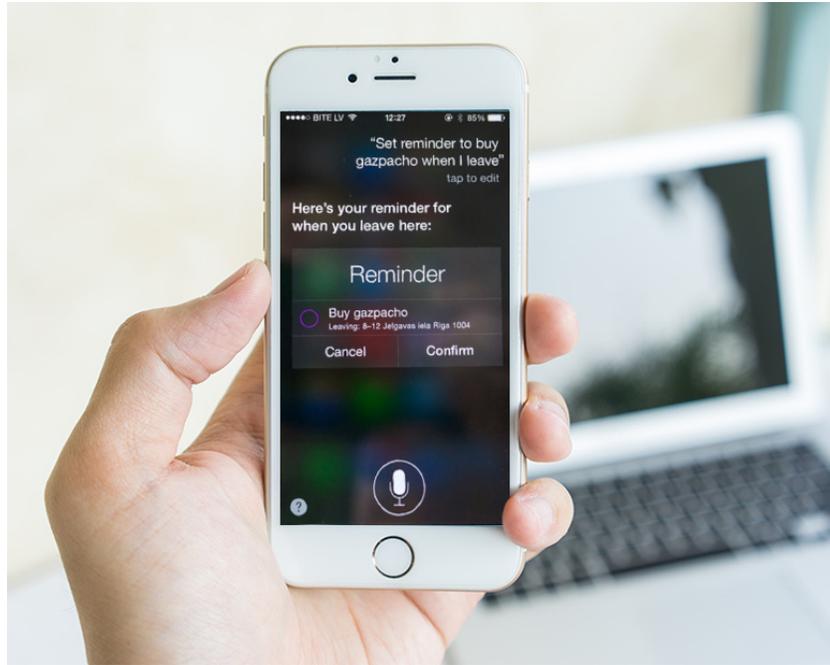


QUICK TAKE **AI PERSONAL ASSISTANTS: HOW WILL THEY CHANGE OUR LIVES?**



KEY TAKEAWAYS

- 1) In 2015, the global artificial intelligent (AI) personal-assistant market stood at \$1.6 billion, and is expected to grow eightfold to \$15.8 billion by 2021, according to market intelligence firm Tractica.
- 2) Voice-driven AI personal assistants developed by the tech giants have seen great advances over the past year, with features like smart-home control and third-party integration with online services now the standard.
- 3) The adoption of AI personal assistants is on the rise; they are available on increasingly more smart devices. Apart from smartphones, it is possible to use them on Bluetooth speakers, smart watches and even in automobiles.
- 4) Many startups are developing AI personal assistants that specialize in specific tasks, ranging from scheduling meetings, acting as health coaches and doing online purchasing to arranging and accommodations. This technology is further penetrating into different aspects of our lives, and will likely disrupt how businesses engage and interact with their customers.

In this report, we look at several companies competing in the AI personal-assistant market, which includes voice-driven assistants, scheduling assistants, health coaches and shopping and travel assistants.



VOICE-DRIVEN PERSONAL ASSISTANTS

In a [report](#) published earlier this year, we discussed three AI personal assistants, which are mainly voice-driven, developed by the tech giants – Apple Siri, Google Now and Microsoft Cortana. As of the end of 2015, the global AI personal-assistant market was worth \$1.6 billion, and is expected to grow eightfold to \$15.8 billion by 2021, according to market-intelligence firm Tractica.

Rapid developments have taken place this year, and a number of features are now standard in these voice-driven AI personal assistants – e.g. smart-home control, adoption in smart devices and third-party integration, which connects it to more online services. We highlight a few of these below.

Figure 1. Major Voice-Driven AI Personal Assistants

Software	Platforms	Last Updated	Initial Release
Amazon Alexa	Amazon Echo	Oct. 2016	Nov. 2014
Apple Siri	Apple Watch Apple TV iPhone, iPad Mac Computer	Sep. 2016	Oct. 2011
Google Assistant	Android Phone Google Home Smart watch [#] Automobile [#]	Oct. 2016	Jul. 2012
Microsoft Cortana	Smartphone Windows PC	Sep. 2016	Apr. 2014

** First released as Google Now; # Proposed Integration*

Source: Company Websites

Apple Siri

Apple introduced its latest version of Siri on iOS 10 in September. One of the major improvements is third-party integration, whereby users can send messages on WhatsApp, grab a ride on Uber and make payment by using Square Cash. The company has also integrated functions such as HomeKit and CarPlay, enabling users to control their home appliances or the climate control in their vehicles.

Amazon Alexa

Amazon launched the Echo smart speaker in 2014, powered by its own proprietary AI personal assistant Alexa. This year, Amazon released the smart speaker in other sizes, namely the smaller Echo Dot and the portable Amazon Tap.

Although Amazon is a latecomer in developing AI personal assistants, Amazon Echo penetrated the smart-speaker market earlier than other tech giants, giving Amazon a head start. Alexa already has over 3,000 “skills”, which are third-party developed capabilities ranging from controlling smart home devices to ordering food.

Category	Echo	Amazon Tap	Echo Dot (2nd Generation)
Image			

Source: Amazon

Google Assistant

In October, Google launched its revamped AI personal assistant, Google Assistant, together with its new smart speaker Google Home. The main feature of Google Assistant is its conversational feature, which provides “an ongoing two-way dialog” experience for users, as stated by Google CEO Sundar Pichai during the Google I/O conference 2016.

Apart from smartphone and smart speakers, the company indicated that Google Assistant will be available on smart watches and automobiles as well. This gives Google Assistant the advantage of offering users a seamless AI personal-assistant experience across different devices.



Source: Google Home Official Page

Viv (Acquired by Samsung)

Viv is an open AI personal assistant platform that allows developers to build their own AI assistants, and plug into any device. The company was acquired by Samsung in early October (please refer to our [flash report](#)).

The acquisition of Viv will help Samsung fill a major gap in its smartphone product portfolio, allowing it to keep up with tech giants such as Apple and Google. According to the report by CNET, Samsung’s next flagship phone Galaxy S8 may be the first Samsung phone to feature the Viv AI personal assistant.

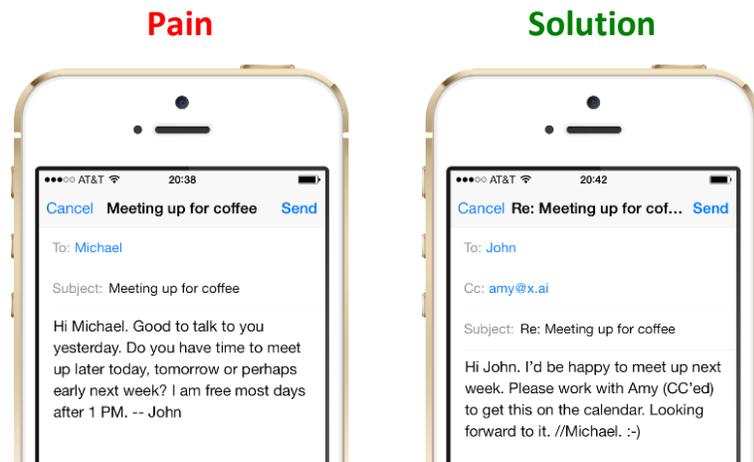
More importantly, with Samsung’s leading position in a number of home appliances and wearables, the acquisition of Viv might accelerate the adoption of AI personal assistants beyond smartphones and smart speakers to other devices.

SCHEDULING ASSISTANTS

X.ai

X.ai provides an AI personal-assistant service that helps to automatically schedule meetings, replies to emails and reminds the user about any scheduled meetings. The startup was founded in 2014, and has already raised \$34.3 million in funding from investors including IA Ventures, Firstmark and Two Sigma Ventures.

Unlike most AI personal assistants, x.ai is not mobile app or device based, it exists as invisible software that is called Amy Ingram. The user first needs to grant permission for Amy to access the user’s calendar and set some preferences such as preferred meeting locations or blackout times. To set up a meeting with Amy’s help, the user simply needs to include “her” email address in the correspondence, and “she” will engage in the email conversation with the parties involved and book a meeting using plain human language.



Source: x.ai

The startup offers a free plan that allows users to schedule a maximum of five meetings per month, and has started to monetize the product by offering a professional plan at \$39 per month, whereby the user can schedule an unlimited number of meetings. According to a recent report by VentureBeat, employees from Walmart, Salesforce, LinkedIn, the New York Times and One Zero Capital have already started to try this paid service.

The ultimate goal of x.ai is to schedule every meeting made by the 90 million knowledge workers in the US, which translates into 10 billion meetings a year, as stated by x.ai CEO and Founder Dennis Mortensen. Even though x.ai only schedules meetings, this AI personal assistant might save millions of man hours.

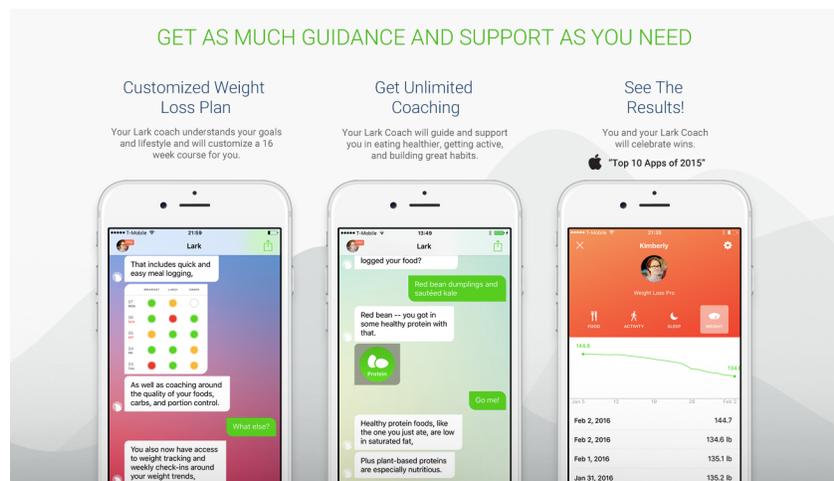
HEALTH COACHES

Lark Chat

Lark Chat marries AI with human expertise in healthcare to provide scalable personal fitness knowledge to individuals. The startup was founded in 2014 by Julia Hu, and received \$4.1 million in five rounds of funding from seven investors, including Golden Seeds and Fenox Venture Capital. The startup was named as one of the top-10 app companies in the world by Business Insider in 2016, together with apps such as Uber, Airbnb and WeChat.

To establish a fitness and diet plan, individuals need data tracking, positive reinforcement and feedback from experts. The hassle of manually keeping track of their diet can drive people to easily abandon their fitness tracking. To make the process easier, Lark Chat utilizes natural language processing (NLP) so that users can either type or say what they eat, and the app will then automatically keep track of their diet. In addition to eating habits, the app can also estimate the user’s sleeping habits by tracking the time the smart device is stopped and started, and log exercise patterns by connecting with the user’s smart watch.

The app can immediately provide positive reinforcement for a healthy meal or an exercise, or feedback and suggestions to reduce or increase consumption of certain nutrients in future meals.



Source: Lark

Behind the app, there are teams of fitness and nutrition experts bringing the world-class knowledge of holistic coaching to everyone. With artificial intelligence, the app has been trained to coach users the same way experts do with their clients. Users can seek professional health advice from the app at any time by making conversation. Not only can the app help individuals who are on a diet, but also provide assistance for people with chronic diseases such as diabetes, hypertension and psoriasis.

SHOPPING AND TRAVEL ASSISTANTS

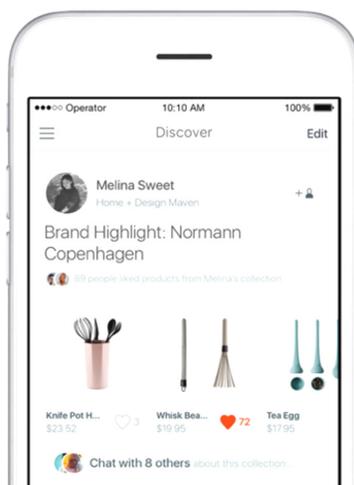
Operator

Operator is a personal-shopping assistant service powered by a human assistant with the aid of AI. It can help a user find a specific item and make personalized recommendations such as which headphone to get for a 4-year old. The startup was founded by Garrett Camp, Robin Chan and Philip Fung in 2014, and received \$25 million in seven rounds of funding, with GGV Capital as the lead investor. The company recently announced its expansion into China with a new office in Shanghai.

“Transforming the process of shopping”
Apple’s Editor’s Choice



Get expert recommendations based on topics you follow



Follow and shop curated picks from designers, decorators, stylists and more



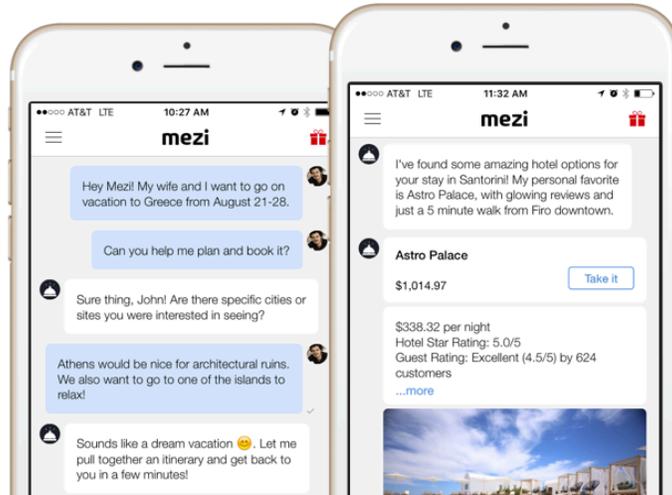
Source: Operator

Users can access Operator on iOS, Android and Facebook messenger interface, where they can browse products in different categories, including home goods, fashion, beauty and electronics.

The startup recently updated the app to Operator 2.0, including a “Discovery Tab” with product recommendations in different categories. Users can get help from chatbots if they require it, which connects them with human agents who are experts in respective product categories, and who then earn commissions from items they sell. In an interview with Techcrunch, Operator CEO Robin Chan stated that the update will help the app push its \$90 average purchase size and 10-15% conversion rate, which is much higher than the typical 1-3% conversion rate on ecommerce sites.

Mezi

Mezi offers a full-service travel concierge app powered by AI with input from human agents. The startup targets busy consumers who do not have time to make travel arrangements, and by using the app, they only need to send a text. The startup was founded by Snehal Shinde and Swapnil Shinde in 2015, and has already received \$11.8 million in two rounds of funding from five investors, including American Express Ventures, Nexus Venture Partners and Saama Capital.



Source: Mezi

To make a booking, the user simply needs to type the request on the chat platform, the AI assistant then filters out key words by using NLP. The AI assistant can handle all tasks from booking, rescheduling to cancellation; it also learns the user's preferences, delivering highly personalized results, such as the room and location preference of the hotel.

Before launching the full-service travel concierge app, the startup first offered a personal-shopping assistant in 2015. Mezi co-founder Swapnil Shinde mentioned that back then the work was split 80:20 between human assistant and the AI assistant. Now the full-service travel concierge is able to handle 80% of common travel requests from start to end without any human intervention.

The rise of shopping and travel assistants may disrupt consumers' online purchase journey. Today, 38% of American online shoppers start their search on Amazon, followed by 35% using Google, according to a study conducted by PowerReviews in 2016. Search Engine Optimization (SEO) has become vital for retailers to increase their accessibility and visibility to consumers. According to a study by Borrell Associates, companies have spent an estimated \$65 billion in this area so far in 2016.

With the rise of AI assistants, in order to remain competitive, online retailers will need to work on the new aspect of AI personal assistant integration, or develop similar platforms that deliver comparable experiences in the online purchase journey, from search experience to personalized product recommendations.



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