
   - Role-Specific Composition
   - Strategic Account Team

3. **End-User Self-Service**
   - User-Adjusted Composition
   - Jane Doe, Strategic AE
More Than Half of Gartner Responders Expect to Use More API-Centric SaaS

- 56% expect an increase substantially
- 33% expect an increase slightly
- 10% expect to stay the same
- 1% expect a decrease slightly
- 0% expect a decrease substantially
- 33% do not use API-Centric SaaS

n = 82, Gartner Research Circle Members

Q09. By what proportion do you expect the use of API-centric SaaS over the next 1-2 years to change in your organization?
4 Architecture: Intelligent and Composable
Compose Your Data Fabric: Current Precursors

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<tr>
<th>Data Virtualization</th>
<th>Logical Data Warehouse</th>
<th>Customer Data Platform</th>
<th>Data Hub</th>
<th>Digital Integration Hub</th>
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<tr>
<td>Leveraging Data Virtualization in Modern Data Architectures (G00378177)</td>
<td>Building the Modern Data Management Infrastructure: Gartner Excellence Awards Lessons (G00331691)</td>
<td>A Guide to What Is — and Isn’t — a Customer Data Platform (G00716277)</td>
<td>Data Hubs, Data Lakes and Data Warehouses: How They Are Different and Why They Are Better Together (G00465401)</td>
<td>Innovation Insight: Turbocharge Your API Platform With a Digital Integration Hub (G00722630)</td>
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Build Your Own
Reference Architecture for Intelligent Composable Business Technology

Composition Platform
- integration
- orchestration
- UX development
- operation
- governance

Integrated Data Fabric
- source data
- metadata
- derived data
- internal processes
- rationalization

Conventional Business Operational Applications

Conventional Data Management Applications

Conventional Analytics Applications

API/Event Interfaces
User Interface
Internal Data

Composition Platform
- Catalog/Marketplace
- Navigation
- Reference
- Insight

Source: "Use Gartner's Reference Model to Deliver Intelligent Composable Business Applications" G00720701
Component Marketplace Is the Control Center of the Composable Enterprise

Composition Technology

Catalog/Marketplace
Register, Discover, Secure, Certify, Version, Manage, Deploy, Track, Optimize

Ecosystem Partners

Business Self-Service

Application Vendors

Building Blocks

Compositions

Building Blocks

Building Blocks

Building Blocks
Recommendations

- Organize the composition process with a clear distinct responsibilities for the roles of Creators, Composers and Curators
- Foster creation of fusion teams and provide the required technology and organizational support for their success
- Demand new application designs to focus on business-centric modularity of PBCs
- Apply the composable architecture principles of modularity, autonomy, orchestration and discovery to design of all applications
- Establish a catalog/marketplace as the control hub of the policies, quality and integrity of the composable enterprise experience
Recommended Gartner Research

- **Kick-Start Your Composable Business Journey With 2 Key Strategies**
  Yefim Natis, Mark O'Neill and John Santoro (G00730327)

- **Future of Applications: Delivering the Composable Enterprise**
  Dennis Gaughan, Yefim Natis, Gene Alvarez and Mark O'Neill (G00465932)

- **2021 Strategic Roadmap for the Composable Future of Applications**
  Yefim Natis, Dennis Gaughan and Gene Alvarez (G00433984)

- **How to Design Enterprise Applications That Are Composable by Default**
  Yefim Natis, Massimo Pezzini and Anne Thomas (G00738874)

- **To Create a Successful API-Based Ecosystem, Look Before You Leap**
  John Santoro and Mark O'Neill (G00745732)

- **Quick Answer: How Can Existing Applications Participate in Composable Architecture?**
  Yefim Natis and Shameen Pillai (G00752704)

- **Innovation Insight for Composable Modularity Of Packaged Business Capabilities**
  Yefim Natis, Dennis Gaughan, Mark O'Neill, Benoit Lheureux and Massimo Pezzini (G00441575)

- **The Applications of the Future Will Be Founded on Democratized, Self-Service Integration**
  Massimo Pezzini and Yefim Natis (G00465611)