Deloitte Luxembourg
Digital Banking Benchmark
Improving the digital performance
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Three billion is the forecasted number of global users that will have access to retail banking services through smartphones, tablets, PCs, and smartwatches by 2021.¹

The digital revolution is disrupting the relationship between banks and their clients and new features continuously appear to enhance customer experience. However, Luxembourg banks do not seem to have implemented tremendous improvements in terms of digital channels over the past two years.

In an environment composed of fully-digital banks, FinTechs, and non-traditional competitors, banks struggle to deliver innovative functionalities and are still hesitating about the key priorities to pursue.

Luxembourg banks still offer significant room for improvement in terms of automation and online assistance. If they offer good features regarding design and ergonomics that also fulfill basic requirements, common features in the new digital era could still be implemented. Money management tools, automated customized advice, and robo-advisory are some of the trends banks may embrace to move away from competitors. Increasing online services ensure higher efficiency and better customer experience.

The Deloitte Digital Banking Benchmark 2017 offers a multi-dimensional analysis with a current picture of the Luxembourg digital banking market for retail clients, a view on the improvements carried out over the past two years, and a comparison with banks from neighboring countries.

Additionally, some insights are provided regarding the new trends that could enter the Luxembourg market in the coming years.

With 230 criteria regarding public websites, web banking, and mobile applications of around 10 Luxembourg banks, this study will provide banks with a better understanding of their performance around eight key dimensions:

- Onboarding (automation and user-friendliness of the process)
- Content and functionalities (basic and value-added functionalities offered)
- Design and ergonomics (device compatibility and possible customization)
- Navigation (search tools and ease to find the required information)
- Cybersecurity features (assessment of some key elements)
- Advice (level of general and customized advice provided)
- Credit (possibility to make a demand and management of pending credits)
- Account closing (attempts to retain the client and understand the closure)

Just like in the Digital Benchmark 2015, three types of digital performers have been identified in Luxembourg: the Luxembourg leaders, the medium performers, and the sub-performers. The total difference of points obtained between “leaders – medium performers” and “medium performers – sub-performers” is symmetric, but there are inequalities within the dimension assessed.

¹ Digital Banking users to reach nearly 3 billion by 2021, Voicendata, 2017
The Luxembourg leaders
This group offers the strongest national performance. Luxembourg leaders differentiate from other categories mainly thanks to their more developed onboarding process, their better functionalities offered in account management (e.g., card management; possibility to open various types of accounts) and their improved design and ergonomics. In terms of mobile banking, leaders deliver a better performance regarding content and functionalities. On the other hand, national leaders deliver weak performances in terms of advisory and credit services, and still lack automated and deeply customized features in comparison to foreign markets. Taking inspiration from outside Luxembourg’s borders would allow them to reinforce their position and gain a new competitive advantage.

The medium performers
These banks deliver satisfying services regarding daily account management and aim at challenging the leaders in terms of credit features and design and ergonomics. However, some measures should be taken to reach the upper category. These banks should take advantage of the opportunities presented by initiatives such as PSD2 and the SEPA instant credit initiative to develop innovative features including money management tools (the possibility to set up a custom budget or saving goals, or a wider offering of languages available on their website). Additionally, their navigation functionalities are one step behind the leader category. These banks could potentially be rapidly outdated in the near future if they do not develop more automated and customer-centered functionalities.

The sub-performers
This group does not fulfil some of the basic requirements from a customer perspective in terms of digital performance. The content and functionalities offered barely fulfill the needs of clients in their everyday account management. As examples, these banks do not enable starting an online onboarding or booking an in-branch appointment online. Important digital investments have to be carried out to reach the upper category and the digital offer has to be included in the banks’ strategy.

The results of the benchmark highlight that even if leaders offer the best general performance, they still have room for improvement in certain dimensions to break away from the other categories. Additionally, it demonstrates that the medium and sub-performers have to relativize their ranking by the dimensions assessed to understand their strengths and weaknesses. The Digital Banking Benchmark 2017 concludes its assessment with a prospective thought on the tactical and strategic adjustments banks should implement in order to face the upcoming changes that will affect them at an individual and industry level within the coming years.
Quick overview of the performance and identified weaknesses of retail banks

As in the 2015 edition of this Digital Banking Benchmark, we identify five main tactical areas for development. Retail banks in Luxembourg should work on and invest in these points in order to provide stronger online services and take advantage of a strongly-built digital channel strategy:

“Increasing online services ensure higher efficiency and better customer experience.”
01. Automated account opening and credit demand
Facilitating users to upload required documentation would free bank resources for more value-added tasks. It would also improve customer satisfaction by allowing them to carry out actions without having to visit a branch. This replies to a growing need for customer empowerment.

02. Implementation of advice features
Regarding the profile of each user and their historical data, implementing advice functionalities would enable users to achieve their goals in terms of savings, returns, or investments. The use of analytics and a robo-adviser could be tracks to follow.

03. Development of smart money management tools
The current offering is basic, and clients will increasingly require tools that automatically analyze and categorize the account movements. Forecasting tools that estimate the upcoming incomes and expenses based on client data facilitate account management and enhance customer experience as well as reduce costs for banks.

04. Customization of the services and constant assistance
A deep profiling of clients, for instance through questionnaires and the use of analytics on historically collected data, has to be utilized to offer services and products that fit clients’ individual needs. Moreover, a constant assistance (phone call, traditional chat, chatbot) should be developed as a matter of dedication to the users.

05. Improving the coverage of cybersecurity features without impairing user experience
While the cybersecurity features benchmarked for web banking are implemented for most of the banks with minor differences, there is more room for improvement to extend cybersecurity capabilities for mobile banking applications. This can partly be explained by the greater maturity of web-based applications and the longer presence of regulatory requirements applicable to web banking. The concern for cybersecurity aspects is real, as shown by the results of the Deloitte Global Mobile Consumer Survey 2016 where 29 percent of the respondents in Europe indicated they do not use their phone to make payments in-store for security reasons.
The digital revolution of the 21st century is reshaping the customer relationship with the banks. People of all ages are now connected 24/7 to their financial data, and millennials, the internet-born generation, require new services to satisfy their requirements in terms of customer experience. Non-traditional competitors enter the banking market prepared to satisfy those needs. FinTechs, with their light structures and young brand image, focus on cutting-edge services not covered by banks, or they provide existing services in a better way. New regulations appear in order to protect customers and to formalize the use of new technologies. Furthermore, the uncommon employment structure of Luxembourg exposes the local retail banks to a threat from border countries and creates country-specific needs. To face those trends, Luxembourg banks need to offer optimized digital performance.

A Deloitte survey carried out over 31 countries states that 94 percent of people between 18 and 75 years old have access to a computer and 88 percent have access to a smartphone.² Digital natives invading the labor market and the global emergence of internet technologies induces a lever effect difficult to forecast for banks.¹ The leading banks globally are among the ten-least-loved brands by millennials, and 33 percent of them believe they will not need a bank at all in the future.⁴

The new generation is not as linked to their bank as the previous one and is ready to switch if a better offer is available elsewhere (better product, pricing, service, or digital offer). Contrary to the last decades, instantaneous accessibility to banking services through digital channels has increased interactions with clients. The frequency of “moments of truth” is higher, and banks should be able to meet the users’ needs with top-notch management tools and virtual assistance.

The disruption of new entrants leads to a new kind of competition

FinTechs, with flexible structures and lower costs, develop at a high speed and focus on niche markets where banks do not offer services or are performing poorly. Digicash, Paypal, and Kickstarter are examples of FinTechs experiencing success with online banking services.

Non-traditional new competitors, particularly retail companies, enter the banking market with deep technological knowledge and abundant data on customer behavior. Benefiting from a positive image among new generations, these companies revolutionize the digital experience regarding financial services and challenge traditional banking strongholds and revenue sources. A majority of millennials (73 percent) would be more excited about a new offering in financial services from companies such as Google, Amazon, or Apple rather than from their own nationwide bank.⁵

New regulations constrain banks to adapt their digital offerings, widening the competition from new players

Banking regulations constantly arise and increasingly cover online services. The CSSF circular 15/603 “Security of internet payments,” implementing the EBA Guidelines EBA/GL/2014/12 into the Luxembourg regulatory framework, is one set of requirements among many other European examples. For instance, investment services have to comply with MiFID II in terms of investor protection; PSD2 forces banks to open their interfaces to third party payment service providers and requires increased data security and authentication mechanisms; and eIDAS defines a legal framework to securely access services and sign transactions online and across borders. According to the 2015 Eurobarometer survey, 42 percent of Europeans are concerned about the security of online payments,⁶ meaning banks still have to go beyond what regulations impose.

The Luxembourg employment market is made of 72 percent foreign workers, of whom 45 percent cross the borders every day⁷

Banks have to overcome online services available in border countries. A risk exists that cross-border workers prefer to manage their bank accounts in their country of origin if significantly better online services are available there. Having an eye on what the innovations are and basic functionalities offered abroad may help Luxembourg banks to adapt their digital strategy.
The Digital Banking Benchmark assesses the performance of banks in Luxembourg regarding user experience and efficiency in key dimensions. It takes into account innovative, regulatory, and socio-demographic elements with a focus on weaknesses observed in comparison to banks from border countries and fully-digital banks. Furthermore, suggestions and concrete examples are provided to improve banks' digital strategies with respect to the particular context described above and to offer enhanced services to the clients.

Figure 1: Structure of the labor market in Luxembourg

The Digital Banking Benchmark assesses the performance of banks in Luxembourg regarding user experience and efficiency in key dimensions. It takes into account innovative, regulatory, and socio-demographic elements with a focus on weaknesses observed in comparison to banks from border countries and fully-digital banks. Furthermore, suggestions and concrete examples are provided to improve banks' digital strategies with respect to the particular context described above and to offer enhanced services to the clients.
Eight dimensions of the customer journey

About ten retail banks in Luxembourg have been assessed on eight dimensions, representing more than 230 criteria. The benchmark covers the daily services that each bank could or should offer on their public website, web banking, and mobile application. The benchmark offers a fair comparison to the 2015 edition, and has added 90 new criteria.

**Comparison with 2015 around five main dimensions**

**01. ONBOARDING PROCESS (17 CRITERIA):**
An analysis of services and automation provided during an online account opening request regarding virtual assistance, documentation required, the ability to upload documentation online, and potential incentives.

**02. CONTENT AND FUNCTIONALITIES (100 CRITERIA):**
A large and deep assessment of basic and value-added features, the improvements achieved since our last benchmark, the remaining weak points and the new development paths.

**03. DESIGN AND ERGONOMICS (27 CRITERIA):**
The customer experience based on compatibility with devices, level of adaptation to languages, paperless options, and ergonomics regarding customization availability.

**04. NAVIGATION (12 CRITERIA):**
Evaluation of the ease to find information, keyword tool efficiency, and transition between sections of the website and the application.

**05. CYBERSECURITY (27 CRITERIA):**
The banking sector is increasingly regulated and online services are not exempt. Furthermore, to face an ever-evolving cyber threat landscape, new cybersecurity capabilities are regularly considered and implemented. Cybersecurity capabilities are seen as an important enabler of customer trust.

**06. ADVICE (17 CRITERIA):**
An inventory of current services provided to clients, the evaluation of non-customized and customized advice, implementation of profiling questionnaires, personal financial management tools, and robo-advisory.

**07. CREDIT (27 CRITERIA):**
The readiness in terms of online credit demand for prospects and clients, as well as the management of pending credits regarding guarantee management, insurance, early repayments, restructuring, and transfers.

**08. ACCOUNT CLOSING (8 CRITERIA):**
An evaluation of the simplicity to close an account online and of the attempts to understand the closure and to retain the clients.

**New comparison with surrounding countries serving part of Luxembourg workers,** on the same basis and over five retail banks, to compare Luxembourg banks with other competitors and rank their performance.

**New comparison with a fully-digital bank on the same basis,** aiming to evaluate the performance of Luxembourg banks to new entrants or recent competitors having known success over the past years.
Figure 2: Repartition of criteria among the eight dimensions

The analysis is composed of 235 criteria.

Figure 3: Performance rating

Each criterion has been assessed on a scale between 0 and 4:

- **0** Unsatisfactory performance
- **1** Below average
- **2** Average
- **3** Above average
- **4** A leading performance
Web banking

In most dimensions analyzed, Luxembourg banks perform less well than border banks in terms of digital touchpoints during the customer journey.

Analysis of the five dimensions used in 2015

Overall, a few changes have been observed: banks in Luxembourg still have room for improvement concerning the onboarding process, content and functionalities, and cybersecurity capabilities. They are already performing well in design and ergonomics and navigation, where they could focus on value-added features.

To understand the potential developments made in terms of online services since our last benchmark, the same five dimensions have been reassessed with some improvement and additional criteria. A comparison with surrounding countries will provide a vision of what features could be developed by banks in Luxembourg.

Insight categories include interesting market practices that present potential developments and solutions to identified weaknesses.

01. Onboarding process

Non-automated, lengthy, and time-consuming are the characteristics of the first step in the customer journey for most of the Luxembourg banks.

Onboarding is the first contact a new customer has with the bank. The process should be responsive, efficient, and user-friendly.

Implementing automated onboarding is an essential feature that determines whether or not a bank could easily gain new clients, especially from the new generation. An automated process is a mutually beneficial situation offering speed, efficiency, and convenience for the clients and freeing bank professionals for more value-added tasks. With the 7103 law project aiming to transpose Directive 2014/92/EU regarding banking mobility, banks that will be offering fully-automated onboarding processes will have a competitive advantage by providing maximum comfort to their clients.

The onboarding processes that were analyzed do not seem to have significantly improved since 2015. The same weaknesses are still present in terms of automation. No bank offers end-to-end online onboarding and the processes remain lengthy, time-consuming, and easier to carry out in a traditional branch, rather than through the bank’s website. Half of the banks offer non-cash incentives and display the reference of a personal adviser on the customer website. No bank in Luxembourg offers an interactive online assistance such as chat.
In contrast, 40 percent of the analyzed banks from the surrounding countries offer the possibility to upload documentation online, provide assistance through chat, and have a thorough FAQ regarding opening an account. 20 percent of border banks even grant some cash incentives.

The automated onboarding has to remain as simple as possible with low requirements in terms of documentation and online uploading possibility, precise explanations during the onboarding process, detailed information in the FAQ section, and interactive assistance through a chatbot.

Even if opening an account in traditional branches remains important for prospects uncomfortable with technology, digitally-automated onboarding is a key aspect for the new generation and people busy during branch opening hours. Delivering a digitally-automated process will be a competitive edge in Luxembourg and a catch-up with respect to foreign practices. To go one step further, banks should implement a customer profiling starting from the onboarding process in order to collect the required information, which enables cross-selling and tailored products and services.

**Insights**

Citibank (US) has developed a fast and simplified online account opening, lasting only 10 minutes. Linked to a proactive chat, the rate of abandonment is reduced. The limited required documentation is uploaded online and the KYC is outsourced through an online questionnaire. Citibank has been ranked number one in account opening for over three years by Forrester, Change Sciences, and KeyNotes.8

In border countries, several banks such as Boursorama or HelloBank! enable a user-friendly and efficient online onboarding as well.

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8 Citibank perfects online account opening, Brad Strothkamp, 2009
02. Content and functionalities

Luxembourg banks offer the functionalities needed by clients for basic money management, but value-added features could be implemented to offer an above-average experience to users and differentiation factors to banks.

On their public websites, banks offer comprehensive information regarding their services and pricing, but improvements could be achieved regarding information on insurance products for 33 percent of banks.

In terms of basic and value-added functionalities, no significant change has been noticed since our last benchmark. However, some improvements have been made with a higher percentage of banks offering basic and value-added functionalities (see Figure 5 below).

Some functionalities that could enhance the user experience and are underlined in the Digital Banking Benchmark 2015 could still be implemented. Especially:

**ENHANCEMENT OF STANDARD FUNCTIONALITIES:**
- Pension savings account opening
- Settlement of standing orders with variable amounts

**INNOVATIONS IN DAY-TO-DAY MANAGEMENT:**
- Purely web-based P2P payment
- Innovative ways of investing solutions (e.g., crowdfunding)
- eBills
- Grouping accounts
- Safety-deposit box

**PROXY, SIMULATORS, AND ASSISTANCE:**
- Modification of person holding a proxy on the account
- Tax calculator
- Simulation of insurances
- Proactive online chat
- 24/7 helpdesk

There are other user-friendly functionalities that are not currently observed in the Luxembourg market and which could also be implemented in order to facilitate the account management for clients and differentiation for banks:

**ACCESS TO EXTERNAL DATA:**
- Centralization of cards linked to other banks
- Access to personal data from other banks
- Account aggregation

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**Figure 5: Improvements observed compared to 2015 Benchmark**

<table>
<thead>
<tr>
<th>Functionality</th>
<th>Percentage 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Basic functionalities (presented in 2015)</strong></td>
<td></td>
</tr>
<tr>
<td>E-Statements</td>
<td>100%</td>
</tr>
<tr>
<td>Consultation, settlement, modification and cancellation of standing orders</td>
<td>100%</td>
</tr>
<tr>
<td><strong>Value-added functionalities in 2015 that became basic in 2017</strong></td>
<td></td>
</tr>
<tr>
<td>Availability of financial and economic news</td>
<td>83%</td>
</tr>
<tr>
<td>Account personalization</td>
<td>67%</td>
</tr>
<tr>
<td>Calculation of interests on loan</td>
<td>67%</td>
</tr>
<tr>
<td><strong>Value-added functionalities in 2015 that remain partially missing in 2017</strong></td>
<td></td>
</tr>
<tr>
<td>Simulation of investment activities</td>
<td>50%</td>
</tr>
<tr>
<td>Investment in a virtual stock market platform</td>
<td>33%</td>
</tr>
</tbody>
</table>
PERSONAL FINANCIAL MANAGEMENT TOOLS:

- Categorization of purchases made by credit card
- Balance and categorization of past incomes and expenses
- Estimation of upcoming expenses based on historical data
- Goal-based personal financial management

OTHER INNOVATIONS:

- Bitcoin account
- Video-call appointment

In comparison, some banks from border countries offer better online services regarding the features highlighted in figure 6.

Figure 6: Comparison with border countries online offer

<table>
<thead>
<tr>
<th>Feature</th>
<th>Luxembourg</th>
<th>Border countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management of basic bank cards features</td>
<td>100%</td>
<td>0%</td>
</tr>
<tr>
<td>Insurance simulator</td>
<td>80%</td>
<td>0%</td>
</tr>
<tr>
<td>Simultaneous online offer of current, savings, term-deposit and savings pensions accounts</td>
<td>60%</td>
<td>0%</td>
</tr>
<tr>
<td>Settlement of custom budget and saving goals</td>
<td>40%</td>
<td>34%</td>
</tr>
<tr>
<td>Automatical categorization of expenses</td>
<td>40%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Banks from the surrounding countries

“The in an environment composed of fully-digital banks, FinTechs, and non-traditional competitors, banks struggle to deliver innovative functionalities and are still hesitating about the key priorities to pursue.”

Insights

Capital One and Citibank (US) have implemented video calls with advisers through the web portal for high-net-worth clients, reinforcing the customized relationship between the client and the bank.9
03. Design and ergonomics

Overall, the performance of Luxembourg banks is strong and similar to the border banks. However, improvements could be done on value-added features regarding customization in order to go one step further.

The design and ergonomics dimension showed good results last year and still remains a strength of Luxembourg banks. Some improvements that were already advised last year could be made in terms of languages offered. For instance, only half of the banks have a website available in a language other than English, French, or German (e.g., Dutch, Portuguese, or Luxembourgish - See Figure 7). Cross-selling that depends on customer profiles is offered by 33 percent of banks, but only if the client accepts to provide the required data to the bank. The option to configure notification preferences is provided by only 17 percent of banks, and no bank offers event calendar participation.

On average, Luxembourg banks perform better than most banks from surrounding countries on key criteria identified (see Figure 8).

Some of the possible differentiators include paperless option, notification preferences, and participation in an events calendar. In order to match foreign best practices, Luxembourg banks could even develop user-friendly and precise cross-selling services and customizable web banking with regards to options displayed. The availability of those kinds of features enhances customer experience and positive feelings toward the bank.

Insights

Scotia Bank (CA) has a well-developed cross-selling offering of bank products that is targeted and concise with an easy subscription. The subscription form is already prefilled with user data and the amount of products is restricted and shaped to a user’s profile. This tool led to a raise in their sales volumes.10

Union Bank (US) offers to add free and paid features to the customer website and Orrstown Bank (US) offers the possibility to configure notification preferences and to display only the options chosen by the user.11

10 Scotia bank boosts sales with targeted mobile cross-selling, Peter Wannemacher, 2015
11 Orrstown Bank website and Union Bank website
**04. Navigation**

A facilitated navigation through the public and customer website is an essential asset for banks. It could be reached through keyword tools and precise and accessible information regarding products, services, and pricing.

Bank clients have various needs and profiles, so the design of the websites, especially the landing page, must enable a direct and meaningful segmentation for each profile. Each step toward the required information should be useful. Segmentation of users from the main webpage improves user experience and facilitates the promotion of services, leading to further sales.

This year’s results follow the same trend as 2015. The main points to implement or to improve are:

- The keyword tools, whether on the public website or on the customer website
- The presence of tutorials or automated assistance, at least for the first login
- A direct segmentation related to the user profile, feasible from the main public webpage
- The availability of money management tools

A differentiator in the Luxembourg landscape would be the possibility to view external accounts on the web portal. It would enable clients to control their financial situation with an aggregate view, without using multiple connections. Several options currently exist in order to do so. However, high security standards traditionally applied in Luxembourg have likely been an obstacle for “PSD2-like” services (services proposed by authorized third parties) to develop before the implementation of the directive. For example, it is difficult for FinTechs to aggregate account information when systematic requirements for strong customer authentication are implemented by the banks at login. In comparison, some neighboring countries may only require a username and password at login.

Other potential differentiators are the money management tools, whether manual or automated. The only one currently available is the possibility to set saving goals. Other management tools could be developed, allowing users to set revenue goals, categorize past incomes and expenses, or estimate future incomes and expenses. Developing these tools proves that the bank cares about clients’ personal situation and objectives, attracts young users, and creates differentiation from their competitors. Future money management tools should be simple, ubiquitous, personal, empowering, and reassuring.

On the border markets, better results are especially linked to the availability of keyword tools, but also due to tutorials and money management tools.

### Figure 9: Services provided by banks in Luxembourg

| Facility to reach the right information from the landing page | 83% |
| Keyword toolbar for the public website | 67% |
| Possibility to check external accounts | 0% |
| Tutorial or help tool to use the Web Banking | 0% |

### Figure 10: Navigation performance compared to border countries

| Keyword toolbar on the public website | 80% 67% |
| Video explaining how to use the web banking | 60% 0% |
| Money management tools | 40% 17% |

### Insights

Several banks such as BBVA (ES), Barclays (UK), and Telstra (AU) offer personalized video using user data for account opening, loan assistance, or increasing savings. The customization linked to innovative assistance offers a positive experience to the user, while streamlining product selling.

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12 Use digital money management to deliver personalized financial coaching, Benjamin Ensor, 2016
13 Australia and New-Zealand digital banking, Alyson Clarke, 2016
05. Cybersecurity

A few cybersecurity capabilities have been benchmarked but reveal a strong overall performance linked to important regulatory requirements.

The current regulation CSSF circular 15/603\textsuperscript{14} sets the base for the security of payments on the internet. The eIDAS regulation provides an environment to enable secure and seamless electronic interactions.\textsuperscript{15} Future regulation will affect the current online cybersecurity features of banks, such as the European directive PSD2.\textsuperscript{16} Due to those requirements, banks have already implemented cybersecurity features ensuring strong protection of client information and complying with regulatory expectations.

Every bank offers a strong authentication method (requiring a token code) and prevents the possibility to save the username and password on the webpage. Furthermore, each bank triggers an automated logoff after a certain period of inactivity. On the other hand, 17 percent of banks still allow users to have multiple sessions valid at the same time (i.e., simultaneously connecting to the web portal from multiple locations/computing devices).

Finally, even if the percentage increased from the previous year, 50 percent of banks are still not relying on an SSL certificate issued following an Extended Validation process (EV SSL Certificate). This certificate is used for HTTPS websites and proves the legal entity controlling the website. Web browsers show the verified legal identity prominently in their user interface, either next to, or instead of, the domain name. The aim of these certificates is to give clients greater confidence regarding e-commerce.

Figure 11: Key performance features on the cybersecurity dimension

14 Circular 15/603, CSSF, 2015
15 Trust services and eID, Europa.eu, 2016
“Money management tools, automated customized advice, and robo-advisory are some of the trends banks may embrace to move away from competitors.”
Analysis of the three new dimensions added in the 2017 benchmark

Two of the new dimensions are seen as main investment areas on the market: the credit and advice functionalities. Another new dimension ensuring consistency in the whole customer journey has been added: the account closing process.

01. Advice

Online advice services are almost non-existent on the Luxembourg market — significant room for the development of digital advice functionalities on web banking exists. Only half of the banks offer the possibility to evaluate their clients’ investment profile through an online questionnaire. Furthermore, no bank offers digital advice services, whether general or customized advice. No client has the possibility to benefit from online advice regarding recurrent income, investment goals, or savings goals.

In surrounding countries, there is an overall better advice offer and one bank has significantly better functionalities with general and customized advice regarding saving goals, recurrent income, and investing goals. Over the border, 40 percent of the banks studied offer personal financial management tools, 60 percent display non-customized advice on the public website, and 80 percent advise their clients on recurrent income and investing goals on the web portal. Finally, every border bank proposes advice for saving goals.

The main digital trend regarding future advice services is robo-advisory. A previous Deloitte analysis states that this technology helps to reduce operational costs. A growth of 2500 percent Assets under Management (AuM) in robo-advisory is expected before 2020, reaching a potential market value of US$489 billion.17

The main advantages of robo-advisers are the accessibility to mass investors and not to HNW investors only, a 24/7 interaction, transparency regarding money investment, low or no fees, and the attractiveness for the new generation.

Current robo-advisers provide a large range of services, such as:

- Digital client onboarding
- Investor risk profiling
- Automated digital advice
- Discretionary portfolio management
- Automated monitoring and rebalancing
- Online visual evolution
- Performance reporting
- Tax harvesting
- Advanced analytics

Luxembourg banks should take advantage of the current low-developed offer of robo-advisory in Europe (except in the United Kingdom and growing Germany). The European market is not yet saturated and Luxembourg could take a leading position in Europe in terms of robo-advisers. Banks now have to make the decision to either ignore those facts and to focus on UHNW investors, or to develop an in-house robo-advisory solution, acquire one at a fair price, or team up with an existing robo-adviser.

Insights

The robo-adviser Nutmeg (UK) asks clients to set their goals in terms of risk and return first, then builds and manages the portfolio, and finally offers 24/7 check and withdrawal at any time without exit fees. Their managing fees are low — between 0.29 percent and 0.94 percent — and there is no compulsory investment period to respect. The minimum amount to be invested is £500 with a minimum monthly contribution of £100. Launched in 2011, Nutmeg currently has over £500 million AuM.18

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17 To what extent will “a robo adviser” replace your financial adviser, Deloitte, 2016
18 Nutmeg website
02. Credit

The current digital maturity level in Luxembourg in terms of online credit and loan management is quite low; better performance could be achieved regarding credit demand and management.

33 percent of Luxembourg residents have personal loans.\(^{19}\) Implementing top-notch digital credit functionalities would be a facilitator for web banking users, improve their experience, and trigger new revenues. Regarding loan requests, even if the possibility to start online loan requests through the public website exists for 83 percent of banks, only 67 percent propose a loan simulator. No bank enables a fully online loan application and management process. The main limit is linked to the impossibility to upload documents online and to sign the required documentation electronically.

In terms of day-to-day credit management, 80 percent of banks allow the consultation of the pending credits and the history of payments. However, only half of them allow online early repayments and none of them enable more specific actions such as credit transfer, credit restructuring, and modification of credit standing orders or management of guarantees.

On the border markets, 20 percent of banks enable the upload of most documents and electronic signatures. Regarding the credit management view, 40 percent of banks offer better features in terms of credit standing orders, early repayments, restructuring, and transfer.

Efforts have to be carried out in order to automate the credit demand through online forms, credit simulators, credit risk, and automated scoring calculation, documentation uploading, electronic signatures, and digital confirmation. Improvements have to be designed in credit management with features such as transfer and restructure as well as the management of guarantees. Other innovations can be implemented such as preapproved short-term credit lines accessible with online activation by the user.\(^{20}\)

03. Account closing

Several weaknesses have been outlined concerning the digitization of the process as well as the lack of attempt to retain the client.

Account closing is the last step in the customer journey. To ensure consistency in the evaluation, this dimension has been developed and analyzed among Luxembourg banks.

There are no banks in Luxembourg that set a functionality enabling online account closing. Demands have to be carried out through the mailing service provided within the web portal. Furthermore, no bank requires the client to fill out a questionnaire to justify the closure, try to contact the client to understand the reasons of the closure, or to attempt to retain the client.

On average, the cost of closure ranges between €1 and €6. However, one bank charged €29 to close the account.

In surrounding countries, banks try to contact the leaving clients in order to retain them. This attempt should be implemented in Luxembourg in order to create a closer relationship between the client and the bank, limit the number of lost clients, and give a view on potential areas for improvement required by the clients.

“Banks now have to make the decision to either ignore those facts and to focus on UHNW investors, or to develop an in-house robo-advisory solution, acquire one at a fair price, or team up with an existing robo-adviser.”

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\(^{19}\) Mixed fortunes for savers in Europe, ING, 2016.

\(^{20}\) Australia and New-Zealand digital banking, Alyson Clarke, 2016
Mobile banking

Currently, based on a survey carried out over 31 countries worldwide, 42 percent of people that own a smartphone do not use mobile banking.\textsuperscript{21} Constant improvements are needed to meet the expectations of users, to convince non-users, and to face competition of services such as PayPal, ApplePay, or Google Wallet.

A comparison with banking apps from surrounding countries gives an overview of functionalities Luxembourg could implement to catch up to the services provided over the border.

Luxembourg banking apps deliver satisfying basic functionalities regarding consultation and transfers. Yet deepening could be achieved for those basics and more specific features could be developed. For instance, no bank integrates a Digicash service directly within its app. In order to transfer money by phone number or to pay bills by scanning, users have to download an additional Digicash app. Only 17 percent of banks allow users to withdraw money without a bank card, although this trend is already being implemented abroad.

Overall, 34 percent of banks face a lower performance in comparison to the scores achieved on their web banking, especially in terms of content and functionalities provided. The gap between leaders and the other two categories is wider for the mobile applications than for the web banking. Some banks that are medium performers in terms of web banking become sub-performers regarding mobile banking.

In terms of simulators, half of banks offer loan simulation and 17 percent a currency converter, while this amounts to respectively 67 percent and 34 percent using web banking.

Insurance simulators and tax calculators still have to be developed. Regarding money management, half of banks allow users to have a view on their personal investment portfolio and 17 percent provide a full range of investment possibilities, for respectively 83 percent and 34 percent using web banking.

On average, banks from surrounding countries offer a better banking app performance regarding day-to-day management. A comparison based on surrounding countries’ best practices with the Luxembourg market is available on the chart on the next page:

Insights

Triggering a notification in case of movement in the account statement is an innovation banks should implement, as is already done by some banks such as Barclays (UK)\textsuperscript{22}

Many banks use geolocation to find ATMs and branches. Akbank (TR) uses beacons to allow withdrawals at an ATM without a card\textsuperscript{23}

The app Finantix Concierge\textsuperscript{24} allows users to know the live waiting time at branch
The design and ergonomics of Luxembourg banks’ websites have a strong performance with a reference to the app and a consistency of elements throughout the pages. 80 percent of banks offer a website completely adapted for navigation on a smartphone. Banking apps are fully satisfactory with regards to the support of major operating systems such as Android and iOS. Because 51 percent of people in Luxembourg have access to an Apple device and 31 percent to a Samsung device,25 being available on those platforms is a key point.

Regarding the integration of cybersecurity capabilities, the benchmark highlighted that most of the banks have been able to deploy solid foundations (strong authentication, session timeout, prevention of data leakage through usage of custom keyboard, etc.). The key differences among banks fall under the following categories:

- Support of biometric authentication (such as Apple TouchID). While one third of the banks do not support biometric authentication, recent trends indicate a more generalized use of biometric authentication. Deloitte predicts there will be one billion active devices equipped with fingerprint readers in 2017. Among these billion devices, 90 percent are predicted to be smartphones or tablets.26

- The ability to manage mobile devices from the web application. We noted that two-thirds of the banks allow users to manage mobile devices from the web application and potentially revoke their access. This is considered to be a useful security feature, particularly to quickly limit or block access for a mobile device in cases of theft or loss.

- The application’s ability to detect and block jailbroken devices (or root for Android): only 50 percent of the applications were able to detect a jailbroken iPhone during the benchmark.

### Figure 14: Mobile banking performance compared to border countries

<table>
<thead>
<tr>
<th>Feature</th>
<th>Luxembourg</th>
<th>Banks from the surrounding countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location of branches via the app</td>
<td>80%</td>
<td>67%</td>
</tr>
<tr>
<td>Withdrawal at ATM without bank card</td>
<td>40%</td>
<td>17%</td>
</tr>
<tr>
<td>Integration of a payment system within the app</td>
<td>40%</td>
<td>0%</td>
</tr>
<tr>
<td>Communication in real-time with an advisor via chat</td>
<td>20%</td>
<td>0%</td>
</tr>
</tbody>
</table>

### Figure 15: Key differences between Android and iOS features on mobile apps

<table>
<thead>
<tr>
<th>Feature</th>
<th>Android</th>
<th>iOS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prevention of jailbreak</td>
<td>34%</td>
<td>17%</td>
</tr>
<tr>
<td>Prevention of snapshots</td>
<td>50%</td>
<td>0%</td>
</tr>
<tr>
<td>If snapshots allowed, the confidential information is blurred</td>
<td>33%</td>
<td>50%</td>
</tr>
</tbody>
</table>

21 GMCS, Deloitte, 2016
22 What drives mobile banking usage, Peter Wannemacher, 2016
23 North American Digital Banking, Alyson Clarke, 2016
24 How US Banking Customers use different channels, Rachel Roizen, 2016
25 GMCS, Deloitte, 2016
26 Prints charming: biometric security reaches the billions, Deloitte, 2017
• Regarding the implementation of specific controls to avoid leakage of information (such as screenshot blurring), some banks currently still enable snapshots without blurring the confidential information. Furthermore, if 100 percent of banks disconnect the user’s session after a period of inactivity, only 34 percent of them automatically disconnect the user’s session when the application is sent to the background, which could potentially cause issues (data leakage, etc.) if the user is inattentive or if the device is stolen.

Besides those key differences, we have noted that we can split the mobile banking applications into two different categories depending on the approach chosen to handle user authentication. Indeed, the choice in terms of user authentication is important for the user experience.

• The first part follows authentication guidelines that are similar to the ones chosen for web banking (strong authentication at launch and strong authentication for sensitive operations such as transferring a payment to an unknown external beneficiary).

• The second part has designed an authentication model specifically for mobile banking applications. During the first use of the application, a mechanism is used to enroll the device. Once the device is enrolled and upon consent of the user, the user will be able to use the application on this specific device without any authentication to perform a simple operation (i.e., check the balance). However, if the user decides to perform a sensitive operation, strong authentication will be required. Generally, users having this type of application will be able to manage (and potentially revoke) devices from the web banking that could access data without authentication.

In terms of advice, while no functionality is displayed within the Luxembourg banking apps, 40 percent of border banks provide general investment advice to their clients. Advice is the most important weakness noticed during the assessment of Luxembourg mobile banking applications.

Figure 16: Key observations of the Luxembourg market regarding mobile features

100% Automated disconnection after a period of inactivity

34% Automated disconnection after a period of inactivity, when the application is sent to background

27 The best mobile banking apps, Nick Clements, Forbes, 2015
28 Banks are missing mobile banking’s three big opportunities, Zhi Ying Ng, 2016
29 Ibid
Regarding credit features, comparable weaknesses are present on the banking apps, with the impossibility to solicit a line of credit end-to-end online and the credit management is often constrained to consultation. 50 percent of banks in Luxembourg allow users to start an online credit request. 67 percent of banks enable the consultation of pending credits and 33 percent enable credit early repayments, the same percentages obtained through the web banking. Each dimension assessed should be strongly improved to fulfil the expectations of the increasing number of mobile banking users.

“Compared to banks from surrounding countries and new entrants, the Luxembourg banking market lacks strong performance and differentiators in terms of online services.”

Insights

DESIGN AND ERGONOMICS:
Chase (US) offers an automated changing layout based on location. For instance, the paper wall will represent buildings when the user is in New York or beaches when in Southern California.

ADVICE:
OCBC Bank (SG) offers the possibility to compare spending with peers over time and tracking toward financial goals.
Westpac (AU) anticipates customer needs by using predictive analytics, by analyzing internal data and third party data (social media, search engines). For instance, the bank sends notifications to traveling clients regarding ATM fees overseas, before they withdraw cash.
New competitors entered the market with more flexible structures and lower costs. Fully-digital banks could threaten the traditional market because of the interesting features they display. Their new digital functionalities could inspire traditional banks regarding web banking and mobile banking. Fully-digital banks offer better savings interest rates and lower life insurance fees. Depending on each user profile, those banks are between two and four times less expensive than the cheapest traditional banks.  

The options we highlighted are advantages that are not yet offered on the Luxembourg market, nor on the surrounding markets (except for some aspects offered by rare pioneers - see Figure 17):

![Figure 17: Key innovations of the fully digital bank](image)

**Enhancement of standard functionalities**
- Dedicated currency ordering option
- Standing orders with variable conditions

**Innovations in day-to-day management**
- Savings account linked to social actions and tax exemption status
- Dedicated option for card blocking
- Safety deposit box
- Large view on stock markets with possibility to invest in commodities and bitcoins

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30 Between senior executive, executive, under-25 young person
31 Les offres des banques Internet au banc d'essai, Agnès Lambert, 2017
The fully-digital banks’ mobile applications offer better results than mobile banking apps in Luxembourg and in the border countries regarding the full management of credit and debit cards, the insurance simulators available, the possibility to obtain a line of credit online, and portfolio management and investment possibilities with an intuitively designed platform. The gap from leaders could widen because of the recent appearance of fully-mobile banks such as Number26 (DE), Soon (FR), and Monzo (UK).

Only focused on banking apps, those fully-mobile banks will go further than what other digital banks currently offer. Examples of their current innovation are the integration of a PayPal account within the app, the possibility to share expenses obtained on social networks, and the geolocation of expenses.

Fully-digital banks target a part of traditional banks’ customers: the ones managing their money through their electronic devices and reluctant to visit a branch for basic operations.

Because this customer segment will continue to grow, banks have to adapt their services to remain competitive with these kind of competitors. As it has been demonstrated above, there is currently a number of features existing and not implemented by retail banks in Luxembourg. Innovation being at core of fully-digital banks’ business, the gap is expected to widen if retail banks do not react with an appropriate digital strategy.

32 Website of Soon and website of N26
33 Une nouvelle génération de banques digitales émerge en Europe, Les Échos, 2016
Conclusion

Compared to banks from surrounding countries and new entrants, the Luxembourg banking market lacks strong performance and differentiators in terms of online services. The opposition between connected customers asking for top-notch technologies at a low price and banks facing increasing competition creates a challenging environment pushing banks to adapt their digital strategy. Unfortunately our study reveals that our local banks still struggle to catch up with the pace of digital disruption and have not significantly improved the services and features of their web channels in a 2-year time period.

Time matters to face innovative services from competitors. Foreign banking markets and fully-digital banks are not the only rivals Luxembourg banks have to keep an eye on. Two classes of new entrants are disrupting the traditional banking market and could significantly reshape the banking industry in the near future.

The non-traditional competitors: originally retail companies having huge client databases, an important mass of customers, and deep knowledge regarding technologies. Entering the banking sector allows them to better market their initial business and to diversify their activities.

The developing FinTechs: involving fewer resources in general but offering innovative options while focusing on specific niche markets. Those new entrants have more flexible structures and please millennials with their novelties.
Thinking outside the box and importing their best practices from other industries, the new entrants are already revolutionizing the traditional banking market. Some of their disruptive best practices should inspire Luxembourg banks, for instance:

- A lack of automated onboarding processes has been outlined. Detailed customer profiling from registration that is linked to the use of artificial intelligence for automated financial advice would help clients to reach targeted savings or incomes. It could provide them with a set of investment possibilities or with a consumer credit directly available online under certain conditions. For instance, Wallet.AI, an American FinTech, develops services that advise users how to save and better manage money based on their daily habits (e.g., due to your income, do not spend more than $20 per day in order to pay your rent; take another kind of drink at the bar and you will save $100 monthly). 34

- The study assessed weak performance in innovative services and the availability of money management tools. A transformation of web banking and mobile banking apps into platforms could be achieved, leveraging on FinTechs’ service partnerships. This could support integration of better features within the app such as payment services (e.g., ApplePay, PayPal) or account aggregation engines. Banking APIs are expected to increase in the near future with the PSD2 regulation, enabling newly regulated entities (i.e., account information or payment initiation service providers) to connect directly to financial institutions.

- Considering the room for improvement in terms of constant assistance, new technology can be used to support the expected enhancements. The implementation of a chatbot-robo assistance by voice system able to show empathy to the client 35 - would enable clients to get answers to questions and to request specific services such as loans or mortgage origination, new or additional account opening, and advice. For instance, the chatbot of Bank of America 36 provides money-saving tips 37 and reminders of regular payments. Currently, implementing basic chatbots would already be a differentiator between Luxembourg banks. In the coming years, tools such as chatbots could enhance the current weakness of online advice and assistance that is being provided by the Luxembourg players.

“Thinking outside the box and importing their best practices from other industries, the new entrants are already revolutionizing the traditional banking market.”

34 Wallet.AI aims to serve-up location-based financial advice, Rachel Metz, 2013
35 Britain’s most hated bank is rolling out a robot teller that shows empathy, Ismat Sarah Mangla, 2016
36 Bank of America launches AI Chatbot Erica, Harriet Taylor, 2016
37 Bots and Banks: How AI is revolutionizing FinTech, Luisa, 2016
• Luxembourg banks could place themselves as leading innovators on the banking markets by implementing functionalities such as: the development of peer-to-peer lending between people and SME, invoice financing, 38 the possibility to obtain currencies at low exchange fees (as offered by the app Revolut 39), or partnerships with car manufacturers in order to implement in-car apps, allowing, for instance, to pay directly at a gas station from the car. 40

Through the highlighted elements, the field of possibilities and the paths to get there are numerous, and could prevent any bank from moving at all in the end, given the effort required for changing and the impact in case of failure. However, most of the banks in Luxembourg have the capabilities to implement strong digital strategies that would enable them to position themselves as leaders and eventually improve efficiency and customer experience.

They should start questioning themselves by following a structured reasoning supported by a comprehensive framework in order to define the best transformation roadmap with the highest success rate for them. We outlined in this study that our banks are still lagging behind in terms of digital channels. Instead of running after the latest trendy features, the incumbents should first look at the root causes preventing them to be in the leading seat of innovation and recognized as such by their customers in Luxembourg.

In a world where open banking will imminently hit the entire industry, the first step is to reassess the enterprise strategy considering these new business models emerging on the market. For instance, rather than investing millions of euros in transforming existing processes and systems to make their existing product and service portfolio fancier, some players decide to develop a brand new, purely digital business, pushing innovative products and services in a more agile way.

In that context, digital has to be seen as a means to foster the change and achieve the implementation of this new model. The Luxembourg ecosystem is way too small to massively invest in all the latest technologies, therefore the banks must carefully select a few key priorities and related digital means that will further drive their transformation and digital channel development. One could aim at becoming the best self-service mobile bank of the country, while another could focus on AI and Analytics to push the most relevant products and services to their customers through all available channels. Thus the transformation roadmap and corresponding approach will be dramatically different from one bank to another.

This strategic digital driver will support the company objectives in terms of market, products and services, operational efficiency, risk mitigation or cost reduction, but will follow generic steps in its realization:

• First, the development of the digital strategy must be based on a strong knowledge of the current digital maturity of the bank, its operating model, its organization flexibility, and its human capital. Launching new trendy functionalities on a mobile app could just fail if your organization is not yet adapted to support a new way of working, handling new customer behavior, or handling a massive increase in client interactions.

• Based on this understanding, the bank will be able to identify the relevant means to achieve its objectives and how to implement the best solutions. This might need to seriously revamp the organization, initiating centralized or federated digital labs in the existing organization, while training the workforce to the latest technologies.

• Then it must identify, select, and implement the relevant technology solution with a trial-and-error approach, where the innovation will be valued and failure permitted. This cultural shift is facilitated thanks to the panel of available solutions on the market among traditional players and new entrants. The FinTech and software vendors are all competing to provide flexible and innovative solutions that could easily be integrated into the current architecture (API) and at lower cost (SaaS). Those could rapidly improve customer experience due to new services and functionalities made available through existing web channels.

• Finally, the digital transformation must be closely monitored, relying on strong KPIs (Key Performance Indicators) initially agreed and tangible, with appropriate follow-up measures that will allow the bank to quickly adapt to market changes or potential failures.

By leveraging digital to achieve their enterprise strategy, banks will be able to exploit new market opportunities and increase operational efficiency, while complying with enforced regulation and mitigating the growing risks linked to cyber criminality. Focusing on their strategic development area will contribute to the success of their channel strategy, and enable them to reach their next digital maturity level in fields such as customer experience, mobile banking, digital marketing, automation, etc. Despite the challenge it represents, Luxembourg banks still have the capability to adapt and become the leaders of our next benchmark on some of the analyzed dimensions, as long as they carefully define and select the strategic objective they want to pursue and put the right focus on it. Digital possibilities are so wide that they cannot be considered all at once.

38 The FinTech wave – Part one, Chris Skinner, 2017
39 The smartphone app revolutionizing foreign currency exchange, Harriet Meyer, 2016
40 Four ways the connected car will change banking, Brian Patrick Eha, 2017

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“Most of the banks in Luxembourg have the capabilities to implement strong digital strategies that would enable them to position themselves as leaders and eventually improve efficiency and customer experience.”
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