CAPCO

NEW INTERFACES IN BANKING

HOW TECHNOLOGY IS CHANGING THE CUSTOMER ACCESS
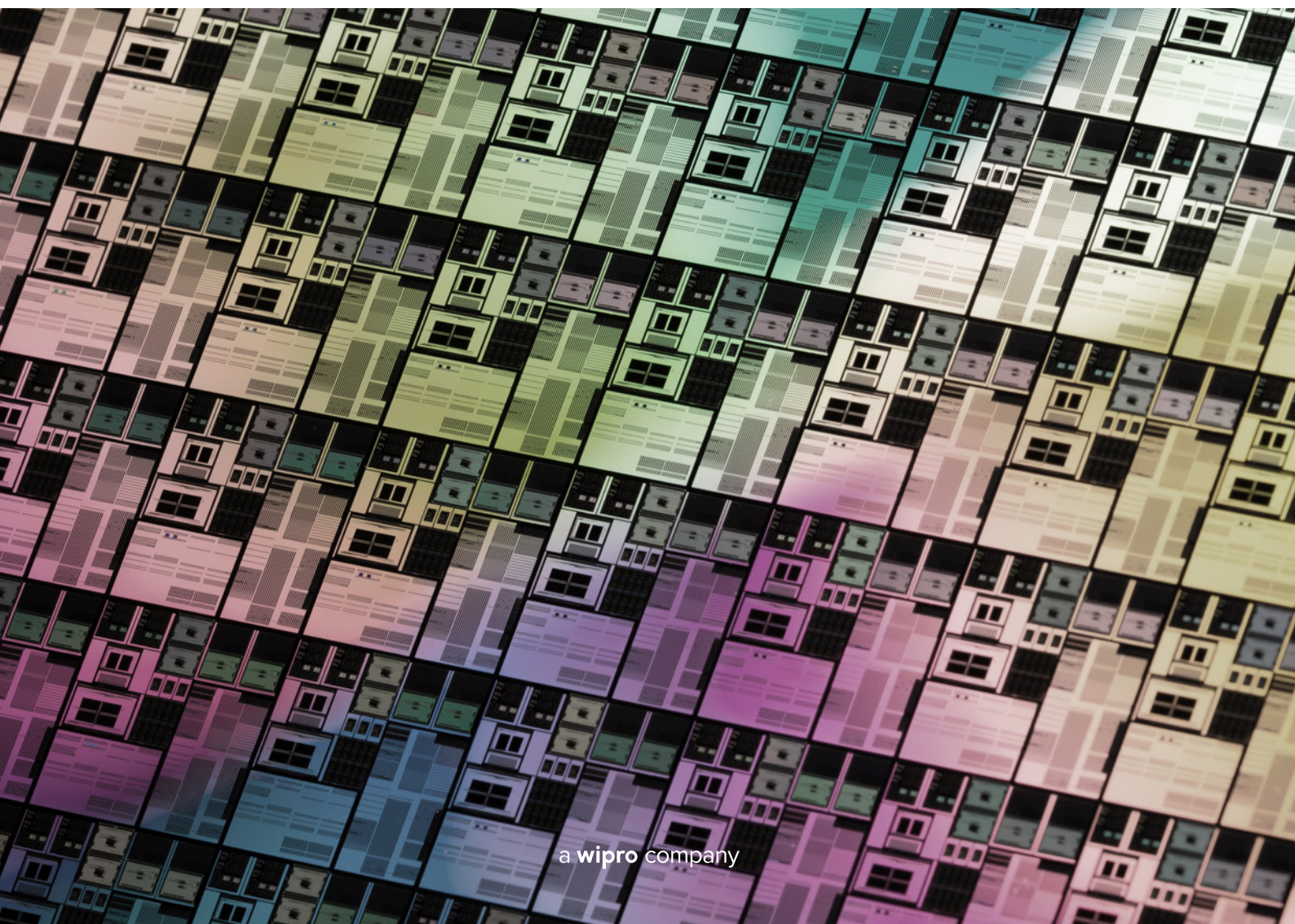

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1. SETTING THE SCENE

Interfaces – i.e. the interface between people and machines, and thus also between people and the companies that provide their services digitally – are central to user-friendliness and the perception of the company by customers. What could they look like, the interfaces of the future?

Most of us probably once imagined the interaction of people with the outside world like a scene from the „Matrix" trilogy: People in futuristic clothing in unnatural postures, highly concentrated and sternly gazing, in front of an interface that is far removed from intuitive operation.

In reality, we are actually dealing with the opposite. We operate with completely different interfaces than we did just a few years ago, but the present provides an incomparably more unexciting scenario than science fiction could ever have imagined. Anyone who does not know what a smart speaker is would not even notice it in the room. Modern interfaces integrate almost imperceptibly into our existing everyday life. They also do not require any elaborate operation but work intuitively. They pick people up where they are instead of taking them away into strange worlds.

Rapid progress and the development of new types of interfaces are having a profound impact. The interaction between banks and customers is changing fundamentally. Already today, where are the advantages and dangers and what does the industry expect in the future?

2. THE BROAD FIELD OF INTERFACES

„Interface" stands for the bridge between person and machine – and the types of this bridging could hardly be more diverse. Depending on how old you are, you probably still think of the first PCs of the 1990s when we hear the term interface. A printer, mouse or joystick was connected to the computer through a plug with many pins, after which the tedious search for the right driver began.

By now, of course, wireless communication between machines has long been commonplace. Where a physical connection still needs to be created at all, we use USB, whether for the power supply, monitor, scanner or external data storage. And expectations of the technology continue to change. This includes usability: for a long time it was accepted that users had to learn how to operate computers, mobile phones, etc. There were courses for Windows, manuals, guides. If something

did not work, you were obviously doing something wrong. This false understanding of user-centricity and usability still prevails in many organisations today: For example, the spokesperson for the US Centers for Disease Control and Prevention (CDC) commented on the **failure of a multi-million dollar software development** by saying that the system had no problems – the users had merely used it incorrectly.

In recent years, instruction manuals and handbooks have disappeared from our lives. Systems and technology increasingly function intuitively. Only senior citizens occasionally still find it difficult to accept the principle of intuitiveness. The learned belief that complex technology must also be complex to operate is all too persistent.

For digital natives, digital companions have almost become a part of their own body, the boundary between biological and digital organism is becoming more and more permeable. What counts is how the interaction with the device feels. What kind of experience one has. How smooth the communication

is. Younger generations do not accept any frustration in the handling or even learning effort – their expectations have adapted to the technological development.

It is the same with banking. After the introduction of the first automations, customers still accepted maximum effort out of sheer gratitude. The first ATMs from 1968 with punch card operation dispensed one 100 DM note per special cheque inserted.

Later, **screen text was the first form of online banking** in Germany. Convenience was irrelevant – the main thing was to be able to make payments from home.

Customers could also do their banking in the branches outside opening hours. What is taken for granted today was a sensation back then: Employees were still able to withdraw money or make a transfer after the official closing time of the branches at 4 pm. To make sure that everyone could learn how to do this on their own, the bank provided its own user manual.

Lochkarte (c) Lena Muessigmann dpa

We all know the recent developments of the new millennium ourselves: After desktop web banking and with the introduction of the iPhone in 2006, mobile banking became more and more present. At first, this was mostly browser-based, but from 2010 onwards it increasingly took the form of bank-owned or cross-bank apps. For a few years now, apps have increasingly come closer to the users' lifestyles: This includes „beyond banking" functions such as importing invoices, photo transfers, cross-institutional multibanking, individual statistical analyses, budget calculations and much more.

How customers perceive „their" bank used to be decided by the design of the branches, the history of the brand, the public image and the management staff. Today it is the digital user interface. Hurdles or a frustrating user experience are no longer tolerated and immediately lead to a change of provider. While the neobank N26 was initially ridiculed by established providers claiming that the differentiation was just a nicer interface, the leap in customer growth in the millions has demonstrated that the user experience is a key success factor.

This experience, which should now be common knowledge since the success of Apple's iPhone, has also led to a rethink among established providers. Key factors that make customers remain loyal to a bank are first and foremost the high quality of the customer experience, followed by time savings, peace of mind and simplification. In all these dimensions, the user-friendly design of interfaces plays a central role.

Without this vital element, customer loyalty is no longer possible. A bank that manages to move away from cumbersome products and complicated applications and makes customer centricity its first priority has the potential to continue satisfying its customers in the future.

SB Terminal (c) Volksbank im Wesertal eG

3. WHAT ARE THE CURRENT INTERFACE TRENDS?

Conversational Banking – Chatbots and the Messaging Revolution

We have known about conversational banking for a long time when referring to service and navigation. We encounter it in the form of chatbot messengers on websites and in apps as well as automated menu navigation on the phone. These interfaces are used to serve simple requests and reduce the number of questions that need to be answered in person. This reduces costs for employees, their recruitment and training.

The purpose of chatbots for companies has therefore been to save resources. However, it is a cardinal mistake to select solutions only in terms of economic interest instead of pursuing customer benefit. For customers, the engagement with conversational banking is still often tedious and frustrating. They are for example often misunderstood in the automated menus on the phone.

However, the use of chatbots can save resources and satisfy customers, provided the underlying technology is fully developed. Examples of the use of conversatio- nal banking with excellent customer experience are „Bella" and „Zelf", two challenger banks launched at the end of 2020. They are all about the most natural interaction between customer and bank.

Bella relies on a text-based interface in its own app. The user experience is controlled by the element called „ Socratex" – an always visible field for text input at the bottom of the screen. Key words are contextually added by Socratex: „Send" becomes „Send Money", „Send 300 to Lisa" becomes a selection of Lisas in the contact list or a nearly completed transfer. The app supports its customers in formulating their intention in form of a complete sentence. The interface is offered in cooperation with the AI-driven cloud „LivePerson".
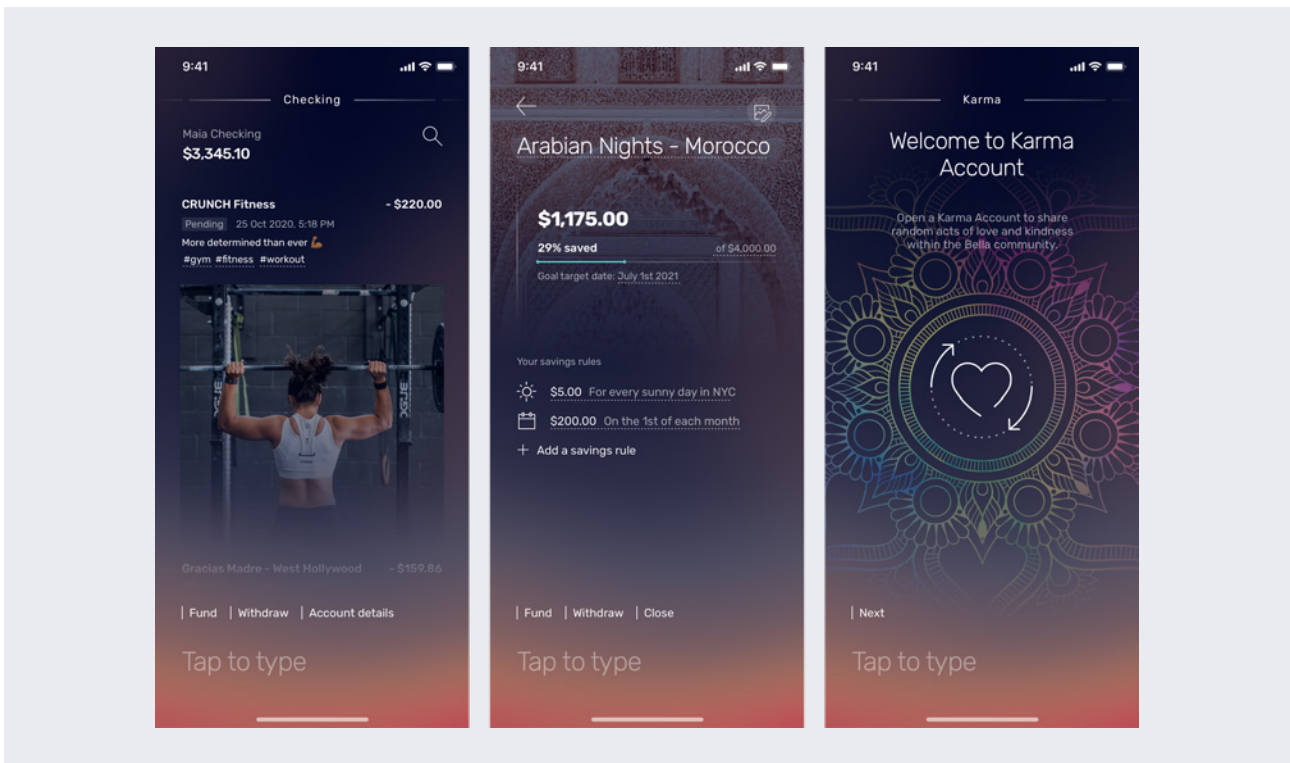

Bella App (c) Bella

Zelf takes a different approach and foregoes an app. Instead, the website inquires about the customer's preferred messenger and then continues the entire process there, for example via Whatsapp.

The more artificial intelligence advances in the use of language, the more intuitively and seamlessly it can be used as an interface. Currently, situations with limited functional needs are particularly suitable - whether an input is „I want to make a bank transfer" or „make a payment" – there is not much room for interpretation. In the course of more complex language models such as the Generative Pre-trained Transformer 3 (GPT-3), more complex dialogues will also become possible, e.g. for product and investment decisions or help with the income-expenditure calculation of a loan application, as the language style of GPT-3 seems remarkably human.
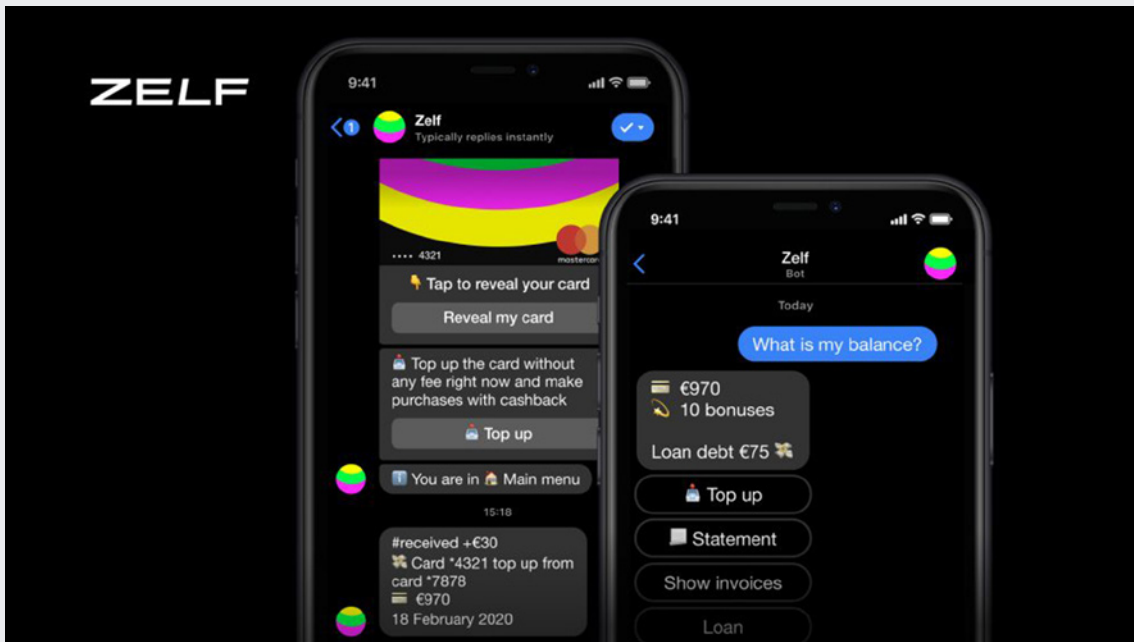
Zelf App (c) Zelf

4. VOICE – SPOKEN LANGUAGE AS AN INTERFACE WITH NLP

The next step after artificially imitated written language is the decoding of spoken language, i.e. the imitation of natural human communication. So-called Natural Language Processing (NLP) is continuously advancing, and language imitated by computers is catching up with human abilities.

After Apple's digital voice assistant Siri, other providers followed suit with their own natural language-based assistants that make use of a number of artificial intelligence components: Google Now, Microsoft Cortana, Facebook M, Amazon Echo, and even Barbie. They all interact with humans in natural language and operate across an ever-expanding range of functions.

With Echo and Barbie in particular, it is striking that they manage without a screen, which means another step in the direction of „no UI". Wearables such as fitness trackers and home automation systems such as Google's Nest also show that while computers are becoming increasingly smaller, the graphical user interface (GUI) will be used less and less in the future.

While in Asia in general and with Asian banks in particular, the advantages of voice and speech-based interfaces are already firmly part of everyday customer life. The Sparkasse dared

to take the first steps and began to gain experience with the integration of Google Assistant with basic functions such as the account status query via voice command. Other German banks have already planned banking with Alexa voice skills.

The fact that new technologies have not yet been comprehensively integrated into banks in the DACH region is partly due to regulatory hurdles, and that many banks in the region still run on an IT infrastructure that is not powerful enough for the integration of artificial intelligence, To change this a holistic approach is needed.

In addition to the numerous possibilities for integrating the new technology into business models and thus shaping the customer experience in a contemporary way, it is also worth taking a look at social benefits. According to a LEO study, 12% of the German-speaking population are so-called functional illiterates: they know the alphabet but cannot read and write sufficiently to cope with everyday life without problems. In the context of banking, voice banking can therefore provide these more than six million people with access to formal financial transactions.

|	BANK (COUNTRY)	SYSTEM	APPROX. LAUNCH	FEATURES
ASIA PACIFIC	**Shinan Bank Korea**	Bixby	Jun 2017	Account enquiries, track spending, financial news, payments
	ICICI India	Siri	Mid 2017	Remittances
	Ant Financial Group	Proprietary	Jan 18	Purchasing tickets, book hotels, calculating daily returns, balance checking
	Westpac Australia	Alexa	Feb 18	Account enquiries, financial news
	OCBC Singapore	Google Home	Apr 18	Account enquiries, financial news, financial advise
MAE	**Emirates NBD UAE**	Proprietary	Feb 17	At call centres only, intelligent call routing and account enquiries, english and arabic
US AND US	**Pay Pal US**	Siri	Nov 16	Account enquiries
	American Express US	Alexa	Nov 16	Account enquiries, payments
	Barclays UK	Siri	Aug 17	Account enquiries, payments
	Ally Bank US	Alexa	Nov 17	Account enquiries, track spending, payments, CurrentSee' feature
	Starling Bank UK	Google Home	2017	Account enquiries, payments

5. GAMIFICATION

Providers of financial services face the challenge of creating an emotional connection to the topic of banking – and thus also to the apps themselves. This also includes „**beyond banking**" offers or the linking with a corresponding third-party ecosystem.

Bank providers in Germany have not yet created lifestyle platforms that integrate banking into the everyday lives of customers more and more closely, that convey a certain attitude to life and connect them with other providers. This is precisely where a key path lies for banks to bring their business model up to date. By introducing game-like components, such as achieving self-set goals and levels that are linked to rewards,

people's psychological characteristics can be used to condition and build positive habits to steer behaviour in a beneficial direction.

This can be done quite casually by chasing points or by unlocking special emo- ticons or badges that are only available after a certain use intensity or goal achievement and can then be used as messages in money transfers. The US project Qapital, for example, uses gamification elements to encourage users to save money. The app uses insights from behavioural psychology to make saving itself desirable.
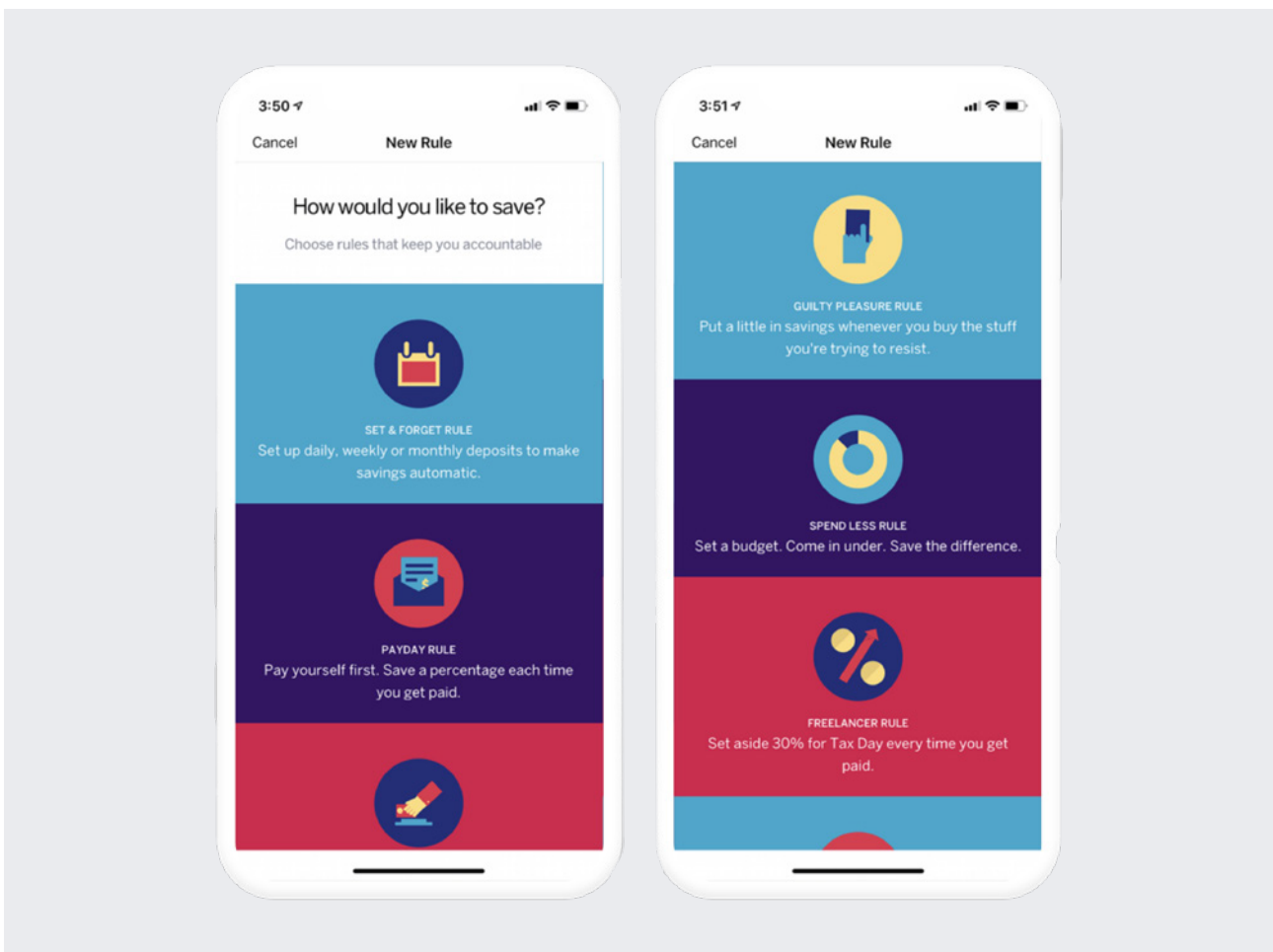
Qapital App (c) Qapital

There is a direct and strong link between gamification and the motivation to use mobile banking. Gamification can help increase acceptance, usage intensity and customer satisfaction. With its contemporary minimalist interface, the well-known free trading platform Robinhood provides a playful process similar to Tinder or Snapchat. Orders are executed with gestures and „swipes". The process is far removed from the sobriety of an investment decision, asset allocation and buy & hold. The customer experience offered is more like a social platform than a bank. Investors are congratulated on their first trade with a virtual load of confetti. With luck, legendary stocks like Apple's can be won. Together with hashtags and YouTube and Tiktok influencers who spend their daily lives trading, a lifestyle of playfully riding the wave of financial success is enticingly presented.

It is obvious that the topic of gamification also touches on ethical and moral issues that the industry has to deal with. As illustrated above, trading apps create an illusion of harmlessness through a playful-looking user interface, especially for young, inexperienced private investors. The suicide of a Robinhood customer who was not aware of the consequences of his selection of high-risk investment instruments is currently the subject of legal investigations. Gamification has enormous potential because of its potential to influence user behaviour – for better or for worse. The ethical scope of decisions made by companies must therefore be kept in mind and carefully weighed.

6. ARTIFICIAL INTELLIGENCE

Artificial intelligence includes all methods of identifying patterns in data and thus generating applicable insights. AI has already been used for some time in back-office processes, whether for automated credit decisions, real-time fraud prevention, authorisation processes for card payments or robotic process automation in payment transactions and securities settlement. Above all, it is about increasing efficiency in banking operations.

But what possibilities does AI offer for the interface? Traditional house banks have a comprehensive data pool at their disposal. Since an increasing number of fintechs have made it possible for bank customers to put together their own desired range of services from the variety of functions offered by traditional and digital banks, fintechs and payment service providers, a fragmentation can be observed, from which the informative value of the data material per provider suffers. Aggregators like the fintech Curve, which bundles all of the customers' credit cards so that only one Apple and Google Pay-enabled card

remains to be used and from which all purchases are then made, provide a remedy here. The gain in convenience for the customer is so great that the surrender of their data

and insights is accepted. It only takes a little imagination to realise the enormous service (and thus monetisation) potential this card has for the company, simply because of the large amount of data available.

Predictive analytics enables data-driven, forward-thinking suggestions using artificial intelligence, making the possibilities endless. Starting with location: Has someone recently done a lot of sport and is now approaching a sports shop? It's quite conceivable that a voucher for 5% cashback on a purchase of Adidas articles worth more than €100 pops up on the smartphone, financed directly by the sports goods manufacturer or the retail business partner. Has someone been lingering in a car dealership for a noticeably long time, hesitating before

making a purchase? The offer of unbeatable financing or used car warranty insurance announcing itself through their device can make the person's decision to buy easier. Does someone on a business trip have free time in their calendar and is in an unfamiliar city? Putting together a shopping trip based on personal interests in the nearby boulevard offers service in real time.

But patterns can also be derived on a transaction basis, enabling deep insights and predictions of relevant transactions. For example, from the buying patterns of a customer in a US department store, the company was able to deduce from just a few purchased items that the customer was pregnant. Increasing the relevance of bank offers through such data-based personalisation up to predictive analytics consequently provides great potential for additional business and customer loyalty based on the abundance of continuously generated transaction data.

It is particularly important here that not every service has to be directly monetizable for providers. Instead, it is about deepening the relationship with customers in the long term. Revolut, for example, recognises payments that look like subscriptions and summarises them so that one has a better overview of subscriptions and cancellation periods. Deutsche Bank sends an email reminder that a certain payment usually arrives around this time but is missing this month.

Needs like these are also covered by „digital financial assistants", for example **Cleo**, a budgeting app from London. The promise is nothing less than „to fight for the world's financial health". Cleo is aimed at Generation Z and connects to their accounts via API. Proactive advice and information on financial status is provided in a buddy-like manner via a playful conversational interface. The paid premium version includes „training up" one's personal credit score and a $100 salary advance for emergencies so as not to have to resort to expensive overdrafts. Last but not least, this ensures learning to manage money wisely – again through an emotional connection.

The example of Cleo shows that a banking licence is not necessary to create an attractive offer in the financial sector. Banks can no longer rest on traditional banking services as a value proposition. They are currently faced with the challenge of remaining visible on the market through a convincing customer experience, which includes an attractive interface, or leaving the important end-customer relationship to third-party providers.

7. MERGING PEOPLE AND INTERFACES

Communication between humans and machines is becoming increasingly seamless. The same applies to the relationship between customers and the bank. Interaction channels are blurring and merging – whether offline with online or different online channels with each other. The current versions of Amazon Echo have a small monitor that allows the device to follow the user's movements. Because while commands can best be transmitted by voice, certain information can be better illustrated visually.

For years it has been said that the branch business of banks is outdated and will die out completely in the future. But new interfaces contradict this assumption; in fact, completely new branch experiences could be created: Augmented and virtual reality, in combination with artificial intelligence and speech recognition, could create an environment that does not require human employees, but whose digital staff scores with competence that is vastly superior to that of humans. Innovative services based on user data would have a much higher accuracy for given advice.

Anyone who was interested in shares in the 1990s will probably still remember what was often recommended by bank advisors back then. They would say: „Go ahead and buy Daimler or Volkswagen, that way you'll be on the safe side, because cars will always be around!" Many may have followed the advice, because the lack of expertise was not yet obvious at the time. In a digital subsidiary, things would be different. The data of all stock exchanges and investment products would flow together there, including decades of development history and paired with AI-analysed knowledge about personal life circumstances, the individual financial situation as well as preferences in user behaviour – all explained in human form. Mediated through
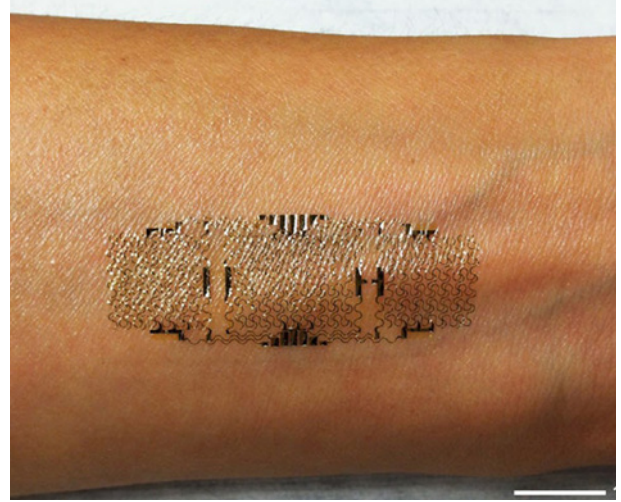
silicon electronic apparatus (c) Hong Yeo, John Rogers

a VR headset and thanks to immediate voice-verified issuing of orders as well as feedback on performance, customers could once again feel comfortable in a world of bank branches and „picked up" with their needs. Citibank's holographic „workstations" for traders extend information-based computing into „mixed reality" by integrating a 2D screen space, a 3D holographic docking space, keyboard, mouse, view-, gesture- and voice-inputs, as well as the usual phone systems in the trading room.

These examples show that the step towards the virtual branch and advisory situation outlined above represents a possible next development scenario. Together with wearables and hearables, the bulky VR helmets will also become superfluous later on. Already today, touchscreens projected onto the skin, electrodes worn on the skin, sensors and controls are coming ever closer to an interface that can no longer be felt.

8. ECOSYSTEMS

The possibilities for shaping and further developing the financial industry are so vast that the entire spectrum of customer needs can never be covered from a single source. The integration of banks into successful digital ecosystems will therefore simply be without alternatives in the future: customer demands are too high, and the possibilities of artificial intelligence are too diverse. There is therefore a necessary strategic move to maintain or recapture the customer relationship.

We are already witnessing the first step of this ecosystem methodology, in the form of a wave of „Beyond Banking" services. Banks and fintechs are competing for the main interface to customers and want to provide additional services as collaborations on their platform. In a second step, non-banks score with embedded finance: banking services are offered where they are needed, e.g. instalment loans and payments as part of the purchase process in an online shop. Large providers such as Amazon will provide the corresponding services themselves; smaller shops must follow suit in order not to fall behind. They need a partner from the financial services world.

A provider focused on „Banking as a Service" like Solaris Bank is already prepared for this coming era.

This gradual shift towards new ecosystems can be illustrated with assistants such as Alexa or Siri. In the first step, banks are trying to improve their customer experience by offering Alexa skills, i.e. enabling their customers to access their bank via Alexa. In the second step, Amazon takes over the banking services itself and integrates, for example, a free current account with cashback service into the Prime membership.

In the worlds of the so-called super apps such as WeChat or Alipay in China, the integration is so comprehensive that users receive all services directly via the same app, from food deliveries to wellness appointments, holiday planning, travel guides and payment transactions. However, new ecosystems are also emerging through digital lives such as Second Life, Fortnite or TikTok, where virtual objects are sold or traded and payments are required. Financial services are already part of everyday life in this environment as well, which expands the competitive space for banks to these platforms.

9. LOOKING INTO THE FUTURE

The momentum of developments makes it difficult to forecast time frames and relevant players that will capture the market for themselves. We are dealing with an exponential growth process, analogous to the growth of artificial intelligence and innovative interface technology. Every further technical change, every further advance of existing technology automatically influences the interfaces on which they are mapped.

The effects of these innovations are serious across all sectors. Interfaces that are reduced to or dependent on screens will be history and replaced by numerous new possibilities. Keyboard

and mouse will be replaced by motion sense, voice user interfaces and augmented/virtual/mixed reality. In the coming years, interactions between humans and machines will feel more and more as if they were taking place in the natural world – with hand and foot, speech, gestures and facial expressions.

What can banks do to respond to the next trend today? Overall, it is about holis- tically aligning their business model around three core elements: an intelligent, AI-powered offering with a focus on customer centricity; integrating banking into valuable partner ecosystems; and operating through an intuitive,

emotionalised interface. Thinking outside their own bubble is necessary for this substantial new path. It is a thing of the past that banks operate in a field entirely off their own, with their own rules of the game. Today, they are exposed to the same expectati- ons as social networks. Users want everything immediately, and they want it the way they are used to from the digital pioneers. Without integrating the target generations with their completely new needs as well as strictly agile development (including rapid prototyping and testing on the target group), an organisation can hardly be prepared for the future.

The potential that lies dormant here has probably been demonstrated in recent years. Completely new entrants with fundamentally different positioning, which were not considered to have relevant market potential by established banks, have given rise to new players whose valuation has reached many times that of some established banks within just a few years. Stripe, for example, has successfully identified a USP with its clear focus on software developers and payment processing via APIs. From this strength, the fintech has continuously expanded its range of services into more and more financial services areas. After only 10 years in business, the company is now as valuable as Goldman Sachs or five times Deutsche Bank with a valuation of up to 100 billion US dollars. Square has also exceeded a market capitalisation of over 100 billion US dollars in just over 10 years and is positioning itself more as an entertainment company, deliberately as far away as possible from the conservative image of classic banks. From the banking environment, Goldman Sachs has been particularly successful in identifying the potential of new technologies and interfaces for expanding its business and reaching new target groups and market segments and has reinvented itself as a technology company.

But ethics will also play a role in the banking of the future. After all, it is possible to make an interface too good and thereby raise moral questions – for example, if it leads to risky

behaviour against one's better judgement, as in the case of inexperienced online traders who are attracted to a service through gamification and thus end up in a real predicament, up to and including suicide. The most basic usability mantra „don't make me think" – i.e. to be intuitively accessible to any

The more seamless the transitions between the private sphere and the computer or bank become, the greater the influence on human decisions. If people buy complex products in a playful way, possibly without understanding them properly, then the question arises as to where the responsibility of the banks is. Just as an investment advisor bears a possible share of the blame for her client's behaviour, there also needs to be responsibility for errors triggered by apps. Short-term corporate growth objectives must be weighed against sustainability from a client perspective here.

We have presented here a series of interfaces that will shape the present and the future. Nevertheless, this series cannot be complete, because the interfaces of the future also include the „zero interface", which no longer has any physical tangible interface at all. Even the human brain itself can become an interface, according to forecasts. Initial developments by Elon Musk's company Neuralink have shown that a chip in the brain (initially of pigs) can be successfully connected to a device. Musk pointed out years ago that people would have to link their brains to computers in the future in order to keep up with the rapidly developing artificial intelligence. The industry is already getting closer to this goal in the present.

So the development of humanoid interfaces is not enough. This makes it all the more important for banks to actively integrate current developments in order to be able to use them optimally in the future.user without thinking – can have serious negative consequences in the context of finance, when it is precisely the stimulation of thought and the building in of hurdles that is called for.

10. REFERENCES

1. https://www.technologyreview.com/2021/01/30/1017086/cdc-44-million-vaccine-data-vams-pro- blems/

2. https://heise.cloudimg.io/width/1876/q85.png-lossy-85.webp-lossy-85.foil1/_www-heise-de_/ imgs/18/5/9/4/1/4/9/OnlineBanking_30Jahre.JPG-74452e76b5c401d4.jpeg

3. https://www.gdata.de/tipps-tricks/geschichte-des-online-banking

4. https://t3n.de/news/n26-7-millionen-kunden-217-euro-1352634/

5. https://www.bain.com/insights/in-search-of-customers-who-love-their-bank-nps-cx-banking/

6. https://amelia.com/2020/10/22/three-conversational-banking-pitfalls-to-avoid/

7. https://techcrunch.com/2020/11/18/bella-is-a-new-challenger-bank-with-a-text-based-interfa- ce/?guccounter=1

8. https://sifted.eu/articles/gen-z-messenger-banking-zelf/

9. https://medium.com/scribe-ai/gpt-3-for-finance-a-money-shot-faaa917194c4

10. https://www.theasianbanker.com/updates-and-articles/a-voice-led-future-banking-with-alexa- and-similar-services-become-mainstream

11. https://www.sparkasse.de/unsere-loesungen/privatkunden/rund-ums-konto/voice-banking/ funktionen-voice-banking.html

12. https://www.homeandsmart.de/alexa-geld-ueberweisen

13. https://alphabetisierung.de/2019/05/07/leo-studie-2018-6-millionen-erwachsene-sind-funkti- onale-analphabeten/

14. https://payspacemagazine.com/banks/gamification-in-banking-how-banks-make-their-apps-en- gaging/

15. Baptista, G. and Oliveira, T. (2017), „Why so serious? Gamification impact in the acceptance of mobile banking services", Internet Research, Vol. 27 No. 1, pp. 118-139. https://doi.org/10.1108/ IntR-10-2015-0295

16. https://www.bloomberg.com/news/articles/2020-12-19/robinhood-s-role-in-the-gamification-of- investing-quicktake

17. https://www.handelsblatt.com/meinung/kommentare/pro-und-contra-das-neue-boersenzeital- ter-verbessern-junge-trader-die-deutsche-aktienkultur/26755940.html?ticket=ST-7382928-YD- 23LesfS3urrJl4wOCF-ap6

18. https://www.ft.com/content/0e451231-fa4c-4686-bf2f-a5e107f337b9

19. https://www.curve.com/how-it-works/

20. https://www.creativeconstruction.de/blog/lp/trends2015/redefinition-privacy/

21. https://www.creativeconstruction.de/blog/lp/trends2015/pro-active-experiences/

10. REFERENCES

22. https://www.revolut.com/de-DE/abonnements

23. https://www.meetcleo.com/resources/saving

24. https://thefinancialbrand.com/68593/banks-credit-unions-finances-virtual-reality/

25. https://www.wired.com/2013/02/skin-printed-electrodes/

26. https://medium.com/swlh/latest-trends-in-user-interfaces-341d9d64f4f7

27. https://stripe.com/at/enterprise

28. https://www.bloomberg.com/opinion/articles/2020-11-25/a-100-billion-valuation-poses-risk-for- silicon-valley-fintech-star-stripe

29. https://financefwd.com/de/cash-app-europa/

30. https://www.linkedin.com/pulse/why-goldman-sachs-becoming-technology-company-jiri-kram/

31. https://www.youtube.com/watch?v=3jRNY_JcBpg

32. https://neuralink.com/

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