

eBook

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# Inside the iPaaS

A comprehensive guide to  
cloud-based integration platforms



# Introduction

Digital transformation allows businesses and organizations to reshape their processes to promote innovation, creativity, and long-term growth. Data integrations play a bigger role in the digital transformation strategy than one may think: iPaaS is the real engine behind rapid digitalization.

In this ebook, we will share our insights on how sophisticated cloud-based integrations can best enhance an integration strategy. Integrations are often overlooked and many companies are still using traditional, on-premise integration solutions. This is not only time-consuming, but also extremely expensive.

To help you better understand how this technology can help you, we provide an overview of iPaaS that is essential for improving operational processes in a fast and cost-effective way on the long-term.

We hope that you find this ebook resourceful and informative.

- The Youredi Team

# Digital Transformation

Digital transformation is strategically a top priority for all firms that want to remain competitive in a rapidly the rapidly changing market. Emerging technologies, increasing amount of data, and cooperation with multiple partners, customers, and third parties put an emphasis on the need of digital change.

Digital transformation can be defined as a strategic process of re-engineering and radically changing all aspects of the business by utilizing modern technologies.

However, creating and executing a digital transformation strategy is easier said than done: the foundation lays in organizational change that can be followed by a series of projects that will transform all operations and processes at an enterprise.

According to the analyst house, IDC, digital transformation could be worth \$18 trillion worldwide in additional business value. Meanwhile, Gartner's CIO Agenda has forecasted that the digital business shall represent an average of 36% of a business's overall revenue by 2020.

To achieve long-term transformation goals and economical success, businesses need to be able to define an organization-wide strategy clearly stating the scope and the objectives of the project.

*“Two-thirds of all business leaders believe that their companies must pick up the pace of digital transformation to remain competitive.”*

*Gartner*

However, these goals cannot be met without finding the right technologies and technology suppliers that will support the strategy. Modern digital emerging technologies, such as the Internet of Things (IoT), Application Programming Interfaces (APIs), or Artificial Intelligence (AI) are driving the business transformation.

Nevertheless, businesses are already harnessing a vast amount of data that is going to increase by adapting to the above mentioned technologies. To make sense of the data, an Integration Platform as a Service (iPaaS) is a necessary solution. Managing data flows, orchestrating processes across all parties, transforming data, and improving data quality are all primary issues for creating transparent, real-time digital operations.

# What is iPaaS?

Integration Platform as a Service (iPaaS) is a suite of cloud solutions enabling the development, execution, and governance of a wide range of integration scenarios, such as data integration, application integration, system integration, cloud integration, service oriented architecture (SOA) integration, process integration, internet of things integration, API management, and B2B integration scenarios.

iPaaS has been designed to act as a middle layer. It can connect any combination of on-premise systems or cloud applications within an organization or across multiple ones. This functionality enables iPaaS to act as the perfect hybrid integration platform (HIP). Cloud-based integration platforms are so versatile, this is why an increasing number of enterprises have started to invest in an iPaaS.

However, according to Gartner very few iPaaS vendors have been able to deliver genuinely hybrid integrations or complex integrations in which hundreds of trading partners need to be connected. Many iPaaS providers only use their platform to offer plug and play integration connectors for SaaS applications and even those that offer an enterprise integration platform as a service (EiPaaS) tend to only sell the technology that your integration architects can use to develop, deploy, and maintain your integration solutions. Only a few vendors have been providing fully managed integration services built on a cloud-based integration platform.

Integration platforms have been designed to act as a middle layer between systems and applications both in EAI and B2B integration cases. It facilitates the real time data exchange between two or multiple stakeholders. iPaaS is an excellent tool for various integration scenarios, like data integration, system integration, hybrid integration, or business process automation.

Becoming well-connected is a critical requirement for enterprises to eliminate data silos and thus improve cooperation across all parties. Traditionally, system integration has been challenging due to the variety of systems and applications organizations use. Some may rely on legacy on-premise systems built decades ago, while others may have adopted cloud-based applications. These systems and applications also operate with a variety of protocols and data formats that complicates the integration process. An enterprise integration platform also needs to ensure that essential cloud features such as high availability, preferably with zero downtime, disaster recovery, multi-tenancy, and security are met.

An integration platform enables protocol bridging, message transmissions, translation and transformation of data formats, routing, service visualization, adapter technologies, orchestration solutions, and scalability for challenging integration scenarios in the most secure way.

Compared to traditional integration solutions, the development, testing, deployment of the integration flows happens a lot faster. As the number of connections may increase, the time-to-deployment cycles must happen rapidly to satisfy the need of enterprises for integrating with new trading partners as quickly as possible.

# Key Functionalities

## CONNECTIVITY MANAGEMENT

Integration platform can connect any systems and applications, whether they are legacy or modern ones, regardless of communication protocols – whether it's HTTP, SFTP, FTP, AS2, or something else. As you can see in the picture above, a typical iPaaS has ready-built connectors and adapters to connect cloud-to-cloud, on-premise-to-on-premise and on-premise-to-cloud. iPaaS also offers full lifecycle API management which can speed up the way connections are created across applications.

## DATA MANAGEMENT

The main purpose of connecting multiple systems and applications is to facilitate data sharing between them. Once applications communicate with each other, the integration solution must enable data transmission between them. Data integration is easier said than done: different applications run on different data standards and formats, like EDIFACT, X12, JSON, XML, and proprietary formats. The integration solution takes care of the data transmission process, and if necessary then also the data translation, transformation, validation, and enrichment.

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The platform monitors the integration flows and reports any errors automatically so that your support team or the iPaaS providers integration experts can fix them.

In addition, some integration platforms provide business intelligence solutions as well for utilizing the data for process optimization or better decision making. Typically, iPaaS vendors don't do anything with your data, besides transmitting, transforming, or cleaning it based on your requirements. This means you have full control over your information so that you can maintain security of the data you own. It can also offer business intelligence on the data that has moved through the platform that can provide some valuable information for decision making.

# Key iPaaS Capabilities

Some of the key capabilities of an integration platform are the following:

- Communication protocols
- Connectors and adapters
- Data formats
- Data standards
- Data mapping and transformation
- Data quality
- Routing and orchestration
- Integration flow development and lifecycle management tool
- Integration flow operational monitoring and management
- Full lifecycle API management

# iPaaS Use Cases

An enterprise integration platform as a service (EiPaaS) can be used for a variety of integration solutions. EiPaaS differs from other integration platforms in that sense that the majority of iPaaS products on the market simply offer connectivity for SaaS applications that basically anyone (often even without integration or coding expertise) can setup with just a few clicks. EiPaaS is rather used for EAI or B2B integrations, including solutions like data integration, system integration, or business process automation.

## DATA INTEGRATION

Data integration is one of the most typical integration scenarios enterprises look for. It's often strategically important that the data would be available for all the right stakeholders in a single place at the right time. Data integration solutions eliminate data silos and ensure that all your information is adequately utilized.

A modern integration platform can improve data integration process. For example, the data transmission can happen in real time instead of traditional batch processes.

Communication between stakeholders can become a lot smoother when everyone within the ecosystem receives the data what they need in the format that their systems can understand. This is why translating and transforming the data during the data transmission can be a game-changer. Data can also be validated to ensure that the data is always 100% accurate. Based on your criteria, the solution checks all messages and if it detects errors or missing information, it sends the message back to the sender for enrichment.

## **APPLICATION/SYSTEM INTEGRATION**

Connecting systems and applications enables a two-way communication. EAI is a solution enterprises are looking for to create integrations between systems and applications. While traditional EAI solutions can indeed create the necessary bridge between applications, integration platforms have improved the way EAI can be done. One significant difference is the speed of development and deployment. Adding new connections with iPaaS is faster. Sometimes new connections can be added in just minutes.

The ultimate goal of application integration that data from disparate systems and applications would be available in a single platform for all the relevant stakeholders. Enterprises can remarkably improve their business processes by connecting all parties to attain necessary information from all the different applications.

System and application integration is a primary use case for an iPaaS, as it can connect any two or multiple systems, on-premise technologies and cloud-based applications to automate information flows.

## **BUSINESS PROCESS INTEGRATION**

Business process integration enables organizations to streamline their processes by creating seamless connectivity to connect systems and applications and automate the processes and workflows between them to improve communication and collaboration across teams.

Enterprises have been using an Enterprise Service Bus (ESB) for enabling business process integration. However, iPaaS has slowly started to replace ESB, as integration platforms are more versatile and it can be used for a variety of integration solutions besides process integration. With iPaaS, both internal and external processes can be automated and improved.

Traditionally, large enterprises used an Enterprise Service Bus (ESB) for enabling business process integration. However, many have started to replace ESB with iPaaS, as it is versatile and the platform can be used for a variety of integration cases besides process integration. With iPaaS, both internal and external processes can be integrated.

## B2B INTEGRATION

Business-to-business integration is often referred to as electronic data interchange (EDI). In one of our articles, we defined EDI previously as the following:

*“Electronic data interchange enables enterprises to exchange business-critical information (e.g., purchase orders, invoices, booking requests, custom status information, etc.) with their ecosystem of trading partners electronically. Shortly, EDI is a set of protocols that empower businesses to communicate with each other, and under EDI we mean the transmission, message flow, document format, and the software that interprets the documents. The EDI message normally includes the same information, as the paper one, however, switching to electronic processes has significantly improved the way trading partners can do business with each other.”*

# Hybrid Integration Platform (HIP)

Hybrid integrations are becoming increasingly relevant when businesses need to be able to connect the old world (their legacy IT systems) with the new world (cloud-based SaaS applications). Hybrid is a bridge between on-premise technologies and cloud-based applications.

Implementing connectivity between on-premise and cloud applications is challenging because legacy systems weren't originally designed to be connected and communicate with other systems. Today, interoperability across systems is crucial, and enterprises need to break down their data silos by enabling connectivity to their on-premise legacy systems for their trading partners.

EiPaaS (enterprise integration platform as a service) can be considered as a hybrid integration platform (HIP). An integration platform is designed to fill the gap between legacy and modern applications. As changing IT systems is not a sustainable option for most enterprises, there needs to be an integration layer that is capable of connecting different interfaces through different protocols. Whether the IT system needs to receive information from the cloud or internet of things (IoT) devices, or it should send data to business partners who have moved their operations to the cloud, an integration platform is an enabler of communication between these different architectures.

There could be other challenges during the development process, like firewalls, different protocols, different standards and data formats, lack of APIs. All these can be easily tackled with an enterprise integration platform.

What makes it even more difficult to successfully execute hybrid integration scenarios is that you rarely need to connect only two systems. Typically, enterprises need hundreds of internal and external connections and in that case an enterprise integration platform is their best choice to tackle hybrid environment.

## iPaaS vs. ESB

Enterprise Service Bus (ESB) is widely popular for creating, deploying, and managing integrations. You may wonder why you should consider switching to an iPaaS or at least take it for a test drive as part of a smaller project.

The basic idea of ESB and iPaaS is the same. Both were developed to enable enterprises to connect systems and applications to facilitate information sharing.

With iPaaS you don't need to buy software or hardware, as integration platforms are built on public or private clouds. Therefore, you don't need to pay for upgrades and maintenance either. ESB has been designed for on-premise integrations, supporting older messaging standards. In comparison, with integration platform as a service you can deliver a wide variety of integration solutions whether the systems are situated on-premise or in the cloud, regardless of the data standards and formats the systems use, e.g., older ones, as EDIFACT or X12 or newer ones as JSON or XML, as well as proprietary formats.

While ESB is an excellent tool for connecting internal systems and applications, iPaaS offers horizontal solutions for B2B integrations.



# iPaaS Benefits

Those who have already started to include iPaaS in their integration strategy have seen the benefits it brings to the business both concerning decreased costs and improved efficiency. Many have been using iPaaS to gain a competitive advantage over the competition: digitalization allowed them to offer better digital services to their customers and improve the overall customer satisfaction and retention.

## **IPAAS FOR SMALL, MIDDLE, AND LARGE-SIZE ENTERPRISES**

Traditionally, integrations have been expensive and anyone but large enterprises could afford it iPaaS has been breaking the barriers and democratized integrations for enterprises of any size. As the implementation time of integrations has shortened, the costs decreased too. As there is no need to purchase software and hardware or pay for upgrades, anyone can start using an integration platform with minimal investment.

## **HOSTED IN THE CLOUD**

This is probably the coolest part of iPaaS. Companies do not need to purchase hardware or software, they don't have to buy licenses to use all the features of the platform, neither they need to pay for upgrades and new features. All iPaaS customers and users are entitled to enjoy all the features that the platform offers. Another great benefit is that it's continually evolving. As new customers need new features for their specific integration cases, the R&D team is working on the implementation – and once it's done, it will be available for all other customers too.

*As Gartner has been forecasting, that the adoption of iPaaS would significantly grow by 2022 and the market would be accounted for 4 billion dollars.*

## **MANAGED SERVICE**

Integration skills are still scarce, therefore, having an iPaaS vendor that will implement your integration solutions on top of an integration platform is a great benefit. The solution can be developed and deployed a lot faster, and you only need to provide an IT person that will help with the specifications and end-to-end testing.

## **SHORT TIME-TO-DEPLOYMENT**

The faster the solution is deployed, the sooner you can start realizing the added value that iPaaS has brought to your business. Short development and deployment cycles are especially vital when you have to connect with an extensive ecosystem – the implementation of your project shouldn't take years.

## **SCALABILITY**

As integration needs may evolve rapidly, the platform needs to be able to follow the changing requirements of the users. Sometimes, new connections need to be added to already existing solutions. With iPaaS, it can be rapidly added.

## **HYBRID INTEGRATIONS**

As discussed above, iPaaS is probably the best tool for implementing hybrid integrations. If you need to connect on-premise and cloud technologies, iPaaS is something that you should consider as a tool.

## **REAL-TIME DATA**

Timeliness of the data is critical for businesses. All the information needs to be available for all the right stakeholders at the right time and the right place.

## **DATA ENRICHMENT AND VALIDATION**

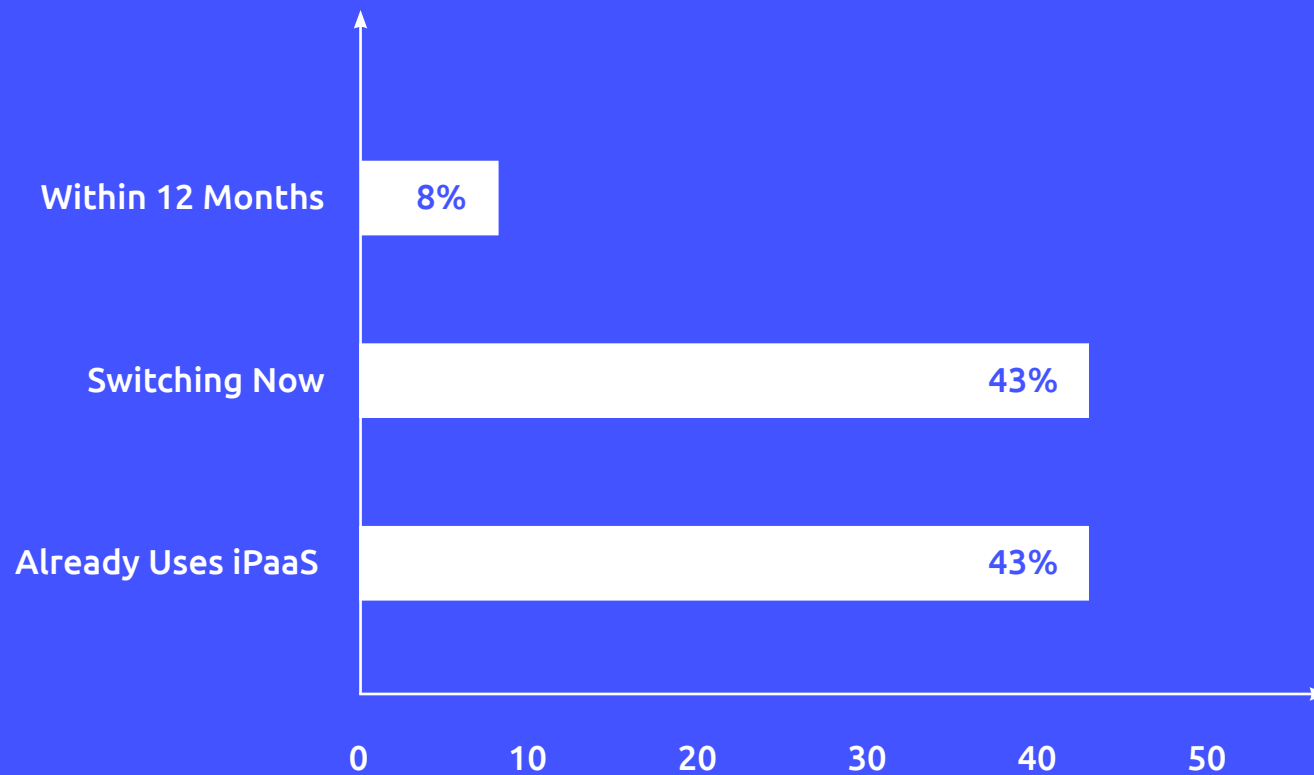
It is not enough that the information is available to all parties, but the data has to be correct, too. To eliminate manual processes in the validation and enrichment of the data, iPaaS can automate it to reduce handling times.

## **LOWER INTEGRATION COSTS**

No hardware, no software, no upgrades, shorter development times ultimately convert to significant overhead savings. After all, who wants to pay too much for integrations?

In complicated cases, the investment may sound like a big chunk of money. Leaders have started to see integrations as a strategic investment opportunity. For the record a simple dummy example: if you pay a million dollars for integrations in 5 years (which is significantly lower than if you'd have done it by yourself), but you can improve your efficiency and services, and that boosts your revenue by 5 million dollars, was it worth the investment?

# 94% of Businesses Plan to Deploy iPaaS This Year



# About Youredi

Youredi is a leading global provider of a cloud-based Integration Platform as a Service (iPaaS) solution with a focus on global supply chain management and logistics.

Youredi enables quick connections and message translations between supply chain partners and customers. Integrating with communities, carriers, shippers, consignees and the systems that they use, Youredi provides global scale, speed, and agility. This seamless real-time flow of 100% accurate data, provides organizations the ability to analyze and optimize all supply chain processes.

Youredi provides a range of solutions related to big data, IoT, and analytics.