

Mobile Apps: Blurring Lines Between Virtual & Physical Worlds

App Annie

© App Annie 2015

Executive Summary

The launch of the iOS App Store and Google Play in 2008 triggered a revolution in developer innovation. Since then, mobile apps have not only reinvented the virtual world but also enhanced consumer interaction with the physical world. Airbnb is a great example of this overlap as [peer-to-peer vacation rentals](#) have revolutionized the way consumers think about travel. Similarly, Health & Fitness apps [connected to wearables](#) like Fitbit have helped users easily create and stick to their personal fitness programs.

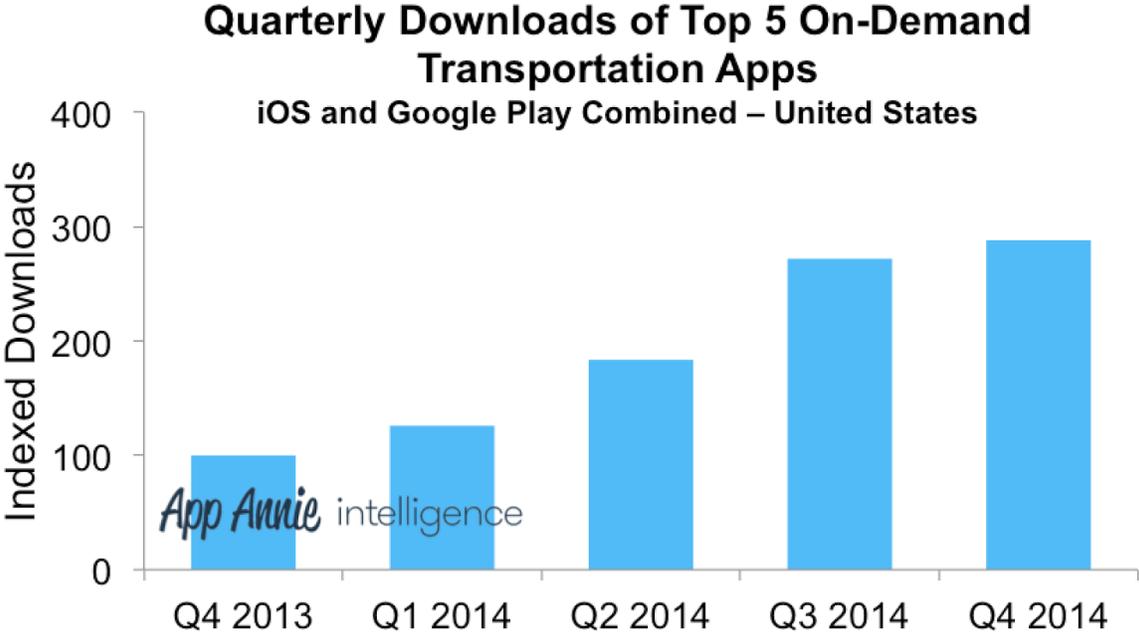
In addition to these, we've found a few other interesting cases of mobile apps that are poised to have a transformative impact on the world by blurring the lines between the virtual and physical. These trends are:

1. ***On-demand transportation*** - Apps in this category is evolving into full-fledged transportation and delivery platforms that have the potential to revolutionize industries like retail and e-commerce.
2. ***Education*** - This area is being revolutionized by mobile apps that make learning more effective inside the classroom and more accessible outside of it.
3. ***Mobile payments*** - This new technology is primed to have an immediate impact on the quick-service restaurant (QSR) industry by reducing service time.

Table of Contents

1. The Shift From Transportation Apps to Transportation Platforms Could Transform Last Mile Delivery
2. Education Apps Are Changing the Way We Learn
3. Mobile Payments Reducing Service Time at Quick-Service Restaurants
4. Conclusion

1. The Shift From Transportation Apps to Transportation Platforms Could Transform Last Mile Delivery



On-demand transportation apps have seen explosive growth over the past year.

Note: Compares downloads of top 5 ranked on-demand transportation apps within each quarter. Apps were identified by App Annie from the iOS Travel and the Google Play Transportation categories. On-demand transportation apps were defined as ones that allow users to book a ride in taxis or cars operated by third parties. This definition excludes general navigation, mapping and public transportation apps.

On-demand transportation apps have seen a sharp uptick in downloads over the past year. But it has become increasingly clear that the potential of these apps is far greater than their

categorization suggests. Recent API launches from competing apps [Uber](#) and [Hailo](#) suggest that these apps are in early stages of evolving into full-fledged transportation and delivery platforms. The APIs allow *Uber* and *Hailo* to integrate with other apps where transportation is a natural need, even if it is not centric to the activity.

The launch partners for Uber's API included apps from categories like hotel/flight bookings, restaurant reservations, local events and many more, highlighting the diversity of potential use cases for these fledgling transportation platforms. One intriguing implementation is with the dating app [Hinge](#), which allows prospective matches to book an Uber directly [from its chat interface](#). Meanwhile, journey-planning app [Citymapper](#) has [partnered](#) with Hailo to allow their users to instantly book a cab while considering travel options. This multitude of use cases is impressive for APIs that are in their infancy.

But this is just the beginning as on-demand transportation apps have been experimenting with ways to include even more diverse use cases. Uber's experimentation with [UberCARGO](#) (a moving service), [UberRUSH](#) (a courier service) and [UberESSENTIALS](#) (convenience store delivery) hint at last mile logistics being the next frontier. Even though the fare is unlikely to be as high as it is for ferrying passengers, the volume of potential requests and the availability of excess capacity makes it a lucrative opportunity. The subsequent reduction in delivery times could have a transformative impact on the retail and e-commerce industries. This seems to be validated by none other than e-commerce giant Amazon. In a [recent experiment](#), Amazon partnered with taxi hailing app [Flywheel](#) to make one-hour deliveries at a cost of just \$5 per package. These experiments strongly suggest that last mile logistics are the next evolutionary step for transportation platforms.

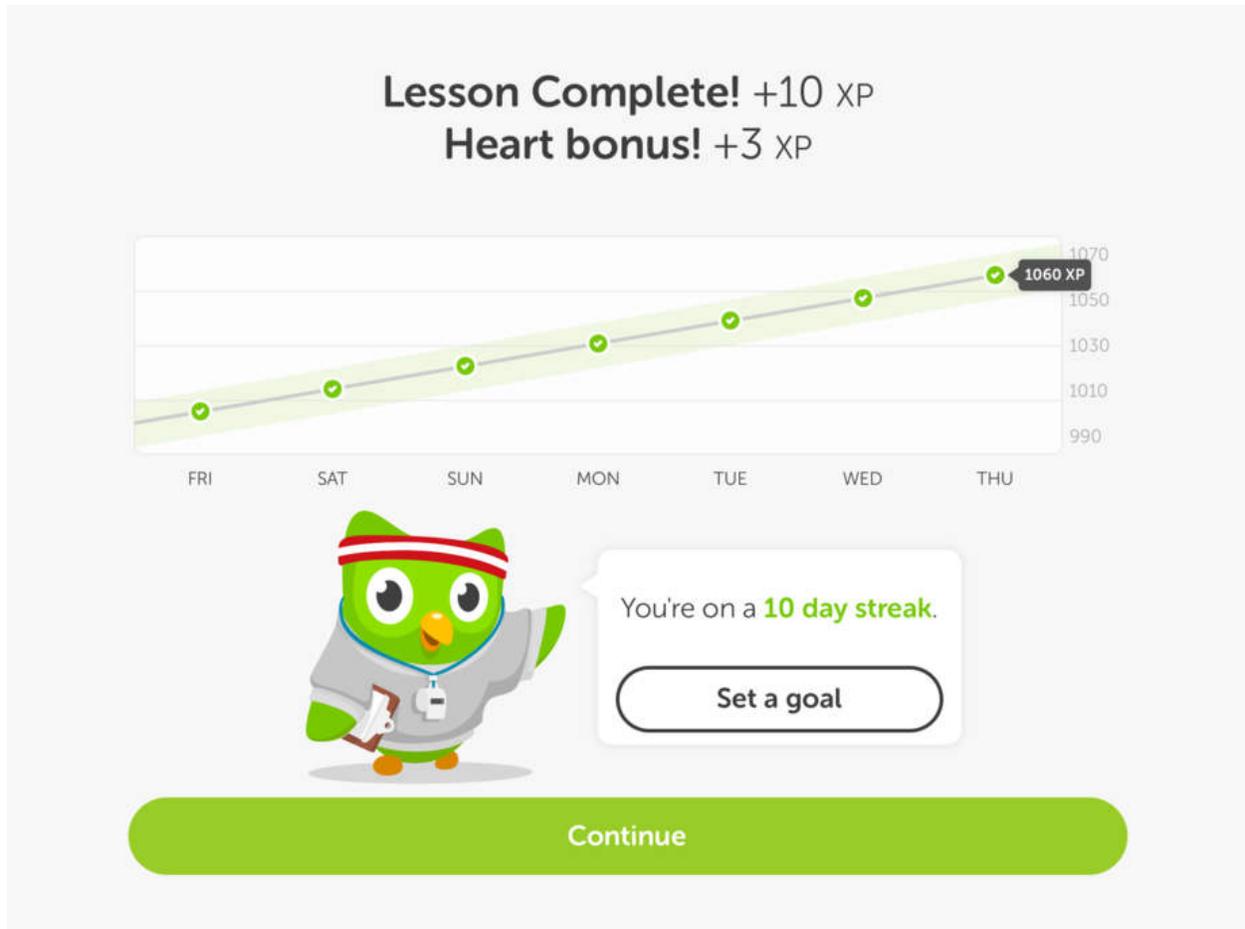
If these platforms are successful in expanding potential use cases, they might also be able to attract a wider range of transportation providers. For example, a successful entry into last mile logistics could attract independent and small business truckers, which could in turn increase demand from the retail and e-commerce industry. As we saw with mobile ecosystems like iOS

and Android, this demand-supply feedback loop has the potential to create big winners. This could lead to a deluge of API launches and partnership announcements over the next few years as other apps join the fray to become the next major transportation ecosystem.

2. Education Apps Are Changing the Way We Learn

Over the past few decades, the Internet has transformed the way we learn. What once required a long visit to the library can now be accomplished in just a few seconds on Google or Wikipedia. Thanks to the explosion in smartphone ownership, billions of consumers have access to the Internet in the palms of their hands. Mobile apps are now leveraging this to make education more accessible and effective for millions of people.

[Duolingo](#) is an excellent example of the kind of apps leading this revolution. Duolingo helps users learn new languages through adaptive, bite-sized and gamified lessons. Recently, Duolingo also launched a crowdsourced language incubator that would let users contribute new lessons for any language, including fictional ones. As of October 2014, these courses had been taken by over [11 million](#) users.



Duolingo's gamified lessons have helped keep students engaged.

Duolingo's transformative impact on language learning is driven by a multitude of factors. According to a [study](#) by the City University of New York and the University of South Carolina, an average of 34 hours spent engaging with *Duolingo* is equivalent to a full university semester of language education. But unlike university education, each *Duolingo* lesson is designed to be completed in just a few minutes. As a result, app users have the freedom to learn anytime and anywhere at their convenience. Also, as we highlighted in [Monetizing the Next 2 Billion](#), *Duolingo* is completely free for users. Instead, some *Duolingo* learning exercises have users translate real-world documents for paying customers like [CNN and BuzzFeed](#). The success of this business model is reliant on the quality of its translations.

Therefore, its innovative business model actually motivates Duolingo to impart completely free yet high-quality education to the largest possible audience.

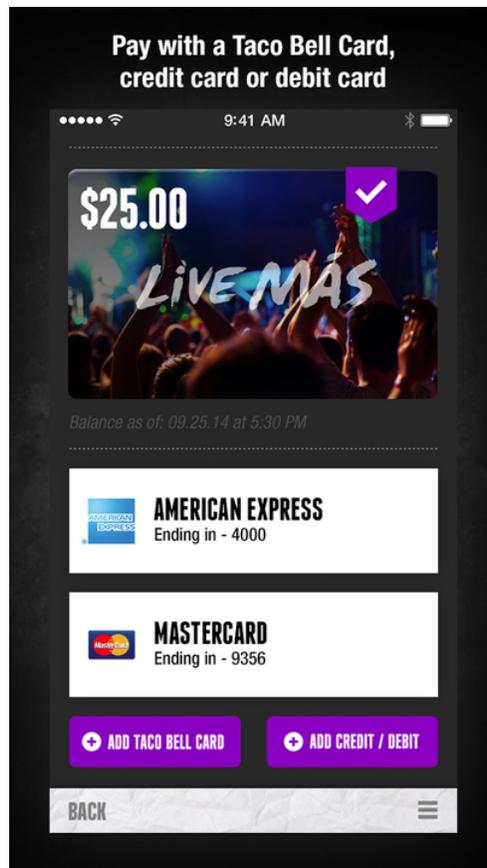
The impact of mobile apps has been felt within the boundaries of traditional classrooms as well. Again, *Duolingo* has been active here with their recently launched language learning platform for schools. Another great example here may be [ClassDojo](#), an app that helps teachers improve student behavior with real-time feedback. It allows each student to create a customized avatar, lets teachers award points for good performance and lets parents track their child's progress. The scoreboard is shared with the classroom and this gamified approach motivates students to self-regulate their conduct. This allows teachers to spend less time managing their classroom and spend more time teaching. Since the app is completely free, teachers just need access to a smartphone and a classroom projector to implement it. This combination of a sound value proposition and accessibility has made ClassDojo a global success with a user base of [2.4 million](#) teachers, 53 million students and 2.2 million parents across 180 countries.

While these success stories are impressive, the impact of mobile apps on education is still in its early stages. In October 2014, we saw the launch of [Photomath](#), an app that uses a smartphone camera to solve math equations. While this may seem like a shortcut, it also gives students a step-by-step guide to solve the equations in question and helps students keep up in school. Even entertainment conglomerate Disney has entered the mobile education space by unveiling their [Imagicademy apps](#) to help children learn subjects like math and science. These apps aim to engage students and introduce learning in "out of classroom" contexts. As this trend becomes stronger, mobile apps are likely to become an even more intricate part of our learning experience.

3. Mobile Payments Reducing Service Time at Quick-Service Restaurants

As we have already seen, mobile apps and services have helped reinvent numerous industries, from travel to transportation to education. In most cases, smartphones have catalyzed this change by introducing the benefit of ubiquitous computing to other industries. Many tasks that once required a semi-stationary PC can now be accomplished on mobile devices carried by consumers. Mobile payments are expected to have a transformational impact as well, especially on the retail industry. However, they need to be studied through a different lens in order to gauge their immediate impact. This is because existing payment solutions like credit cards and cash have always been as mobile as smartphones are. Therefore, we need to look at other attributes to understand the immediate benefits that mobile payments bring over traditional payment solutions.

One area where mobile payments could hold a distinct advantage is processing time -- in many cases, scanning or tapping a phone is quicker than a credit card or cash transaction. For this to have an immediate impact, we need to identify a segment of the retail industry where checkout speed or service times are considered a priority. Among sub-verticals in retail, this constraint seems to best fit quick-service restaurants (QSRs). According to a [study](#) published by the Kellogg School of Management, a seven-second reduction in service time could translate into a market share gain of 1% for a fast food chain.



Taco Bell was one of the first QSRs to introduce mobile order-and-pay.

Downloads of QSR apps have remained strong over the past year. With access to an engaged user base, QSRs have two avenues to reduce overall service time. The first is to reduce transaction time through mobile payments and the second is to improve operational efficiency by allowing customers to place orders before they enter a store. Large QSR chains have already begun targeting both by experimenting with mobile payments and order-ahead solutions through their mobile apps. Starbucks, one of the early movers in mobile payments, has already [stated its intent](#) to introduce mobile ordering early next year. In addition, [Taco Bell](#), [McDonald's](#) and [Dunkin' Donuts](#) are already testing or have rolled out a mobile order-and-pay feature for their respective apps. Interestingly, McDonald's has also announced

a [collaboration with Apple Pay](#) and a partnership [WeChat's mobile payment solution](#) in China. This suggests that QSRs could see platform-owned payment solutions as complementary to their own app-driven ordering and payment solutions.

Small businesses are likely to benefit from mobile payments as well, thanks to third-party providers. Square recently announced that their point-of-sale terminals would accept Apple Pay in 2015. Meanwhile, NCR Silver, a mobile point-of-sale system that runs on iPads, recently announced an order-ahead app integrated with Apple Pay called [NCR Silver Sidewalk](#). The app allows small, participating QSRs to reap the benefits of mobile order-and-pay, without incurring the technology investments made by larger chains. Based on these trends, mobile payments could have an immediate, broad-based impact on the QSR industry.

4. Conclusion

As we have seen, mobile apps may be on the verge of transforming numerous traditional industries that have been built on real-world interactions. The cases highlighted in this paper showed that:

1. Transportation platforms could enter last mile logistics and accelerate delivery time to hours or minutes. This could help the retail industry combine the convenience of e-commerce with the instant gratification provided by a real-world shopping experience.
2. Education apps like *Duolingo* and *ClassDojo* are changing the way students regulate their behavior and learn in classroom settings. At the same time, apps like *Duolingo* are also introducing university quality education to new audiences in new “out-of-classroom” contexts.
3. Mobile payments and order-ahead solutions could help the quick-service restaurant industry reduce service time to mere seconds. The resulting boost in operating efficiency could help them improve their customer experience and serve more of them.

Some of these trends are still in their infancy and are likely to establish first in the United States before expanding globally. But over the next few years, we could see mobile apps enabling a seamless transition between our virtual and real-world experiences.

Notes

- The app rankings used in this report are based on download estimates available through [App Annie Intelligence](#). Daily rank history charts are available to all users through App Annie's app tracker solution, [Store Stats](#).
- App rankings are based on unified apps made possible by App Annie's exclusive [DNA](#). In unified apps, similar versions of the same app with different names and on different platforms are unified. For example, *Uber* on iPhone for iOS and *Uber* on Google Play, are aggregated and ranked as a single *Uber* unified app.
- Download rankings are based on individually downloaded apps and exclude app downloads when included in bundles. Revenue rankings are based on download revenue from individually downloaded paid apps as well as in-app purchase revenue from both individually downloaded apps and app bundles.
- App rankings are based on the [App Annie DNA](#) relationships as of January 1, 2015. App Annie DNA relationships are subject to change over time.
- Certain trademarks and/or images used in this report may belong to third parties and are the property of their respective owners. App Annie claims no rights to such trademarks or images.

About App Annie

App Annie is the #1 decision-making platform for the mobile app economy. App Annie combines the analytics of one's own apps with a granular understanding of the competition and market to provide a unique 360-degree view of one's mobile business. The App Annie platform is relied upon by over 90 percent of the top 100 publishers and more than 700,000 apps. Customers of our Intelligence product include the likes of Electronic Arts, Google, LinkedIn, Line, Microsoft, Nexon, Nestle, Samsung, Tencent, Bandai Namco and Universal Studios. The company has tracked over 83 billion downloads and more than US \$25 billion in gross revenues to date, the industry leader by far.

App Annie is a privately held global company of more than 300 employees headquartered in San Francisco with offices in Amsterdam, Beijing, Hong Kong, London, Moscow, New York, Seoul, Shanghai, and Tokyo. The company is backed by leading venture investors including eVentures, Greycroft Partners, IDG Capital Partners, Infinity Venture Partners, Institutional Venture Partners and Sequoia Capital with \$94 million raised to date.

www.appannie.com | [@AppAnnie](https://twitter.com/AppAnnie) | press@appannie.com

Report methodology and updates are available [here](#).