The What and Why of iPaaS for Modern Businesses

Today, acronyms that end in "aaS" may seem like old news. SaaS, PaaS, and IaaS are all staples of the cloud computing revolution that began in the early 2000s and are commonplace technologies that we take for granted.

Yet, there is a new category of "aaS" technology that, unlike more established types of solutions, are already widespread within the enterprise. This new "aaS" creates radical opportunities to transform the way businesses manage and evolve their IT resources.

It's called Integration Platform as a Service, or iPaaS. While iPaaS builds on some of the concepts at the core of SaaS and PaaS, it delivers a deeper level of opportunity for connecting siloed IT assets and the business units that depend on them.

This eBook explains what business stakeholders should know about iPaaS. It starts by defining iPaaS and outlining its core areas of functionality. It then walks through the four key business advantages that an iPaaS is uniquely positioned to offer.

By reading through the following pages, you'll learn how you can fully modernize your business's IT strategy – even if it includes legacy systems that have traditionally been difficult to integrate with modern, cloud-based solutions – by adopting an iPaaS as the operational backbone of your IT estate.

What is iPaaS?

Put simply, iPaaS is a type of technology that provides cloud-based services for bringing disparate IT resources and systems together.

In other words, an iPaaS is a way to integrate assets that lack a native means of efficiently connecting with each other to build unified workflows. An iPaaS lets businesses define how independent systems should communicate with each other, share data, operate in tandem, and so on. IPaaSes also often provide tooling to help monitor and secure the integrated environments that they allow businesses to build.

By design, an iPaaS is platform-agnostic and capable of connecting virtually any application or resource with any other. An iPaaS can integrate different applications running in the same cloud or bring together applications hosted in different clouds. It is capable of connecting an application running in the cloud to a data source that is hosted on-premises or vice versa. And it can work with cloud-native, API-first applications as well as monolithic legacy systems.

How is iPaaS Different from PaaS and SaaS?

An iPaaS is similar to other types of cloud technologies, including PaaS and SaaS, in some ways. However, iPaaS fills a role that PaaS and SaaS simply do not.

A PaaS provides developers with a simple solution for building applications and deploying them to the cloud. In this respect, PaaS is great if you need a fast way to create and deploy an app. But a PaaS doesn't address the need to integrate multiple apps together. That's work that falls outside the scope of the development and deployment pipelines supported by a PaaS.

On the other hand, SaaS is an architectural model for hosting software in the cloud so that users don't have to worry about managing infrastructure or deploying software themselves. SaaS thus enhances the user experience. But it does nothing to address the need for application integration. An app that you deploy using a SaaS architecture will be just as siloed as an app deployed in any other way unless you take extra steps to integrate it.

You can think of iPaaS, then, as a type of solution that addresses a key gap within the PaaS and SaaS paradigms: The need for application integration to ensure that businesses have tightly connected IT estates where resources can be shared easily wherever and whenever needed. As opposed to siloed environments in which each application lives in isolation from others, making it harder to leverage the power of all apps collectively.

Key Features of iPaaS

An iPaaS is a category of technology, not a specific product. Thus, there are multiple ways to implement an iPaaS.

Nonetheless, every iPaaS should offer a core set of features:

✔ **Connect siloed systems:** An iPaaS allows disparate applications or other resources to communicate and share data with each other in a systematic, easy-to-manage way.

✔ **Bring together disconnected business units:** By connecting siloed applications, iPaaS also makes it easier for discrete business units to work together. For example, a sales department could integrate its apps with the marketing team's software, or an accounting department might import customer data from CRM software.

✔ **Align IT and business goals:** Along similar lines, iPaaS helps ensure that IT teams work to support business goals. Rather than haphazardly creating integrations that may or may not actually advance the business, IT can use iPaaS to collaborate with business stakeholders to identify and implement integrations that drive the greatest value. By extension, iPaaS helps to maximize the business's ROI on application development and deployment.

✔ **Rapid application deployment and updates:** In addition to connecting apps, an iPaaS simplifies the process of deploying and updating integrations between apps. In turn, it speeds the overall app deployment and update process. If developers had to maintain integrations manually and tailor them to each app, each deployment would take significantly longer.

✔ **Monitoring and management:** A full-featured iPaaS allows businesses to build application integrations and monitor their performance in near-real time, track updates, and otherwise manage the complete application lifecycle.

✔ **Continuous improvement:** An iPaaS can help teams improve the quality of their applications over time, while also optimizing the end-user experience, through features that provide point-by-point observability to identify problems and prevent them from recurring. In addition, automated remediation functionality can help resolve problems as quickly as possible, with minimal impact on end-users.

Those are the features that iPaaS delivers. To help explain how these features translate to real-world business goals, the following sections of this eBook walk through four essential benefits that iPaaS unlocks for organizations seeking to optimize their IT strategies and continue advancing in their digital transformation initiatives.

Chapter 1: Enabling Composable Apps

Conventionally, there has been a sharp misalignment between the way businesses designed and developed apps and how they actually used them.

Traditionally, applications were developed on a case-by-case basis, with each app created to serve a specific business need. However, in most cases, application functionality overlapped. A business might maintain dozens of applications that each have a payment-processing component, for example, or that need to look up client account data.

Developing each app independently, therefore, leads to a great deal of redundant effort. Developers continually reinvent the wheel by rebuilding functionality that already exists.

Composable apps

There is a solution to this conundrum: Composable applications. In a composable app architecture, application functionality is broken into discrete units, then shared across applications. That means that developers can create, for example, one module to handle payment processing, then share it across multiple applications.

Composable apps offer a range of benefits, as compared to the traditional application design and development approach:

Business agility: The business can implement update functionality faster when it only needs to update one module to change behavior across multiple applications. For example, suppose you need to handle payments in a new type of currency. In that case, you can easily implement that feature within your payment module and then roll it out across your business if you use a composable app design.

Code reusability: Composable apps save developers from having to write the same type of code multiple times. In turn, it allows development teams to do more with fewer highly specialized programmers and in less time. Junior developers are able to handle more integration work allowing the subject matter experts to focus more of their time and skills on delivering true business value

Customizability: Although composable application modules are reusable across apps, they can be customized to meet the needs of different users or support nuanced use cases within each app.

Integrated data streams: A composable app approach makes it possible to create one stream of data (such as payment information or customer names and addresses) and share it across all apps that need to consume the data. This eliminates the need to maintain redundant data stores or connect each app to a data stream manually.

IPaaS and Composable Apps

Part of the reason why composable apps haven't become wide-spread – or why earlier experiments with the architecture, like the Service Oriented Architecture (SOA) trend of the 2000s, fizzled out – is because integrating and managing so many different units of code is a steep challenge.

For a composable app strategy to work, developers need a simple means of connecting each module with other modules to define complete applications. They must also be able to update individual modules without breaking the functionality of applications that depend on them. And they need to be able to tailor the behavior of modules in different contexts so that a single module can address multiple use cases or handle different types of data.

The tools for addressing these challenges were elusive until the advent of iPaaS. With iPaaS in place, developers can create as many modules as they need, then use the iPaaS to connect them in a con-sistent, systematic way. In other words, the iPaaS can define how modules should integrate with others to deliver the functionality that each business unit requires. With iPaaS, every group gets what it needs from IT resources, without developers needing to build standalone, custom apps from scratch for every business need.

At the same time, by providing centralized monitoring and manage-ment of application modules, iPaaS allows developers and IT teams to keep track of, secure, and update their software resources.

A good example illustrating the benefits of such an approach is the financial services industry's wide-scale embracement of open banking. Open banking provides third-party financial service providers open access to consumer banking, transaction, and other financial data from banks and financial institutions through application programming interfaces (APIs). Open banking allows the networking of accounts and data across institutions. In turn, it enables banks to create better, simpler user experiences by allowing customers to access account data from multiple banks through a single app or service. Open banking can also help developers to build innovative types of products and services, such as apps that integrate social networking features with financial tools.

But the challenge of implementing open banking can be immense. A major impasse in the sharing of information concerns the difficulty of connecting with a bank's APIs. Banks need a way to make such integrations feasible or seek alternative platforms that work with a focus on open banking. Specifically, they need platforms that connect more easily. Such technology will allow banks to accelerate the integration without needing a high investment.

Chapter 2: Digital Transformation and Modernization

If there is one thing most business leaders love to talk about today, it's digital transformation (meaning the implementation of digital solutions across the business). It's one thing to talk about it, and quite another to achieve it.

In practice, businesses tend to find that they face a variety of show-stopping challenges when they go about pursuing digital transformation:

• **Siloed applications:** The applications that businesses already have in place were often designed before the advent of modern digital transformation initiatives. There is no easy way to connect these apps with the latest digital technologies.
• **Legacy code:** Even in cases where integrations between applications can be built, legacy applications tend to rely on outdated code that may not meet modern performance or security requirements. As a result, these apps are left out of digital transformation initiatives.
• **Lack of expertise:** The developers who wrote existing applications may no longer be at the company, and documentation about the apps may be substandard. Both challenges may make it even more difficult to factor existing IT resources into digital transformation.

For reasons like these, it may seem next to impossible for businesses that already have established, monolithic IT systems to integrate them with modern IT solutions, like public cloud services or S/4HANA. This is because legacy apps weren't designed to support modern IT solutions. As a result, businesses either end up with bifurcated IT estates in which part of the environment is modern and cloud-native, and part of it remains legacy and siloed, or they abandon digital transformation altogether.

IPaaS as an enabler of digital transformation

While it would be an overstatement to say that iPaaS alone is the key to full digital transformation, iPaaS does solve many of the application-related barriers that prevent businesses from fully transitioning to modern digital ways.

Because an iPaaS can build integrations with any type of application and any codebase, iPaaS makes it possible to connect legacy apps to modern digital platforms no matter how old or poorly documented the apps are. Having an outdated codebase ceases to be a barrier when you can use an iPaaS to bridge the gap between legacy code and modern, cloud-native environments.

At the same time, iPaaS provides a centralized monitoring and management solution that works for any type of app – even legacy apps that would otherwise be difficult to manage with cloud-native tools that are not designed to work with older programming languages or frameworks.

And because full-featured iPaaS offerings let businesses define and deploy integrations using a low-code approach, iPaaS eliminates the need for specialized knowledge of the app to merge it into a modern environment. It doesn't matter if no one on your team today fully understands how your legacy apps work, as long as you can use a low-code iPaaS to define integrations that connect them to other apps.

Chapter 3: An Architecture that is Omnichannel by Default

Today, businesses typically need to deliver a consistent user experience – for both customers and their own employees – across a range of different platforms. In addition to supporting PCs, they must provide applications that work seamlessly across various tablets, smartphones, and possibly even specialized IoT devices.

In other words, businesses need to provide an omnichannel experience that ensures that no matter where or when their users engage with IT systems, the user experience is consistent and reliable.

Omnichannel application challenges

Delivering an omnichannel experience has traditionally been difficult, especially for businesses with established IT environments that weren't originally designed to support omnichannel initiatives.

It's challenging to deliver a consistent user experience across apps when each app has different code behind its interface and a different data stream, and, possibly, different data structures. Guaranteeing a fast, reliable experience is even harder, given the difficulty of predicting exactly when and where users will choose to engage with software.

And to make matters even more complicated, applications typically change constantly. Businesses that attempt to build manual integrations for a consistent experience across apps end up playing a cat-and-mouse game. An update in one app requires developers to implement a similar update in another app, and until they catch up, their omnichannel initiative falls short.

Achieving omnichannel with iPaaS

IPaaS eliminates many of the application-level barriers to an omnichannel experience.

With iPaaS, teams can define integrations between applications once, then keep them in sync even as individual applications change. In addition, the composable nature of iPaaS integrations makes it simple to reuse components across applications, ensuring that users receive the same exact functionality and can access the same data on multiple apps.

Put another way, adopting an iPaaS means that businesses shift to a strategy that enables omnichannel by default. Instead of relying on manual integrations to provide a consistent user experience, iPaaS ensures that integrations are always there without burdening the IT team or developers with the additional work of connecting siloed systems.

Chapter 4: Maximizing Business Agility

A competitive business is an agile business, which means it can react rapidly to changes in the market, shifts in its customer base, and so on.

IT systems are often one of the weakest links in business agility. When companies rely on siloed apps, implementing new functionality to support shifting business goals requires updating each app independently, which is time-consuming. At the same time, the siloed organizational structure that tends to accompany siloed applications makes it difficult for each business unit to understand what others are doing and identify opportunities for evolving its business strategy in a way that complements, rather than reiterates or competes with, the work of other groups.

Complex enterprise software systems make business agility even harder to achieve. When each platform that a business depends on requires special expertise to manage and connect with other platforms, it's even harder to update IT strategies to support pivots in business strategy.

Building an agile business with iPaaS

IPaaS helps businesses overcome these challenges and, in turn, maximize their agility.

With iPaaS, business platforms such as Enterprise Resource Planning (ERP) and Point of Sale (POS) systems can be integrated in weeks rather than years – a huge advantage when business goals shift suddenly or the business makes internal organizational changes. In addition, the ability to execute business functions in parallel within an iPaaS platform facilitates the rapid communication of data, ensuring that IT systems advance rather than hinder business operations.

And because an iPaaS serves as a central platform for building, running, and monitoring business applications, it allows business stakeholders, developers, and IT teams to collaborate in a common space when defining and implementing the IT changes required to achieve new business goals.

The Digibee Difference

From building more flexible and efficient application strategies through composable architectures to maximizing business agility and optimizing the customer experience through an omnichannel approach, iPaaS systems solve key challenges that organizations have traditionally had to address manually and inefficiently.

While all iPaaS solutions are technically capable of delivering these benefits, Digibee's low-code, cloud-based iPaaS Platform stands out from other iPaaS solutions on the market because it maximizes the simplicity and usability of iPaaS. A low-code approach to defining and deploying app integrations means that developers can roll out connections rapidly without writing reams of custom code for every app they need to connect. At the same time, Digibee's container-based, cloud-native architecture, which runs each integration inside an isolated environment without the overhead of full virtualization, enables maximum performance and security. Digibee also supports parallel versioning, which speeds development processes. And customizable monitoring and management tools make it easy to tailor Digibee's iPaaS to your business's unique needs.

On top of this, Digibee offers an unparalleled focus on customer experience and outcomes. Digibee engineers work hand-in-hand with clients to provide the knowledge and tools they need to be self-empowered and self-sustaining in building integrations through iPaaS. And, when customers run into trouble, expert help is a click away.

Book a demo to learn more about how Digibee's iPaaS solution can help connect the dots of your organization's IT estate. Or check out our learning center for the latest news and insights on the fast-evolving world of iPaaS.

RTInsights
.com
Accelerate Your Business with Real-Time Insights

RTInsights is an independent, expert-driven web resource for senior business and IT enterprise professionals in vertical industries. We help our readers understand how they can transform their businesses to higher-value outcomes and new business models with AI, real-time analytics, and IoT. We provide clarity and direction amid the often confusing array of approaches and vendor solutions. We provide our partners with a unique combination of services and deep domain expertise to improve their product marketing, lead generation, and thought leadership activity.

digibee

Digibee offers its clients fast, secure, and reliable integration solutions. They have developed their Hybrid Integration Platform (HIP) to quickly connect enterprises to the digital world by leveraging Kubernetes, micro-services, low-code, and a unique delivery model. By simplifying and accelerating integration processes, Digibee's platform gives enterprises greater flexibility and freedom to allocate time and resources towards innovation projects. This accelerates Digibee's clients time to market, allowing them to capture more revenue quicker than before.

Digibee treats integration as an abstracted capability instead of a one-off undertaking. Their holistic and agile approach to integration, allows enterprises to accelerate decision making, enhance customer experience, and achieve greater business outcomes in a fast and scalable way without major investment. Digibee has offices in São Paulo, Brazil and Weston, Florida.