



MICROFINANCE CENTRE

February 2019

Case Study

RIDING THE TECHNOLOGY WAVE IN EUROPEAN MICROFINANCE: THE CASE OF QREDITS A Data-Driven High-Touch Approach to Microfinance

This case study traces the origins and the digital evolution of Qredits, a Dutch microfinance foundation that is the only national program providing an alternative source of funding to new- and early-stage businesses. Qredits, from its inception, has banked on the intensive use of technology, all the while retaining the personal 'high-touch' character of microfinance where needed. It also applied technology to its business development services offered through e-learning, mentoring and an Academy Program. The unique vision of the Founder, combined with consistent application of technology, has led Qredits to become one of the most innovative and forward-thinking microfinance organizations in Europe.

CONTENTS

1. QREDITS' DIGITAL JOURNEY	2	4. CATALYSTS FOR THE DIGITAL PUSH	14
2. QREDITS: A MICROFINANCE INSTITUTION	3	4.1 Internal Factors	14
2.1. Company Background	3	4.2 External Conditions	14
2.2. Entering the Microfinance Marketplace: A Different Company	5	5. QREDITS' APPROACH TO TECHNOLOGY	15
Early Experimentation	5	5.1. Following the Trends	15
Enters Elwin Groenevelt	5	5.2. Adopt, Adapt, and Create	15
Research and Vision: 11 Rules for Success	5	5.3. Experimentation	15
Ready. Steady. Go!	6	6. FULL AUTOMATION?	16
600 Applications	6	7. LESSONS LEARNED	17
The First System	7	ANNEXES	19
3. DIGITAL JOURNEY TIMELINE	8	ANNEX I: ORGANIZATIONAL CHART	19
3.1. Qredits' Timeline	8	ANNEX II: DIGITAL QREDITS: SUMMARY	20
3.2. Evolution of Data Collection	10		
3.3. Evolution of Internal Systems	12		

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1. QREDITS' DIGITAL JOURNEY

"Qredits helps entrepreneurs successfully start and invest in their company. We offer coaching and knowledge for entrepreneurs in the Qredits Academy, and we provide business loans up to €250,000. Our goal is to make the dreams of entrepreneurs possible. Relying on the power of entrepreneurship, the power of a good idea—we prefer to look to the future instead of the past."

www.qredits.nl

Unlike other microfinance organizations in Europe, Qredits recognized early on the importance of technology and digital solutions to what the organization sought to accomplish. Its goal was to build an alternative funding source for the entrepreneurial market that had been neglected by banks in the Netherlands, and to do so efficiently and at a scale unseen in other microfinance operations at that time.

Qredits started with a clear purpose and a vision for the future: to take the best that microfinance has to offer and enhance it with technology. It is not as much *what* they wanted to do, but *how* they decided to do it, that set Qredits apart from others European microfinance providers. As Elwin Groenevelt, the Founder and CEO of Qredits maintains: "If you do not think about the future, you have no future."

When Qredits was conceived in the late 2000's, the technological landscape was different than today. The iPhone had just arrived on the scene, and digital solutions as we know them now were in their infancy. That said, Qredits recognized that technology would drive scale and growth. Qredits approached each task or project with a clear vision of the desired direction and destination and experimented in a flexible way to achieve those goals.

Atypically for the European microfinance marketplace, Qredits offers loans of up to €250,000 (although its loan sizes average €24,000). Even its initial maximum loan size of €35,000 was high by prevailing standards of the day, but Qredits maintains that this was what was needed to meet the real demands on the entrepreneurship market. Qredits focuses on financially-excluded (start-up) entrepreneurs and views the historical lack of smaller loan sizes as a failure of the market. In the Netherlands, commercial banks are less interested in

loans below €250,000, especially when clients lack collateral or a lending history.¹

After its first six years, during which time striving for financial sustainability was its primary focus, Qredits began to increasingly focus on other socially excluded groups such as migrants, students and people living on welfare benefits. This increased the outreach and social focus of the organization.

Using technology and moving up from the lowest end of the credit market created growth that surpassed initial projections. By mid-2018, Qredits had become one of the leading microfinance institutions in Europe. Elwin Groenevelt's vision and drive towards innovation has enabled the organization, despite its unlikely for microfinance location in a very high-income country like the Netherlands, to start offering its clients services through online tools and mobile applications integrated with internal operational systems and processes.

"On October 31, 2008," remembers Elwin, "I walked into the notary office Stotijn in De Wijk to set up the Foundation *Qredits Microkrediet in Nederland (Qredits Microcredit in Holland)*. I think that this notary (like many others at the time) never realized that Qredits would become so successful and would be a trendsetter for the alternative finance market for entrepreneurs in the Netherlands. Not to mention our best-practice status in Europe and our beautiful offices in the Caribbean. We set out on a journey and we never expected the success that we achieved."

Today, Qredits operates in the microfinance space that is known for personalized services for often poorer clients. It has put itself squarely on a digital path that follows the prevailing trends and technological developments yet has not become a FinTech company. Instead, it combines the 'high-touch' approach with technology to create the best outcomes for clients and the institution. "We will never be fully automated", says Vincent Stulen (Qredits' Manager of IT and Innovation) who, together with Elwin, has been spearheading the organization's technological development.

Qredits, now almost 90 employees strong, has over the past ten years served tens of thousands of entrepreneurs, offering loans of up to €250,000, and

¹ Het kleinbedrijf Grote motor van Nederland, McKinsey and Company Nederland (2014)

providing coaching and educational programs to clients. In October 2018, Qredits founded its international arm of the business Qredits International. Its first initiative was an investment in MFI Oportunitas S.L. in Barcelona (Spain).

This case study traces the development of Qredits from its very beginning, when it entered the microfinance market with a different vision and a different appetite for technology. It is a story of a visionary founder and leader, told through the achievements of his creation. With his dedicated team, Elwin built a different type of microfinance organization in Europe.

2. QREDITS: A MICROFINANCE INSTITUTION

2.1. Company Background

Launched in January 2009, Qredits is a social enterprise that supports entrepreneurs in the Netherlands to successfully start or invest in their business by offering business loans up to €250,000. It also helps entrepreneurs to build their business skills through its coaching, e-learning and Academy services. To date, Qredits has delivered almost 15,000 loans totaling over €326 million, making it the largest alternative lender for entrepreneurs in the Netherlands. Currently it employs almost 90 staff and works with 600 volunteer entrepreneurial coaches. In the Caribbean, since 2015 Qredits is active through local Qredits offices on Bonaire, Aruba, Saint Maarten

and Curaçao. So far, approximately 450 loans have been disbursed on the islands.

Qredits is based in Almelo, and has 5 branch offices in Amsterdam, Rotterdam, Weert, Barneveld and Meppel. It is a private foundation, founded by a group of public and private partners, including:

- Three commercial banks (ABN AMRO, ING Nederland and Rabobank)
- The Ministry of Social Affairs and Employment
- The Ministry of Economic Affairs

Qredits' vision is to build a strong and independent entrepreneurship culture in the Netherlands by providing financing, mentoring and tools for micro-entrepreneurs who have a viable business plan, yet are unable to obtain credit from conventional lending institutions. Its mission is to:

- Stimulate new business start-ups
- Help new entrepreneurs make an informed choice for entrepreneurship
- Increase the opportunities and survival rate for new businesses
- Provide opportunities for entrepreneurs to become financially/economically independent, and
- Bridge the gap for (starting) entrepreneurs to grow into the mainstream financial sector.

Qredits in the Caribbean

In 2015 Qredits started activities on Bonaire which has the status of municipality of Holland. Qredits was formally asked by the local government of Bonaire to start lending activities there to give a positive impulse to entrepreneurship and the economy on the island. Qredits received a grant from the Ministry of Internal Affairs of Holland which supported this idea. The activity started with one loan officer on Bonaire; the back office was totally handled in Holland (Qredits Almelo); a very efficient approach. In 2019 Qredits Bonaire has already provided 150 microloans (max \$ 50,000), now with two loan officers.

The news of the success spread quickly to the other Caribbean islands in the Dutch Kingdom: in 2017 Qredits opened a branch on Aruba and Sint Maarten, and in 2018 on Curacao. The operational model is everywhere the same: a grant of \$200k from the local government to cover the operational costs for the first two years; a small office with 2-3 loan officers; and back-office operations (risk management, administration) being done from Holland. The main goal is to be financially sustainable after two years (with a loan portfolio of \$2.5mIn) and create social impact through job creation and reduction of the social welfare burden.

Up to 2018 the four branches on the Caribbean provided 450 business loans (\$ 13mIn) and this will increase with 250 annually from 2019 on.

Qredits' portfolio has grown steadily over time (see Tables 1 and 2). By December 2018, it had €150 million in outstanding loans, and a total of €326 million disbursed to almost 14,000 entrepreneurs from its inception. Annual disbursement in 2018 was more than five times the amount disbursed in 2009, and the portfolio at risk (90 days past due) is about 7 percent annually.

In addition to funding, Qredits offers business development services (BDS) that help new entrepreneurs with their startup businesses. Qredits developed a unique e-learning course 'How to write a business plan' for new entrepreneurs, which guides them to write a unique and compelling business plan through a step-by-step process. This free guide is downloaded 800 times per month. Qredits also offers free templates (that are downloaded 150 times daily), white papers, mentoring, and evening classes for new entrepreneurs on business plan development. By charging a "personal mentoring fee" (€200 per year) Qredits is able to offer BDS as a sustainable product line.

Figure 1: Evolution of Qredits' Portfolio, million Euro (2009–2018)

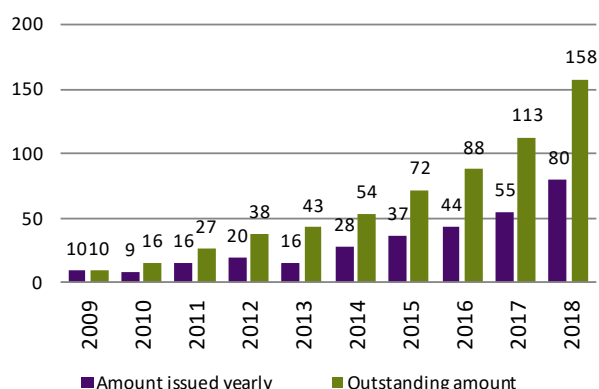


Table 1. Cumulative Portfolio by Location (Nov 2018)

Location	Number of Loans	Amounts Disbursed (€)
The Netherlands	13,694	287,303,742
Bonaire	127	32,187,096
Aruba	72	2,959,500
St. Maarten	134	3,094,077
Curaçao	42	1,297,000
TOTAL	14,069	326,841,415

Table 2. Cumulative Portfolio Structure (Nov 2018)

Loan Products	Number of Loans	Amounts Disbursed (€)
Microcredit		
Microloans	12,112	248,009,197
Flexible loans	1,298	19,380,000
Total Microcredit	13,410	267,389,197
Other Loan Products		
SME loans	583	53,814,535
Mortgage	35	3,661,000
Other loans	41	1,976,683
Total Other Loan Products	659	59,452,218
TOTAL	14,069	326,841,415

In 2016 Qredits began to offer a comprehensive entrepreneurial education program to vocational schools. The strategy is based on the fact that many students have to start a business after school. The labour market in Holland is changing fast. More people have to become self-employed because many companies outsource their activities, for example, the construction sector. Many small businesses such as shops or barbers do not hire employees anymore; rather they partner with other self-employed professionals. The number of jobs for graduates of vocational school is shrinking. At the same time self-employment and startups are much more popular among young people than ever before.

The program includes an e-learning app, a workbook, field visits and (if needed) a student loan. The program has been launched in 60 schools and so far, more than 6,000 students have successfully completed it.

Figure 2. Qredits' Results



2.2. Entering the Microfinance Marketplace: A Different Company

Early Experimentation

In the early 2000's, discussions about the potential introduction of microfinance within Western Europe began having increased prominence (having long been limited to so-called developing countries). At that time, microfinance was viewed as a social finance innovation and an alternative to grants and subsidies historically used to stimulate new entrepreneurship and self-employment. The Eastern European microfinance market had, by that point, matured to the point of achieving financial sustainability, but operated on different principles and served a different target market, focusing instead on existing micro- and small businesses. The challenge in Western Europe was how to support new and early-stage businesses in a sustainable way as there were not many programs doing that.

In the Netherlands at the time, the debate on microfinance was being led by the Netherlands Council for Microfinance, chaired by then-Princess (now Queen) Máxima, and focused on five experimental microfinance projects located throughout the country. Each was small-scale, localized, and early-stage—with little to show for by way of results or impact.

Enters Elwin Groenevelt

Elwin Groenevelt got involved in microfinance while working at Fortis Bank. He started his financial services career in 1996 as a management trainee at Credit Lyonnais Bank in the Netherlands. He advanced his banking career by becoming a Corporate Account Manager at Generale Bank. Following the bank's merger with Fortis, Elwin worked as a Branch Manager, later advancing to District Manager, and in 2004 to Regional Director Business Banking of the Eastern part of the Netherlands.

Elwin's interest in microfinance began in 2004, when his close friend mentioned he could not obtain a small loan of €5,000 to start a business, despite his financial track record and educational achievements. Commercial banks rejected him because the loan amount would not be profitable for them. Elwin decided to offer his friend this loan personally because he trusted him, and he was convinced of his ability to repay. This small loan was paid back after

one year, and the proceeds were re-lent to other private clients to set up three other businesses.

Elwin was inspired by Mohammed Yunus' book, *The Principles of Microfinance*, in which Yunus explains that microfinance is based on trust and a belief in the skills and capabilities of people. Elwin became strongly convinced that commercial banks lost touch with the core principle of credit (the word 'credit' derives from the Latin word *crēdere*, which means 'trust') and approached the Board of Fortis Bank with an idea for a pilot microfinance project in cooperation with several volunteers from Fortis Bank. In 2006, during his tenure with Fortis Bank, Elwin initiated a successful project called "Microfinance in the Netherlands". As a result of this success Elwin was asked to work with the Ministry of Economic Affairs in the Hague to help set up the first national microfinance program in the Netherlands.

Research and Vision: 11 Rules for Success

As part of his assignment, Elwin studied several types of microfinance projects and analyzed the emerging practice in the Netherlands. This research uncovered several important findings that helped him to formulate the vision for the future organization, and that became the bedrock for Qredits in the years to come.

1. Centralization: Elwin realized that a national program would have to be centralized with one office and with people working flexibly around the country. All other pilot initiatives at that time were regional and separated from each other. They were all loyal to their own offices, which made their consolidation and integration into one national program difficult, if not impossible.

2. Meeting needs: Elwin felt that the program should support entrepreneurs with loans that were meaningful in the context of the Dutch economy. Loans of just a few thousand Euros would not support a decent start-up. The initial loan ceiling was set at €35,000,² when most European MFIs were lending, on average, less than €10,000—and the EU had established a maximum for EU-funded microcredit at €25,000.

² A typical microloan in Europe at that time was less than €4,000, and in some countries such as France, MFIs were not allowed to disburse loans of more than €10,000.

3. Designing for efficiency: Elwin knew that microfinance would need to combine a personal client relationship with the technology to create an efficient and sustainable organization. He believed that this high-touch approach should be the defining feature of microfinance. Everything else should be automated.

4. Designing for sustainability: Elwin determined that the organization would have to be financially sustainable. Microfinance in Western Europe was (and mostly still is) operating at a loss, supported by donations, subsidies and other types of funding. Elwin developed a sustainability plan to achieve a break-even point within 5 years.

5. Independence: Elwin knew that the organization would need to be independent of banks and the government to avoid external influences on its policies. Even though the largest banks in the Netherlands and the Dutch government provided initial financial support, Elwin insisted that the funders were not to be part of the board in order to steer away from external influences.

6. Scale: Elwin realized that the organization would have to scale up its outreach in order to have a national impact on its target market. Instead of experimenting and growing organically, the organization needed to be built for scale to serve a sizable number of clients from the outset.

7. Market rates: Elwin concluded that interest rates should not be too low and subsidized. At the time, sponsor banks and the Government insisted on low interest rates. Elwin argued that it was not the low interest rate that would attract clients to the program. In fact those clients who would come only because of low rates would most likely be the wrong clients because they were more interested in cheap funding than in starting a viable business.

8. Flexibility: Elwin believed that clients should be able to apply for and access services whenever they needed and wanted to, and that the organization would need to offer an online system for people to use anytime, anywhere.

9. Skill-building: Elwin believed in the power of volunteers as part of the mentoring program. The drive and energy of entrepreneurs, combined with the necessary knowledge and skills of seasoned volunteer business mentors could be the key to

weather initial challenges. Elwin decided to use digital technology to match entrepreneur and mentors through an online 'dating site' for mentors ('coachingsplein'). All mentors use a specially-developed app which enables them to network with each other.

10. Partnership: Elwin recognized that commercial banks are important partners for a microfinance institution. First, banks can refer applicants (who they can't serve because they want a small loan, for instance) to the microfinance institution (which increases its brand visibility and credibility), and the microfinance institution can support banks by "graduating" its successful customers so they become bankable (once clients outgrow the microfinance organization's offering). It's a win-win situation.

11. Replicability: Elwin was strongly convinced that a successful microcredit model can be copied and introduced in other Western European countries.

These eleven principles set the stage for the creation of a new microfinance organization that soon made ripples in the sector and proved to be a success.

Ready. Steady. Go!

Qredits was registered as a private foundation in January 2009, and soon after opened its doors to clients. Its initial operational funds of €2 million were provided by the Dutch government (€0.4 million) and three banks (Rabo, ABN/AMRO and Fortis) contributing €0.4 million each. The government also provided funding through a subordinated loan of €15 million. The head office was established in Almelo (in the Eastern part of the country) due to this being a region with high unemployment rates (and close to where Elwin was based). Qredits began with 5 employees in 2009, growing to 21 employees at the end of the year. The organizational strategy was a centralized back-office and mobile/flexible loan officers in all areas in the country.

600 Applications

From the start, Qredits had a technology budget, and planned to have its internal operating systems ready on day one. To make this happen, Qredits hired an IT company with experience developing software applications for a small microfinance provider in Amsterdam to create its internal operational system. However, the development process took longer than

anticipated; a problem compounded by a very high level of client demand when Qredits opened its doors. Within its first six weeks Qredits received 600 applications via mail, fax and email. This was partly because Qredits opened soon after the financial crisis, and also because it received a lot of national publicity in media as well as support from Princess Máxima.

Welcome as they were, the organization did not have the capacity to process the applications within a reasonable timeframe. Staff needed to manually input application data into an Excel spreadsheet. Given this, initially Qredits needed four weeks simply to inform clients that their applications had been received and would be reviewed in due course. It was an intolerable situation, and a radical remedy was required.

Vincent Stulen, a young microfinance enthusiast and a recent graduate from University of Twente, joined the Qredits team in March 2009. It was a timely hire. Vincent started working in microfinance in 2006, and in 2007 graduated with a master's thesis that explored the emerging microfinance industry in the Netherlands. Soon after graduation, he launched a microfinance program for students with the county government and the local branch of Rabobank.

On his arrival at Qredits, he was tasked with finding a solution to the crisis. Faced with hundreds of hard-copy and digital loan applications, Vincent realized that it was 'mission impossible'. The reality was that while it took Qredits four weeks to inform applicants that their application had been received, it would take far longer to review and assess each proposal and make a credit decision.

The organization needed a technological solution to manage the credit process in a timely and effective manner. It had three options for developing an IT system:

- Buy a software package and configure it to meet its needs
- Acquire a core banking system, or
- Design and build an entirely new and proprietary system.

However, Qredits could not find an off-the-shelf solution that would serve its needs. Acquiring a core banking system was expensive and cumbersome, and too sophisticated for the needs of a simple lending

operation. Building its own system was the only viable option.

The IT supplier that Elwin had initially hired to develop its internal operating system had experience building software solutions for smaller MFIs in the Netherlands. However, its inability to deliver on time was what created the huge backlog of unanswered applications in the first place. The IT supplier was invited to pitch a proposal, but Vincent and Elwin were not convinced that their idea would work; because the provider was relying on external developers (based in Istanbul), the supplier had little control over the design process and could not guarantee there would not be delays). To speed things up Qredits cut out the middleman and brought the project manager from Istanbul to Almelo for three weeks. Where Vincent created the first visual screens of the system, the project manager was able to immediately build the functionalities. Having the developer on site full-time ensured a constant dialogue between teams and helped to build the first bridges between the business' needs and its IT solution.

The First System

The first data migration from Excel sheets with customer data into the new system was tested at the end of March 2009. At that time, the online application form was launched—and while clients still had the option of submitting paper applications, most applications were received online, and documents started to flow in digital form. The organization's first crisis had been averted, and the launch of what was named 'MicroNET 1.0' marked Qredits' entry into the digital world.

Taking into account how long it typically takes to develop a workflow system, this fast-track development was nothing short of a small miracle—but critical for the organization's reputation and ability to respond to levels of demand that would have otherwise proved to be overwhelming.

After this initial effort, the organization extended and improved the original platform. It evolved over time as new technological solutions emerged and new devices were introduced. However, the core framework for future growth remained the same.

3. DIGITAL JOURNEY TIMELINE

From the outset, Qredits' digital journey was founded on the principle of using technology wherever it could be applied. This includes the customer interface, internal processes, and business support for clients. This journey shows how Qredits evolved over time and how different parts of its digital architecture expanded into a complex system that combined several platforms and numerous applications.

3.1. Qredits' Timeline

Tables 3-5 lay out the major milestones for Qredits as an organization, as well as its technology and products offered to customers. From a technology point of view it is possible to divide Qredits' story into several chapters:

- **First application of technology (2008–2009):** Its technology had to support the basic needs of the organization with the idea of digitalizing all key processes. During this time it developed the first system for customer information (MicroNET 1.0). The focus was on transparency and reporting to get insights on the business process.
- **Early consolidation (2010–2011):** Early consolidation led to rebuilding MicroNET to create more scope for Qredits staff to set up and develop their own workflows, including automated emails, status changes, and ability to send text messages to clients. Also, the data-model was rebuilt from scratch to reach more scalability and efficiency. The key focus in this period was on efficiency: how to do more work with the same number of staff.

- **Integration (2012–2017):** This included developing new services and products and automating operational sub-processes. At this stage, all information was cloud based and available throughout the organization, and there were no more Excel-based processes within Qredits. It created new BDS services and new loan products, and a new customer platform ('MijnQredits' or 'My Qredits') for existing and returning customers. In addition, it introduced a series of data-integrations between applications and links to external data sources. Also Risk scoring algorithms were developed and implemented.

- **Company-wide digitization (2018–).** The most recent stage focuses on data-driven processes, adopting innovations from other sectors (e.g. FinTech), offering full-service applications on any device, anywhere, anytime (mobile, tablet, computer). Qredits launched a FinTech process based on a combination of technological innovations that have not been available in the past (distance digital identification, data-driven risk scoring, digital contracting and video calling). Qredits was able to substantially raise its loan approval percentage without taking on more risk. Although it may be too early to make a full assessment on the impact of these changes, initial results are very promising.

Tables 3-5 identifies major milestones in the digital journey of Qredits looking at organizational development, technology application and products offered to customers.

Table 3. Qredits' Activities: Organization, Technology and Products (2008-2009)

Period	Organization	Technology	Products	
2008	Oct	Qredits registered		
		Grant of €2 million by government and three commercial banks		
		€15 million subordinated loan funding by government		
2009	Jan	Office opened in Almelo	CRM in Excel	
		5 employees		
	Mar		Development of MicroNET	600 applications
			MicroNET 1.0 goes live	Free business plan template
			Loan applications accepted via website	
	Apr			100 loans disbursed
	Jun	Introduction Qredits Rating	Development of excel-based rating model	Free Excel-based financial plan template
	Oct		Digital logbook for mentors	
Dec	21 employees	Coaching Square 1.0	€10 mil. disbursed, 509 loans	

Table 4. Qredits' Activities: Organization, Technology and Products (2010-2015)

Period	Organization	Technology	Products	
2010	Mar	€2 mil funding (EIF)	Rebuild application module (2)	
	June	European Good Practice award		
	July		MicroNET 2.0 (Workflow manager)	
	Aug	€30 million funding: Syndicate of banks and Bank Nederlandse Gemeenten		
	Nov		1,000 loans disbursed	
	Dec	Progress guarantee 28 employees		€20 mil. disbursed
2011	Mar	€2 mil funding: EIF		
	Apr	Status Public Benefit Organization (ANBI) (retroactively)		
	Sep		Central system for projects and tasks (Basecamp)	Max. loan size increases from €35K to €50K
	Nov	Merger with mentoring foundation "Eigen Baas"	Workplaces migrate to Citrix private cloud	
	Dec	33 employees		
2012	Jan		Introduction of Salesforce	Referral pages for intermediaries
			Develop e-learning platform	Launch e-learning service
	Mar	First national mentoring day Qredits	Rebuild application module (3)	MijnQredits for coaches
	Sep		Social performance monitoring automated	€50 mil. disbursed
2013	Jan	3 volunteer regional coordinators mentoring	MicroNET 3.0	
			MicroNET used by credit unions	
	Jun		New Coaching square (2.0)	
	Sep		Development MicroNET with new Dutch Partner	Max. loan size increases to €150K
	Nov	45 million Euro funding - Ministry		1st SME loan
2014			First customer Mobile App	Introduction of educational programme
			Integrated external data sources	First international e-learning (Italy)
			Data warehouse	
Dec.	€30 million funding: Banks and insurance companies	Rebuild application module (4)	€100 million disbursed	
2015	Apr		Reporting through data warehouse	
			Start development of Qredits-scorecard	
	Sep	COSME guarantee		Max. loan size increases to €250K
	Oct	Start Qredits Caribbean with branch on Bonaire		
	Dec	€100 million funding: EIB		1st Caribbean loan
		56 employees First profit after provisioning (€172K)		

Table 5. Qredits' Activities: Organization, Technology and Products (2016-2018)

Period	Organization	Technology	Products	
2016	Jan	Start PHD research on Impact of Microfinance in the Netherlands	Core banking system for Loan Administration	
	May		MicroNET 4.0	
	Jun		Introduction MijnQredits.nl	
	Sep			
	Oct	Introduction of management team		
	Dec	Achieve compliance with EU Code of Good Conduct for Microfinance Providers		First evening classes for entrepreneurs
		54 employees		First flex loan product
2017	Jan		First mortgage product	
	Apr	Qredits branch on Aruba		
	May	Introduction of Qredits scorecard for loan applications		
	Oct	Qredits branch on St. Maarten	Digital contracting and identification	First bootcamp for entrepreneurs
		Pilot fast-track screening	Video screening	Educational programs for schools
	Nov	Second office in Almelo		10,000 loans disbursed
	Dec	66 employees		
2018	Jan		New workflow management module MicroNET	
	Apr	Qredits branch on Curacao		
	July	Qredits International B.V.	Rebuild application module (5)	Start soft-loan project on Sint Maarten after Hurricane Irma
		Qredits invests in IMF Oportunitas SL (Spain)	Start sending payment links through WhatsApp (Tikkie)	
	Nov		Mobile app for mentors	€250 mil. disbursed
		New screening module		
Dec	89 employees	Workplaces in Office365 + private cloud		

3.2. Evolution of Data Collection

Qredits' data collection and analysis process has evolved over time. It collects personal information about the customer, as well as information about the proposed or existing business enterprise. While information was collected digitally from the outset, at each stage the organization added more information sources and more analytical capabilities to further automate those credit decisions. Figures 3-5 trace the evolution of the system.

In the beginning (Figure 3), business data obtained from the loan application and the accompanying

documents (such as business plan, financial statements, annual reports, etc.) were assessed by the loan officer for completeness and accuracy, and personal information about the applicant and their identity were verified with the credit bureau and other sources. Once reviewed, the loan application proceeded to risk assessment whereby it was scored using Qredits' proprietary scoring model. Once approved, the applicant was assigned to a loan offer and at that moment the (new) business was verified with the Chamber of Commerce. After the client accepts the loan offer, the loan is disbursed to their bank account.

Figure 3: Data Collection – Stage One

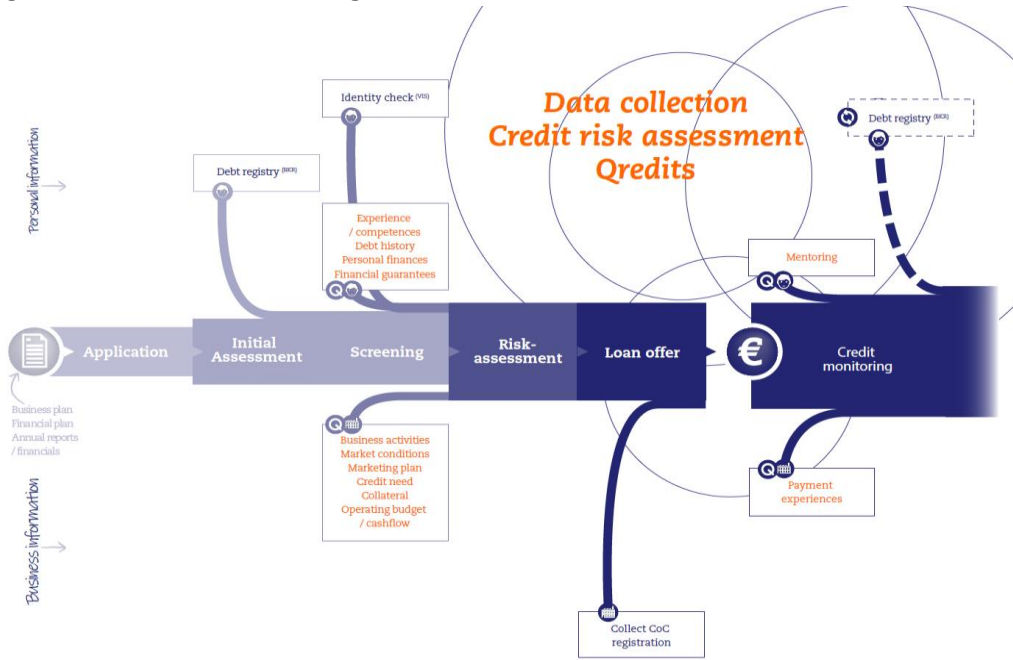


Figure 4. Data Collection – Stage Two

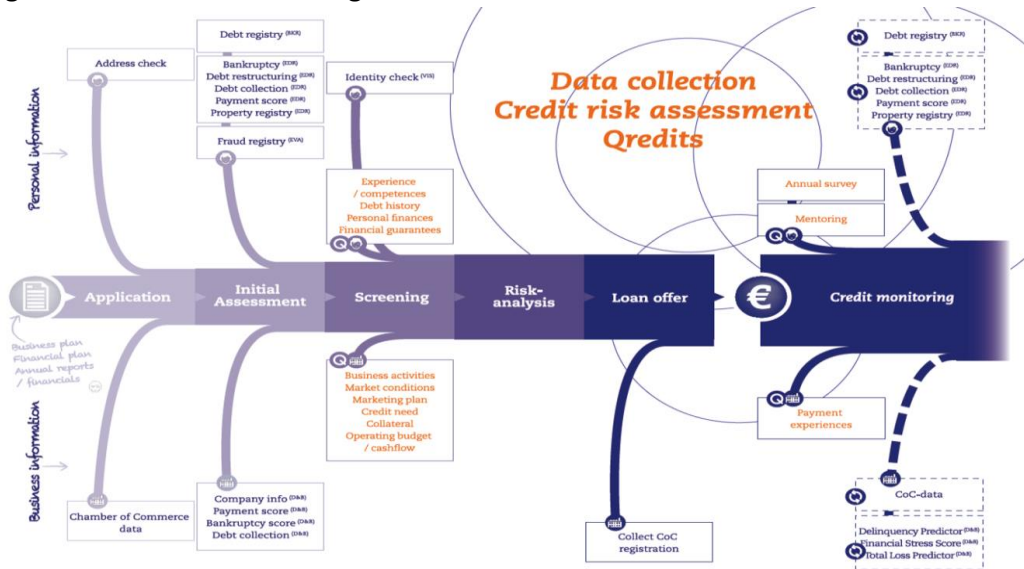
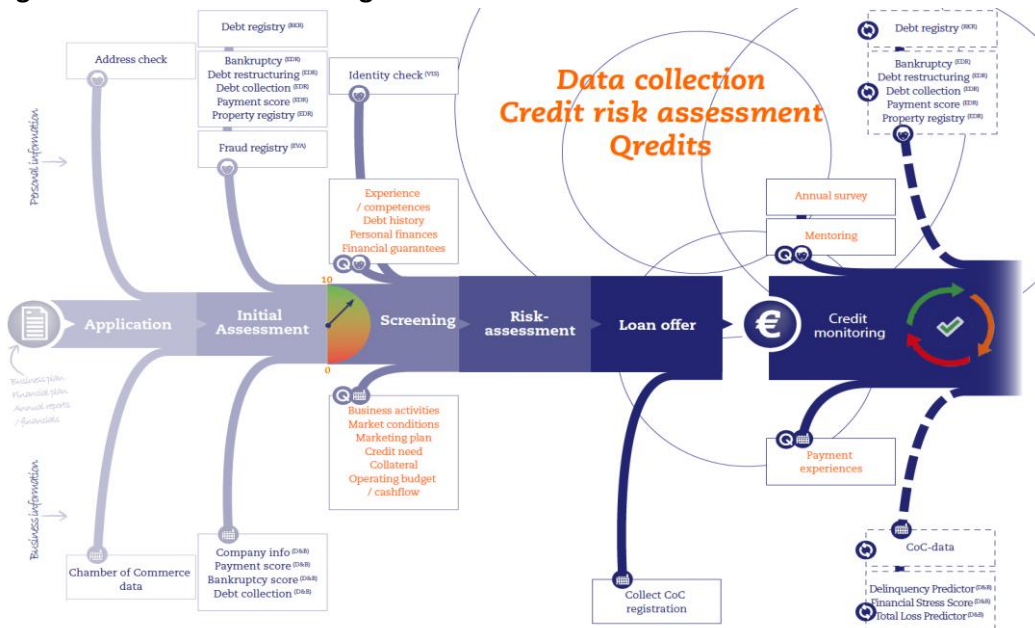


Figure 5. Data Collection – Stage Three



This basic process is still in use by Qredits, although it has gradually improved and added more data sources and data checks along the way. Figure 5 shows the current, and most elaborate, credit review process—with the use of big data and analytical tools such as delinquency and total loss predictors, as well as more elaborate business assessment tools. The biggest change between stages two and three is the additional automated predictive risk score in the application process and continuous automated monitoring throughout the life of the loan.

3.3. Evolution of Internal Systems

Since its introduction, Qredits’ internal operations system has also evolved significantly. The system consists of three parts, each designated for different users: customers, staff and other users (coaches, funders, researchers, etc.). The key principle driving the system’s design is that all employees, customers, and stakeholders should have access to the information they need.

Developed in 2009, MicroNET was historically the centerpiece of the internal system. Later the system evolved to include a data warehouse (for compiling all the data and facilitating multi-stakeholder reporting), a series of websites (13 in all) including My Qredits (MijnQredits) and two apps for clients, and Salesforce, which has become the main application for business development services.

MicroNET, now on its 6th iteration, compiles all information needed by loan officers and acts as the master loan data repository. MicroNET is linked to over 10 different applications or data sources, one of which is CBloans, a core banking system. Loans information can be viewed in MicroNET in real-time. Salesforce, on the other hand, collects all non-loan data and registers all non-loan processes. All these applications form an interconnected data system that can be used by all users at any point in time.

The evolution of the internal operating system is illustrated in Figures 6-8.

Figure 6. Internal Operating System: Stage One

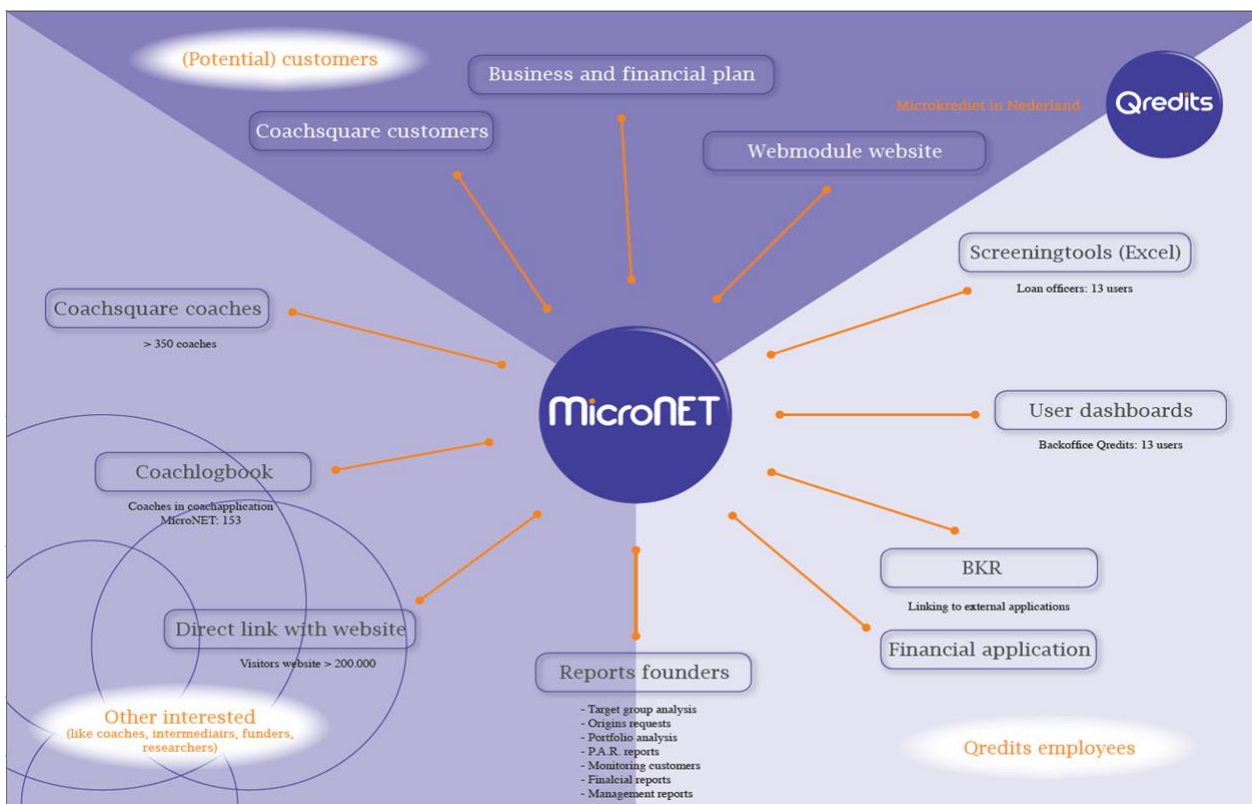


Figure 7. Internal Operating System: Stage Two

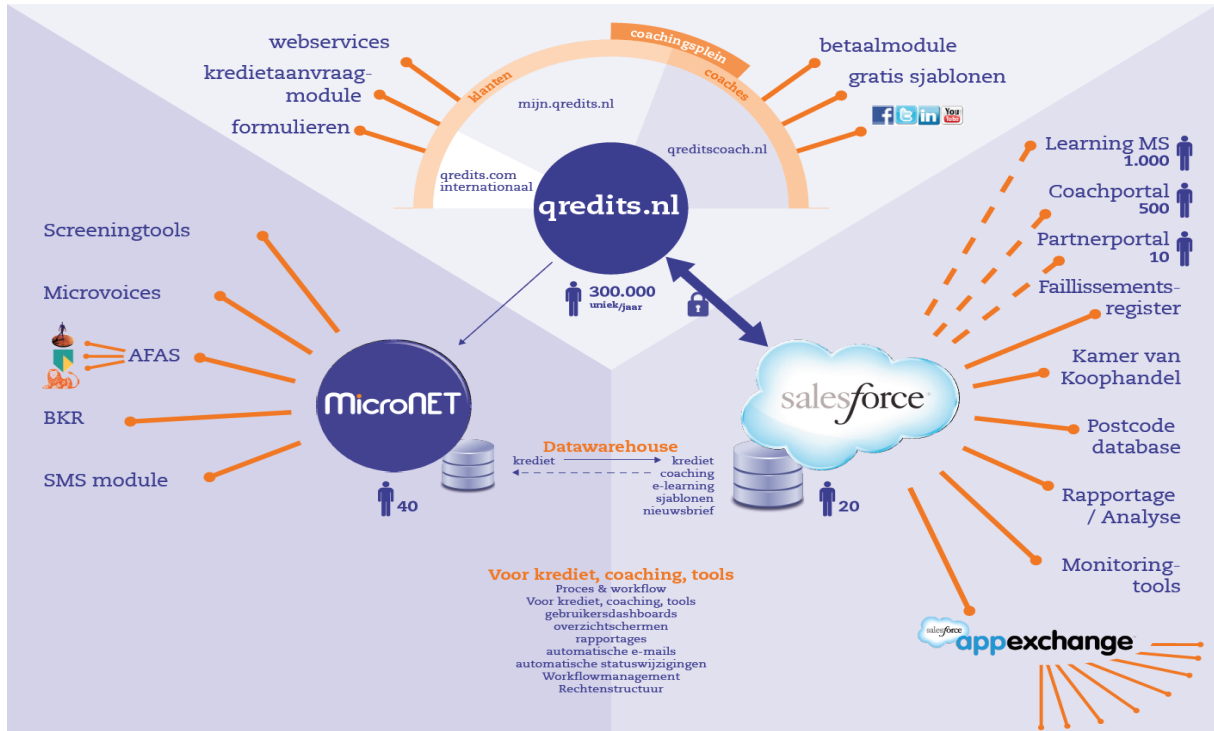
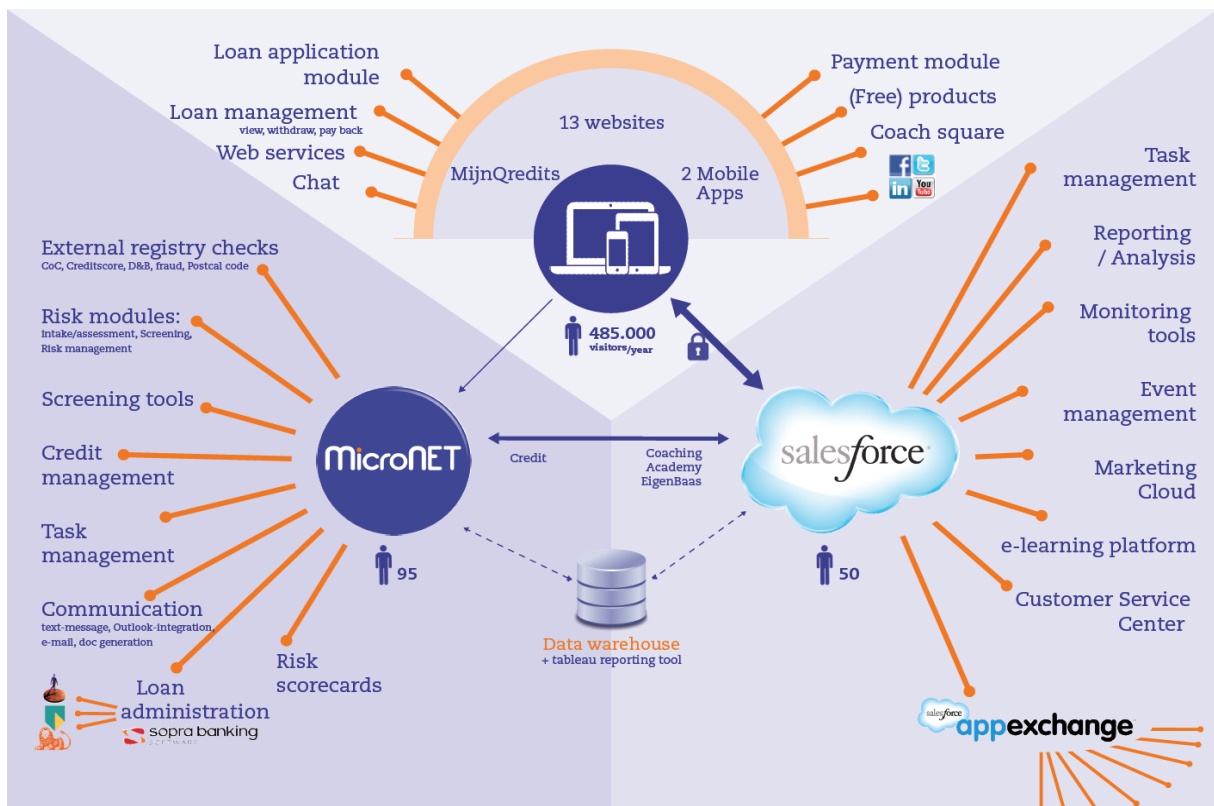


Figure 8. Internal Operating System: Stage Three



4. CATALYSTS FOR THE DIGITAL PUSH

Numerous internal and external factors shaped the organization's attitude towards and use of technology. It is difficult to point to one single factor that was critical; rather a confluence of various factors made the application of technology both attractive and necessary.

4.1 Internal Factors

People

Elwin has been the biggest and most influential internal driver of the growth and development of Qredits, applying his entrepreneurial drive and vision towards creating a sustainable institution. Despite the initial delay, the choice to use technology from the outset was critical. This was complemented by smart hiring decisions. Vincent's arrival at the company was timely, as was his decision to focus on developing the online client application process, despite being hired to setup the back office.

Vincent, now the IT and Innovations Manager, leads decision-making processes around major IT developments in alignment with Qredits' overall strategy and goals. Mindful of global technological innovations, he identifies businesses opportunities and integrates them in a fit-for-future systems landscape.

Efficiency and Sustainability

The drive towards efficiency was strong. MFIs in Western Europe were at that time (and mostly still are) loss-making businesses. To make Qredits a financially-sustainable institution, it was necessary to reduce operational costs and manage risks—something that could only be achieved through technology. For instance, thanks to technology, Qredits was able to double the size of the portfolio with only a 30 percent increase in the number of loan officers (whereas traditional MFIs would need to increase staff by 100 percent).

Business-driven Technology

Technology is important and necessary, but its value has always been viewed from a business perspective within Qredits. Digital solutions and applications are used wherever it made business sense for the organization, not because a solution was available or fashionable. Technology is also adopted in a way that

is forward-looking, allowing the organization to achieve gains in the long-run rather than simply fixing short-term problems.

Company-wide View of Technology

Qredits' digital approach is more than just the use of an operational platform, but a strategy that is relevant and embedded within every aspect of the organization. It considers how the organization as a whole might be impacted by the emerging capabilities of digital solutions, and how the organization can use those new capabilities to enhance its broader business strategy.

Growth Outlook

The growth imperative is another important driver for the use of technology, where the latter improves efficiency and opens the door to sustainability. To break even, Qredits needed to achieve scale, something that was only possible by automating and digitizing key aspects of the loan approval and management processes. Thanks to the organization's continuous growth digitization has created new jobs within the organization rather than reducing them.

4.2 External Conditions

Banking Environment

The well-advanced banking sector in the Netherlands was a factor in adopting novel technological approaches to microfinance. The majority of the country's population is financially-included; most people have bank accounts and use financial services. Microfinance services, therefore, had to match the level of financial services provided by banks and other institutions in terms of sophistication and ease of use. Also, the high level of maturity in the banking sector allowed Qredits to make its loan payments and disbursements through bank accounts.

Customer Expectations

Similarly, technology use is widespread, and the population is well-versed in the use of a number of technological applications. This meant that Qredits could develop its digital options knowing that its clients were already technologically-savvy and expected a service similar to that which other financial institutions provided.

Financial Crisis

The role of the financial crisis of 2008 cannot be underestimated. Banks curtailed business lending overall, and small businesses felt the credit crunch the most. Funding for new and early-stage businesses dried up just when Qredits was launched. A lack of funding when banks withdrew from small business lending was a strong enabling factor for the new organization. Although not a direct factor for the digital push, the financial crisis contributed to the large volume of applicants not served by banks, which in turn necessitated the use of technology to cope with elevated demand levels.

Initial Investors

The initial investors in the project, including the Dutch government and private banks, provided a level of resources sufficient enough to allow Qredits the security it needed to plan and lay a solid groundwork for the future, without needing to 'bootstrap' its way towards growth, as is typical of many start-up MFIs. This generous funding enabled Qredits to invest in technology with a longer time-horizon and vision. It also meant that the organization would afford a 'test-and-learn' approach to pilot various initiatives and retain those that proved useful.

5. QREDITS' APPROACH TO TECHNOLOGY

Qredits takes a pragmatic and opportunistic approach to technology. The organization scans the technology environment and new developments and tests available applications that prove useful. At the same time, the organization is developing its own solutions, where off-the-shelf solutions are not available.

5.1. Following the Trends

Vincent Stulen takes the lead on following tech trends, although others within the organization also track new developments. Vincent has developed a network of people 'in the know' within and outside of the organization when it comes to technology with whom he shares ideas and information. This peer network is a valuable source of knowledge, and an excellent opportunity to validate various applications among other users.

Vincent also uses other methods to monitor trends. He is a member of Holland FinTech,³³ whose mission is to empower everyone to access knowledge and network in the digital ecosystem. In addition, he keeps an eye on the competition, including FinTechs. He often adopts the guise of a customer seeking services from other organizations to discover what tech solutions they use. He also scans the skills that other organizations call out in their job advertisements. These give a good indication about the types of technologies the other organizations are planning or beginning to use.

5.2. Adopt, Adapt, and Create

The choice between adopting vs adapting an existing solution is a pragmatic choice. If a technological solution is useful and can be integrated with the existing systems, then the choice is driven by cost, time and application. On the other hand, some solutions need to be adapted and reprogrammed to effectively link with current systems and processes.

Qredits found that they are using the 80/20 rule quite effectively. In other words: 80 percent of its solutions are adopted and adapted, and only 20 percent are developed in-house as customized applications. There is no checklist or a set of criteria for the types of technology used by Qredits. Choices are made based on comparing costs versus possible gains. Usually, the selection process starts with a concept proposal: a one-page document with text and graphics to communicate the basics of the concepts and get people (in the business team) enthusiastic about testing the idea. The next step is to work with developers or technological architects to get a rough estimate of technological impact and feasibility of the project.

5.3. Experimentation

Experimentation is an important part of how technology is selected and applied in Qredits. The organization has adopted a 'test-and-learn' approach. These rules apply equally to external solutions as well as to their own developments that are tested in-house.

³³ <https://hollandFinTech.com/>

Not all ideas prove successful. One example of an experiment that did not work out is Qmmunity, an online platform for micro-entrepreneurs. The goal was to bring Qredits entrepreneurs together into a peer-to-peer network, to collaborate and share solutions to common challenges with each other. Yet the potential users did not find it useful, and platform activity levels were low. After 5 months, and several attempts to 'activate' entrepreneurs, the idea was ditched.

Some of the key criteria for evaluating technology trials are:

- Deciding ahead of time what 'success' looks like, so you have clear and useful benchmarks for evaluation.
- Monitoring projects closely, starting to evaluate as soon as possible.
- Adjusting where needed and where possible until you're happy with the results.
- Using the 'kill switch' if goals cannot be reached, even with further adjustment. Not everything is going to work.
- Keeping investment levels low in the experimental phase. As soon as you are happy with the initial outcome, try to integrate the project with the core systems to make sure that the processes are efficient and there will be a low (or better no) risk of manual errors.

6. FULL AUTOMATION?

It is possible for Qredits, with all its internal systems and advanced in digital technologies, to become a fully-automated credit factory that doesn't interact with clients at all. In short, it could become a FinTech—albeit one that is specialized in terms of its focus on its chosen target market.

Yet, according to Qredits, this is not envisaged for its future. Despite the opportunities to go fully digital and 'impersonal', the organization deliberately maintains its personal contact and communication with clients as its core feature and automates everything else.

One reason for this is the belief that losing direct contact with clients would be against the mission of the organization. Qredits was established to provide access to finance to early-stage and nascent entrepreneurs who cannot find funding within the traditional financial system. Being in contact with clients in a personal way and automating all other aspects of operations is how Qredits sees the mission to be realized. Personal contact is key in the Qredits approach and is the main difference with FinTechs. If you skip this element, there is no added value of microfinance related to fintech and banks. Microfinance is all about personal contact and social impact. It is right in the mission and vision of an MFI like Qredits. Qredits offers a blend of personal contact and fintech operations; this results in the fact that Qredits can assess applications for start-ups (regular fintech only provide loans to existing businesses).

For Qredits as a lender, clients are also an excellent source of information and insights. The entrepreneurial market is very dynamic and working directly with clients allows it to understand the needs of entrepreneurs and how these develop and change over time.

Finally, Qredits sees itself as a social enterprise with a mission to reach out to various segments of the society with its financial and non-financial products. This role would not be possible if Qredits became a credit processing automat. Fintechs are only focused on existing businesses and entrepreneurs with good track record; there is no social mission nor focus on startups. This is the main difference between a social enterprise like Qredits and commercial FinTechs. Qredits' focus on financially underserved people can only happen through personal contact and a focus on business development services (BDS).

For now, the default position is that Qredits keeps its personal contacts with clients, including business site visits, and automates all internal processes that do not require human interactions with clients. Increasingly, however, client is able to choose the type of contact they want to have. For fast-track loans (smaller amounts) a client may opt-in for a personal site visit by a loan officer or choose a virtual site visit via WhatsApp.

7. LESSONS LEARNED

Qredits' use of technology is an example of how a new entrant can disrupt an existing traditional microcredit market that had, until recently, relied almost entirely on personal interactions with clients. Many MFIs started operating long before the technological/digital revolution arrived and naturally, had little choice but to rely on their personal relationship with clients to assess their creditworthiness. However, as technology became more accessible and affordable, MFIs started to adopt various solutions—although often in a piecemeal fashion and without a vision or strategy for a broader digital transformation of the whole organization.

Qredits launched its activities at a time when digital technology was readily available and well-tested. Qredits also had the benefit of leveraging lessons learned by other Western European MFIs. Both of these factors played an important role in the organization's successful rollout of its activities. And, critically important, Qredits began with a vision for a sustainable organization that included technology as one of the key elements.

Qredits' digital journey offers several lessons for other microfinance institutions on a journey of digitalizing their operations:

- **Vision:** Application of technology requires both vision and commitment. Even if an MFI's leader is not a technology expert, their vision and drive are needed to make technology work in the organization. If there is no vision, it will never work operationally, it is crucial part of the DNA of the organization.
- **Technology Driver:** An MFI needs to have a dedicated person who is knowledgeable about technology and its application to microfinance tasked with driving the development of appropriate solutions.
- **Budget:** Technology is an investment that requires a significant budget. Qredits allocated a technology budget from the outset, and often sought external financial resources to support its technological development.
- **Coherence:** Qredits demonstrates that building technological architecture is a complex endeavor that requires all components to fit and communicate with one another.

- **High Touch and Technology:** Technology can be successfully and effectively combined with a traditional 'personal' approach to microfinance. There is no inherent contradiction between technology and human-delivered financial services. The challenge is to define which parts of the credit journey are best served through human contact, and which can be safely automated.
- **Build and Buy:** There are a lot of solutions available on the marketplace that can be used by MFIs, meaning that there is no need to develop new solutions. However, an organization needs to have the technical competency needed to select, adopt and integrate tech solutions into a well-functioning operating system.
- **Development in Stages:** Technology can be developed and applied in stages. Not all processes must be digitalized, and not all at the same time. Often, using a tried-and-tested solution is a better option, but this comes at the 'reputational price' of being market follower, rather than leader. On the other hand, it can save an MFI from unnecessary hype if the solution isn't fit for purpose or received well by clients.
- **Technology as an On-going Concern:** See applying technology is an on-going process that must be constantly monitored, maintained and enhanced as new technologies and solutions emerge. Success depends on the organization constantly improving by developing new techniques and functionalities; every system must be constantly enhanced to keep its functionalities current or it will be quickly outdated.
- **Experimenting:** Experimenting is an important part of digitalization. Not all ideas and applications will work, and not all of them will be accepted by clients. Failure is a part of the learning process.
- **Data Input by Customers:** Let customers provide their own structured data and ensure a step-wise verification of data submitted by the applicants throughout the loan application process, this helps reaching efficient processes and brings down chance of error.
- **Digital Data:** Digital data is essential for any application of digital technologies. A well-structured and -tested loan application is the primary source of the loan application. It pays off to design the loan application well, paying attention to even the smallest

details, such as the notation of a zip code or e-mail address, that may seem unnecessary or unimportant.

- **Structured Data:** In order to be useful to, and used by, an organization—data must be well-structured and -organized. When databases are in different and incompatible formats that need to be manually-transformed or manipulated, it can lead to errors and make streamlining internal processes difficult and costly.
- **Access for All:** All staff in the microfinance organization must have access to necessary data and share relevant information. Having a 360-degree customer view anytime anywhere allows staff to service customers best.
- **Use of Data:** It is not enough to have and store digital data. The goal is to *use* the data as information for making credit decisions, discovering customer preferences and assessing the impact of loans on their businesses.

Contact us to learn more:

Microfinance Centre (MFC)

Noakowskiego 10/38
00-666 Warsaw, Poland
tel: + 48 22 622 34 65
microfinance@mfc.org.pl
www.mfc.org.pl

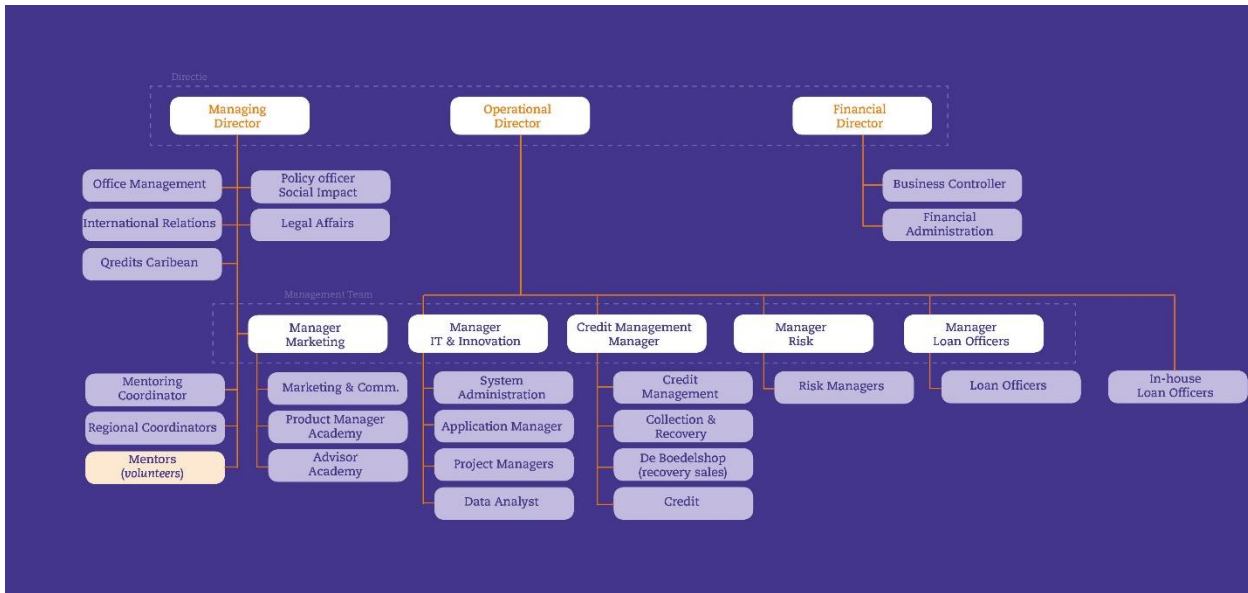


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ANNEXES

ANNEX I: ORGANIZATIONAL CHART



ANNEX II: DIGITAL QREDITS: SUMMARY

Core Business Areas	Use of Digital Tools and Application				
	Social Media and Collaborative Technologies	Mobile Tools	Data and Analytics	Cloud Computing Services	Artificial Intelligence
CUSTOMER: Designing digital customer experience					
Customer insights	Analytics on social data / behaviour	A-B testing in website and apps	Google analytics	Behavioral analytics in data warehouse	
Digital marketing	Facebook, twitter, google, Bing. Sharing knowledge e.g. about business plan	Direct mail, AdWords campaigns, CPC campaigns, link building	Customer profiling, online advertisement bids		
Channels for interaction	Website, WhatsApp, SMS, Twitter, e-mail, white papers, vlogging	Own mobile app, Marketing cloud (Salesforce), Hootsuite			
Digital business support	Chat agents	Mobile app to match mentors with clients		e-learning platform, CRM-outlook integration	
PRODUCT: Applying digital technologies for managing products and services					
Digital application		Mobile application for existing clients	Links with external data sources, like Chamber of Commerce and address database	Online application through website	
Client documentation in digital form		All documentation is digital	Real-time financial information can be accessed through MijnQredits and mobile app	Amortization schemes and yearly statements can be found in MijnQredits	
Digital approval		Digital customer signatures		Approval processes are all integrated in MicroNET workflows	
Digital delivery		Mobile App, MijnQredits, e-mail, WhatsApp			
Digital management by client		MijnQredits, check balances, change of personal and business details, like e.g. address			

Core Business Areas	Use of Digital Tools and Application				
	Social Media and Collaborative Technologies	Mobile Tools	Data and Analytics	Cloud Computing Services	Artificial Intelligence
Digital collection		Collection process is fully automated in CBloans	Real time information is available for customer and employee. Through monitors in the collection office, employees keep track of real-time information.	E-mail and other communication are triggered automatically and personalized. In case of late payment, specific actions are recommended based on reason.	
Fully digital product		Several BDS tools are fully digital, including e-learning courses		Flexible loans are managed fully digital, except the acceptance, where a video call is needed with a real person.	
PROCESSES AND SYSTEMS: Digitalizing internal operations					
Anytime, anywhere, any device		Customer functionality is developed for any device.		Data is real-time or max. one day old.	
Standardized operational platform				Salesforce, EasyInvoice, Nmbros, Viadesk, Jira, Mindjet	
Digital records / archives			All applications, data and documents are archived digitally. Only contracts with 'wet signatures' are also stored in a physical archive (mainly historical applications)		
Agile organization of work		Jira, Mindjet	All issues are registered. Projects are split up in user stories. Suppliers work with development sprints etc.		
ORGANIZATION: Using digital tools for managing the organization					
Cross-functional collaboration / teaming		Office 365, Teams, Skype for business, Jira, Viadesk, Q4u			
Digital skills	Skilled staff	Skilled staff	Skilled staff	Skilled staff	

Core Business Areas	Use of Digital Tools and Application				
	Social Media and Collaborative Technologies	Mobile Tools	Data and Analytics	Cloud Computing Services	Artificial Intelligence
Virtual workforce		Teleconferencing. Qredits works with external developers, but also internal collaboration is done digital, e.g. among loan officers and Caribbean staff.			
Digital stakeholder ecosystem		Section for intermediaries with information about 'their' customers.		Data warehouse for reporting	
FUNDING: Using digital funding streams and sources					
Own online crowdfunding platform					
External digital funding platforms		In some cases, Qredits collaborates with crowd funders.			
Funding through cryptocurrencies					
Other digital funding options					
STRATEGY: Developing strategies for digital transformation					
"Test-and-learn" innovation	Most new projects are set-up as a proof of concept. Scrum development, A-B testing, test-panels, organizational culture where mistakes can be made, etc.				
Digital positioning	Qredits is since late 2018 positioned as "Your social lender". Personal approach				
Digital strategy					

Core Business Areas	Use of Digital Tools and Application				
	Social Media and Collaborative Technologies	Mobile Tools	Data and Analytics	Cloud Computing Services	Artificial Intelligence
Digital transformation	Digital transformation is a broad subject that touches many areas, e.g. IT vs business goals, drivers, organization etc.				
Business case for digitalization	ROI are calculated on a project basis, but not always. Overall investments are not in a business case, overview is discussed between IT manager and board of directors.				
IMPACT: Capturing impact with digital tools					
Digital surveys	For customer satisfaction and social impact				
Digital customer impact tracking	Through yearly surveys				
Impact communication and dissemination	Through research on brand awareness		Through google analytics		
Digital impact reporting	Yearly report on social impact on the website), videos and case studies				
TRANSPARENCY: Making the organization transparent for clients, investors and regulators					
Client transparency	Clients' rights and data protection on the website				
Investor transparency					
Regulator transparency	n/a				
Ownership transparency	n/a				
Stakeholder transparency	Code of Good Conduct for MF Providers Certification on the website; Online portal with information for intermediaries				