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Online to Offline & Offline to Online (O2O):

A seamless Digital Society has emerged; the race for the ownership of consumer data has begun.

We have all heard, seen, and experienced how technology has changed, and will continue to change the way we live, work, and socialize. With the advances in the Internet of Things (IoT) sensors, facial recognition techniques, augmented reality, artificial intelligence (AI), machine learning (ML), collection of biometrics data, and the widespread availability of the internet, we are poised to launch into a seamless digital society like never before. The only limitation is, --- I was going to say, the human imagination however, --- with artificial intelligence and machine learning that might not be the case! There may be no limitations! As the late Stephen Hawking warned in 2014, "The development of full artificial intelligence could spell the end of the human race. It would take off on its own, and re-invent itself at an ever increasing rate. Humans, who are limited by slow biological evolution, couldn't compete, and would be superseded." Stephen Hawking is not alone. Elon Musk, CEO of SpaceX, warned that in the longer term AI is "our biggest existential threat".

The good news is that not everyone is pessimistic. Recent events such as COVID-19 have plunged the majority of the developed world's population into an increased digital experience, most of us had not yet imagined. Consumers who thought they would never make internet purchases now have several online retail accounts. There is no turning back for us now as a society! All this online activity creates enormous opportunities for companies to collect and analyze data about us and to use that data for their own gain; and reportedly to improve our "online buying experience." These companies can also "share" our data to innumerable entities throughout the world for a myriad of purposes.

What is O2O?

The term O2O, which means online to offline and offline to online, originated in Asia and originally meant sharing customers' online data to an offline channel (physical experience). However, due to widespread internet usage and the continued rapid developments in technology, O2O also now means sharing consumers' offline data to online sources. O2O now means the continuous flow of consumers' data between online and offline channels; there are no longer two channels. They now seamlessly merge into one channel. O2O gives companies the ability to use customers' online behavior to customize its services or products for physical interactions or use the offline experiences to tailor the customer's online experience.

Examples of O2O include Amazon's $13B+ purchase of Whole Foods or Groupon's use of coupons. Amazon customers can now pay or get a discount in a physical space (Whole Foods) with their Amazon account. Amazon is now capturing customers online and offline activities. They use the data to customize the customer's online and offline experiences - and of course, sell more items, equaling more profits for shareholders. It is a win-win situation; *or is it?* Groupon customers can get a coupon to enjoy offline activities such as horseback riding or shopping in store.

All companies, in order to survive long term, should examine its business strategies to ensure it addresses how to utilize customers' online and brick-and-mortar data to provide a consistent, yet tailored approach. According to Shipearly, "O2O commerce lets companies treat online and offline channels as complementary rather than competitive." Consumers already expect a total seamless digital experience for all products and services. Take for example my six-month old niece who was born into a world with smart phones and my 70-year old father who was born before computers were invented. I have seen my niece trying to swipe pages in a paper book and my dad trying to expand his computer screen with two fingers! Two different age groups, but their brains quickly adapted to their environment. Most people, regardless of age,

probably have had similar experiences. We are beginning to expect all output surfaces to react to us!

Why is O2O Important?

Considering the cost reduction and prolific use of mobile phones, cameras, IoT sensors, and the availability of the internet, it is extremely important for companies with a long term vision to plan for a future where customers will expect, and anticipate, a seamless digital experience. Internet availability will be greatly improved when Elon Musk's plan to implement satellite-based Internet Constellation service in low-earth orbit is realized.

One company predictably molding our O2O retail future is (surprise!) Amazon. Amazon has a pilot store "Amazon Go" in Seattle where customers access the store with their Amazon account via their mobile phone. After customers' use their phone to access the store, they can put the phone away and start browsing and shopping. When they are ready to check out, they simply walk out. The items are scanned and debited to their Amazon card which they used to enter the store. Amazon is using the same types of technologies used in self-driving cars to complete these transactions; computer vision, sensor fusion, and deep learning. Amazon calls it, "Just Walk Out Technology."

According to a video posted on Amazon's website, there are some errors in the technology, as one would expect in any pilot system. Soon Amazon will perfect the technologies being utilized in Seattle and adopt it across the US, and possibly around the world. Amazon has a long history of making mistakes, making them early, not making the same mistakes twice, and quickly moving on – I call this a "progress now, perfection later" method. My prediction is that soon portions of each Whole Foods store will be converted to an "Amazon Go" store – it is only a matter of time. Consumers will want the convenience. It's like EZPass for highway tolls. Remember those long waits at toll booths on highway exits and at bridges?

Other retailers will also adopt the same technologies which will have a profound effect for all companies knowing what customers like, don't like, thought about buying but did not buy, and what they returned and possibly why. Retailers can use this type of information to lure customers back into their stores or online with personalized ads and coupons. Who doesn't like feeling special? Consumer privacy will be a thing of the past! I can see a future where retailers will also integrate family members' activities to mine! For example, my niece clicks on an ad for a product advertised in her favorite online game, and a coupon pops up in my phone to let me know it is in the toy store at a discounted price.

In addition to the lack of privacy, this seamless digital world will increase the need for identity theft insurance coverage and the need for cyber insurance coverage. Recent history has taught us that as we create new technology to make our lives easier, we also create new problems. Amazon and Alibaba in China are leaps and bounds ahead in experimenting and revolutionizing our lives – for better or for worse!

COVID-19 Effect on an O2O Strategy

If there is any benefit to COVID-19, it is that it forced much of the world to adapt to technology and adapt fast! People were shy at first about being on camera for a meeting; now it is normal, thanks to countless hours of required online meetings. Companies that did not want their employees to work from home had to figure out almost overnight how to do exactly that, much to their chagrin! Now millions more consumers have a free Zoom account. COVID-19 will without any doubt accelerate the adoption of O2O strategies.

For example, in the US, according to Forbes Magazine on April 28, 2020 , "COVID-19 will forever change retailing, and its initial impact on e-Commerce is creating challenges to online selling and service no one imagined in January. Mobile devices are the most popular device for online shopping by a wide margin. Seventy-two percent of

consumers are using mobile devices to shop in stores according to the latest PYMNTS' 2020 Remote Payments Study."

In China, iiMedia Research claims that China's online grocery market can expect to grow 62.9% in 2020 to 264 billion RMB compared to a 29.2% growth last year. A survey conducted by Capgemini Research Institute in India revealed that over the next six to nine months online shopping will increase from 46% to 64%. In addition, India has the Aadhaar card, which collects citizen's name, address, date of birth, biometrics information, fingerprint, and iris scan. The card has a QR code on the front and a bar code on the back. In addition, every card has a phone attached to it. The Government of India has restrictions around using the data on the card, especially for marketing purposes, however, retailers such as Amazon and Zoomcar are requiring the Aadhaar information to track lost packages and proof of identity. Considering the amount of data on the card and Amazon's expertise in crunching data to ensure they stay ahead of the competition, it's probably not long before the card's data *is* used for marketing purposes. Consequently, this means the data can be hacked, resulting in millions of resident's data being exposed, leaving them vulnerable to hackers. However, the economical and ethical issues aside, the increase in online shopping and the ease of collecting data, will only accelerate companies' O2O strategies.

Examples of O2O Brands on a Global Basis[*]

For companies to create a seamless O2O experience for their customers, they have to collect and purchase data on their customers and interpret that data for their benefit. Alibaba in China is leading the way in these efforts. For over two decades Alibaba has been collecting shoppers' data and reimagining how consumers should shop. To this end, Alibaba created their retail grocery store called Hema. Shoppers scan a bar code with their phone to get product information and have choices such as cooking and eating in store the fresh seafood they selected, or cooking it and taking it home, or taking it home without cooking. Deliveries are completed within 30 minutes for customers who live within three kilometers of the market. Payment is also cashless – it

is done through the Alipay platform which is embedded in the Hema app. Over half a billion people (more than the entire U.S. population!) have the Alibaba App. More people than the entire US population have one App in China. Even if all U.S. residents have the Amazon App, we will not be able to compete! Since customers use their phones to look up and pay for products, Alibaba is able to gather end to end user data which gives them the insights they need to customize the shoppers' experience. According to the company's website, each store serves as its own warehouse and logistics center that collects, fulfills, and delivers customer orders as fast as they come in, online or offline.

Alibaba is also reimagining car sales. Instead of visiting a dealer one at a time and spending hours with a salesperson, Alibaba has auto vending machines which allow customers to browse a variety of makes and models on their app, choose a car they want to test drive, pick it up from an unmanned vending machine, and drive it for up to three days. After experiencing the car in a no-pressure situation, they can make an appointment to visit a dealer when they are ready to buy. As an insurance professional, I am thinking that this requires a manuscript policy to cover this type of exposure!

And Alibaba keeps reinventing; consumers can even experiment with new make-up in store using "magic mirrors." The technology is similar to Amazon mirror patent which helps shoppers to try on clothing and try out furniture in their homes. The technology uses a set of highly specialized cameras, projectors, displays, lights, and mirrors to create a realistic and moving image as soon as you look in the mirror. Alibaba's magic mirrors are capturing and storing significant amounts of physical data about the consumers including facial recognition, body weight, height, etc. Imagine over time if the mirror can tell you that you have gained weight and need to get healthy! I can see this type of information being shared with medical professionals and health insurers. Given Alibaba's innovative history, I would not be surprised if they soon decide to get into the health insurance business. Why not? They already have most of the data they need.

Amazon and Alibaba are not the only ones experimenting with technology to improve their customer's experience. Burger King in Spain recently created an Instagram-based burger customization tool where consumers created a custom Whopper through answering poll questions and then receiving a voucher to collect a free version of the real burger in-store. Burger King not only created buzz in the market place, but also generated ideas for new products. Walgreens Balance Rewards program collaborates with brands such as MapMyFitness to award extra points to spend in-store for making healthy lifestyle choices, such as exercising and stopping smoking. This information can be shared with health insurance companies, if allowed by regulators.

Even sports teams are getting into the game! The professional basketball team in California, the Sacramento Kings, has an arena app, powered by Urban Airship. The app sends out personalized updates on game day, such as where to park or offers on ordering food delivered to your seat, and you can navigate the arena digitally within the app itself.

Post COVID-19, customers' expectations will increase significantly; most will want a seamless experience via the channel that is most appropriate for them – at that time. Companies which are not investing in O2O technology to provide this experience may not survive. Of course, there will always be customers who prefer to shop off the grid with cash in hand. But, will there be enough of these customers to sustain a business?

As artificial intelligence and machine learning become more sophisticated, business and organizations will be able to make better personal recommendations – for tangible goods or services. In addition, as IoT devices propagate in society, consumer data of all sorts will be shared like wildfire. According to ABI research, more than 30 billion IoT devices will be wirelessly connect in 2020. With these advances in technology, and the amount of data being collected and shared, combined with lack of regulatory response to the data sharing explosion, it might soon be the Wild West for data!

Scary for Some People

For some people sharing information such as lifestyle, preferences, wants, needs, and desires is an uncomfortable and scary thought. They would prefer to keep their information private. In some ways, it seems a basic human right. Others are asking if they should be paid for their data. In addition, at what point is there too much data? Could there be too much personalization based solely on past experiences? What about new human learning and creative experiences? Will there be embedded biases in the programming which could cascade into our lives from machine learning? One of COVID-19's greatest lessons is "essential vs non-essential." How essential is all this O2O technology? Connie Chan, who calls herself the "Silicon Valley's China Whisperer" predicts that every surface will become an output. There will be so much data floating around that every physical surface we touch will be able to output some type of data to us - about us! Is this essential? As we navigate this new seamless digital world, consumers, companies, and regulators will need to stay vigilant to ensure profit goals that do not undermine our basic need for human individualism, preferences for certain privacies, and the continued natural evolution of the human race.

Definitions

- **Artificial Intelligence** - the theory and development of computer systems able to perform tasks that normally require human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages. Source - Google.

- **Machine Learning** - Machine learning is an application of artificial intelligence (AI) that provides systems the ability to automatically learn and improve from experience without being explicitly programmed. Machine learning focuses on the development of computer programs **that can** access data and use it learn for themselves. Source- Expert System.

- **Augmented Reality** - a technology that superimposes a computer-generated image on a user's view of the real world, thus providing a composite view. Source- Google.

- **Internet of Things (IoT)** - the interconnection via the Internet of computing devices embedded in everyday objects, enabling them to send and receive data. Source- Google.

    *Most of this information was obtained on https://www.insider-trends.com/