

ACCELERATING ECOMMERCE SYSTEMS DEVELOPMENT USING APIs

JAVELIN GROUP WHITE PAPER

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INTRODUCTION

Since the introduction of ecommerce and the recent growth in the use of mobile and tablet devices, one of the challenges for the retail industry still remains: How can retailers deliver technology change more quickly?

One of the solutions to this challenge is through the use of Application Programming Interfaces (APIs).

An API is simply one computer talking to another and asking for data in a structured format. The data can be sent over an internal network or over the Internet, and well-designed systems can manage millions of data requests per day.

This paper looks at how retailers can enhance their ecommerce technology strategy through the development and implementation of Application Programming Interfaces (APIs).



In practice, APIs give systems the ability to make data (e.g. product data) and services (e.g. add to basket or get order status) available to other systems in a standard format. Developers can rely on APIs to return data in a structured and consistent format. Security and scalability can easily be built in and therefore avoid the need to build duplicate function or point-to-point systems interfaces. This can dramatically speed up development of a new business function.

Having a set of APIs can fast track development on multiple platforms, including mobile, as applications can call the APIs to provide the data they need without being dependent on changes being made on the main website or having to develop the same basic function again.

APIs also allow external partners (e.g. marketing agencies) to access data for microsites, Facebook pages or any area where product is promoted online.

APIs have been used for nearly a decade and are now found all over the web. One of the most commonly used APIs is provided by Google Maps. Many store locators use the Google Maps API to display the map and information about stores and enable customers to calculate driving directions.



DEVELOPING APIs

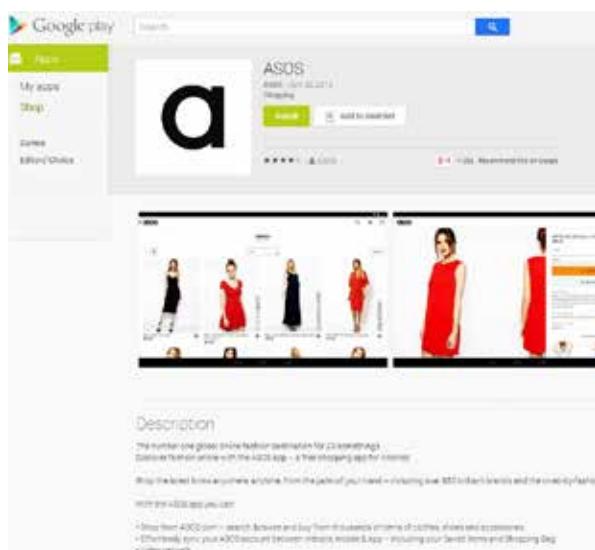
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How are retailers using APIs?

The most common areas where APIs are built for external use is product, customer and stock. These core APIs allow retailers to provide consistent product information to external partners (e.g. marketing agencies for microsites) or internally for ecommerce through Smartphone apps (e.g. iOS, Android).

In the UK, the **ASOS** mobile application for iPhone and Android uses APIs instead of creating bespoke links to the main website. Because APIs give developers a standard way to interact with the ecommerce platform (e.g. show product, add to basket) the effort required to deliver the app on a different platform is reduced. Developers can then focus their time on features that are platform-specific to provide the customer with the best possible user experience.

New and existing versions of APIs can coexist, so as new features are developed and new API versions released, previous versions can remain in use and existing services can continue uninterrupted. Developers or external partners can choose when to upgrade a specific system to take advantage of the richer data or new functionality of the latest APIs.



Source: developer.asos.com

Argos is another good example of a company using APIs to support its business. Initially APIs were set up to support the development of mobile applications, but this work has been extended so that APIs are also used to power in-store devices.

Argos is undergoing a digital transformation and has developed a new digital store concept. The old paper catalogue is replaced with a fixed tablet in-store and digital signage promotes key promotional lines.



Best Buy in the USA is a good example of a retailer providing APIs to external partners. Citibank allows their customers to redeem loyalty points by purchasing Best Buy items. Citibank displays the items on its own website by calling the Best Buy product API for product information and the inventory and store APIs to find stores from which the customer could pick them up. If another company wanted to run a similar loyalty programme, all Best Buy has to do is give them access to the APIs and the associated documentation and their part of the work is complete.

A screenshot of the Citibank thankyou rewards website. The page features a banner for "SEASON OF CELEBRATIONS" with the sub-section "CAPTURE EVERY MOMENT". Below this, there is a grid of six products: a green portable speaker (6,400 pts), a barbecue (22,300 pts), a hand drill (18,700 pts), a camera (15,200 pts), a smartphone (29,000 pts), and a suitcase (27,000 pts). At the bottom of the page, there are three promotional sections: "Celebrations are In Season", "Earn up to 50,000 pts", and "Help make a difference".

Source: developer.bestbuy.com

The Best Buy API programme has been running for a number of years and includes APIs for category and product search and for product ratings and reviews.

The screenshot shows a search interface for a 'Fitbit - Zip Wireless Activity Tracker - Lime: Availability and Delivery Cost'. The user has entered '32821' as the ZIP code and selected '10 Miles' for the search radius. A red 'CHECK STORES' button is visible. Below the search bar, it says 'In-Store Pickup: 6400 Pts' and 'Why risk a wasted trip? Redeem now.' Two store locations are listed:

- Best Buy Mobile - Florida Mall West, FL**: 6.25 from 32821. Status: Out of stock. Message: Sorry, product currently unavailable from this store.
- Kissimmee, FL**: 4.89 from 32821. Status: Out of stock. Message: Sorry, product currently unavailable from this store.

A red 'ADD TO CART FOR IN-STORE PICKUP' button is at the bottom left. At the bottom, it shows 'Home Delivery: 6400 Pts' and 'To Zip Code: 32821' with a green checkmark and the text 'In stock'.

What are the main considerations?

When developing an API retailers need to consider a mobile-first strategy. This ensures that the API is lean and fast and able to work over cellular networks as well as standard Internet connections.

It is important that the system providing the data performs well. API usage can see sudden spikes in activity and usage may grow significantly as the applications they power are adopted by customers. To ensure the IT team is not continually upgrading system capacity, a cloud service and a caching strategy, which will scale and grow as needed, should be considered. Whichever route is taken, an excellent backup and disaster recovery procedure is required. API usage can quickly become a critical line of business system, it is important that this step is not forgotten.

Security of data and its transmission is also extremely important, with APIs typically secured by providing certificates to each consumer of the API service. It is imperative that security is well managed to ensure only trusted partners can access data.



Who can offer these services?

Many vendors provide API management solutions including specialists Apigee, Layer 7 and Mashery and generalists such as IBM and TIBCO. Some systems can be implemented in-house and others can be provided as a cloud computing service.

What are the first steps?

The best way for retailers to start is to consider the future technology roadmap for the business (e.g. for mobile, in-store digital and external partners). It may be that some of these ideas will benefit from having standard APIs to allow faster, more agile development and to be able to pilot new initiatives rapidly.

In most cases, it is a good idea to start in a small, simple area, rather than trying to develop an API for every area of business. By using this pilot approach, the principle can be proven before extending development to more complex or peripheral areas.

Many organisations start with a product API and provide this to an external partner to show content on affiliate sites. It is simple to do and requires minimal effort, but provides useful insight.

ABOUT JAVELIN GROUP

Javelin Group is Europe's leading – and largest – specialist firm of retail strategy consultants.

For large retailers and brands all over the world, we plan and implement strategies to enable them to anticipate and respond to the rapid changes in customer shopping habits, retail technologies and the competitive environment, to ensure that they thrive in the coming decade.

From offices in London and Paris, our 230 experts advise retailers and brands all over the world including John Lewis, Sainsbury's, Marks & Spencer, Waitrose, Jumbo Supermarkten, Metro Group, Carrefour, SFR, Leclerc, Richemont, Unilever, and Kering on their strategies, operations and technologies, with particular focus on digital and omni-channel retail.

The **Technology Consulting** practice specialises in supporting retailers as they make strategic technology investment decisions. We help retailers to plan, select and implement the most suitable retail and ecommerce technologies including ecommerce platforms and associated technologies, ERP, POS and merchandise planning, and warehouse management and logistics. We are specialists in retail and ecommerce and can support companies as they progress through the journey towards digital maturity.

Contact us

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