NatWest

Understanding APIs

Introduction

In the future, successful organisations will be more networked and collaborative, working with others to better serve their customers. Application Program Interfaces (APIs) are a technology that is evolving to help digitally link organisations facilitating slicker collaboration. At a core level APIs are simply a way to connect one computer program to another but more significantly, in the digital world, they can join value chains and participants together.

The payments value chain involves multiple parties, including customers and banks, with all parties having to manage any associated disconnects or delays. APIs can play a critical role in the value chain by enabling a seamless digital service, spanning multiple organisations and processes. By utilising APIs, banks are well placed to orchestrate customer journeys, deepen relationships and create new revenue opportunities.

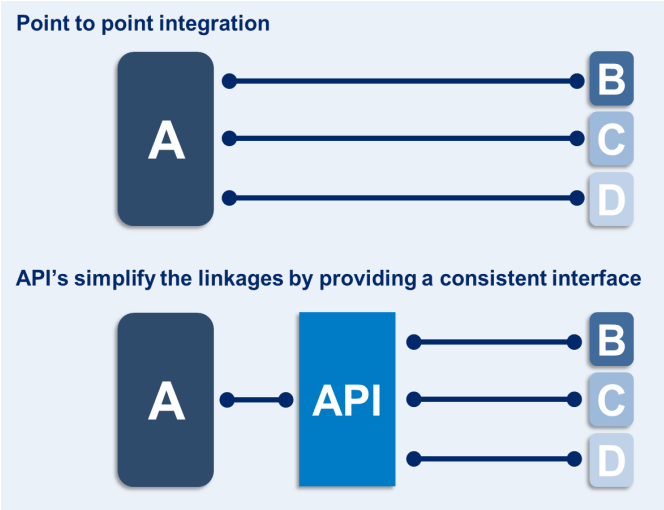
What are APIs, how do they work and why do they matter?

An API enables one computer program to interact with another. It is designed to make it easier to link systems together without requiring knowledge of the intricacies of either system.

Prior to the existence of APIs it was common practice to develop bespoke links between systems. Proliferation makes it challenging to maintain bespoke links, and changes to one system potentially impact on other linked systems.

Figure 1 demonstrates how the interface can be standardised by an API. The API is developed once and can be re-used multiple times. Any system changes are isolated from other programs that are linked via the API.

Figure 1- APIs improve connectivity



The API has evolved from technical interface to digital business building block. APIs were originally used to link internal systems. Web facing APIs implement and extend the concept in a new disruptive way, providing a simple yet secure gateway to and from the internal systems and data of an organisation. They enable the outside world to connect at a system level – typically using mobile apps or browser based systems.

API led disruption is enabling new business models. Developers can incorporate functionality and data from any organisation that makes a web API available. The skill threshold required to develop in this way is relatively low, enabling people from a wide range of backgrounds to quickly make innovative ideas a reality.

There is more to it however than developing an API. Product management considerations are key, opening up system-to-system connectivity demands robust channel management, and will require associated channel infrastructure and controls to be in place. Access to Web APIs could come from anywhere and the channel has to ensure security; making sure calls are authentic and authorised each time.

APIs exist at different levels

APIs can fall into various classifications depending upon their purpose:

- Private (Internal) APIs – these are for use within an organisation only, the API opens up access to internal developers or contractors
- Open (Public) APIs – these are exposed externally and are available for programmers to develop services or products on the back of the API

- Partner - these could be described as a hybrid of the above. They can create and extend the ecosystem by approved partners making use of the API to build upon products and services

How are APIs being used?

There are currently 15,500 programmable Web APIs publicly available and this figure is increasing all the time. Social media technology companies were early providers of APIs allowing others to easily build on their functionality and create new propositions.

As an example, social media APIs allow other programmes to retrieve information about friends, upload photos, videos and generate analytics. The "insights" API provides an analysis layer on top of social media posts, enabling the identification of key stories currently. A commonly used social media API allows sign in credentials to authenticate access to other applications.

Publicly available APIs span a wide range of industries. There are currently around 200 published APIs that relate to banking. This is likely to grow rapidly due to the marked increase in interest that many banks are showing in the technology.

Create new revenue models

A number of organisations have spoken publicly about revenue generation that they attribute to the use of APIs. Through the use of APIs a number of business models have emerged, from which a sub-set of revenue models can be created.

- Free - APIs are available at no charge, can lead to adoption of other chargeable APIs
- Developer pays – the developer pays to use the API. This could be done via a number or different models such as pay as you go, tiered pricing, usage based or charging a transaction fee
- Developer gets paid – the developer and the organization share in the total revenue generated by the API

The key is to understand the value of the API and what the market is willing to pay for it.

What is the potential impact of APIs on the banking industry?

A new model of connected banking is emerging. The banking ecosystem is expanding incorporating non-bank partners for wider distribution of products and new customer value propositions. Bank provided APIs are also being used to stimulate and facilitate innovation.

App based services are emerging embedding the tools and capabilities of other offerings. This could be a future model for banks, to provide the payment functionality within a range of niche retail apps. Banks must adjust to serving new client developers; working with developers as well as continuing to respond to the needs of retail, corporate or institutional clients will bring new challenges and opportunities. Banks may respond with a mixed approach of providing services and payment tools to the end-user, whilst also collaborating with developers.

Regulators and governments recognise the potential offered by APIs as an enabler to create customer value and promote competition within the financial services industry, with a number of regulatory drivers influencing API adoption and business strategies. APIs for payments data and functionality are being specified by the European Banking Authority to meet Payments Services Directive 2, the European Commission regulation to harmonise the payments landscape across the E.U. Furthermore, in response to HM Treasury consultations on open API standards and the use of open data to improve competition in the UK banking market, the Open Banking Working Group (which included RBS representation) published a framework for the development and implementation of an Open Banking Standard. More recently the Competition Markets Authority has introduced a remedy requiring nine UK banks to adopt and maintain an Open Banking Standard through which they will share data with other providers and third parties, with release one due at the end of Quarter 1 2017.

What is RBS doing in the API space?

External APIs linking independent systems enable a level of experimentation and discovery that is not possible within more traditional systems. We are excited by the opportunity to experiment in partnership with third party developers.

RBS is encouraging API experimentation within a safe environment via our Blue Bank API - http://www.bankofapis.com/. Connecting to and accessing Blue Bank requires zero infrastructure provision as it is hosted in the Cloud.

The "Blue Bank" API sandbox has been created to facilitate interaction with third party developers. It provides a simulation of what a live banking API could look like and holds representative data to allow 3rd parties to build prototype banking applications.

The sandbox has been used successfully at Hackathons in 4 different countries, attracting 170+ developers with a focus on creating solutions around the themes of making banking faster; helpful banking; inclusive banking; open data; and emerging platforms.

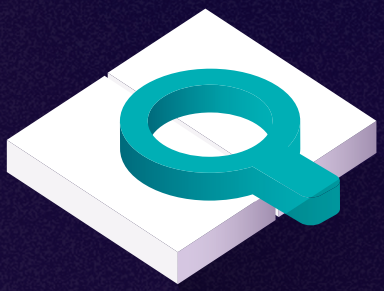
Conclusion

In their simplest form APIs link systems together. Web API growth has been rapid, and the use of APIs is still evolving. They will continue to develop as a disruptive technology enabling new business models and creating new propositions, combining information from different providers in a seamless customer experience.

Beyond regulation, banks are using APIs to accelerate innovation, reshaping the way financial services are provided in the future.

The banking ecosystem is expanding with significant benefits for both customers and banks. The ability to integrate at a digital level with a range of partners via APIs will drive competitive advantage for those organisations that are technically able and culturally willing. APIs are a critical enabler of becoming technically able.

To find out more about our API journey, go to bankofapis.com or join the conversation on Twitter @bankofapis



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