HAPPY MEMBERS; SUSTAINABLE CREDIT UNIONS

THE OPPORTUNITIES IN FINTECH

FinTech White Paper 3
September 2017

SOLUTION CENTRE

CONTENTS

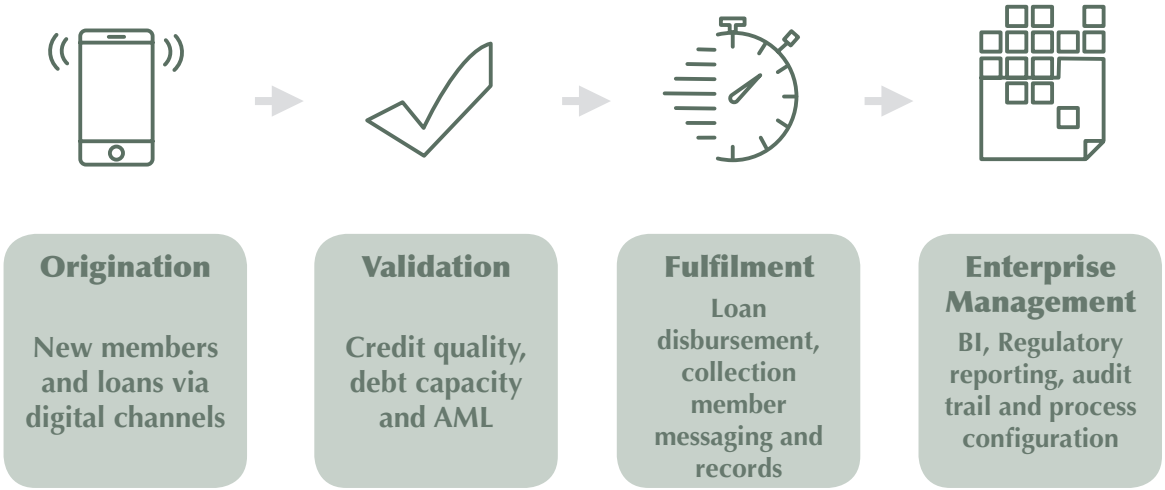
01

INTRODUCTION

In Paper 1 we explored the transformative effect FinTech is having on Financial Services and the opportunities this presents for Credit Unions. In Paper 2 we examined the technology available to improve member insight, engagement and experience; transaction fulfilment and reporting.

In this Paper we focus on process, how FinTech can be deployed to automate critical processes in the front and back office and how the data generated can drive improved decision making and performance management.

Such automation is increasingly common and in practical terms would allow new members to be originated online, loans disbursed within minutes and back office management executed in real-time, with detailed reporting of performance and exceptions.



The benefits are compelling. Value propositions will be improved by offering members more personalised service with higher convenience. Growing the loan book, reducing non-performing loans and eliminating manual processes will support positive ROA growth while managing cost:income ratios. Digital business models are smart and adaptive, converting data into business intelligence and making change fast and effective.

The human touch need not be lost, FinTech is about doing more, faster and better. Staff time will be freed up to focus on direct relationships with

members, a vital element in the evolution from a transaction to an advice based business model. Market reach will be extended and members empowered by convenient anytime, anywhere service. The offering can be expanded by proprietary or third party solutions.

Nor need undue risks be taken. Credit Unions can approach FinTech in an incremental manner, automating easier elements and up-tiering as the business need and sophistication grow. Processes can have appropriate checks and balances built-in and a digital audit trail will improve governance. Working with reputable partners such as The Solution Centre ensures expert, impartial advice.

In the nine months since we began the FinTech journey much has changed. Irish banks have improved their client engagement and loan fulfilment and new entrants such as N26 Bank have gained market share using superior digital capabilities. Ireland is emerging as a FinTech hotspot and location of choice in the post-Brexit world[1] .

While many Credit Unions have been positive about engaging in a digital transformation journey, a thorough and long term commitment is required, firstly to satisfy members growing expectations for frictionless processes, the regulators expectations for enhanced governance and management and thereafter to create more financially sustainable and agile business models. From everyday processes to high level strategy FinTech provides that opportunity.

"IN SEVERAL CASES, WE HAVE ENCOUNTERED LIMITED FINANCIAL SKILL SETS AND WEAK MANAGEMENT; POOR SYSTEMS OF CONTROL; WEAK RISK; COMPLIANCE AND INTERNAL AUDIT FUNCTIONING, AND WEAKNESS IN CREDIT PRACTICES"

ANN MARIE MCKIERNAN - REGISTRAR OF CREDIT UNIONS

Introductory Statement at Oireachtas Committee on Finance, Public Expenditure and Reform and Taoiseach 23rd March 2017

[1] http://uk.businessinsider.com

02

MEMBER ONBOARDING

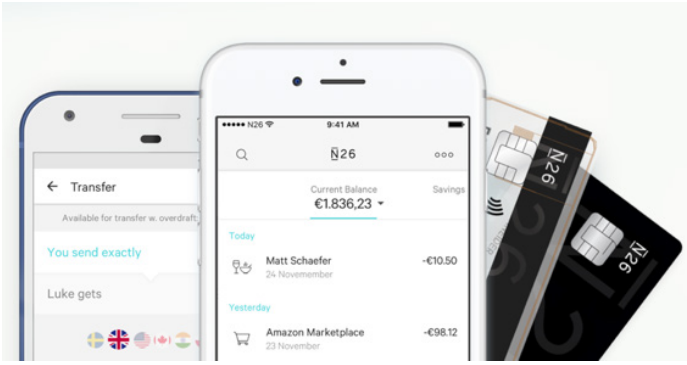
FIRST IMPRESSIONS MATTER

The onboarding process is one of the most critical in any industry, sending a signal to prospective members about how deeply their needs are considered and how mature your business processes and technologies are.

The financial implications of getting it wrong are also considerable. Manual, paper based processes are not only expensive but prone to fraud and operational risk, as AIB recently experienced being fined EUR 2.3m by the Central Bank of Ireland for breaching anti-money laundering (AML) and terrorist financing laws[2].

As in many areas FinTech is creating new possibilities in onboarding which are both more user friendly and cost efficient.

Digital only N26 Bank has one of the fastest and easiest customer onboarding journey's in financial services today. By utilising a combination of easy-to-use websites and mobile apps to engage clients, integrated with credit scoring and digital core systems to automate back office processes, N26 offer access to their digital account, MasterCard and personal financial management app in just 8 minutes. With such convenience it is little surprise N26 have signed over 10,000 clients in Ireland in a matter of months[3].



[2] www.bloomberg.com

[3] www.irishtimes.com

Such meaningful results can only be achieved through a holistic approach, as respected writer Jim Marous observes in his 7 Steps to Improve Customer Onboarding

> "PERFECTING THE ONBOARDING EXPERIENCE REQUIRES MORE THAN JUST RETHINKING YOUR BUSINESS PROCESSES. IN ORDER TO SUCCEED, YOUR UNDERLYING TECHNOLOGY MUST SUPPORT CONTINUED INNOVATION OF FRONT, MIDDLE AND BACK OFFICE PROCESSES. IMPROVING THESE PROCESSES MAKES IT POSSIBLE TO PROVIDE THE EXPERIENCES CUSTOMERS WANT."

2.1 FOCUS ON REGTECH

A critical component in optimising the onboarding journey is RegTech, the suite of FinTech solutions used by financial service providers to improve AML, KYC, etc. A wide range of solutions exist including:

IDENTITY VERIFICATION	BANK STATEMENT VERIFICATION	CREDIT BUREAUS	NATIONAL & INTERNATIONAL RECORDS
In many countries it is possible to open a bank account online thanks to visual and biometric ID verification solutions such as Veriff and IDnow. These are legally binding and evidence suggests biometrics verification is extremely robust.	Solutions such as Nordigen digitise bank statements and classify income and expenditure for credit analysis purposes. With more categories and deeper analysis than traditional credit bureaus it supports better credit decisioning. Digitalisation also reduces fraud prevalent in paper based processes.	Credit bureaus such as Experian and Credit Info provide credit data on personal and corporate clients.	Many governments provide access to data such as crime records, electoral roll, tax, etc which can be used in client verification. Cross-border watchlists on AML, terrorist funding, politically exposed persons and adverse news are available from providers such as Comply Advantage.

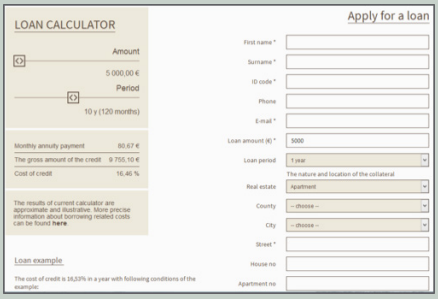
[4] https://thefinancialbrand.com

Digitalisation can create a virtuous circle: Credit Unions can onboard cheaply and compliantly, members receive personalised service immediately, regulators receive better data and confidence.

The latter must not be overlooked. New, complex regulations such as PSD2 (Jan), MiFID 2 (Jan) and Basel 3 (Mar) all go live in 2018, regulators are stretched to their limit even in benign market conditions. Credit Unions must therefore adopt RegTech and risk solutions to uptier their capability and demonstrate consistent compliance to stand a realistic chance of amendments to their regulatory framework.

2.2 PROCESS AUTOMATION

Onboarding new members and deals via digital channels may look similar to this:

1. Loan marketing campaign via social media, local retailers and other partners.	**Social Media** **@POS** **Retailers** **APIs** **Third Parties**
2. Member directed to customised website or mobile application	**Internet Bank** **Mobile App**
3. Member validates offer using calculators and visualisations	
4. Member consents to terms and conditions including a credit check being run and personal data being collected, analysed and stored.	☑ **I Agree**
5. Application submitted	*Thank you for your application, we'll be back to you shortly*

2.3 TECH STACK

The technology solution required to deliver this solution includes:

MEMBER ENGAGEMENT	REGTECH	CREDIT SCORING
Sign-up is made through a website or mobile application. The UX must be clean and interactive. Information must be provided only once thus cookies and dropdown menus utilised. It is essential that all steps are undertaken in a single page or application to ensure trust.	Credit Unions must integrate RegTech solutions which ensure they are compliant with local and EU legal and regulatory requirements.	It is standard to run a credit check on account opening to validate client appropriateness for the product and for AML and KYC compliance.
Real-time integration of these elements is required to automate onboarding, additional integration to a digital core system is required for loan fulfilment. Additional integration to a CRM or ERP system is recommended to ensure business intelligence is captured and utilised.		

03

MEMBER VALIDATION

DATA IS THE NEW GOLD

As explored in Paper 2, we are entering a 'data driven' economy where data is transformed into business intelligence and used to provide members with personalised offers and to give management a better understanding of how and where value is created.

The manual credit scoring process currently favoured by most Credit Unions means they cannot take advantage of such advances. Worse still, loyal members are forced to wait for credit decisions, scarce resources are expended on data collection and analysis, fraud and non- performing loans could be lower.

Credit scoring is therefore critical in unlocking the potential to originate online, approve and disburse loans in minutes. The potential benefits are huge:

SMART ORIGINATION	GOVERNANCE	BUSINESS INTELLIGENCE
Better measurement of credit risk and debt capacity when originating new members and loans. Over time increased data allows offers to be better targeted.	Credit scoring supports a framework of technology, process, rules and policies. Transactions are standardised, subject to a full audit trail and visible to management in real-time. Algorithms are increasingly used to reduce fraud and genuine operational risk.	Deeper analysis of member habits and needs allow the right product to be delivered at the right time and price. Regular back testing of credit policy allows enhancements to be implemented and new products developed.

A common perception is that automation results in vulnerable members being penalised by a one size fits all approach. This is misplaced, good credit scoring systems can easily accommodate thin data files, complex borrower histories and non-standard situations. Business rules can be set so that marginal scores, certain segments or products are always referred for human judgement before a final decision.

Applied properly FinTech can actually empower borrowers. Credit data providers increasingly offer free credit data so borrowers can ensure their score is accurate ahead of loan applications. Positive credit scoring offers lower margins to those who volunteer more information. Financial passports will soon emerge to combat identity fraud. The possibilities are huge but require digitalisation.

3.1 FOCUS ON CREDIT SCORING

Credit scoring systems have performed accurately and reliably for decades, vary in complexity but typically have three component parts:

BUSINESS RULES	SCORECARDS	DECISION ENGINES
Inbuilt rules to ensure that lending occurs in conformity with risk management policies. Compliant deals can be processed automatically and exceptions reported in real-time.	Multiple data points, weighted based on their importance, which when totalled provide the credit score. Each product will have its own scorecard, perhaps two based on the availability of data (so called thin and thick file)	Software which collects data, analyses it and creates a score in accordance with the scorecard. Pre-set levels determine if the request is automatically approved, declined or sent for review.

Data point	Weighting
Age	18 to 25 > 10pts 25 to 34 > 25 35 to 65 > 40
Education	Basic > 10pts Middle > 25 Higher > 40
Income	500 to 700 > 10pts 701 to 900 > 25 901+ >40
Living place	With parents > 10pts Flat > 25 House > 40
Internal credit information	0 defaults > 300pts 1 default > 200 2 defaults > 0
External credit information	0 defaults > 300pts 1 default > 200 2 defaults > 0

Action	Score
Flawless	800+
Excellent	750-799
Good	700-749
Mediocre	650-699
Not Good	600-649
Weak, Restructure	550-599
Awful, Restructure	500-549
Decline	499-

DATA SOURCES

Regardless of how good a scorecard and decision engine are it is the depth and integrity of data which has the greatest impact on credit scoring. More data over a long period clearly provides a better insight on member creditworthiness. The data used in credit scoring typically comes from 3 sources:

INTERNAL DATA	CREDIT DATA PROVIDERS	STATE DATA
The 'golden source', Credit Unions must capture member credit and loan data in order that it can be used in future applications. Data may be stored in different systems including credit scoring, digital core, CRM and ERP, highlighting the need for an integrated approach.	Credit data providers such as Credit Info Group often have bureaus which capture, categorise and assess personal and SME credit data. Such providers also provide software and advisory services to help lenders utilise the data to best effect.	State data such as electoral rolls, criminal records and tax status is often available to include in the credit scorecard.

Credit Unions weakness in capturing member data will be partly offset by the Payment Services Directive 2 (PSD2) being implemented from January 2018. Although themselves exempt, Credit Unions will (with consent) be able to access member account and payment data at other financial institutions using API, in turn improving the dataset and allowed additional services to be offered[5]. Again, digitalisation is a pre-requisite for unlocking the opportunity.

Machine Learning

Historically credit scoring was conducted using historic data and classical statistical theories, however the rise of machine learning has unlocked new possibilities in credit assessment and fraud prevention[6]. Machines are able to process more data and identify patterns and relationships which humans cannot, supporting deeper analysis in origination, proactive forecasting during the loan's life and improved risk identification.

Degree of Complexity

In Paper 2 we explored the practicalities of implementing FinTech, including whether to adopt a big bang or incremental approach. The same dilemma exists in credit scoring especially if NPLs are high.

[5] https://www.europeanpaymentscouncil.eu

[6] https://www.economist.com

Experts such as Credit Info advocate an incremental approach. In the early stages it is important to build the data set and validate its integrity. Scorecards too need to be modelled, carefully calibrated and back tested to ensure results are accurate and stable. Complexity should be minimised until management get comfortable that inputs and outputs are understandable and auditable.

Automation is standard. Highly rated members, repeat borrowers and small sums over short tenors are all well suited to full process automation. Big-ticket and complex loans may have the data collected and analysed, but final judgement needing human intervention. As Credit Unions progress along the learning curve it is easy to up-tier, be it adding more automation, sophisticated analytics or alternative data from social media and online search histories.

KPIs around loan processing times and portfolio performance are an excellent way to benchmark the value added of credit scoring. Periodic reviews of data, scorecards and credit policies are encouraged to ensure assumptions remain valid given the ever-changing nature of market conditions, regulation and technology.

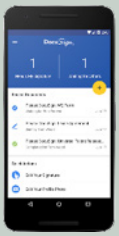
3.2 PROCESS AUTOMATION

Validating members and deals via digital channels may look similar to this:

1. Credit scoring system interrogates internal and external data sources	Excel · Credit Bureau · State Data
2. Application is auto-completed to reduce fraud and operational risk	01100 10110 11110 →
3. Scores are totalled in coherence with scorecard.	
4. Initial credit decision produced	If score is below threshold application it is declined. If score is marginal then it is referred for analysis, restructure or payment insurance. If score above threshold loan is approved.
5. For approved deals a draft term sheet is produced for the member to review.	

Action	Score
Flawless	800+
Excellent	750-799
Good	700-749
Mediocre	650-699
Not Good	600-649
Weak, Restructure	550-599
Awful, Restructure	500-549
Decline	499-

[2] http://thefinanser.com/2017/01/5-banking-tech-trends-2017.html/

6. For highly rated members, repeat borrowers and small sums over short tenors, the process is automated and member simply clicks accept.	 **Straight Through**  **2 or 4 eye principle**
7. On acceptance the member adds an electronic signature to a smart contract.	
8. Payment notice is processed or limit assigned	

3.3 TECH STACK

The technology solution required to deliver this solution includes:

CREDIT SCORING	DIGITAL CORE	PAYMENT SOLUTION	SMART CONTRACTS AND E-ID
Credit Unions will require a credit scoring system which has the ability to store data, build scorecards and an accurate and reliable decision engine.	A modern, digital core system with API enablement will be able to update client records, issue smart contracts and integrate third party providers in real-time.	For instances where funds are remitted (as opposed to a limit being marked) Credit Unions will require a payment service provider.	Smart contracts allow clients to sign documents using an electronic ID. These are time stamped, immutable and legally binding, thus used extensively in digital origination.
Real-time integration of these elements is required to automate onboarding, additional integration to a digital core system is required for loan fulfilment. Additional integration to a CRM or ERP system is recommended to ensure business intelligence is captured and utilised.			

04

LOAN FULFILMENT

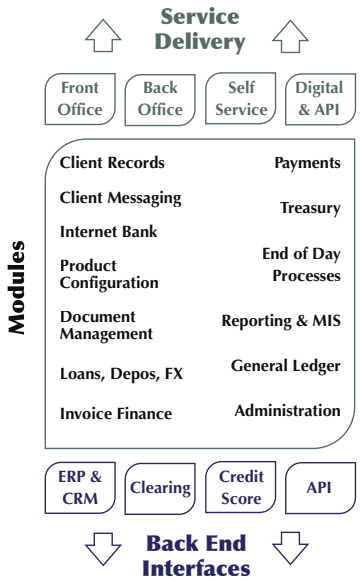
DOING MORE, FASTER AND BETTER

In Paper 2 we examined the functionality core systems provide and how a new breed of 'digital core' such as Mambu, Union and Ohpen are emerging which have advantages in member experience, bottom line impact and corporate agility.

In the FinTech era omnichannel service, real-time integrations, process automation, customisation and cloud delivery are the new norms.

Legacy systems cannot be replaced overnight given the careful planning, trialling, implementation and business change required. Many providers are also upgrading their current offering.

Quicker wins are possible in areas such as onboarding, wallets, cards, credit scoring and risk management, however unless Credit Unions upgrade their core technologies they will not unlock the benefits available and may damage competitiveness.



4.1 PROCESS AUTOMATION

In practise, digital core systems also perform in the origination and validation processes but for simplicity we focus on their role from when a deal is live:

System automatically calculates interest and fees for live transactions	
Members sent reminders about repayments in advance via SMS, email or app	

System monitors for repayment on the real or virtual current account linked to the loan	
On repayment account balance, client record and general ledger are updated in real-time	24
Member receives thank you message via SMS, email or push notification.	
For missed payments a new repayment is created. Client records and general ledger are updated in real time.	NPL
Member sent notification via SMS, email or app and a formal written letter.	

A digital core system has numerous related capabilities to manage the enterprise, which can be utilised in real-time, daily or on an *ad hoc* basis:

Management dashboard providing real- time performance data, BI and news feeds.	
Full audit trail on a member, deal or staff basis.	
Configuration of documents, products and prices. End of day processes are run automatically, including statement issuance, interest application, etc.	
General Ledger accounts sent to board and regulator automatically.	
Data export to CRM for member engagement and business intelligence	CRM

4.2 TECH STACK

The minimum viable product Credit Unions should seek from a digital core system should include:

OMNICHANNEL	API OPEN ARCHITECTURE	AGILE
It is essential that solutions have the ability to engage members through Wallet, Internet Bank, Branch, ATM and third party channels.	Given the requirement to integrate other systems and possibly 3rd party services and products it is essential that the core system supports secure, real-time integration.	Technology and finance are ever changing and user needs often unique. It is essential any solution allows customisation, the ability to scale and change easily, supports process automation and cloud delivery.
Digital core systems can also be multi-tenant, meaning they can host many entities within a single ecosystem. Each tenant receives a customised version based on their specific need, data and users are segregated but with a potential to configure and manage centrally for approved users. This creates the possibility for the Credit Union movement to adopt a shared services model to digital core systems.		

05

KPIs

FROM STATIC DATA TO DYNAMIC BUSINESS INTELIGENCE

During and after any business transformation process it is essential to define top level goals and the day-to-day actions required to make change effective and sustainable. Likewise, the benefits FinTech delivers relative to the total cost of ownership should be measured in order to demonstrate ROI to members.

Alongside hands-on management and regular reviews, KPIs are an excellent tool for providing insights on performance. Defined properly they help staff understand change and adopt it in to their customer interactions and daily routines. Likewise, KPIs give management a benchmark against their top-level goals. Poorly defined KPIs often signal that the overarching strategy is not coherent or the execution ineffective.

There are hundreds of possible KPI's and in all likelihood Credit Unions will deploy a balanced scorecard of financial and non-financial measures.

Direct member input is recommended to ensure KPIs actually align to member experience rather than becoming an internal exercise prone to bias or irrelevance.

Some possible KPIs to be considered include:

SERVICE QUALITY	Service availability (in each channel) Number of service calls per day Time taken to first response Time taken to resolve query Number of member complaints Member rating of service Average member retention period Member attrition rate Average loan processing time

SALES & MARKETING	Number of campaigns Number of leads generated Time taken to first response New member acquisition rate (campaign, web page, total leads, etc) Drop-off stage (sales funnel) Sales cycle duration Cost of capture Renewal rate on annuity business Cross-sell and up-sell performance Number of member contacts Average products per member Share of total member wallet
EFFICIENCY	Revenue growth Return on assets Cost:Income ratio Non-performing loans Average income per member Surplus per employee
CORPORATE SOCIAL RESPONSIBILITY	Net promoter score Living wage employer? Number of people impacted by community supports
TECHNOLOGY	Member adoption of FinTech Member utilisation of FinTech Number of self-service cases Number of fully automated processes Number of broken processes Total cost of ownership (customisation, license, service) Return on Investment (revenue/TCO)

5.2 PROCESS AUTOMATION

Top performers not only analyse KPIs on an enterprise level but drill down to gain deeper insights on where and how value is created.

The CRM (customer relationship management) solution being piloted by The Solution Centre and profiled in Paper 2 will assist Credit Unions in developing and monitoring KPIs. Member data is captured and segmented in a structured manner with customised dashboards, exception reports and performance providing business intelligence on a member, product or staff basis.

Benchmarking results across the movement will also help identify strengths, weaknesses and the potential to leverage best practise to improve member value propositions and business models.

06

CONCLUSION

THIS IS REAL, THIS IS NOW

In the nine months since we began the FinTech journey Irish banks have improved their client engagement, new entrants have gained market share and ATM access been removed for some Credit Unions. Negative interest rates, NPL's, regulatory costs and inefficient manual processes continue to dampen profitability.

Both sides of the FinTech trade have become clearer. Those who persevere with legacy technology can expect to see profits decline further, McKinsey estimate by 20% to 60% by 2025[7]. Those who have embarked on digital transformation already have strong value propositions, business model agility and Cost:Income ratios of 40%.

This is just the beginning, advances in technology, analytics and user sophistication will unlock new possibilities for those with the data and digital capabilities to exploit it.

On first appearance, the digital transformation journey may appear daunting – new technologies, cyber security, cost, uncertainty. While these should not be underestimated, as we explored in Paper 2 there are methodologies to ensure you get it right. Breaking the journey into smaller pieces helps:

USER INPUT	Ask members what digital services they need, desire and what they are willing to pay for.
VALUE PROPOSITION	What will you offer to members, how and why will they choose you? What skills, processes and systems are required to deliver this?
IT REVIEW	Speak to current suppliers, map your business requirement, understand the gap and the time and cost involved in bridging it. Speaking to alternative suppliers will help your understanding.

[7] http://www2.itif.org

STRATEGY REVIEW	Are strategy, IT and resources aligned to execute this in sustainable way? If not you risk a Kodak moment[8].
ROADMAP	Create a plan to help analysis and decision making. Consider alternatives, discuss and calculate ROI before committing budget. Can you execute this and is it compliant with regulation?
QUICK WINS	Full process automation may not be achievable immediately but quick wins are available in many areas – wallets, credit scoring, onboarding, CRM, risk, partnerships, etc. Early wins prove concepts and build momentum
PROJECT MANAGEMENT	Clear ownership, documentation and regular reviews will ensure you stay on course.
EXPERT ADVICE	Speak to qualified, impartial experts and actively follow best practise from other markets.

The Solution Centre is taking a leadership role in supporting Credit Unions on this FinTech journey. Our successful projects have shown that collaboration is working. Digital transformation will position Credit Unions as market leaders in the adoption of new technologies and ensure relevance for future generations.

The loan process automation explored here is already standard in consumer lending and proven to improve engagement, conversion, bottom line profitability and reporting. When combined with elements such as CRM for deeper insights and improved risk management, the entire value proposition of Credit Unions can be transformed and the business model made sustainable and agile.

Credit Unions hold a unique position - loyal members, a trusted brand, local knowledge and impact. Adequate resources exist and can be leveraged in movement-wide initiatives. FinTech is the missing component which will enable Credit Union's to become masters of their own destiny again and deliver upon our social obligations like never before.

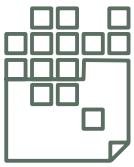
This is real, this is now. Do not wait.

[8] https://hbr.org

07

APPENDIX

END TO END LOAN PROCESS



ONBOARDING	1. Loan marketing campaign via social media, local retailers and other partners.
	2. Member directed to customised website or mobile application
	3. Member validates offer using calculators and visualisations.
	4. Member consents to terms and conditions including a credit check being run and personal data being collected, analysed and stored.
	5. Application submitted
VALIDATION	6. Credit scoring system interrogates internal and external data sources
	7. Application is auto-completed to reduce fraud and operational risk
	8. Scores are totalled in coherence with scorecard.
	9. Initial credit decision produced
	10. For approved deals a draft term sheet is produced for the member to review.
	11. For highly rated members, repeat borrowers and small sums over short tenors the process is automated and member simply clicks accept. For complex and marginal decisions the credit risk officer makes final sign-off.
	12. On acceptance the member adds and electronic signature to a smart contract.
	13. Payment notice is processed or limit assigned
FULFILMENT	System automatically calculates interest and fees for live transactions
	Members sent reminders about repayments in advance via SMS, email or app
	System monitors for repayment on the real or virtual current account linked to the loan
	On repayment account balance, client record and general ledger are updated in real-time
	Member receives thank you message via SMS, email or app.
ENTERPRISE MANAGEMENT	Management Dashboard providing real- time performance data, BI and news feeds.
	Full audit trail on a member, deal or staff basis.
	Configuration of documents, products and prices. End of Day processes are run, including statement issuance, interest application, etc.
	General Ledger accounts sent to board and regulator automatically.
	Data export to CRM for cross-sell, up-sell and new product development