NEW PLATFORM STRATEGIES

BUSINESS PLATFORMS: STRATEGY, DESIGN AND DEPLOYMENT

2019 DECEMBER

DECEMBER 2019

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New platform strategies

Business platforms: strategy, design and deployment

Overview

Major French corporations and public administrations are changing, becoming more agile and innovative to meet their customers' new expectations and upcoming market challenges. Digital technology gives them the opportunity to reshape their relationships with end consumers. However, corporations do not want merely to improve their knowledge of their users. They also want to increase their interactions with them, and shift from a "product" culture that too often stops at the point of sale, to a "services" culture that engages corporations over the long run and focuses them on customer uses. Business platforms meet these requirements. That is why major corporations are preparing to allow one or more strands of their business to develop via one or more platforms.

Firstly, corporations are conducting a strategic review to determine the scope concerned and the value that a business platform might add: does it enrich the current service offering and/or does it complement their conventional business? Shaping the business platform strategy also comes down to asking what more corporations aim/want/need to offer their customers by harnessing the capabilities of their ecosystems (suppliers, customers, vendors, partners, etc.). A single firm can implement several different platform strategies at the same time and blend them as necessary. However, not all business activities lend themselves to platformisation.

According to Francis Nappez, CTO and co-founder of Blablacar, "technology is the business". It is true that technology plays a decisive role in business platforms. That is why it is crucial to reach out to the IT Department (ITD) from the strategic review stage onwards in order to enrich the discussion and establish the guidelines for technological decision-making.

If we were to identify three key takeaways about the design and deployment of a business platform, they might be the following. First of all, providing a platform-type technology infrastructure, or at least offering a technological enabler in the form of open data, APIs[1] and open-source software, now seems essential. This allows the IT legacy and the business platform's new IT to exist side-by-side. In order to interface rapidly with an existing business platform or contribute to the development of a new one, the ITD will need to upgrade its architecture to make it modular and flexible, while also ensuring that it is secure. It must be possible to deploy any type of technology on the IT platform. The architecture must also implement "industrialised" data and operations management so that it can scale up quickly.

Secondly, a platform has to be data driven, and to have access to comprehensive, coherent, relevant data on customers or users and on transactions, compiled in real time. The platform's ecosystem must have the data it needs to organise fast feedback cycles, test growth drivers or produce new and

[1] API, abbreviation of Application Programming Interface. An API is a set of functions and procedures allowing the creation of applications that access the features or data of an operating system, application, or other service. (Source: Wikipedia).

disruptive business models. The platform itself must offer an impeccable level of service quality which is constantly improved, while also being a trusted data operator. The simplicity of the user interface is key: all the complexity must be managed by the platform.

Lastly, for companies, getting the most out of a business platform requires having talented people in-house to implement it with ecosystem partners, in a smart, sustainable and effective way. This means instilling the right culture in team members. Given the importance of data in business models, all team members must adopt a "technology and data" culture to understand data and organise it in such a way that it can be exploited. All corporate entities must be responsible for producing and adding value to data. The corporate culture must also promote openness vis à vis other teams.

Acknowledgements

We would like to thank Stéphane Deux, CIO - Europcar Mobility Group, and Jean-Christophe Lalanne, Executive VP IT, CIO - Air France KLM, who led this initiative, along with everyone who took part in the Cigref working group:

Bernard BARFETY - ADEO
Jean-Christophe LALANNE - AIR FRANCE KLM
Rodolphe PARISOT - AIR FRANCE KLM
Christophe BOUSQUET - AMADEUS
Gilles FLOYRAC - AMADEUS
Cherif BIDI - AXA
Tanguy DEFLANDRE - BANQUE DE FRANCE
Xavier TERRASSE - BNP PARIBAS
Sébastien LAFFITTE - CAISSE DES DÉPÔTS
Marie-Laure MICOUD - CAISSE DES DÉPÔTS
Philippe RICHARD - CAISSE DES DÉPÔTS
Catherine TOURNIER-LASSERVE - CAISSE DES DÉPÔTS
Nicolas VERNEY - CAISSE DES DÉPÔTS
Sabrina CAMPAGNE - COVEA
Stéphane ARDOUIN - DASSAULT AVIATION
Louis CHAVANNE - EDENRED
Cédric JUBLOT - EIFFAGE
François BLANC - ELIS
Franck ATGIE - ENEDIS
Marc DEMERLÉ - ENGIE
Nicolas DRAPIER - EURO DISNEY
Stéphane DEUX - Europcar Mobility Group
Raynald LASOTA - FRANCE TÉLÉVISIONS
Emmanuel MONZIES - GROUPE PSA
Mathieu MATYSIAK - KLESIA
Eric SORIN - MACIF
Fabien BERTHELOT - MATMUT
Sébastien MARIE - MATMUT
Hervé CICCHELERO - MINISTRY OF THE ARMED FORCES
Christophe BOUTONNET – MINIST.OF ENVIRONN.& LOCAL GOV.
Bruno HEMMATI - ORANGE
Alain TORRUBIA - SCOR
Denis LOSFELT - SNCF
Frédéric CHARLES - SUEZ
Ludovic DECOURCELLE - TERRENA

Cigref offers its sincerest thanks to the participants of the various workshops: Francis Nappez - BlaBlaCar; Renaud de La Croix - Accenture; Christophe Deshayes - Digital Matters; Emmanuel Jusserand - Accenture Strategy.

This document was written by Marine de Sury, Cigref Mission Officer, with help from Stéphane Deux and Jean-Christophe Lalanne.

Table of contents

Introduction **6**

1 · Platform characteristics **8**

1.1 Definitions 8

1.2 Platform business models 9

1.3 Revenue model 10

1.4 Causes of failure 11

1.5 Key elements of a platform 11

2 · Major corporations' platform strategies **14**

2.1 Possible business platform strategies and positionings 14

2.2 The key role of regulation 16

3 · How does IT support a business platform strategy? **17**

3.1 Transformation programme 17

3.2 Partnerships 18

3.3 Culture and change 18

3.4 Organisation and methodology 18

3.5 Architecture: enable cohabitation between the IT legacy and the business platform 19

3.6 Technologies (API, cloud, security) 21

3.7 Budget - Finance 21

3.8 Governance 22

3.9 Skills 22

4 · IT strategies for implementing a business platform **25**

4.1 Characteristics of a technology platform 25

4.2 OpenAPI 27

4.3 Native cloud 30

4.4 Hybrid architecture 30

Conclusion **33**

Table of figures

Figure 1: Four possible ways for corporations to position themselves versus platforms **15**

Figure 2: Evolving cohabitation of on-premises and cloud-based setups **31**

Introduction

The platform businesses that have been created in recent years, like Blablacar, Doctolib, OpenClassRooms, ManoMano and Meero, along with the GAFA[2], NATU[3] and BATX[4] giants, operate using new tools that enable them to grow at great speed. Personalised services, instant global communication, real-time data control, the digitisation and automation of many processes: all of this has made these new companies faster and more agile than their older competitors. They often arrive unannounced as soon as they launch their products or services, they have sought to offer direct access to the global market, and have come to challenge long-established local businesses. These new companies keep close tabs on user feedback, and adapt their products and services continuously to always offer more innovative versions of them by harnessing customer interaction data.

Digital technology offers the opportunity to reshape relationships between businesses and end consumers. Large corporations are now conscious of the need to be customer-centric and attach just as much importance to the customer experience as to the product. They leverage data to foster business innovation and personalise services. And they are transforming themselves, becoming more agile and innovative to meet upcoming market challenges.

The work of the Cigref Foundation and working groups led to the company design sketch for 2020, published in 2015. They highlight three goals pursued by corporations and public administrations that have already made progress towards digital transformation: adding value to their data, entering into more partnerships, and reinventing business models. They are still relevant. Firstly, companies are seeking to improve their offerings or develop new business models to **better meet their customers' new expectations**. In addition, companies do not merely want knowledge of their end users' needs, but also to **increase interactions with them**, thereby **shifting from a "product" culture** which too often stops at the point of sale, **to a "services" culture which engages firms over the long term and focuses them on customer uses**. **Business platforms meet these requirements**. And companies can reach out directly to a wide range of people who consume their services via communities and social networks, and gather data on their purchases and uses.

The "New platform strategies" working group (WG) picked up where the various Cigref WGs left off; these WGs were "Agile at scale", "Digital technologies and enterprise architecture", "Innovation in action" and, more closely linked, "Open source, an alternative to major IT suppliers".

[2] Google, Amazon, Facebook, Apple.
[3] Netflix, Airbnb, Tesla, Uber.
[4] Baidu, Alibaba, Tencent, Xiami.

The word "platform", a group of technologies (software, hardware, operating systems, etc.) that are used to store or share virtual content (audio, video or other), is a vague one. There are several types of platform; the working group categorised them to specify which were looked at in the report.

- The platform businesses that have emerged in recent years, such as Alibaba, Airbnb, Facebook, Netflix, etc.;
- Digital platforms, a catalyst for business digitalisation, which evolve in tandem with the company's digital resources. These are websites used for sale or to present their products and solutions in order to boost sales and/or improve the customer relationship;
- IT platforms, platform-type technical structures, are enablers that allow technologies to be deployed according to need;
- Business platforms. These are the fruits of ecosystem-based strategies. This type of platform opens a company up to an ecosystem which enables it to expand its business proposition and/or improve the user experience. Thanks to platforms, major corporations and public administrations can reach out directly to a wide range of people who consume their services via communities and social networks, and collect data on their purchases and uses.

IT platforms is essential for the implementation of business platform strategies. It is the latter type of platform that interests us in this report.

Having defined the characteristics of a business platform, we will examine the possible platform strategies for major corporations. Next, we will explore how IT helps shape a corporate strategy and then implement it.

Business platform strategies will sometimes necessarily evolve very quickly in response to a changing economic context or opportunities. An IT Department (ITD) must therefore lay the groundwork for success in order to integrate platform strategies into information systems in an agile manner.

1 · Platform characteristics

The aim of this chapter is to set out what a platform is and its characteristics.

1.1 Definitions

There is no shortage of definitions of a business platform. Francis Nappez, CTO and co-founder of BlaBlaCar, who spoke to a Cigref workshop, suggests that the purpose of a business platform is to "attract, bring together and connect people or companies to enable them to carry out transactions".

Platforms can be, for example:

- marketplaces, such as Amazon, Uber, Alibaba, etc.
- providers of social media functions and content, like Facebook, YouTube, Snapchat, etc.
- operating systems, like Android, iOS, etc.

A business platform is **first and foremost a response to a customer requirement** in an **ecosystem**. **The core value of a platform lies in its data**, whether it is targeting a B2C[5] or B2B[6] audience. When shaping a business platform strategy, a company will ask how it can best meet customers' new expectations. The platform organises and ranks content (services or product offerings) for presentation to end users. It will enable the proposed data item (supply) to be exchanged for the searched-for data item (demand). In addition, it facilitates value creation via the analysis of a large amount of data and transactions, in record time, either to refine propositions or to use the data to develop other services. There is nothing new about exploiting customer data to get value out of it, it's the **change of scale that is crucial**.

The ecosystem, a key element in a platform, comprises suppliers, customers, vendors, industrial companies or manufacturers, and the actors who develop the product or service. These partners work together and deliver part of the business platform's solution or technologies. **The value of the ecosystem is greater than the sum of the value of each individual actor in the ecosystem.**

More broadly, a platform can be defined against three criteria:

- **Intermediary**: a platform is an intermediary between two or more areas of interest that are quite different but depend on each other for the products or services that are exchanged on it. When the platform achieves its purpose, users remember the business platform more than the ecosystem partners. Some people used to say that IT and digital technology would do away with

[5] Business to Consumer (B2C), in which the company speaks to end consumers
[6] Business to Business (B2B), in which the company speaks to an audience of companies.

intermediaries. But the economy now relies on these "middle men" whose days were supposedly numbered...

- **Social and mobile**: a platform is simultaneously social, as users' opinions can be compared, which generates trust, and mobile, because it can be viewed anytime, anywhere.
- **Lowering of barriers to entry**: a platform gives new actors the means to enter a market; it puts everybody into competition with everybody else. By enabling these new actors to grow rapidly using leverage effects, it considerably lowers barriers to entry. It is in a company's interests to position its business platform wherever regulation is strictest and therefore in protected industries because platforms can undermine some top-down structures. That is why regulation plays an important role in the platforms market, as we will see in the chapter on possible strategies.

A platform sometimes emerges when **hitherto under-utilised assets** are leveraged. AirBnB offers the world's largest supply of accommodation, and yet it owns no real estate. Facebook is the most read media platform in the world, and yet it produces no content.

Platforms do not seek profitability in the short term, but rather to gain as much market share as possible as quickly as they can in a game of winner takes all. Profitability is never usually achieved with the initial service offering. Platforms must first exist and be deployed on considerable scales to gain market share nationally and internationally. This is true of the likes of Uber and Amazon. Once critical mass is reached, the platform then seeks new and often very different business opportunities to generate margin and become profitable. Amazon is the undisputed world number one for e-commerce in many countries, but it is not this low-margin business that guarantees its profitability. In the space of a few years, Amazon has developed a cloud-based service offering for businesses, called Amazon Web Services (AWS). Amazon has also developed advertising on its platform, enabling brands to position their products more prominently and to collect precious data on what consumers buy. Today, it is these two business lines, on the margins of its core business, that are inflating its profits.

1.2 Platform business models

According to Accenture, who spoke to a Cigref workshop, we need to distinguish between **business platforms** and **business pipelines**. In a business platform, **value is added by external partners and competitive advantage derives from controlling the ecosystem**. For example, Amadeus provides a full aeroplane ticket sale offering, covering all partner airlines, to travel agencies, private individuals, etc. UberEats is a platform that delivers meals from various restaurants. UberEats has no kitchens, instead using those of the restaurants it has partnered with.

In a business pipeline, **value is added by the company**. More precisely, the added value lies in what is different about the product or solution offered. FoodChéri cooks the dishes offered to its customers. They are therefore a business pipeline. Initially, FNAC was a business pipeline rather than a business

platform. However, its directors decided to expend their offering to products other than their own. These two models, business platform and business pipeline, might therefore end up converging and complementing each other.

A platform's business model comprises the **revenue model**, the **type of platform** and the **value added**, which might be:

- Content and a community;
- Data;
- Service channels;
- A marketplace.

Before opening up the Uber service in a city, the platform company recruits drivers. Until the supply-to-demand ratio hits 80%, Uber does not open up the service. This is all about the network effect. The company needs enough taxis and enough customers. The value of platforms is created by **traffic** and therefore the **network effect**. Value can be generated more rapidly in B2B or B2B2C mode when the platform's offering meets an existing demand that was hitherto managed differently.

1.3 Revenue model

Platforms run on various revenue models:

- **Commission**: when a vendor is put in contact with a customer and a transaction results, the platform is paid a fee. Amadeus, which receives a commission based on traffic generated, illustrates this type of business model;
- A **Freemium** model: the free solution is available for a limited time or if the user accepts advertising. The complete or advertising-free offering is a paid-for service, as in the case of Spotify, Deezer and Lydia;
- **Subscription**: the customer pays a subscription to get access to the service. This model is illustrated by Netflix and Swift[7];
- A **Pay-as-you-go** model, such as Lime[8] for example;
- A **Crowdsourcing** model: a group of people is asked to take part free of charge in the creation of a product or delivery of a service. These large numbers of people are compensated for taking part

[7] Swift is a platform that enables secure communication and the reliable exchange of financial messages between more than 11,000 banking and securities organisations, market infrastructures and customer businesses in over 200 countries and territories

[8] Lime is a US-based self-service transport equipment rental company created in January 2017. The company offers short-term bicycle and scooter rental and operates in numerous countries around the world

by being given access to content. For example, the NikePlus platform brings together a community of athletes who receive expert training advice, priority access to events and sporting experiences. They can also share with each other, set each other challenges, and are kept informed of members-only product offers. The more effort and progress members make, the more perks the platform offers them.

Some business platforms are a point of contact between the products or services of different companies and customers. This type of platform gradually weakens the relationship between "offerer" companies and their end customers, in B2B or B2C mode, including around the payment transaction, which becomes critical. For example, Booking.com, which on average takes 80% of hotel bookings, gathers customer data and also takes a hefty commission. This is also true of themed subscription box concepts, sent out monthly, and smart home solutions offered by GAFA or voice assistants. When a user asks a voice assistant to order batteries, the voice assistant chooses the supplier.

1.4 Causes of failure

Business platforms fail for many reasons, and it is worthwhile listing some of them to have them in mind:

- **Lack of openness to the market**: is it better to have 10% of a large business or 100% of a small business?
- **Refusal to share the added value** (e.g.: Napster failed to come to an agreement with Universal to share value);
- **Bad timing** (e.g.: Zune came to market late, with the same proposition as everyone else);
- **Lack of user trust**: this is what did for GoogleHealth. However, Amazon is currently going back over this ground in search of the considerable value to be found in the health sector.

1.5 Key elements of a platform

According to Francis Nappez, a business platform's ecosystem must constantly bear in mind, from design through to development and for the whole lifespan of the platform, four major factors. In fact, he calls them "obsessions"!

- **Attract through innovation and network effect**: define what the areas of interest are (supply and demand) and the associated value proposition. Increasing sales volumes and traffic benefit the whole ecosystem and generate value, imagination and innovation;
- **Create links, match**: make matching criteria more effective and meet expectations with related or linked offerings;

- **Connect**: so that people make connections on the platform, the ecosystem reduces interface-related friction to a minimum and improves the efficiency of user connections. The customer experience ensures the platform is easy to use. In addition, the platform enables any new actor or partner attracted by the business to slot seamlessly into the ecosystem from a technical, contractual, industrial or other perspective. As a result, partners are integrated in the space of a few months;
- **Process transactions at scale**: the aim is to keep friction to a minimum during transactions and to ensure that the platform can be rapidly scaled up while safeguarding security. The ecosystem assesses how value circulates on the platform.

The participants in the Cigref working group considered the key characteristics of the platform of a major corporation or public administration. They selected three:

1. **Customer experience:** All partners in an ecosystem strive to ensure that the platform "delights" the customer. **Making the customer journey as simple and smooth as possible is key to the platform's success**. The business platform must allow users to come on board quickly, ensure that complexity is managed by the platform, and make the offering as simple as possible while adding new features. To improve the customer experience, it is important for the company to have **reliable customer feedback**. Having a close relationship with customers allows you to discover their needs and to understand them. Some stakeholders speak for the customer and can make mistakes. That is why it is crucial to test, measure and then choose based on the results. This also means putting in place governance measures to set priorities or guidelines. To abide by them, the platform must be able to aggregate a certain number of products and services as simply as possible. Solutions evolve to adapt to customer needs and serve them. A customer experience that is uniform from country to country is also a way of keeping things simple. Lastly, the platform seeks to offer new products or services in order to accommodate new users without losing existing customers. This is an ongoing quest.
2. **Mastery of technology and orchestration of data governance**: IT teams must have a perfect grasp of the business platform's technology so that they can upgrade it on a daily basis and set it apart from its rivals, take opportunities as they arise in order to claim market share, or produce new, disruptive business models. Algorithms have an essential role to play in rapid scaling. Automation is pursued constantly at all levels. Service quality is key. Furthermore, having data at your disposal allows you to run fast feedback cycles in order to test offerings. Generally speaking, the person in control of data has the power. Establishing trust around data is crucial. To be competitive, you have to implement the solution with no delays and at the right price. In short, agility is of the utmost importance.

3. **Ambition**: It is important to identify **a business platform's goals** in order to ensure it is successful in a given market. Establishing this ambition paves the way for **vision, meaning and raison d'être** and thus helps you **secure the means** of achieving it from your sponsor. This sponsor may be one or more partners in the ecosystem or external investors (venture capital, banks, investment funds, etc.). Platforms must set their ambitions high, from the outset, in order to avoid being out-competed. This requires very considerable investment. Being first is a major asset. That is why platforms are all generously funded. Capital is needed to buy skills, users, etc. The critical mass a network needs to reach differs depending on the service or product on offer. Customers no longer want to buy services piecemeal. That is why platforms are trying to extend the scope of their offerings by incorporating one or more related offerings, in order to achieve an attractive position and deliver a "seamless" customer experience.

2 · Major corporations' platform strategies

2.1 Possible business platform strategies and positionings

It is common nowadays to hear that any given company needs to "platformise", i.e. become a platform, if it wants to survive. But is this really true? Becoming a platform is not necessarily the right strategy for a major corporation. Platformisation is worthwhile for a major corporation provided **this new business enriches the current service proposition** and **complements its conventional business**. Traditional companies, with their varied entities (operating across segments and business lines), need to carry out an in-depth strategic review to determine the value of platformisation. This marks the **big comeback for strategy** as a tool to combat existential threat.

> In the world of aeroplane, engine and component maintenance, data is becoming the real driver of growth because it is produced in quantity by modern devices. AFKL is one of the global leaders in the industry, and it wants to offer its customers a digital services platform harnessing this technical data. It wants to do so in a way that is secure, tailored to its customer airlines, and neutral with respect to OEMs.
>
> The concept of a B2B platform within a wider ecosystem aligns with this thinking. It allows data to be shared and for the services offered to be extended and global.
>
> 
>
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Shaping the business platform strategy of major corporations also entails asking what more corporations aim/want/need to offer their customers by harnessing the capabilities of their ecosystems.

Answering this question is all about positioning the business platform in relation to the big dominant players. According to Christophe Deshayes, CEO of Digital Matters, who spoke in a workshop, major corporations can position their businesses in four possible ways, as summarised in the diagram below.

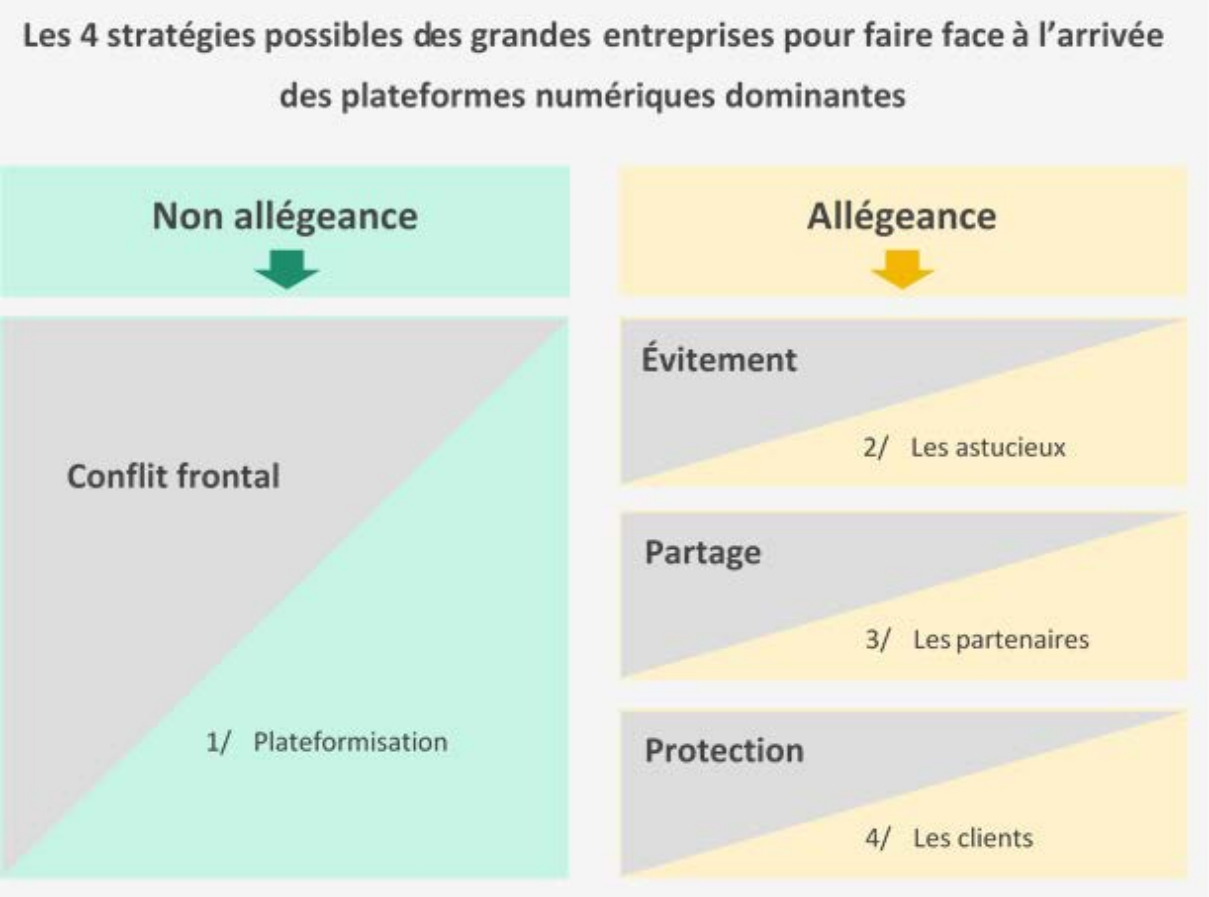


Figure 1: Four possible ways for corporations to position themselves versus platforms.

Source: Les Annales des Mines - Christophe Deshayes - Digital Matters.

Companies can choose whether or not to give allegiance to the dominant platform. When a company chooses **not to give allegiance**, its business platforms comes into **head-on conflict** with the dominant platform. Corporations who choose this positioning often already have platforms. In the platform war, there is only room for two to three actors to be in head-on competition.

C-Discount, a subsidiary of the Casino group which is a major player in online sales, has chosen to tackle Amazon head-on.

When a company chooses to **give allegiance**, it can adopt one of three positions:

- **Avoidance**: this amounts to "picking up the scraps". Webedia, a French company specialising in online media, is a good example of the avoidance strategy with respect to the Google platform. Webedia enables brands to reach their audiences by producing content aimed at putting them at the top of search results, including on Google. Webedia is however dependent on Google, which changes its site ranking algorithms every 18 months to shuffle the deck.
- **Sharing**: this means becoming a partner. For example, Monoprix, by managing the last delivery mile, has adopted this strategy in its contract with Amazon.

- **Protection**: the "traditional" company keeps a strong link – as a customer – with the platform company to which it gives allegiance. Pernod Ricard illustrates this type of strategy. It buys advertising, keywords etc. to raise its digital profile. However, Pernod Ricard also creates content and nurtures attractive communities. In so doing, it makes itself a sufficiently key player for the Google platform to continue to rank it correctly without forcing it be the best bidder in its keyword auctions.

A major corporation can adopt several platform strategies for different business entities, like Casino (see CDiscount for the non-allegiance strategy, Monoprix for the sharing strategy, etc.).

When a major corporation chooses platformisation for one of its businesses, several choices are open to it:

- Convert the new business platform into a subsidiary;
- Create the new platform within the existing organisational structure, inside or outside a separate business unit;
- Join forces with/create/acquire a startup that offers a bare-bones version of the business platform to be developed.

2.2 The key role of regulation

The platform era shows to what extent **the role of the State is crucial, through sectoral regulation**. Regulation is one of the key playing fields in the pursuit of competitiveness. It has a major impact on some industries or businesses. It is striking that platforms often emerge in legal grey areas, and especially when an industry is protected; new entrants play by different rules, and the State does not respond. In other words, the platform overcomes the sectoral (industry) regulations that create top-down structures. These regulations might include the obligation to go through an existing organisation. In banking regulation, for example, the PSD2 directive allows any fintech[9] to approach banks to request their customers' data, if the customers have given the fintech in question a mandate to do so. Regulation thus structures the emergence of platforms intended to aggregate the flows of customers' data from banks which are all bound by banking law, including strict confidentiality rules, whereas the platform is not required to abide by the same law. The rules are not always the same for everyone. This means that the authorities need to be in step with digital innovations, understand them and take rapid steps to remedy these situations.

[9] Financial technology, contracted to form the neologism "fintech", is a new industry that uses technology to improve financial activities.

3 · How does IT support a business platform strategy?

The participants in the Cigref working group considered what IT needs to do to be ready to support a business platform strategy or strategies. First and foremost, IT should **have a seat at the table as soon as the strategy starts being designed**. As we mentioned above, **technology is a component of the business activity on platforms**: technology and business are inextricably linked. Working alongside marketing, the business and the sponsor, IT's role is to cultivate the strategy, to co-construct and to provide the **key information that will guide technical decision-making**. In addition, IT will be tasked with testing ideas, solutions or offerings in PoC (Proof of Concept), PoV (Proof of Value) and any other type of testing.

To prepare to support a company's business strategy or strategies, IT needs to examine several broad topics:

- Transformation programme;
- Partnerships;
- Culture and change;
- Organisation and methodology;
- Architecture (cohabitation of IT legacy /business platform)
- Technologies (API, cloud data, security);
- Budget and finance;
- Governance;
- Skills.

3.1 Transformation programme

Developing a business platform for a major corporation or public administration is a large-scale change, so a transformation programme needs to be drawn up. The target must be determined. The **strategy must be communicated and explained** so that nobody falls by the wayside and all talents are harnessed. This also ensures that the various **changes are implemented in parallel**.

3.2 Partnerships

Platforms must be deployed on considerable scales to gain market share. This means platforms need to be built quickly. Joining forces with the right partners can get things moving and stimulate open innovation. There are two types of partnership:

- partnerships with ecosystem players who will be stakeholders in the product/service;
- partnerships with actors who supply platform components, such as technological partners, a startup, and GAFA.

3.3 Culture and change

For platform strategies to be implemented successfully, it is crucial that **team members adopt the culture**. Interpersonal skills need to be developed and in some cases new roles have to be defined. What is more, the platform's various partners will need to work together. This means instilling in team members the instincts for **openness** with other teams, and **transparency**. To cut time to market, the partners in the ecosystem need to come to agreements quickly. Openness often requires you to **team up with your own rivals and to collaborate with them**. The aim of achieving the critical mass needed to take market share also means accepting difference (different ways of operating, different cultures, etc.). Transparency entails a twin-track approach: **sharing** developments produced internally along with APIs, and **instinctively looking at what already exists**. Companies will encourage the use or reuse of existing tools or what has already been developed in-house or by partners in the ecosystem. This is also the time for a company to clarify its make or buy strategy.

3.4 Organisation and methodology

There are many examples of traditional companies creating or accepting complexities in their offerings or industry rules. The success of digital platforms demonstrates that simplicity is key: **companies need to revisit the business model they want to deploy via a platform, stick to it without exception, and as a result simplify the "internal business" rules in the scope concerned, in order to be consistent and effective**. For example, when Blablacar buys Ouibus from SNCF, they will take on the coach routes that serve several cities at different times, but sell the physical assets, namely the coaches and drivers, to traditional transport operators.

In a different vein, the participants in the Cigref working group recommend **capitalising on the added value contributed by all partners** in the ecosystem to achieve the common goal quickly and rewardingly. For a major corporation, using the IT solution of the most competent partner(s) can mean **knowingly retreating** from a field to allow the best placed partner to operate.

Participants recommend organising and operating in product mode with a dedicated team operating in agile mode. The team will be made up of team members from the IT, operations and business departments, and ecosystem partners. Some recommend starting quickly with small projects and, on complex projects, splitting them up for a finer-grained operating mode. This also helps limit complexity. The aim is to put together small viable projects quickly.

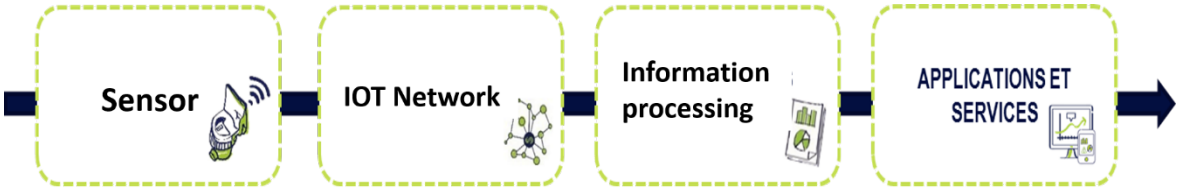
3.5 Architecture: enable cohabitation between the IT legacy and the business platform

The platform brings together a series of actors who partner up and share data securely. It is therefore important to determine the systems architecture strategy, which includes connecting different systems and applications to the business platform and the performance levels to be delivered, and must be aligned with the platform strategy.

Business entity constructed on top of an IoT platform at SUEZ

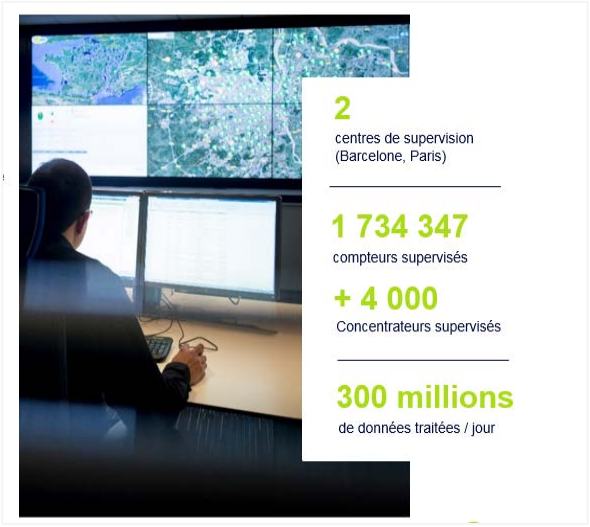
A longstanding partner of city councils, the SUEZ Group is supporting the environmental transition in the regions through digital technology, via its subsidiary SUEZ Smart Solutions, set up 10 years ago and split into profit centres. The staff in this organisational division are from the group's IT departments, business entities and environmental data science research units.

Metering data used to be used once a year for billing. Now, SUEZ Smart Solutions uses the smart meter data every day to market smart apps. The company has opted to develop, rather than subcontracting, expertise across the data value chain, from transmission through to integration into software. SUEZ Smart Solutions has therefore hired all the hardware, network and software skills it needs.



Smart objects produce data that can be collected. Their specifications have been defined along with product tests, updates and maintenance. To communicate, these objects use open standards used in Smart Solutions communications. These standards are embedded by manufacturers, as in any object that joins the WIZE Alliance co-created with GRDF. More than 4 million smart objects connected by WIZE, one of these standards, are operated by SUEZ around the 000world and 15 million objects will be deployed by 2022 by all WIZE partners.

Data is transmitted to the monitoring centre via the **telecommunications network**. The technical platform that manages these smart objects was set up to guarantee the network's radio performance and provide reliable data 24 hours a day.



Based in Le Pecq, the **Smart Operations Centre** (SOC) set up in 2015 is an essential component: it provides supervision of the performance of the IoT network transmitters and concentrators for Suez and external clients. This expertise centre oversees the performance of the transmitters, receivers, storage servers, and the telecoms transmission chain, but it also carries out remote operations to transmitters and concentrators (software updates, settings, etc.).

Today, more than 300,000 items of data are processed every day to monitor 1,734,347 water meters and more than 4,000 concentrators. A second SOC has opened in Barcelona to monitor meters in Spain.

Water data and the associated bills are processed using data science algorithms to add value to them: alerts in the event of suspected leaks, identification of consumption patterns, detection of network drift.

This data also presents an opportunity to develop smart solutions services in the field of direct customer relations, whether these customers are users (consumption coach) or local authorities deploying smart city projects.

Frédéric Charles
Head of Digital Strategy & Innovation - SUEZ Smart Solutions

To avoid inconsistency issues affecting the reference base, security, etc., architects connect the business platform to the IT legacy. It is therefore essential to modernise the IT core so that it supports this cohabitation. This means deploying a hybrid architecture. The IT is also transformed to **ensure its modularity** and so that new functionalities can be implemented in the allotted timeframe. Lastly, data and operations management needs to be **"industrialised" so that it can be scaled up fast**. Projects are started on a small scale to test the concept, but **strong growth should still be expected from the outset**.

> The digital transformation of the Eiffage Group, as new solutions are implemented closer to end users, requires more and more reference bases and transaction data to be distributed. In this context, Group applications (ERP Finance, for example) must be opened up and APIsation is a must.
>
> **Cédric Jublot**
>
> **Head of IT Finance – Eiffage**

3.6 Technologies (API, cloud, security)

When implementing the business platform and then when it is up and running, the ecosystem's IT partners must take new technologies into consideration. This means technology intelligence and benchmarking (analysis and comparison of performance levels with the leader and its rivals), IT must be a reliable source of proposals and use its platforms R&D work.

To cut time to market and reach critical mass, tools need to be industrialised for APIs[10], ESBs[11], etc. Partners must therefore prepare for this by carrying out tasks in the following areas:

- Cloud
- "Data" strategy
- API strategy
- Network with research into nodes.

3.7 Budget - Finance

When co-constructing the platform's business case, the role of IT is to identify the costs and get the most out of budgets for transformation of the IT legacy and creation of the platform (or integration into an existing platform). IT will also provide information on the API strategy: the OpenAPI portal to be suggested (see above at §4.2), the way to monetise APIs, the consumption model, etc. This data has a major impact on the business platform's business model even if IT accounts for only some of the costs, another considerable cost centre being the marketing budget, at least in B2C.

[10] API, abbreviation of Application Programming Interface. An API is a set of functions and procedures allowing the creation of applications that access the features or data of an operating system, application, or other service. (Source: Wikipedia).

[11] ESB (*enterprise service bus*) is a message-oriented middleware infrastructure. Its primary implementation is to enable communication between applications that are not designed to work together. The ESB infrastructure that operates web services, message-oriented systems, smart routing and transformation acts like a light, omnipresent integration backbone through which all software services and application components are routed. (Source: Wikipedia)

3.8 Governance

Coming up with a governance model that is simple and favours doers is key. The organisational structure is tailored to develop agility at the scale of the business platform. Learning continuously throughout the lifespan of the business platform and reusing existing setups as early as possible become everyday tasks for staff. It is crucial to decide on data governance so as to determine where it is, whether it is available and how to access it, to ensure it is secure and compliant, and to measure performance. Participants in the Cigref working group recommend describing how IT gets involved in platform governance.

The value created by the platform must be assessed by putting in place a maturity scale, or measured using shared success indicators determined before kick-off. The lead business-side, technical and compliance stakeholders must be able to "sell" the platform internally, or even externally, and to that end have responsibility for the value it adds.

A platform's partners must examine the risks linked to each and every participant's intellectual property. However, to make rapid progress, it is sometimes wise initially to look at the big picture without going straight into the details, otherwise the project would not be delivered on time.

3.9 Skills

Implementing platform strategies in a company requires a range of technologies but also and above all talents to implement them together, in a sensible, sustainable and optimal manner. As we have already seen, the technology is a component of the business in a platform. It plays a fundamental role. That is why IT contributes to the strategic thinking. It must not hesitate to put forward its best resources, people who have versatile skills, an entrepreneurial spirit, with a talent for leadership and communication. The team that shapes the strategy must bear in mind the consequences that technical choices have for intellectual property, governance, market solutions, etc. Market solutions often vary greatly from one country to another. It is important that IT examines them and suggests various options. For example, social logins do not meet with the same success in every country or context, whether used for wechat solutions, Facebook, Instagram, LinkedIn, Google, FranceConnect, etc. Being innovative is clearly a plus.

Given the importance of data in business models, all team members must adopt a "technology and data" culture to understand data and organise it in an operational way. All corporate entities must be responsible for producing and adding value to data.

Once the platform strategy is defined, the IT department will need to recruit a number of skills if they are not already available in-house in order to implement the strategy:

- **Enterprise architect**: the architect's role is to design the target IT infrastructure (components, level of granularity, decommissioning strategy, technologies, patterns[12] used, strategy for dealing with technical debt, etc.) to make the IT consistent with the platform strategy. Consequently, his or her mission is to make the IT legacy compatible with the business platform's IT. The latter cannot be uncoupled from the IT legacy because otherwise there would be consistency issues around reference bases, security, etc. The architect must therefore modernise the IT core so that it supports hybrid architectures;
- **Integrator**: skills will also be needed to integrate and then monitor the platform;
- **UX expert** (UX stands for User Experience): a platform is designed to give the end customer a smooth user experience and make it as easy as possible for them to access the service and to make the service operate as effectively as possible;
- **Developer, DevOps**: developers must have the skills to edit the platform's algorithms on a daily basis so as to make new offerings available within the allotted time. This expertise must be available in-house. DevOps ensure cooperation, collaboration and fluid exchanges between development and operations. They ensure that applications perform well and have end-to-end responsibility for digital actors. Participants in the Cigref working group suggest bringing developers together in a community in order to keep skills in-house;
- **Data-related skills:** business value lies in data and how it is used. Mastery of technology makes it possible to extract value from data in a useful way. Hence the importance of possessing analytical skills in order to understand data and exploit it appropriately. There are various data-related roles: data stewards (quality of data – knowledge of available data), data scientists (analytics, machine learning/AI/statistics) and data engineers (data transport and storage).
- **FinOps function**: these operations "accountants" optimise the IT architecture and its day-to-day operation. This role is becoming increasingly specialist with the arrival of platforms implemented in a hybrid cloud[13]. They are responsible for examining the cost of implementing the platform, and analysing total costs while protecting the IT legacy;

[12] In IT an architectural pattern is a solution to a problem occurring in a given context that is reusable in most other cases. In other words, architectural patterns are like software design patterns in that they are templates that serve as sources of inspiration when designing the simpler sub-elements of the architecture of a system or of a piece of software. All the architect has to do is adapt the pattern to his or her problem based on its principles. Source: Wikipedia.

[13] The hybrid cloud is a combination of a public cloud provider (such as Amazon Web Services, Google Cloud, etc.) and a private cloud platform, intended for use by a single company. Public and private cloud infrastructures, which operate independently of each other, communicate via an encrypted connection using a technology that promotes data and application portability. Source: ZDNet article.

- **API product owner**: defines API products, brings together all API users and developers, and outlines the interface agreement. APIs are usually published on a portal and more rarely in a store.

More broadly, the IT department needs to reflect on the skills it needs, either internally or externally, and then shape its strategy for upskilling its teams in technical fields and in soft skills.

Skills are out there but are becoming scarcer as demand steadily increases. That is why the question arises of what should be subcontracted versus the level of technological expertise to achieve. Intellectual property, and more specifically data ownership and portability, is ultimately what counts. Furthermore, technology is evolving rapidly. Is it appropriate to manage all the necessary skills in-house? Some participants recommend owning the technological elements that add value and using SaaS solutions for the rest.

4 · IT strategies for implementing a business platform

IT needs for implementing business platform strategies, mainly open data, APIs and open-source software, also entail the development of a platform-type technical infrastructure, without which things would soon become very complicated. Indeed, the IT platform is a technical enabler of the implementation of innovative business platforms. To avoid any confusion, we will always state whether we are referring to a business platform or the technology/IT platform. Companies can use IT platforms to blend the four strategies according to their needs. An IT platform must therefore be **data-centric: it must have real-time access to comprehensive, coherent, relevant data on its customers or users**.

The platform aggregates a variety of technological tools which facilitate rapid developments in order to test innovative business models or simply offer new business models. For tools to be aggregated, the platform must be open, but operations also need to be secure and traceable.

4.1 Characteristics of a technology platform

To implement a company's business platform(s), Accenture, which spoke at a Cigref workshop, says IT should design a technology platform that is:

- **Simple** to make it easy to integrate new components. Enterprise architects musts ensure that the IT legacy and new IT tools and solutions are compatible, i.e. enable the cohabitation of the company's new and old models;
- **Agile**: agility is essential if new business models are to be tested quickly and implemented on time. The time factor is very important;
- **Agnostic** and **innovative**: all types of technology must be capable of being implemented;
- **Trusted**: data security is vital;
- **Easily scalable**: algorithms play a key role in scaling up.

> Several years ago, an **international retail group**, made up of distribution and service companies, with a range of store formats, began a radical transformation project to address the changing competitive environment and its customers' changing needs. This has resulted in the "platformisation" of its business. The ultimate aim is to offer on a single business platform all the services its ecosystem of actors offer by interconnecting them and giving its customers a simple, single journey.

To achieve the first step in its transformation, the group needed to combine its internal capabilities (i.e. the different companies and/or different formats, digital capabilities and logistical capabilities) to create an enhanced customer journey. In the context of a highly decentralised organisation, IT decided, to support the platformisation of the business, to organise itself as a platform. This means a strong desire to pool, combine and share the IT resources of the retail group's various constituent companies. The aim is to accelerate the time to market of IT solutions. In practice, this entails the sharing of code (inner source development), application characteristics and data. It also requires methods for linking up the companies' various IT resources and getting them working together. Corporate teams are responsible for establishing the general frameworks enabling the development of this operating mode (governance, architecture, financing, mobility of people, incentives, methods of information sharing, minimum mandatory technology platforms or tools, shared KPIs).

Security must be ensured through technological choices but also considered in terms of processes and employee behaviours.

According to Accenture, the company is preparing for the challenges faced by business platforms by opening up to its ecosystem via **APIs**, deploying a **hybrid IT architecture**, and **changing its corporate culture**.

To ensure that the platform is scalable and meets time to market requirements, it became clear that an **OpenAPI** architectural pattern was essential, to meet both internal and external IT needs.

Against the backdrop of changing air transport distribution models (New Distribution Capability), airlines like AFKL are opening up their booking systems and enriching their offerings with backend APIs and mobile APIs. An ecosystem is developing, and B2C business platforms are within reach to give customers end-to-end (or "door-to-door") offerings. From its merchant website, harnessing its customer knowledge (for which it remains responsible), the airline can offer a wider range of services, grow the footprint of its loyalty programme, and offer a value-added service.

To this end the ground rules of AFKL's IT are: open, flexible websites, a services architecture (decentralised microservices, APIs, managed web services), simple identification and protection, multi-format payment service, data protection, a service level guarantee, and 24/7 performance.

Because so many services can be delivered on the (virtual and inter-company) platform, offerings and prices can be blended in numerous different ways, depending on the customer profile. The era of full customisation has arrived.

Jean-Christophe Lalanne
Executive VP IT, CIO - Air France KLM

4.2 OpenAPI

API is the pattern chosen to open up to outside players, enabling partners to use the company's data. An OpenAPI is an API published online and intended to be shared. An API enables a product or service to **connect to the company's service in order to interact and create value**. Business data, functionalities and services are thus shared in a controlled way with third parties. APIs must therefore be secure. The APIs made available are not necessarily free of charge. The company and the ecosystem more generally need to **determine the API strategy**. APIs must be methodically incorporated into the architecture and ensure good granularity. There are several families of API:

- End user APIs for an application or a user interface;
- Process APIs;
- Backend[14] APIs installed in the IT legacy.

The participants recommend using the ecosystem's standards and installing management APIs to handle API data exchanges and agreements.

APIs are revolutionising the way business is done. Three factors have conspired to promote this:

- **Regulation**: new business models are not always regulated like old ones, and OpenAPI helps to distort competition in regulatory terms. Let's look back at the example of the PSD2 banking law directive mentioned above: this regulation structures the emergence of platforms intended to aggregate the flows of customers' data from banks which are all bound by banking law, including strict confidentiality rules, whereas the platform is not required to abide by the same law;
- **Technology**: OpenAPI enables the modernisation of IT and major operational effectiveness gains in the IT legacy;
- **Competition**: it has promoted the emergence of digital-only channels which have implemented technological API platforms and are breaking down conventional business boundaries.

Integrating the creation, use and management of APIs within a company entails a genuine transformation and requires API management skills. Firstly, the **API strategy** needs to be determined, which includes the **identification, prioritisation and analysis of financial flows, and monetisation**. The API strategy has an impact on the company and the business models that will grow around it. The API strategy includes management of the API developer portal and of partners, the marketing of the ecosystem, and the legal and contractual model. The API developer portal is the platform that provides the environment in which API products are developed and managed, and enables collaboration with

[14] In IT, backend is a term describing an output stage in a piece of software that needs to produce a result. By contrast, the frontend is the visible part of the iceberg.

the developer community. It is thus the showcase for the API strategy and positions it in relation to the outside world. A portal includes documentation, tools for testing and analysis, authentication, monetisation, communication, etc.

Once the API strategy is shaped, the enterprise architects determine, in technical terms:

- The **API architecture**, specifying the standards and directives along with the security rules;
- The **API management technology**, including the tools the company is acquiring and how the technology is implemented on the platform;
- The **infrastructure**.

The company must also make choices in terms of the level of support provided for the development and deployment of APIs. The finer-grained the services (webservices vs microservices), the simpler the decision-making process will be. As regards the development cycle, companies need to ensure that agile developments can cohabit with V cycle developments. This includes a cross-functional review of the management programme (automated testing, continuous development, DevOps, MVP, etc.). Ecosystem partners choose between the different API monetisation models.

Becoming the prosperous leader of an ecosystem can be accomplished in the following stages, although some can be circumvented:

1. Teach and enable the use of your APIs;
2. Monitor those who offer internal or external services with a backend or a data lake. For example, data and customer behaviour analysis.
3. Set an example by producing a business model for your APIs.

Modernisation of the IT legacy is to be separated from deployment of the API strategy.

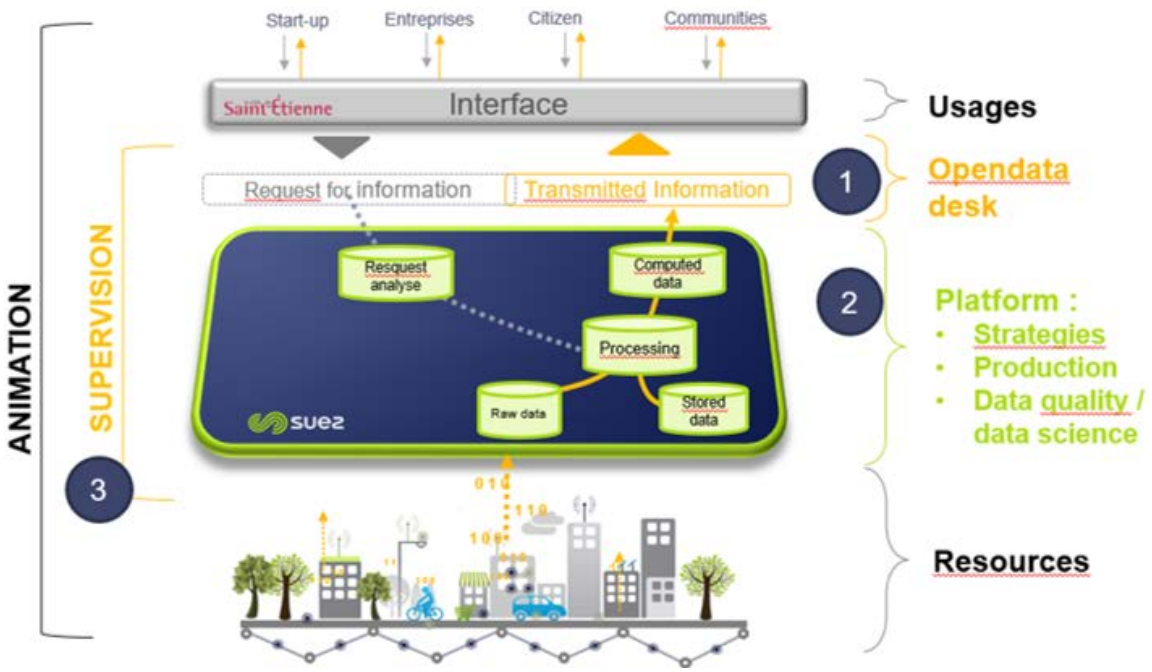
Data platform for interoperability in a smart city

Any smart city project needs to address the question of data interoperability between ecosystem actors, while still giving each actor the freedom to use the business applications and collection networks they wish. A neutral, shared city data platform might solve this problem. This is the concept developed by Saint-Etienne city council and Suez Group as part of an innovation partnership entered into in 2016.

Digital technology is becoming more widespread in cities as citizens acquire ever more devices and connectivity, and as local authorities modernise and delegate to public or private service providers. These providers automate processes.

But a city is a complex system and the time comes when all these digital systems need to talk to each other in order to deliver an effective overarching service. There is little point a citizen using their smartphone to report flytipping if the local authority cannot send the photo and its

geolocation to the right operator, which can then take action. Once the flytip has been cleared, the local authority needs to be informed that the service has been delivered in order to notify, and maybe thank, the person who reported it.



At the core of these interoperability systems is a city data management platform, built mainly from open source data, intended to be shared and accessible to public or private actors.

Suez Smart Solutions, Suez Group's digital services operator, and the IT department of Saint-Etienne city council, chose a technical platform based on an event management system (Kafka, InfluxDB, Cassandra) that brings together data from all actors in the city, whether it arrives in batches or in real time, from information systems or sensors, and processes it in a personalised way so that it can be reused easily (Kong API gateway) by a whole ecosystem in order to improve existing services or develop new ones.

These cloud-native IT platforms are of course orchestrated and monitored by an operator. They exploit the potential of message-oriented architectures for scalability and semantic interoperability. Lastly they protect API access to data with a developer services portal; these developers are an essential data reuse ecosystem.

Other large French cities have made similar choices (Dijon, Angers, Toulouse, among others). New forms of data governance are emerging because these platforms are shared by several information systems, some public and others private.

Frédéric Charles

Head of Digital Strategy & Innovation - SUEZ Smart Solutions

4.3 Native cloud

Cloud-native solutions can be used to deploy a data platform quickly. However, it is important to raise the question of solution reversibility when a company shifts into service consumption. The use of cloud-native solutions also gives rise to a degree of dependence on the cloud supplier, including the risk that the price of services will rise. The bill for on-premises solutions is predictable, while that for cloud services is complicated even if FinOps make it easier to understand. The platform's business model must be made a development focus in order to reduce the cost of using the cloud. It is crucial to make sure there is a FinOps in every development team. This additional expense should be added to the costs of delivering the data platform. By sticking to the business model, the platform becomes a prisoner of the cloud supplier. Every supplier of cloud services has its own APIs, specific tools and business model.

4.4 Hybrid architecture

The aim of a hybrid architecture is to enable the move to the cloud, so developments should be cloud-ready and interoperable by design. Moulding the information system around a web model also makes it device-independent.

For major corporations, the major obstacle to the technology platform strategy is integrating legacy systems into the new world. The platform cannot be uncoupled from the IT legacy, without which consistency issues would spring up around reference bases, security, etc. It is therefore essential to modernise the IT core with gradual investment so that it supports hybrid architectures. To this end, you need to have an organisational, cultural, architectural and business vision from the outset. Providing new user experiences while maintaining old ones and doing it smoothly requires you to adopt a user-centric approach. In order to modernise your core system so that the two worlds can exist side-by-side, you need to look at the following aspects:

- **Digital decoupling**: the user and analytics elements are disconnected from the backend;
- **In situ modernisation**: you need to check whether some components can be upgraded, or even completely redeveloped, to make them more modern and agile;
- **Decentralisation into microservices**: a complex set of applications is split into a number of independent, loosely-linked processes, often specialising in a single task. The fine-grained nature of the services makes processes more lightweight;

- **Parallel replacement**: replacement of a system with a packaged solution (as opposed to a specially-designed solution).

According to Accenture, core modernisation can be achieved by moving the IT legacy into the public cloud following a set roadmap while maintaining service quality. Three parallel aims can be adopted for the evolution of the cohabitation – on-premises and cloud – model, as shown in the following diagram:

- The first is the move from a monolithic architecture to an API-based web app architecture;
- The second entails the decoupling of the frontend and the backend (the frontend encompasses the company's frontend and the frontend of the external solution). An API manager is plugged in to support the ESB. The two worlds work together;
- The third involves deploying an API management platform between the frontend and the backend.

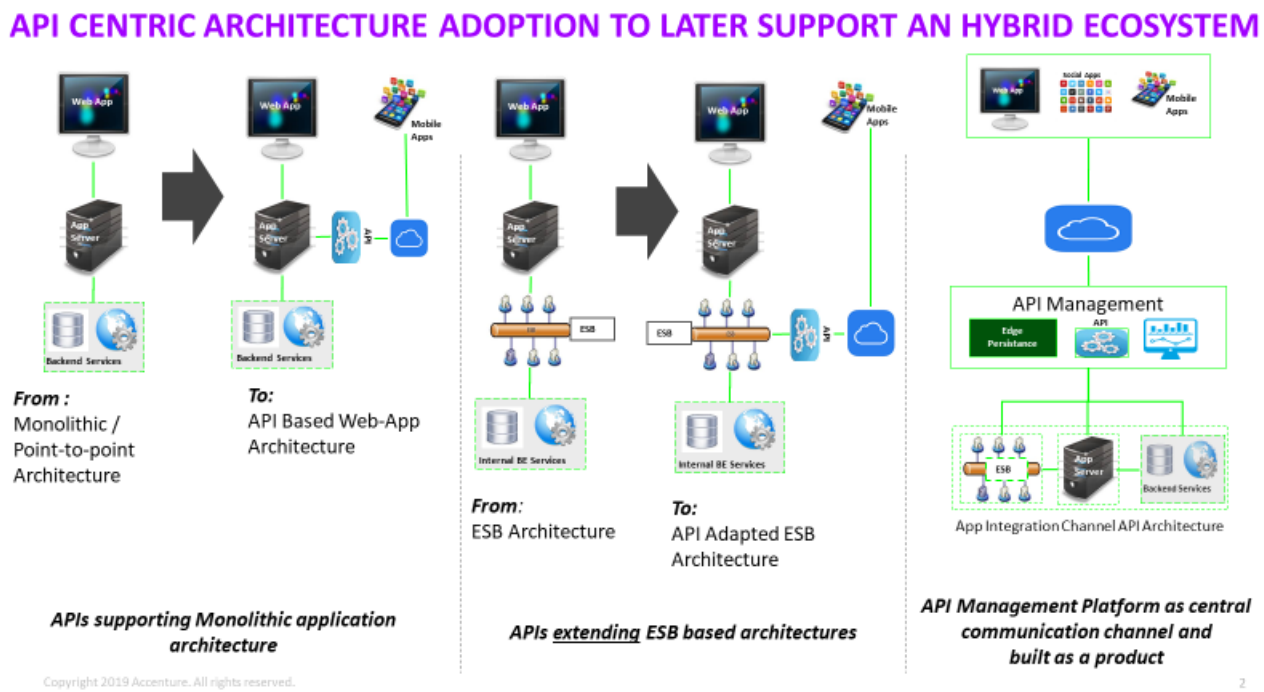


Figure 2: Evolving cohabitation of on-premises and cloud-based setups.

Source: Accenture

An API-centric architecture includes a middle layer which is the API manager. It encompasses security (in terms or reading and writing data), traffic management, data transformation, monetisation, etc.

Integrating the new and old worlds is a major obstacle to achieving business goals and fully capitalising on platform capabilities. By adopting a hybrid architecture, the technology platform enables communication between the backend and SaaS or PaaS solutions, including iPaaS, ESB and APIs. It offers IT agility, rapid scaling, and the ability to manage huge volumes of data. It allows you to move

quickly to deployment and ensures availability and maintainability. Technology platforms also enable the use of all backends.

The iPaaS platform brings together four worlds: that of new consumption modes (SaaS, PaaS, IaaS and hybrid models), that of the users and influencers of solutions, the world of new architectures (microservices, lean, API), and lastly the world of ecosystems. There are several factors in favour of choosing the hybrid iPaaS integration platform, such as the shift to agility and the need to reduce time to market, the ease of updates, inherent security, etc. As off-the-shelf solutions exist, there is less need for bespoke setups.

Conclusion

Several of our sources tell us that B2B platforms will expand in the coming decades, mirroring the growth of B2C platforms in the last 20 years. The business platforms currently in the market are poised to make considerable gains. Long-term movement (agility) and positioning strategies are being adopted, with smaller players often competing asymmetrically with dominant players. That is why major corporations are preparing to allow one or more strands of their business activity to develop on one or more platforms, and are shaping their platform strategies once they are satisfied that platforms enrich their service offerings or complement their conventional businesses. A single company can implement **several different platform strategies** at the same time and combine them as necessary.

Technology plays a decisive role in business platforms. That is why it is essential to reach out to IT from the strategic review stage onwards in order to enrich the discussion and establish the guidelines for technological decision-making.

Not all business activities will lend themselves to platformisation. However, providing a platform-type technological infrastructure, or at least offering a technological enabler in the form of open data, APIs and open-source software, now seems essential. This allows the IT legacy and the new IT to exist side-by-side. In order to interface rapidly with an existing business platform or contribute to the development of a new one, IT departments will need to upgrade their architecture to make it modular and flexible, and above all secure. The IT platform infrastructure is agnostic so that the best available technologies can be used and the most appropriate architecture modules chosen. The architecture must also implement "industrialised" data and operations management so that it can scale up quickly.

The platform itself must offer an impeccable level of service quality which is constantly improved, while also being a trusted data operator. The simplicity of the user interface is key: all the complexity must be managed by the platform.

A platform has to be data driven, and to have access to comprehensive, coherent, relevant data on customers or users and on transactions, compiled in real time. The platform ecosystem must have the data it needs to configure fast feedback cycles, test growth drivers or produce new and disruptive business models.

For companies, implementing platform strategies and getting the most out of them requires them to have talented people to deploy those strategies with ecosystem partners, in a smart, sustainable and effective way. Corporate culture must also promote openness vis à vis other teams, and transparency. Given the importance of data in business models, all team members must also adopt a "technology and data" culture to understand data and organise it in such a way that it can be exploited. All corporate entities must be responsible for producing and adding value to data.

Building on this working group, Cigref plans to examine the consequences of platform strategies, including IT servicisation: APIsation and microservices. It will also study the mindset changes within IT departments resulting from B2B firms' shift to B2B2C. Lastly, as networks have a decisive connectivity-enabling role to play in platforms, Cigref will also look at the changes in network strategies and architectures.

Achieving digital success to help promote the economic growth and competitiveness of its members, who are major French corporations and public administrations, and users of digital solutions and services

Cigref is a network of major French companies and public administrations set up in order to develop its members' ability to acquire and master digital technology. It is a unifying player in the digital society, thanks to its high-quality thinking and the extent to which it represents its members. Cigref is a not-for-profit body in accordance with the French law of 1901, created in 1970.

To achieve its mission, Cigref counts on three business units, which make it unique.

1/ Belonging:
Cigref speaks with one voice on behalf of major French corporations and public administrations on the subject of digital technology. Its members share their experiences of the use of technology in working groups in order to elicit best practices.

2/ Intelligence:
Cigref takes part in group discussions of the economic and societal issues raised by information technologies. Founded nearly 50 years ago, making it one of the oldest digital associations in France, it draws its legitimacy from both its history and its understanding of technical topics, giving it a solid platform of skills and know-how, the foundation stones of digital technology.

3/ Influence:
Cigref publicised, promotes and champions its member organisations' collective positions on digital technology issues. As an independent organisation in which digital technology practitioners and actors can discuss and create content, Cigref is a benchmark recognised by its ecosystem.

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