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A Guide to Composable Applications & Packaged Business Components

A modular, flexible, adaptable new paradigm for businesses

Composable enterprises, made up of smaller independently operating units, are a new paradigm that emphasizes modularity, flexibility, and adaptability. They make it possible for businesses to respond to changes in the market, customers, and technology quickly and effectively.

The traditional business model needs to be revised to meet the demands of a rapidly changing business environment. Businesses must be adaptable and act quickly on new opportunities and challenges to stay competitive in the digital age.

Gartner [defines](#) composable enterprise as “An organization that delivers business outcomes and adapts to the pace of business change.” It does this by assembling and combining packaged business capabilities (PBCs), application building blocks that have been purchased or developed. These smaller units can run on their own, or easily combine and change to meet various business needs.

In this paper, we'll look at the idea of composable companies, how to develop new ideas by combining pre-configured business parts, and steps to help organizations use this modular model successfully.

We will also discuss the benefits of the composable enterprise model, show examples and case studies of successful implementations in different industries, and share a few examples from GlobalLogic.

Lastly, we'll discuss **what organizations should consider when putting a composable enterprise model in place.**

A. Definition of composable enterprises

A composable enterprise is a business model emphasizing modularity, flexibility, and adaptability in which smaller units function individually or can be easily combined to meet changing business needs.

This structure makes it possible for the business to respond quickly and effectively to changes in the market, customers, and technology.

The traditional, monolithic enterprise model cannot similarly promote cooperation and cross-functional teamwork.

Composable enterprise drives more innovation and allows for quick testing and refining of new ideas.

Each team in a composable enterprise owns and delivers a set of components assembled into a complete software product and delivered to the client.

Each cross-functional, autonomous team includes members from every stakeholder group, including product owners, managers, UI/UX designers, developers, and data engineers.

These enterprises are built as graphs of components (called Packaged Business Capabilities or PBCs) for independent development, testing, and deployment.

The composable enterprise model is especially well suited to the digital age, as it enables companies to maintain their competitiveness and adjust to new opportunities and challenges.

B. Overview of the traditional enterprise model

Historically, businesses were hierarchically organized, with distinct departments operating independently of one another and each employee having a set of well-defined duties. A small group typically holds decision-making authority at the top, and efficiency and effectiveness are prized.

Organizations with a more hierarchical structure are often less effective and susceptible to innovative ideas.

Furthermore, this makes it harder for organizations to respond rapidly to changing market, consumer, and technology improvements due to the limited adaptability it introduces.

Traditional business models value consistency and predictability more than flexibility and response.

This paradigm needs updating for today's fast-paced, constantly changing corporate environment, and adoption of alternatives such as the composable enterprise is rising as a result.

C. The need for a new paradigm in the digital age

When discussing the need for a new paradigm in the digital age, consider the following points.

The rise of digital technologies

The advancement of digital technologies such as e-commerce, social media, cloud computing, and data analytics has presented several challenges for traditional enterprises.

New forms of collaboration, communication, and data-driven decision-making have disrupted business models.

Enterprises now have to deal with the increased competition they bring.

The importance of customer experience

Access to e-commerce and online marketplaces has made it easier for customers to purchase goods and services online, often at lower prices and with greater convenience than in brick and mortar stores.

Businesses must promptly respond to evolving client expectations and interests through customer research, developing customer-centric

strategies, and implementing customer-focused processes.

Social and demographic change

Social and demographic change can present business opportunities and challenges. For instance, an aging population increases the demand for healthcare products and services.

Similarly, a change in attitude towards the environment and sustainability has brought new opportunities for companies that provide eco-friendly goods and services.

The role of data

Data is a crucial enabler for agility and flexibility.

Businesses can reorganize their business functions and respond to changing business demands in an informed, evidence-based manner by gathering and analyzing data on consumer preferences, market trends, and operational performance.

Composable enterprise offers a fresh approach that meets these demands and helps companies stay competitive in the digital era.



Moving from concept to market faster than your competitors is one of the hallmarks of a successful, sustainable product development strategy.

Digital twins are proving to have an oversized impact on businesses using them to curate data from multiple sources and activate it to improve outcomes at every step through design, manufacturing, and support.

Continue reading at [GlobalLogic Insights](#).

Benefits of the composable enterprise model

Composable enterprise offers many benefits over the traditional enterprise, paving the way for innovation, agility, and increased customer satisfaction.

The global composable infrastructure market was valued at [\\$3.3B in 2020](#) and is expected to reach \$14.4B by the end of 2028.

Some of the key benefits of composable enterprise include:

1. Faster time to market

By design, composable enterprises can quickly and efficiently bring new products and features to market, enabling businesses to respond to changing customer needs faster than competitors.

2. Increased flexibility

The modular nature of composable enterprises provides the flexibility businesses need to respond to new opportunities and challenges.

3. Enhanced innovation

By encouraging collaboration and cross-functional teamwork, composable enterprises can foster a culture of innovation. Quickly testing and iterating on new ideas allows enterprises to stay ahead of the curve and bring new, innovative products and services to market.

4. Greater efficiency

By breaking the enterprise into smaller, more agile units, composable enterprises can reduce waste and streamline processes, improving efficiency and lowering costs.

5. Improved security and compliance

Composability helps enhance security and compliance for the organization. It is easier to secure the system when a single security component (eg.: for authentication) is used across hundreds of applications rather than using different components in each application.

Compliance best practices can be standardized and made mandatory for all teams within the organization.

The principles of composable enterprise

Composable architecture allows a business to thrive and flourish in times of significant disruption by creating an organization made from interchangeable building blocks.

A composable business operates on the five basic principles below.

1. Modular design

In a composable enterprise, products and services are modular components that can be easily assembled and reconfigured to meet changing business needs.

2. Agile development

Agile methodologies, such as Scrum and Lean, can help enterprises quickly respond to changing business needs, testing and iterating on new ideas faster and more efficiently.

3. Collaboration and cross-functional teamwork

Collaboration and cross-functional teamwork are essential to the success of composable enterprises.

By breaking down silos and encouraging teamwork, enterprises can foster a culture of innovation and agility.

4. Data-driven decision-making

In a composable enterprise, data is a crucial enabler of agility and adaptability.

By gathering and analyzing data on customer preferences, market trends, and operational performance, enterprises can make informed, evidence-based decisions about how to reconfigure their units and respond to changing business needs.

5. Continuous learning and improvement

To stay competitive in the digital age, enterprises must be committed to continuous learning and improvement, with ongoing employee training and development and incorporating feedback and best practices from external sources.

Following these key practices enables enterprises to realize the composable enterprise benefits of increased agility and adaptability.

Transforming a traditional enterprise to composable

Transformation to a composable enterprise requires an innovation mindset and forward-thinking business leadership.

Clear goals and objectives

A clear understanding of the organization's goals and objectives helps ensure the modular components and processes support its long-term success.

Standard interfaces & APIs

Allow modular components to be easily combined and reconfigured, ensuring they are easily integrated into different systems.

Continuously monitor & improve

Make adjustments as needed, track key metrics, gather feedback from stakeholders, and regularly review and update the organization's modular components and processes.

Collaboration & coordination

Nurture collaboration and coordination across different teams and departments. Provide tools to facilitate it, and recognize and reward teams for their efforts.

Culture of innovation & experimentation

Give teams the freedom and resources to experiment and the support to help them succeed.

People, Process, Technology, and Culture

A failure to provide the cultural shift necessary to support a digital transformation project can prevent its success. Bringing about a culture shift is easier said than done. It requires a coordinated and sustained effort to engage employees, review and improve processes, and invest in the right technology.

Once the enterprise has started its cultural transformation journey, it can use Packaged Business Capabilities or PBCs to transform its product landscape.

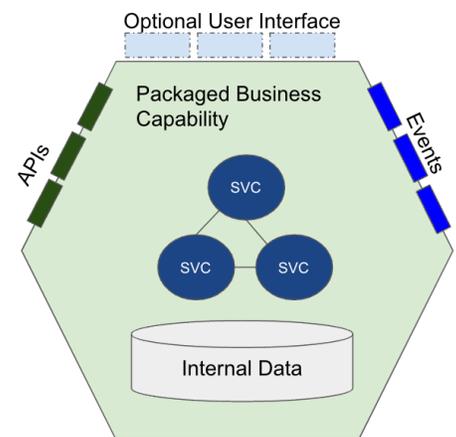
PBCs (Packaged Business Capabilities)

PBCs (Packaged Business Capabilities) are application building blocks enterprises either develop or purchase from other third-party vendors.

Each PBC is a software component with a well-defined business capability.

Many legacy applications will be modernized using the PBC model, as the transition from complex monoliths to composable enterprise is gradual. The constituents of a PBC are:

- One or more APIs (microservices)
- Event streams
- Database (internal to the PBC)
- Optional User Interface



PBCs vs Microservices

	PBC	Microservices
Definition	Predefined, standardized, and self-contained business capability that can be easily and quickly integrated into an enterprise.	Software architecture style in which a large application is built as a collection of small, independent services that communicate with each other using well-defined interfaces.
Characteristics	Modular, reusable, and standardized.	Independent, scalable, and flexible.
Scope	Business architecture.	Software architecture.
Implementation	Can be implemented as a microservice or a group of microservices.	Can be used to implement PBCs.
Target Audience	Business leader (like a CDO or CMO) or users like a merchandiser or marketing manager.	Software Architects and Developers

Governance, security, and compliance in a composable enterprise

Governance, security, and compliance are essential considerations in a composable enterprise, as they ensure that the PBCs are used responsibly per regulations and best practices.

Governance

The governance model enforces the processes and policies to ensure that PBC development, deployment, and maintenance align with the organization's goals and objectives.

The Data Governance standard establishes clear policies and procedures for managing data, including how it is collected, stored, and accessed. Organizations can also apply monitoring and auditing processes.

Security

Composable enterprise allows for measures to protect the architecture and data

from unauthorized access or tampering by way of secure storage, access controls, and encryption.

These data security measures protect data from unauthorized access, breaches, and other security threats.

Compliance

Composable enterprises can have compliance rules like data privacy laws, industry-specific regulations, and ethical guidelines.

They can also mandate checks for compliance-as-code with the right set of tools.

By implementing governance, security, and compliance measures for composable architecture, enterprises can ensure that the PBCs are used responsibly and effectively while protecting sensitive data and adhering to regulations.

Composable enterprise examples and case studies

Spotify

Spotify has adopted a composable team structure to build and deliver products quickly and efficiently.

This structure involves organizing teams around specific business goals and technologies rather than traditional hierarchies or functional silos.

The composable team structure at Spotify consists of several key components:

Squads

These cross-functional teams are responsible for delivering a specific product or service. Squads are small and agile, composed of engineers, designers, data scientists, and other professionals who work closely together to deliver value to customers.

Chapters

These groups of individuals share a specific area of expertise, such as front-end

development or data engineering.

Chapters meet regularly to share knowledge and best practices and ensure that their members' skills and resources are being used effectively across the organization.

Guilds

These are communities of practice that bring together individuals from across the organization interested in a specific topic or technology.

Guilds provide a space for sharing knowledge and ideas and collaborating on projects and initiatives.

Tribes

These are large, cross-functional teams responsible for a specific business area or product line. Tribes are composed of multiple squads and are responsible for defining and prioritizing their work.

This way, Spotify can build and deliver products faster and more efficiently while also fostering a culture of collaboration and continuous learning.

Uber

Uber can handle a large volume of ride requests and match them with available drivers in real-time thanks to its composable enterprise architecture.

The system consists of several components, including:

- 1. The mobile app:** This is the interface that riders use to request rides and track their progress.
- 2. The dispatch system (DISCO):** The core of the Uber architecture, responsible for matching riders with drivers and assigning trips.
- 3. The mapping system:** This component uses data from a variety of sources, including GPS and real-time traffic data, to determine the most efficient route for a trip.
- 4. The payment system:** This handles the financial transactions between riders and drivers, including calculating the cost of a trip and processing payment.
- 5. The driver app:** The interface drivers use to receive trip requests and track progress.
- 6. The server infrastructure:** This consists of a server network that supports the various components of the Uber architecture, including the dispatch system and payment system.

Uber's architecture provides a seamless and reliable experience for both riders and drivers. Its composable architecture philosophy means that each system component is designed to be independent of the other and can be packaged as a business capability.

How GlobalLogic's composable transformation redefined training and onboarding

GlobalLogic understands the importance of composable enterprises and the cultural shift it brings as a result of our own people, processes and technology transformation. As part of our transformation journey, we set up the India Technology Office (ITO), which is responsible for bringing teams the proper technical training and setting up the right processes.

GlobalLogic recently developed an employee onboarding platform using a mobile-first approach and the latest Web3 technologies, such as blockchain and metaverse. The platform is composable, built using PBCs developed by different cross-functional (independent) teams.

The development process involved a global team of dedicated individuals who owned and developed their modules. Despite the remote work challenges and coordinating across time zones, the team successfully integrated all modules without any issues.

The final product was a seamless and user-friendly platform that greatly improved the onboarding experience for our new employees. This approach to our talent platform reduced onboarding time from months to just a few hours.

Audit: Process audit as part of Delivery Assurance; Architectural Audit as part of SARB.

Train and Prepare: GlobalLogic established 10 running academies to provide key tools and technologies and foster a culture of learning. Academies include the Freshers Program, Architecture, DevOps/SRE, Tech Design School, and Tech Scale Up programs to train project leads and managers.

Knowledge Sharing via 1. Community and Practices; 2. Lab specific repositories; 3. Access to POCs and whitepapers.

Develop & Grow: Many accelerators programs are completed successfully and progress that helps in technical growth of people.

Perform and Evolve: 1. Promoting people based on performance; 2. Role changes as per skills and interest; 3. Deep engagement programs by HRBPs.



Considerations for implementing a composable enterprise model

Take these considerations into account when implementing a composable enterprise model.

1. Organizational culture

A composable enterprise model requires a culture that is open to change and encourages collaboration and cross-functional teamwork.

This may require significant cultural change, breaking down silos, and empowering employees to take ownership of their work.

Cultural change can be complex as people are reluctant to change, and it takes a lot of effort for the organization to bring in a cultural change.

Each team should have an agile mindset and empower employees to take ownership of their work to make the organization more responsive and adaptable.

2. Technology

Implementing a composable enterprise model may require significant technological investments, such as modular design tools, agile development platforms, and data management systems.

Current applications are designed for something other than the future and are an obstacle to innovation. These cannot be completely replaced due to their cost and risks.

Some key technologies used in composable enterprises include:

- **APIs:** Each PBC exposes one or more APIs to seamlessly integrate various systems and components within the organization.
- **Cloud-first approach:** A cloud-first approach allows the organization to quickly and easily access and scale the computing resources it needs.

- **Data analytics:** Data analytics tools and techniques extract insights and inform decision-making.
- **Collaboration tools:** Tools for collaboration, like messaging and video conferencing software, enable cross-functional teams to collaborate within the organization.

3. Data management

In a composable enterprise, data is a crucial enabler of agility and adaptability. It is important to have robust systems to collect, store, and analyze the data to ensure the organization can utilize it for changing business needs.

Some key practices for managing data in a composable enterprise include:

- **Data governance:** Establish clear policies and procedures for managing data, including how it is collected, stored, and accessed.

- **Data quality:** Ensure the organization's data is accurate, complete, and up-to-date.
- **Data integration:** Using APIs and other integration technologies to connect data from various systems and sources, making it easily accessible and usable.
- **Data security:** Implementing measures to protect data from unauthorized access, breaches, and other security threats.
- **Data analytics:** Using data analytics tools and techniques to extract insights and inform decision-making.

4. Legal and regulatory considerations

Ensure compliance with all relevant laws and regulations when implementing a composable enterprise model.

There are several legal and regulatory considerations that organizations need to take into account when operating as a composable enterprise,

including data privacy and protection, contractual issues with third-party vendors, and safeguarding intellectual property.

This may involve contract changes, business structure modifications, and updates to other legal documents.

5. Talent management

In a composable enterprise, it is vital to have a diverse and highly skilled workforce that can adapt to changing business needs.

This may require changes to talent management practices, such as training and development programs, recruitment, and retention strategies.

By carefully considering these considerations, enterprises can successfully implement a composable enterprise model and realize the benefits of increased agility and adaptability.

Conclusion

Although still developing, the composable enterprise model has the potential to significantly impact how businesses operate in the digital age. One of its key benefits is that it enables businesses to quickly adapt to market, customer, and technology changes.

As a result, more businesses will likely adopt this model to remain competitive and it may become the norm rather than the exception.

The traditional, monolithic enterprise model may become obsolete as more businesses benefit from modularity, flexibility, and adaptability.

Planning and implementing a composable enterprise strategy requires careful coordination between departments, people, processes, and technology. Protecting and improving culture is imperative.

[Get in touch today](#) and let's see how GlobalLogic can help with your company's digital transformation.