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Organization is twice as important at the leading edge

Fintech projects often research new territory in technology,
but rely on sure ground just as much.
Yet since only one solution will win the race, speed is of the essence.
What does this mean for project organization?

By Kornel Wassmer and Martina Jan

Fintech projects often break new ground in technology. Large projects in particular require a different project organization than "old economy" projects. Guides in form of best practices, methods and processes are either missing entirely or their existence and documentation is basic at best. They need to be developed "on the fly" and parallel to the project. This requires the typical virtues of classic software engineering.

What qualifies a fintech project?

Our inventory refers to "large fintech projects" as software development projects involving several parties, teams and sub-projects and over 30 people. Embedding the solution in a tried-and-tested environment such as the IT architecture, operations, support, backend systems and of course regulatory framework is typically required.

A small window of opportunity must be used under great market pressure.

The target audience of the new IT solution must also be considered and is essential in the approach. Are they consumers (B2C), professionals (B2B) or internal employees? Developing a consumer-oriented application is the biggest challenge. Here it is not only important to utilize a small window of opportunity under great market pressure, but also to ensure usability, the appeal and the robustness of the application along with the update and feature cadence.

Lastly, fintech projects are typically based on leading-edge technologies. Meaning, these new technologies are the actual initial ignition for fintech. No wonder are the expertise, implementation and operating experience as well as technology management limited in the broadest sense. As already mentioned, best practices are still missing for various issues, after all.

These new technologies are the actual initial ignition for fintech.

How about AdNovum's fintech experience?

When we develop fintech solutions, for example a mobile payment app, we use the entire range of engineering skills. During development and supply we are constantly modifying the technical scope within the schedule and typically also the financial terms together with the customer or even completely realigning them – flexibly and ad hoc. The immediate market feedback, user acceptance, competing offerings and the technological foundation are trendsetting in the process. When it is a specific new application, it is also possible that the regulator will become involved during technical development. In this case we need to assess external factors of influence very quickly and, if need be, incorporate these directly into the technical system.

A large fintech project pushes the proven process models to their limits in many aspects. On the one hand, the connection between costs, time and scope needs to become flexible. On the other hand, the entire IT infrastructure of the company providing

Martina Jan and Kornel Wassmer: familiar with both classic and agile projects.

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the solution must be willing to deal with these new framework conditions. This is required to meet the original purpose of the IT to make commercial use of the market opportunities.

Large fintech initiatives often turn out to be trial balloons, marketing vehicles, strategic spearheads or innovative market offerings. The client's economic terms consequently also vary: An IT solution may serve to utilize a brief opportunity and thus cannot be assessed as a long-term investment ("throwaway software culture"). Vice versa, an innovation may require a strategic investment in a new issue. This was for example the case with TWINT, the digital wallet launched by the PostFinance subsidiary with the same name in the summer of 2015 with the objective of revolutionizing mobile payment. TWINT entered a market which is on the strategic agenda of all well-known financial service providers.

The connection between costs, time and scope needs to become flexible.

So with fintech projects we are faced with a series of tasks: We utilize top technology, gain experience, practice technology management "on the fly", are agile in adapting the technical scope and only finalize the requirements once they have been tested on the market. Finally, we embed the solution in system landscapes and organizational structures based on professional and well-structured processes. Here we incorporate aspects such as economic terms, software as an asset invested vs. software as a marketing tool, and using resources for "trial and error" approaches.

Proven development process

Complex fintech projects greatly affect the classic strengths of a company such as AdNovum. One of these is an established and proven software engineering process. The ability to implement and provide technology management and life cycle, third-party component engineering, built-in quality assurance and continuous integration "out of the box" is crucial to the success of large fintech projects in particular. Only this allows for the quick yet safe integration of new technologies. Agile project organization which allows resources to be continuously optimized and always using the right people in the right place at the right time is also key. By avoiding or even eliminating unnecessary variances – i.e. questions such as "Which problems do we really want to solve?" – we can focus on the actual problems and the work packages.

Another important factor is having the know-how, experience and brainpower. Here, aside from straight capacity, quality of course is key. Our employees are experienced in continuously dealing with new techniques, technologies, methods, special fields and partners in their daily work. And collaborating in distributed and virtual teams is nothing out of the ordinary. Curious and motivated software engineers with the best education provide the best premises.

Even large fintech projects can be implemented quickly and securely.

Last but not least, large fintech projects require the ability to quickly provide tremendous development capacities. This requires highly efficient and intelligent near- and offshoring. In the process it's crucial to also break the mould, even with respect to working with different locations, and to purposefully utilize the strengths of the individual locations.

Complex but possible

Although the project organization standards are even higher on the leading edge than normal and a number of factors need to come together for successful implementation, experience does show: Even large fintech projects can be implemented quickly and securely. This has been proven by well-known examples such as UBS Paymit and TWINT. ▪

Kornel C.C. Wassmer

Kornel C.C. Wassmer, MSc ETH in Computer Science, has been working at AdNovum since 1996. In 2007 he became the Chief Development Officer and, in this function, is responsible for software development. He is a vintage car enthusiast and – in addition to the art of software engineering – tries to convey some savoir-vivre to the juniors. After giving up his career in politics he is able to focus entirely on advancing AdNovum.

Martina Jan

Martina Jan, organizer holding a federal certificate, joined AdNovum in 2012. As a project manager she was responsible for several medium- and large-size projects in various industries. In 2014/15 she supervised the UBS Paymit project, which was based on an agile approach and required flexible project organization. In her leisure time, she is an avid reader and equestrian.

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TWINT

What does it do?

TWINT is primarily a smartphone app available for iOS as well as Android. This app allows users to register, load, manage or transfer money and pay via the physical register or online channels. In addition to payment options, TWINT also helps users manage loyalty cards and discounts. TWINT is also a complete wallet for your mobile.

Who's behind it?

The client for the TWINT app is TWINT AG. It is a 100% subsidiary of PostFinance and wants to establish the Swiss standard for a digital wallet. Despite having a well-known parent company, the TWINT solution is purposely open and designed to include other banks and partners. The system is developed separately from PostFinance's systems and is structured and runs as a stand-alone solution. AdNovum supports TWINT in all IT matters related to its "CIO as a Service" initiative – from requirements engineering to software development and integration all the way to complete 24/7 operation.

> IN THE COMING MONTHS TWINT WILL GRADUALLY BE UPGRADED INTO A FULL WALLET.

How does it work?

The TWINT functionality uses a variety of system components, both on internal and third-party systems. The mobile app communicates with the TWINT back end via a JSON-based REST interface. A handshake between the mobile and the beacon via Bluetooth Low Energy (BLE) matches the customer with the point of sales. Both ends verify it via the TWINT back end.

The back end in turn links various internal and external systems using various interfaces: Merchants (or their cash register system), for example, communicate with TWINT via a SOAP-based merchant interface. Banks also use a specific interface to communicate directly.

Other components use the same architecture and to some extent the same interfaces to use the necessary services. For example web applications such as the merchant portal and the administration console as well as the TWINT merchant application developed specifically for merchants where the cash register is not networked.

Where is it going?

TWINT is still new and has a full backlog of ideas. In the coming months the system will gradually be upgraded into a full wallet. The app will offer users targeted promotions which they can take advantage of immediately. The TWINT back end has been and is continuously being updated with other components such as a data warehouse, CMS and a business analytics engine. ■

Simon Zweifel: development coordinator of the TWINT project.

Simon Zweifel

Simon Zweifel, MSc ETH in Computer Science, has been with AdNovum since 2005. As a technical project manager he has managed several larger banking and e-government projects. He became the program manager for TWINT in autumn of 2014. He coordinates the overall planning and all development activity for the large project. His private life revolves around his young family, which always keeps him on his toes.

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UBS Paymit

What does it do?

Paymit is an open system by SIX and several banks which primarily offers P2P payments between individuals via mobile. Once a large group of users had been built with this basic functionality, the system is now being expanded to the merchant-payments sector. The app offered by UBS is also available to non-UBS customers. Payments are debited straight from a bank account or a credit card. Adding funds is therefore not required.

Who's behind it?

Paymit is a product by a consortium of financial service provider SIX and several Swiss banks. UBS and ZKB were on board from the start. More partners have joined since, and others have announced joining. This open approach is a key strength of the system.

AdNovum is responsible for developing UBS' systems. On the one hand, this includes apps for iOS and Android, on the other also the back end integration into the UBS system environment. AdNovum was not only responsible for implementation but also for the business analysis, integration as well as maintenance and support. AdNovum implemented the user experience in close collaboration with UBS and external partners. The UBS design guidelines and international models served as the basis.

> THIS OPEN APPROACH, WHICH ALLOWS ADDITIONAL PARTNERS TO JOIN, IS A KEY STRENGTH OF THE SYSTEM.

How does it work?

The UBS Paymit app is based on Cordova, the connections to the UBS back end systems use the proven approach of other UBS apps such as Mobile Banking. The back end at UBS on the other hand communicates with the SIX scheme, which ensures interoperability between various Paymit systems.

The UBS Paymit system is fully integrated into the bank's IT systems. One advantage here is how easy it is for UBS customers to register. On one hand, the big challenge is meeting the high security and data protection requirements of a large bank, and on the other hand to ensure rapid and agile implementation required in such a rapidly changing market.

Where is it going?

Paymit will primarily be upgrading functionalities in the next

Lukas Brügger: drives the development of UBS Paymit.

few months to make it a complete mobile payments solution. The first step will allow customers to pay small merchants via QR code scan. Integration into the SIX terminals is planned for the future. In addition, many more features are waiting to be implemented. The Paymit universe will soon see strong growth again when more partners are integrated.

Lukas Brügger

Lukas Brügger, Dr. Sc. ETH, has been with AdNovum since 2013. Holding various positions as software engineer, technical project manager and project manager he was able to gain insight into various projects in the banking and the e-government field. Over the past 18 months, UBS Paymit allowed him to follow the launch of a new app from the fintech field straight from the start.