MODEL BEHAVIOUR – IS YOUR PAYMENTS PROCESSOR THE RIGHT FIT?

Introduction

Overview of processing options

When deciding how to implement their payments processing platform, a financial institution (FI) would typically choose between either:

- Outsourcing; or
- Buying payments processing software from a platform vendor and deploying it on its own infrastructure, either in a data centre or in the cloud.

Despite the obvious benefits of having an in-house system, the second option places significant financial, operational and administrative burdens on the FI. Having an in-house platform requires skilled personnel and increases the initial time-to-market.

Consequently, many FIs prefer to outsource their payments platform to a third party processor. When it comes to outsourcing, the two most popular processing service delivery models are:

- Software as a Service (SaaS)
- Platform as a Service (PaaS)

This whitepaper explores the capabilities of the SaaS and PaaS delivery models, how they differ and how a FI can select the most appropriate model – and processor – for its product portfolio.
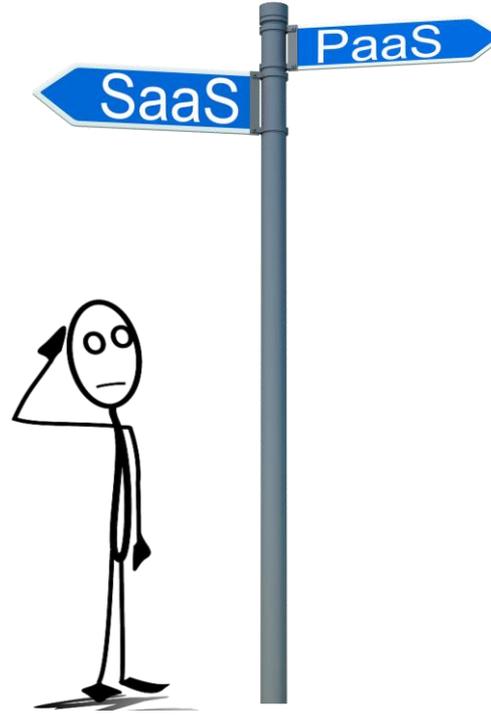
Selecting the most appropriate processing delivery model is key to a FIs success now and in the future

Software as a Service (SaaS)

SaaS is the most common delivery model in the processing market today. The most notable characteristic of the SaaS model is its multi-tenanted environment, whereby the processor runs a single instance of its payments application for multiple FIs.

The processor is able to tailor (to varying degrees) the application for each FI by applying an individual set of custom parameters whilst sharing one instance of the application that is updated, patched and maintained centrally.

A SaaS delivery model has the following additional characteristics:

- The infrastructure it runs on is hosted and maintained by the processor.
- The processor administers the payments application centrally, including release cycle management.

- The data is stored in a single, common database with separation of each FIs data enforced by access controls and partitions implemented by the processor.
- Traditionally, any more than basic changes to the configuration for a FI must be initiated via change request.
- The processor undertakes all PCI compliance functions, thereby removing this burden from the FI.

FIs

FIs' configurations

FIs' customer data

SaaS processor's payments application

SaaS processor's infrastructure
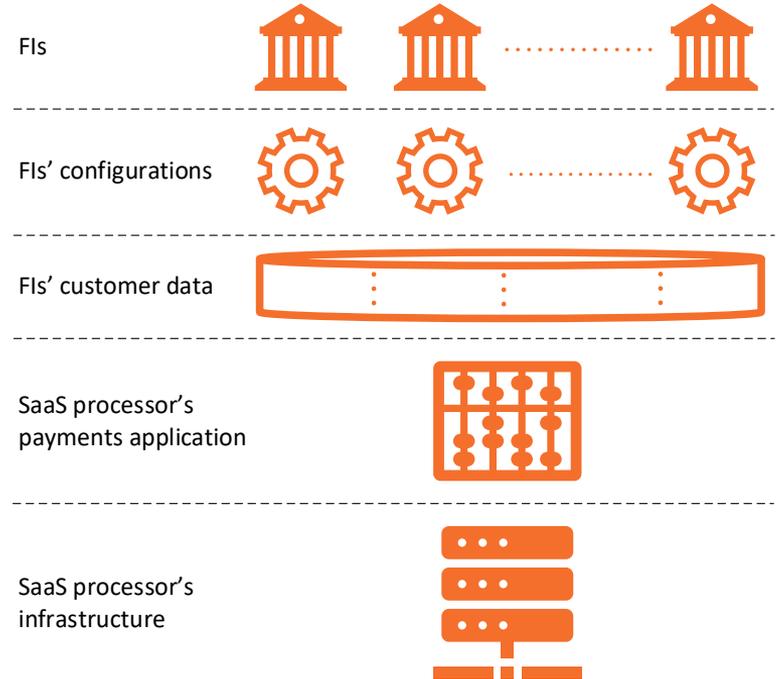
Platform as a Service (PaaS)

PaaS is becoming increasingly popular for FIs who want to have their own platform so that they have the freedom to control their payments application, but without the burden of building and maintaining the underlying infrastructure.
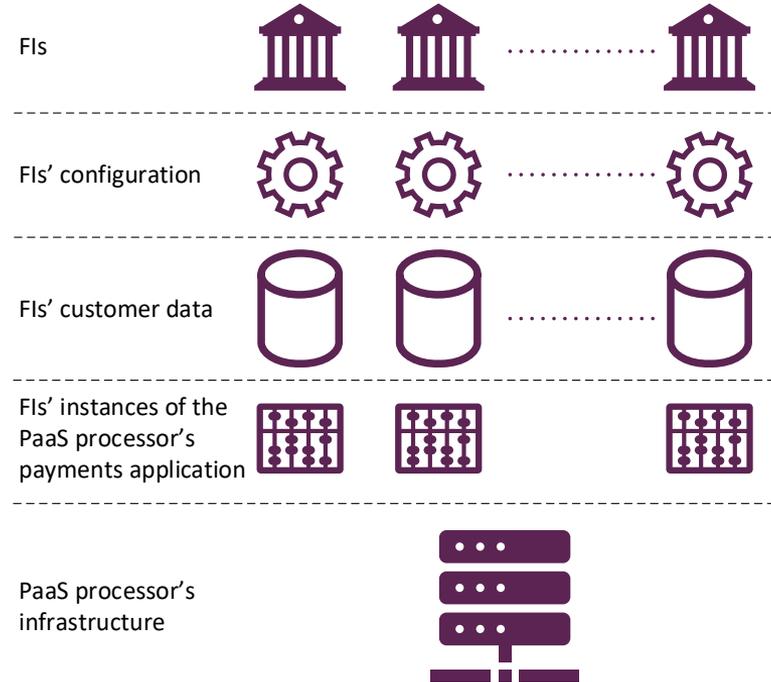
As the FI has its own application instance, the PaaS model allows a FI to fully customise their own payments application beyond advanced parameterisation, entering into the realm of user-defined functions and vendor independent integrations.

A PaaS delivery model has the following additional characteristics:

- The infrastructure it runs on is hosted and maintained by the processor.
- The payments application is administered by the FI, with the FI in control of the release cycle.
- A FI's data is stored in a separate database, but is still administered by the processor.
- The processor undertakes all PCI compliance functions, removing that burden from the FI. However, depending on the level of application control (which can vary), the FI may be involved in the PCI assessment.
- PaaS offers development and testing tools for enhanced customisations.

FIs

FIs' configuration

FIs' customer data

FIs' instances of the PaaS processor's payments application

PaaS processor's infrastructure

3

Who is PaaS for – and not for?

Whilst it is clear that PaaS comes with a host of advantages that address the drawbacks of the classic SaaS model, it is important to understand the complexities it brings. The two main considerations are availability of resources and cost.

Resources

Although the processor takes care of the PaaS infrastructure and database, a FI should be fully aware of the resources required to manage, run and customise its own application. Without the correct allocation of resources, a FI may find itself resorting to raising change requests with the processor, defeating the point of PaaS and disengaging from its coveted vendor independence.

Cost

Operating a separate application instance and database comes with the associated costs. The economies of scale that come from a multi-tenanted environment are lost, with the FI having to meet the full costs in a PaaS model.

Who is PaaS for?

Given these considerations, the business case to purchase processing services using a PaaS delivery model needs to be strong. PaaS is ideally suited to an agile FI looking to be a disruptive pioneer in the payments industry, seeking to launch differentiating products quickly and have the freedom to experiment with less risk; a FI that wants to integrate with multiple partners and systems at speed without being weighed down by their processor's change request queues.

PaaS transcends commodity requirements

The costs of PaaS mean that it is unlikely to be a financially viable approach for a FI implementing commodity products, such as a payment switch. Likewise, if a FI doesn't need user-defined functions to continuously innovate and create new products/services, the PaaS delivery model is probably not for them and they are better suited to SaaS.

But is it really this black and white?

For a FI who wants to innovate and go-to-market quickly, the PaaS model is not a panacea; there are other options. In this modern payments industry, there is no longer a standard SaaS model and the intricacies of what SaaS can offer need to be explored when choosing a processor.

Innovation comes in different forms: a FI must carefully analyse if PaaS is the model they need to realise their vision

SaaS and platform generations

Whilst the SaaS delivery model remains the most popular, not all SaaS systems are equal. The payments platforms powering them vary widely in their capabilities due to the technologies they are built on.

Considering that the processor's underlying platform will underpin all of a FI's technical capability in how it runs its business now and into the future, it is surprising that very few FIs explore what their processor runs on. It is imperative that FIs look under the hood. What's under the hood will determine how achievable your goals are. You can't expect all the advantages of an electric car from a 50 year old car. Only by understanding a processor's platform capabilities and limitations will a FI be able to make an informed choice of processing partner to power their business for the present and into the future.
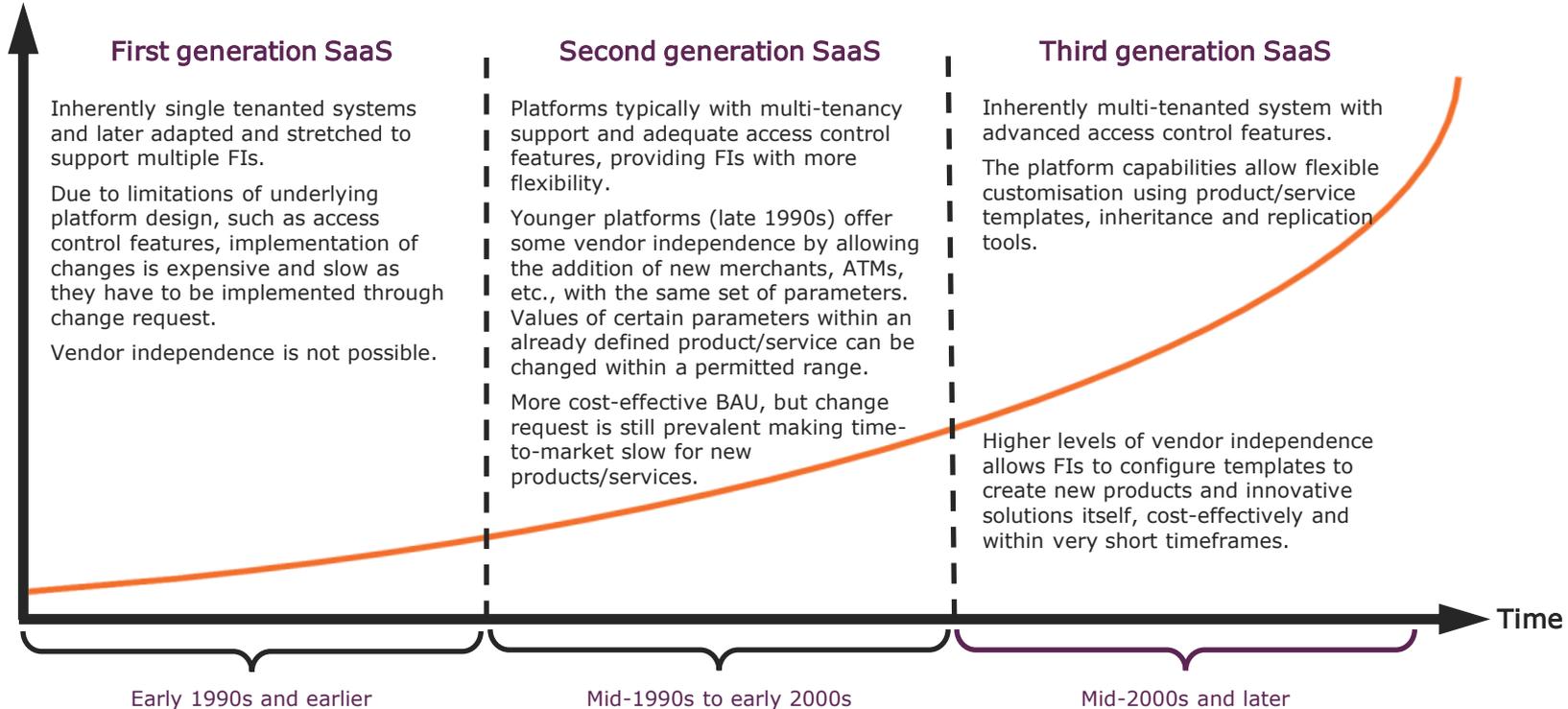
SaaS systems today run on payments platforms that can be loosely categorised as first, second or third generation depending on their age, which in turn has a direct impact on their capabilities. For a FI, these capabilities will translate into how innovative its products and services can be, how closely they will match its requirements, how quickly a product can be launched, how vendor independent a FI can be, alongside a host of other dependencies.

For more information on first, second and third generation platforms and their capabilities, please see the Compass Plus Technologies' whitepaper *Future ready payments platforms*.

It is imperative for a FI to understand the technology that underpins their processor, otherwise it may find itself pinned under this technology in the future

First, second and third generation SaaS

Platform capabilities

First generation SaaS

Inherently single tenanted systems and later adapted and stretched to support multiple FIs.

Due to limitations of underlying platform design, such as access control features, implementation of changes is expensive and slow as they have to be implemented through change request.

Vendor independence is not possible.

Second generation SaaS

Platforms typically with multi-tenancy support and adequate access control features, providing FIs with more flexibility.

Younger platforms (late 1990s) offer some vendor independence by allowing the addition of new merchants, ATMs, etc., with the same set of parameters. Values of certain parameters within an already defined product/service can be changed within a permitted range.

More cost-effective BAU, but change request is still prevalent making time-to-market slow for new products/services.

Third generation SaaS

Inherently multi-tenanted system with advanced access control features.

The platform capabilities allow flexible customisation using product/service templates, inheritance and replication tools.

Higher levels of vendor independence allows FIs to configure templates to create new products and innovative solutions itself, cost-effectively and within very short timeframes.

Time

Early 1990s and earlier

Mid-1990s to early 2000s

Mid-2000s and later

Comparing second and third generation SaaS

Second generation SaaS

Whilst enjoying a higher degree of flexibility than first generation SaaS, a FI using a processor running on second generation SaaS will inevitably find itself at the mercy of change requests if it wants to make anything other than limited changes to its products/services. Only the processor can action a change request, this puts the FI in the position of competing with other FIs for the processor's resources and priorities. This will inevitably increase the FI's costs and time-to-market.

Whilst younger second generation SaaS platforms do allow a FI to change its products/services without a change request, the scope of such changes is restricted. For example, the FI might be able to:

- Add a new merchant to an already configured merchant service. However, limits, restrictions, fees, commissions for the new merchant would have to be identical or confined to a pre-defined range, in line with the other merchants in this group.
- Change the values of parameters of an existing product/service, for example to remain competitive or to comply with changing regulations. However, this will change the parameters for the entire product/service for new and existing customers.

Third generation SaaS

The main advantage that third generation SaaS offers FIs is the ability to create new products and services independently of the SaaS processor.

A FI wanting to create a completely new product works with the processor to define a set of templates for a product/service category (sometimes referred to as a "program"). These templates define the types of configurable parameters such as limits, restrictions, fees, commissions, as well as fraud rules and other relevant dependencies. Once these base product templates have been created, the FI uses them to create multiple differentiating products within the defined parameters.

As an example, a FI might have a card program which has been set up as a "prepaid card" by the processor. The FI is then able to create new prepaid products (such as prepaid for travel, prepaid gift card, prepaid for insurance pay-out, etc.) simply by changing the values of parameters in the defined templates.

The advanced inheritance and replication tools provided by third generation SaaS mean that these new products can be created without the FI having to involve the processor, resulting in minimal to no set-up cost and no timescale dependencies on the processor to launch the products.

Second generation SaaS is plagued by the curse of change requests.

Third generation SaaS says farewell to change requests and hello to product templates.

Deciding between SaaS and PaaS
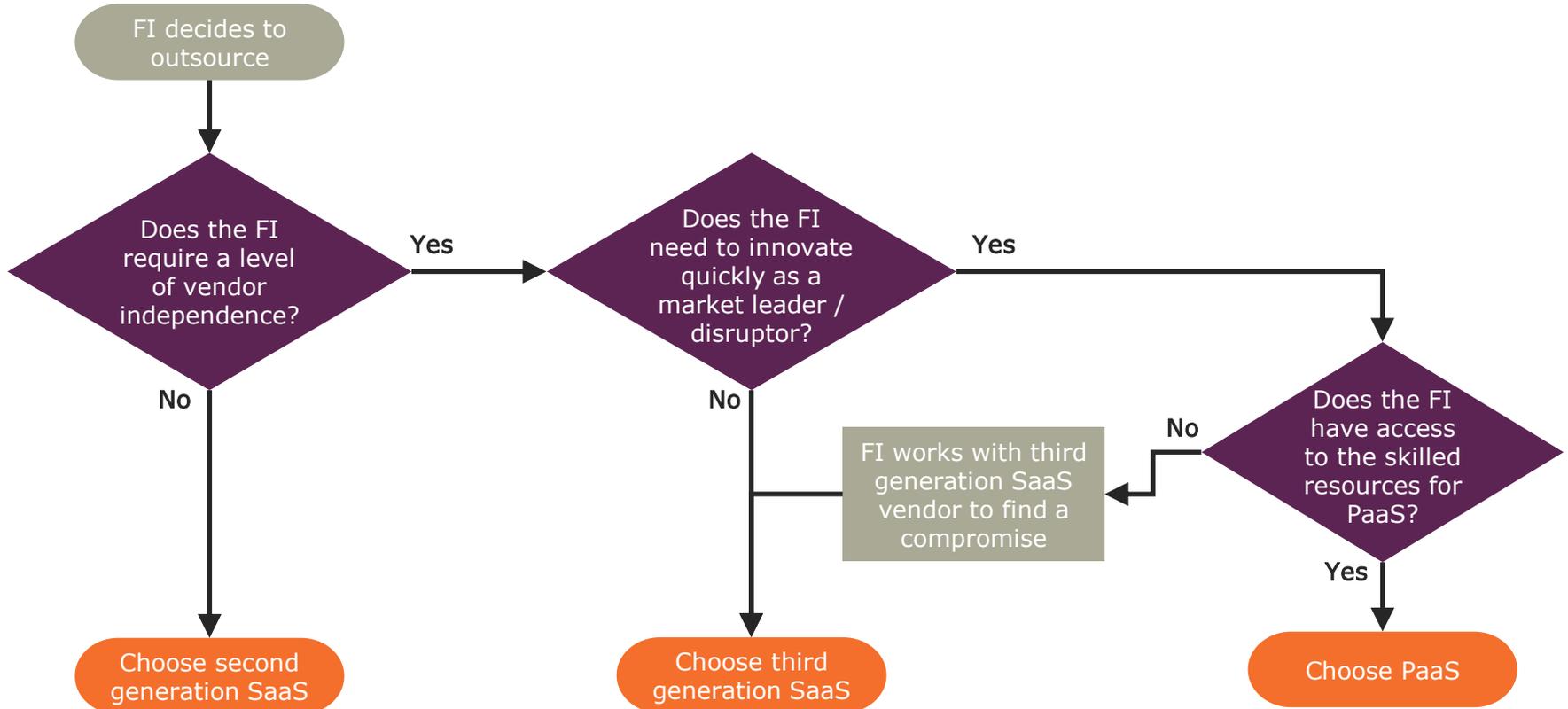
Making the right decision

This whitepaper has discussed SaaS, PaaS and the circumstances under which one might be an appropriate choice for a FI.

An equally important decision for a FI is the choice of processor. In particular, a FI needs to understand the capabilities of the payments platform used by a processor to deliver its services. This allows the FI to determine whether the processor can support their needs not only today but in the future.

As outlined in this whitepaper there is significantly more choice available to FIs than an initial cursory search might imply.

Therefore it is important for FIs to take a closer look at the underlying technological platform that a processor runs on to determine if it is suited to both their short and long-term strategic goals. Whilst SaaS may well meet the current requirements of a FI, this may not be the case in 3-5 years time.

Partnering with a processor that can provide a hybrid approach between the PaaS and SaaS delivery models can provide the most cost effective route to support a FIs long-term strategic roadmap. If the processor also offers a license model whereby a FI can bring all or parts of its business in-house, the FI will find itself in a position of optimal flexibility in terms of choice for the future, negating the need of facing a costly migration to another processor/vendor.

A FI's decision to select a particular payments processor should be based on an understanding of everything the processor has to offer

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