

Frictionless Smartphone Transactions Using Behavioral Model and Biometrics in the Mobile Wallet to Identify Users and Reduce Fraud



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CEOCFO: Dr. Margaliot, what is the concept behind OffLA?

Dr. Margaliot: The concept behind OffLA is that finally we have an ability to perform off-line fraud detection /authentication of the e-Wallet user on the end user side. We are talking about the mobile wallet industry, which will become the main payment mean in the next few years. Plastic cards fraud detection is somehow problematic, since you cannot do any user authentication with the cards. Everything must be done from the merchant side via the back-office. However, if you have a mobile wallet, which has the capability of memory and a CPU (Central Processing Unit), we can use it to prevent fraud and reduce friction with the end user.

What we do is actually take the fraud detection system from the back office of a card issuer, and relocate it on the smartphone to work in an offline mode during the security process of the transaction.

This is a disruptive technology in the world of payment security, because at present, back office fraud detection systems can prevent around 30% of fraud in plastic cards, despite the fact that billions of dollars are invested in this industry. It means that 70% of the fraud actually occurs. Moreover, in order to prevent one fraudulent transaction, payment card issuers have to interact with 10 legitimate transactions – decline some of them, call the customer, etc. It requires a lot of effort and expenses to keep the fraud as low as it is today. However, when we talk about smartphones and mobile wallet, we can change the whole process, by reversing the order, first check the probability that the next transaction is fraudulent and only then – decide what user verification mean to use, if at all.

CEOCFO: How are you able to accomplish this?

Dr. Margaliot: We are experts in fraud detection. Of the three co-founders at OffLA, two of whom have been working in this industry for more than 20 years. What we have accomplished is to change the behavior modeling that is running in the back office systems of the issuers. Instead of looking for fraudsters, we are looking at you, the smartphone user as a customer, and thus the system resides on your smartphone defending you. The question now is if the present transaction fits your past personal purchase behavior. If so, then we can clear the transaction without any other identification, which resolves the problem of friction with the customer for 92% of the transactions. Mobile wallets today suffer from severe conflict of interest between the security process constraints and the wishes of the marketing people. The security people want you to identify yourself, the wallet owner, in every transaction that you do with the smartphone, in sharp contrast to the marketing people who want to minimize user friction as much as possible. Therefore, what we suggest is a system that can check and decide, with high probability that it is indeed your transaction 92% of the time, skipping over any of the identification needs, and still apprehending more than 90% of the fraud on the smartphone. This is a disruptive technology we are providing.

CEOCFO: What is the interaction when the person who actually owns the smartphone purchases something a little outside their normal pattern?

Dr. Margaliot: Presently customers are asked to identify themselves 100% of the time, where for example they are requested to provide a pin code. Thus they are exposing the confidential pin code 100% of the time while using the mobile wallet. In our process you do not reveal your identification mean unless you really need to, which normally would only be 8% of the transactions that you do. We suggest two very simple authentication means for these 8% of the transactions. One is biometrics, which offers a sort of a signature identification on the smartphone, where you can sign your signature or write one or two letters enabling us to recognize if it is really you. The second identification mean is our One-Click system, which relocates the verification questions from the back office of the bank to the smartphone. The bank

representative might ask a question on the phone like, "What is your mother's maiden name?" However, we streamline the process by displaying the question on your smartphone, "What are the two first letters in your mother's maiden name?" which can easily be answered by a simple click. It is all part of a risk based process, where according to your past historical purchase behavior and the nature of the current transaction; we decide whether to ask you a question or two, or alternatively for your signature. This process produces satisfactory statistics to be sure that it is you making the purchase using your smartphone, and block all of the rest. The idea is that we can do everything in an offline mode on the smartphone, before the transaction goes into the traditional process and system. With the assistance from Citibank, OffLA estimated the savings of the overall fraud related costs to be between 70% - 75%, 20% of that saving will be OffLA's service fee.

Just to be absolutely clear, there is almost no cost of handling fraud, when it is blocked on the smartphone. On the other hand, if the transaction leaves the smartphone and goes through the merchant to the back office of the vendor, then you can only prevent 30% of the fraud and concerning the rest, you have to run investigations, other processes and refund purchases that cost a great deal of money to the banks. However, we can block the fraud right up front on the smartphone.

CEOCFO: *Where are you in the development and commercialization process?*

Dr. Margaliot: We have accomplished a few things during the last year. OffLA received EUR 2 million grant from Horizon2020 and the technology is officially recognized as disruptive for the mobile wallet industry. OffLA is the only Israeli Fintech company that received this acknowledgement.

OffLA was part of the Citibank accelerator in Tel Aviv during 2015 and we are negotiating proof-of-concept processes with several banks. IBM has one accelerator around the world, which is located in Israel, and we are part of this accelerator. During the last half a year, OffLA completed a full scale system working on the IBM infrastructure and we will partner with IBM to offer this system to the banks that IBM is working with. We are currently implementing the OffLA system in one mobile wallet in Israel.

"With OffLA, mobile wallets can skip user verification process 92% of the time, because OffLA learns your habits and uses them to help you enjoy your mobile wallet."- Dr. Nachshon Margaliot

CEOCFO: *Regarding the users, do people care as long as they are safe? Do they pay more attention if it is easier for them to utilize?*

Dr. Margaliot: Right now, many people are scared of the mobile wallet. If you take your smartphone and put your wallet into it, you get a vulnerable device. If someone steals the device, that person steals not just your smartphone, but also your wallet and leaves you without anything. However, in the future, people will gain confidence regarding its security, paving a smoother road of acceptance in the mobile world. However, the friction remains a major obstacle. Nowadays, using a mobile wallet is not as easy as using a payment card. If the mobile wallet industry will not achieve a dramatic improvement on the friction side – people will not want to use it. OffLA addresses both challenges.

CEOCFO: *Has something similar been tried in the past?*

Dr. Margaliot: We do not know of any other fraud detection system that is similar to ours, and we have been around for 2 or 3 years. Everyone thinks that a fraud detection system is something that belongs to the back office of an issuer or acquirer. What we did was relocate the process onto the smartphone. We do not know of any other company that succeeded in shrinking this kind of complex models onto a smartphone, despite the fact that MasterCard and Visa started talking about a risk- based security when they initially raised the topic of a mobile wallet. This is because they know that the friction with the customer is very important. Right now the friction is excessively high; you are required to provide your fingerprint, password, type codes and do many things that you do not want to do when you make a purchase. The average person wants to use their smartphone in the same way as they use their plastic card. Take it out, swipe it and go on. In general, if the average person will not love it, they will not use a mobile wallet. This is the most important question at the moment.

CEOCFO: *How would the mobile wallet get into someone's phone? What is the implementation process? Are they downloading an App?*

Dr. Margaliot: We are not a B2C company. We are a B2B company. We sell to mobile wallet operators. They may be independent wallets or belong to a bank, such as Chase Bank that just introduced Chase QuickPay mobile wallet a few months ago. The mobile wallet is introduced into the smartphone in one of two ways. One of them is as an App that comes when you buy the smartphone. For example, Samsung Pay or Apple Pay mobile wallet Apps. Once you have the mobile wallet you can put in credit cards, debit cards and other payment products that you have into the wallet.

If the wallet belongs to your bank, it would be an application that you would have to download from the App Store into your mobile device. Then you would work with it much like any other application.

OffLA is part of the mobile wallet to ease the life of the user. End users are not downloading our software separately; rather we are an integral part of the mobile wallet. In truth, we defend not the customer, because most of the time, the customer is insured. We are defending the issuer of the credit cards that the user has loaded into the mobile wallet, and the merchants that are responsible for a part of the payment process. Therefore, fraud liability is divided between the issuers and merchants, so we are defending them, despite the fact that we are a part of the consumer's wallet.

CEOCFO: *What is your eventual business model?*

Dr. Margaliot: The business model is very simple. We save a great deal of money for issuers and merchants. Therefore, we target around 20% of what we save as our fees. We can prove the savings, since we have a very reliable proof of concept process that we can perform with the banks. We can even prove the savings based on historic plastic card data, so banks that are interested in the OffLA solution, do not need to have an operating wallet before signing with OffLA. They do not have to nor should they wait until they suffer from mobile wallet fraud. However, they do have plastic card historic data, with many fraudulent transactions, from which we can prove the strength of the OffLA system, by demonstrate that we accomplish exactly what we claim we can do. Then we can translate the savings to per transaction or a monthly fee per wallet as a basic business model for them. We want 20% of what we save for issuers or merchants.

CEOCFO: *What have you have learned as you developed the product, as it has evolved and started to be tested?*

Dr. Margaliot: We have made many changes along the way. Many of them are marketing issues, because we started talking about fraud detection process as the core of the company. Then we realized that fraud detection traditionally belongs to the back office operation, and is not part of the mobile world now. Typically, two departments in a bank are presently dealing with the mobile wallet - the innovation or marketing department and the security department. Both of them are not dealing with fraud.

Therefore, we changed our pitch emphasizing the main advantages of using our system, and draw much more interest when we claim to minimize friction with the customer by 92% while maximizing security of the mobile wallet and minimizing exposure of identification means. This is much more important to the bank these days than the issue of fraud prevention. It is because they believe that their current system can do the job, at least as it is being done today. The money that we save for them is good, but it is not the real motivation behind their interest. The most important issue is minimizing the friction with the customer, which we can reduce from 100% to 8% of the transactions. As a secondary gain, we can block more than 90% of the fraud, much better than their current systems. This is what we have learned in the last few months.

CEOCFO: *Why is OffLA noteworthy?*

Dr. Margaliot: We believe that the mobile wallet will actually be the main payment mean within the next few years. The last time there was this type of revolution was with the introduction of credit cards 40 years ago. Plastic card industry is a good system that worked well for many years. Thus, if you want the mobile wallet to reach its potential, a trillion-dollar business, and to replace plastic cards payments it has to be very easy to use.

If OffLA can calculate probabilities and decide that the right person is making the current transaction, so the wallet can complete the purchase without user verification for more than 90% of the time, that will be a great achievement for wallets that will use the OffLA system.

It is a solution that many wallets are searching for, since they strive to minimize friction with their customers. Since the OffLA equipped wallet knows that it is truly your transaction, why would the wallet have to bother you every time you go to the same supermarket and buy approximately the same basket for approximately the same sum of money every week? If we can authenticate the true customer on the smartphone, without exposing your confidential identification information most of the time, then this is a major advantage for OffLA. With OffLA, mobile wallets can skip user verification process 92% of the time, because OffLA learns your habits and uses them to help you enjoy your mobile wallet. This is why OffLA stands out as a very important player in the mobile wallet market.

Interview conducted by: Lynn Fosse, Senior Editor, CEOCFO Magazine



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