ForkLift

What's Next for Grocery E-Commerce

Sweden - August 2016

This report is also available in digital format at
`fork-lift.co/grocery`

ForkLift AB (www.fork-lift.co) is a foodtech startup based in Stockholm, Sweden. We are a small team of experts in software engineering, artificial intelligence, and digital design – with decades of experience building industry-standard platforms and award-winning applications at Apple, Microsoft, Mobiento, Monterosa, and Skype.

At ForkLift, we are dedicated to bringing advanced technology to food, groceries, and cooking. Our mission is to make cooking easier, because we believe this leads to a healthier, happier, more sustainable planet.

Introduction

In Sweden, online grocery services have existed as early as 1997.[1] Along the way, Sweden has upheld its reputation for innovation, particularly with the invention of the meal kit (Middagsfrid) and new types of delivery services (in-car, in-fridge). However, the entrenched positions of the "Big Three" supermarket companies (ICA, Coop, Axfood) make for a relatively quiet scene, in contrast to situations abroad.

In the UK, the "Big Four" supermarkets (Tesco, Asda, Sainsbury's, Morrisons) face intense competition, both from foreign discounters and the recent arrival of pure player AmazonFresh. As a result, they have responded with bold initiatives, such as establishing dedicated innovation labs (e.g. Tesco Labs, M&S Digital, Sainbury's Digital) as well as a large-scale "Click and Collect" partnership with the London Underground.

In the US, the grocery landscape consists of the unlikely combination of traditional supermarkets, discount retailer giants, and hyper-capitalized high-tech companies, all variously collaborating and competing with each other. By far, America's #1 retailer of groceries is actually Walmart,[2] where groceries make up more than half of overall revenue.[3] Recently Walmart announced partnerships with both ride-sharing services Uber and Lyft to test grocery delivery,[4] while e-commerce king Amazon.com has expanded same-day grocery delivery across the US and beyond. Meanwhile, after Instacart pioneered a model for providing

grocery delivery by employing shoppers who shop on-demand at existing retail stores, Google followed in their footsteps with Google Express.

Both in the UK and in the US in particular, we are witnessing a similar disaggregation of vertically integrated silos, with new systems being created and old pieces reassembled in new ways, by new actors. Just as other industries have been transformed by the internet – from books, music, and movies to hotels and taxis, the same thing is happening in groceries.

> "You put an Amazon Dash on the machine, or perhaps it can measure what you're used and re-order by itself, and so you in effect subscribe to the product, and once done you'll probably never bother to change brand. Or, say to Siri or Alexa or Google Assistant 'Hey, order some more soap powder' and the same brand is added to your next delivery. (And in both cases your choice of channel is just as now locked in as your choice of soap powder, once you've set the default.) Either way, an impulse purchase in one of 2 or 3 retailers you might have stopped in at, based on real-estate portfolio on one hand and eye-level placement and brand equity on the other, shifts to auto-renewal or a natural language parser."[5]
>
> – Benedict Evans, Partner at Andreessen Horowitz

This should be a source of inspiration and a cautionary tale for Sweden. As a highly developed and digitally progressive country, it would not be surprising if Sweden, despite its size, is on the short list for "disruption" by the likes of Amazon, Google, and Uber – all of which already operate grocery and food delivery services elsewhere in the EU.

Fortunately, recent technological developments have paved the way for supermarkets to act, rather than react, by adopting a platform strategy: to establish an ecosystem of partners who can build specialized applications and capture customers on your behalf.

This paper explains why and how, in three sections:

1. First, we look at challenges with existing supermarket apps.
2. Second, we highlight opportunities for online grocery shopping in third-party apps.
3. Last, we examine considerations for opening up to external developers.

1

Today's Supermarket Apps

With mature apps, supermarkets face three challenges in software development: 1) high complexity, 2) low quality, and 3) rising costs. Further development along the same old path runs the risk of diminishing returns. Fortunately, recent technological changes have opened up a new path.

1) Complexity

In Sweden, supermarket apps similarly consist of a large assortment of features, falling into three buckets:

1. shopping: grocery list, weekly promotions, store locator
2. membership: coupons, loyalty program, account
3. cooking: recipes, timers

Additionally, some supermarkets are starting to include advanced in-store functionality (barcode scanner, location beacons, mobile payments).

Nonetheless, one important feature that's missing is online grocery shopping. As of this writing, ICA's app simply kicks the user over to the web browser for actual online shopping. Coop's and Hemköp's apps do not even mention the possibility.

Packing such a large feature set into a single app can create complexity in the codebase, not to mention complexity in the user interface. This can lead to challenges for future development, as well as problems with reliability and usability.

2) Quality

In Sweden, user satisfaction for supermarket apps is poor to average. On the App Store, offerings from ICA, Coop, Hemköp, and City Gross all lie in the 1½ to 2½ star range (out of a possible of 5 stars). Users complain of crashes and other reliability issues, as well as lack of updates for newer hardware models.

Feature complexity can be a contributing factor, but these kinds of problems can also be indicative of handing off development to external agencies. Software engineering best practices such as code reviews, unit testing, continuous integration, dogfooding, usability testing, and even proper bug management are not necessarily standard in agency work, because consulting is fundamentally client-driven and deadline-oriented by nature.[6] Unless special effort is taken by both sides, code quality can suffer.

3) Costs

Outsourcing can be problematic, but insourcing is not without its own challenges. A supermarket company would have to make serious, sustained investments in order to cover the wide range of consumer platforms and applications, not to mention staying on top of emerging technologies and user interaction paradigms.

In the UK, some of the major supermarkets decided to invest in digital development by building their own dedicated in-house "innovation labs". Indeed, both Tesco and Marks & Spencer have 4-star apps; the "Cook With M&S" app even has 4½-stars.

Marketing costs are also on the rise. Recent data indicate that mobile usage is consolidating around fewer apps: the average person only uses 12 apps on a daily basis.[7] And outside of games, Facebook and Google dominate the list of our most-used apps.[8] With this kind of "app fatigue" among users, it is becoming increasingly difficult and expensive to convince users that any particular app, let alone a supermarket app, should be one of their favored apps.

Apps becoming platforms

Hitting a wall with these same problems in recent years, the software industry reacted with a wave of "unbundling" feature-laden apps into smaller, more focused apps.[9] This was catalyzed by "deep linking," which enabled developers to link to content within other apps, and "app extensions" on iOS, which enabled developers to embed services within other apps. Meanwhile, on the web, the industry has gravitated from Web Services (based on SOAP, XML, WSDL) to modern Web APIs (based on HTTPS, REST, JSON, OAuth), which has enabled developers to weave services across different apps and websites more easily.

These changes mean that applications, both mobile and web, are evolving from relatively static content containers to dynamic service platforms. Today, for example, one can order an Uber ride fully within Facebook Messenger. The boundaries between applications — and by extension, companies — are being erased, now more than ever.

For supermarkets, this represents a clear path forward. The key is to rethink online grocery shopping from a user feature to a developer service — to embed the supermarket into more and more mobile and web applications.

While certain functions of supermarket apps must reasonably remain within the domain of first-party apps, online grocery shopping is one kind of functionality that can very well be made available to third-party apps.

Let's take a glimpse of this future.

2

Grocery E-Commerce, Everywhere

Bringing the supermarket into third-party applications, both mobile and web, can be beneficial across the board:

- For supermarkets, each application represents a new sales channel and branding opportunity, a cost-effective way to reach more customers.
- For developers, an affiliate marketing relationship can provide a much-needed source of revenue.
- For users, the presence of mini-stores inside favorite apps makes it easier and more enjoyable to buy groceries without changing habits.

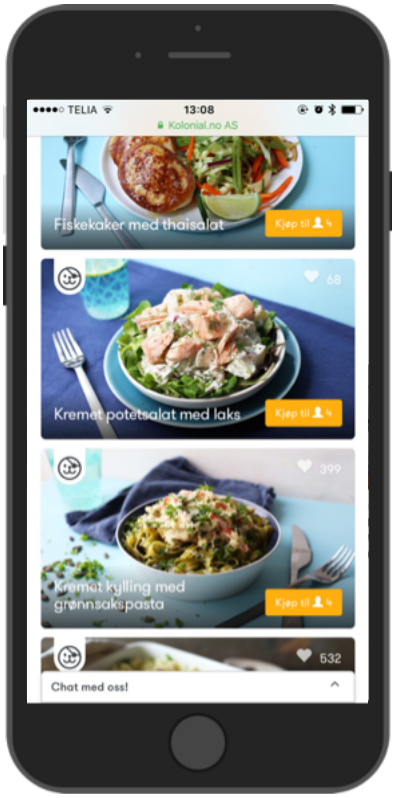
To illustrate, this section presents three types of third-party applications that offer natural points of integration for online grocery shopping.

1) Cooking apps

Recipes appear across thousands of apps and websites, in cooking apps as well as other contexts: newspapers, magazines, television, blogs, health & fitness programs, lifestyle and culture media.

For a supermarket, all of these applications are prime opportunities to capture customers: people thinking about food should be readily convertible into paying customers. Many of these applications, however, are specialized enough to lie beyond what a supermarket can feasibly develop on its own.

The key is to bring the supermarket to recipes,
rather than bring recipes to the supermarket.



From Kolonial.no

Here's how it could work: on each recipe, a "Buy" button could populate the supermarket's online shopping cart with one touch.

In fact, most pure players (MatHem and Mat.se in Sweden, Kolonien.no and Marked.no in Norway) already have this functionality, and Coop is developing something similar.10

Even so, this only works for a closed selection of vendor-provided recipes. What users really expect is a "Buy" button that works across all of their favorite apps and websites, even from international sources. (Jamie Oliver's apps, developed in the UK, are popular in Sweden, for example.)

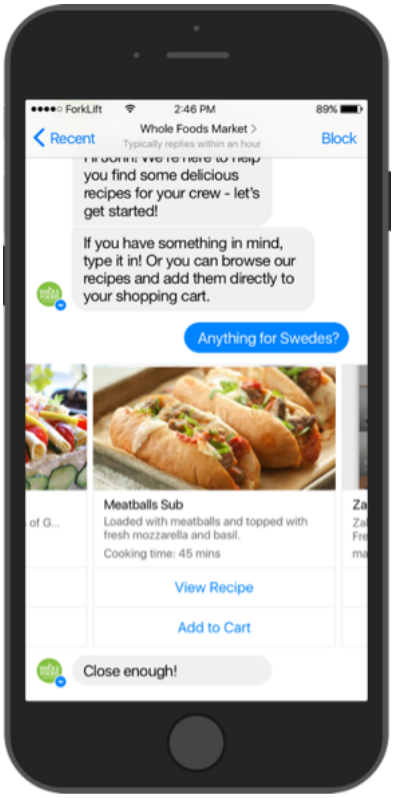
2) Messaging apps, digital assistants

Today, messaging apps such as WhatsApp, Facebook Messenger, and WeChat are among the most popular apps in the world. Reinforcing their place as our "second home screen,"[11] they are also fast becoming full-blown platforms of their own.[12]

For supermarkets, conversational interfaces offer a fresh way to connect with customers as well as combat "app fatigue". Notably, Whole Foods Market introduced a bot for Facebook Messenger that allows users to search for recipes.[13]

One could go a step further: a bot could listen for key words in everyday conversations ("Hey, we're out of milk") and respond with suggested products. The user could ask questions (e.g. "Is there a bigger one?") or proceed to add it to the supermarket's online shopping cart.

Digital assistants (Apple Siri, Amazon Alexa, Google Now, Microsoft Cortana) could also integrate grocery e-commerce in a similar fashion. "Remind me to buy milk" becomes "Buy milk", powerfully transforming assistance from passive to active.

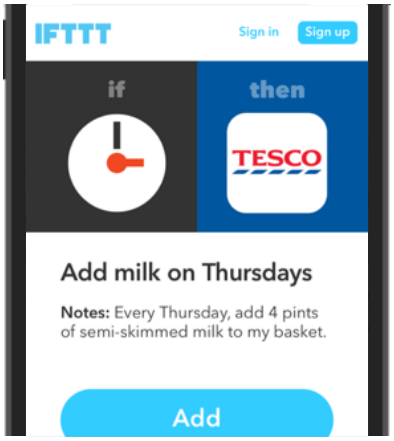


Concept based on Whole Foods Market's bot

3) Internet of Things

Amazon pioneered automated e-commerce from hardware applications with its Dash Replenishment Service platform. Existing Dash products include Amazon's own Dash Buttons[14] as well as Brita water pitchers, Brother and Samsung printers, and Whirlpool laundry machines, all of which can reorder supplies on demand.[15] Market research by Nielsen has shown that these kinds of "stock-up category" goods are especially well-suited to online purchasing.[16]

> **Tesco**'*s partnership with automation service* **IFTTT** *(ifttt.com) opens the door to similar innovations, paving the way for a "more open future, where consumers can do their Tesco shopping in many places other than the Tesco website."*



From IFTTT.com

Appliance manufacturers are also entering into the grocery business in other ways. Samsung's Family Hub refrigerator allows groceries to be ordered directly from the fridge, with software created by MasterCard Labs.[17]

In Sweden, the story is different. Shortcut Labs manufactures Flic (*flic.io*) "internet buttons" which integrate with a range of services including home automation, music, and messaging – but not grocery e-commerce.

All of these scenarios can and should work in Sweden as well. In the next section, we'll look at what it takes to do so.

3

Opening to Developers

Immortalized by former Microsoft CEO Steve Ballmer cheering for "developers, developers, developers,"[18] the importance of nurturing developer ecosystems is well-understood in the tech industry. During the PC era, Microsoft's domination was due in large part to their success in making Windows the most attractive platform for developers in the world.

More recently, former Nokia CEO Stephen Elop critically observed: "Our competitors aren't taking our market share with devices; they are taking our market share with an entire ecosystem."[19] In the grocery industry, a platform-minded upstart could conceivably do the same.

Platform = Technology + Business

A developer platform has two components: a technology solution and a business solution. The technology solution revolves around an Application Programming Interface (API), which is a sort of programming contract that defines the terms of a software service. Not all APIs are created alike: modern, well-crafted APIs are a pleasure to use, while poorly-designed APIs are a burden for developers.[20]

However, a good API, that is, a technology solution, is not enough. There needs to be a compelling business case for developers as well. In the case of grocery e-commerce, this could take the form of an affiliate marketing program, whereby developers are paid commission for driving sales to the supermarket.

Elements of a developer program

The embodiment of a developer program is in the form of a website known as a developer portal. Exemplary references of developer portals include Facebook

(*developers.facebook.com*), Foursquare (*developer.foursquare.com*), and payments service Stripe (*stripe.com*).

> *In the grocery business, industry leaders* **`Tesco`** *and* **`Walmart`** *each have developer portals (at devportal.tescolabs.com and developer.walmartlabs.com, respectively).*

The best developer portals are not only attractive but packed with resources that help the developer succeed. A survey of top developer portals found a number of common ingredients:[21]

- a getting started guide (onboarding)
- an authorization guide (security)
- API reference documentation
- a testing environment (sandbox)
- additional development resources (tutorials, sample code, SDKs)
- support channels (status board, human support)
- a platform policy (restrictions, allowed use cases, brand guidelines)

Even with a shiny developer portal, a "build it and they will come" approach will not work. Just like with any commercial product or service, a developer platform needs to be actively marketed to its target audience.

This is the job of a developer evangelist, who performs a combination of technical marketing, engineering support, and business development. Typical work include organizing hackathons and meetups, writing technical blogs, and connecting with individual developers. Through these activities, the developer evangelist plays an important role in creating awareness and building community for a developer platform.

Opening up while retaining control

A successful developer platform balances the needs of developers with the needs of the platform vendor.[22] Commonly, a crucial need from the vendor's side is the ability to retain a certain amount of control. This can be achieved by designing it as a managed developer program.

Almost all vendor platforms are managed to some degree; the most famous example being Apple's App Store. Within its developer program, Apple issues formal guidelines, conducts app reviews, and has both the technical and legal mechanisms to regulate developer behavior.

With a managed developer program, a supermarket could have similar mechanisms in place. For example, a supermarket could disallow price comparison applications, enforce branding guidelines, or perhaps promote apps encouraging sustainable or healthy lifestyles.

Furthermore, a managed developer program acts as an important buffer between the vendor and the rest of the world, offloading marketing and support inquiries from the outside as well as providing API management services to ensure high levels of security and performance.

Summary

By opening up to third-party developers, supermarkets can reach new markets. But providing an API is not enough; it's only the starting point.

- To attract developers, an API needs to be well-crafted and accompanied by a compelling business model, e.g. revenue sharing.
- A developer program needs both effective packaging (developer portal) and marketing (developer evangelism).
- A well-managed developer program provides the means for a vendor to retain control and serves as a buffer to the rest of the world.

Join us in inventing the future of online grocery shopping.

Our ambition is to create the world's premier developer program for grocery e-commerce. We'll do everything from building the program to marketing and managing it. We're looking for partners in the supermarket business worldwide.

We'd love to talk to you. Contact us at hello@fork-lift.co.

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