

FINANCIAL REVOLUTION ON THE HORIZON

**How digital networking, blockchain
and connectivity are creating billions of new
customers and a fresh financial market**

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Introductory remarks

Excessive costs, cumbersome processes, false incentives and above all: more isolated solutions for specific lines of business. An old-school financial system with methods and processes from yesteryear still shapes banking, transaction and investment today. Indeed, our entire life and society in almost all areas, especially administrative, state and public sector areas, is based on such archaic processes. However, the financial sector is a particularly blatant example: billions of people aren't even represented there. Almost one third of the global adult population has no bank account and is thus excluded from payments, insurance, loans or investment products, however small they may be. Banks, our currencies (the infamous fiat money) and common payment methods do not seem to be sustainable. They do not respond to the needs of many customers, nor to the challenges of the times in all areas, such as social affairs, education, healthcare, general interest services or development aid. The historical balance of traditional currencies and systems is also devastating.

Politically and socially, in these essential areas of life and politics, we are therefore drifting aimlessly, uncontrolledly and inefficiently into the future. But the groundbreaking solutions

have long been there: digitalisation with its core elements Internet, mobile and blockchain characterise the developments that find their apparently most important expression in cryptocurrencies. In contrast to what has been presented so far, the revolutionary thing about cryptocurrencies is not the pure payment process, but the technology behind it, the more efficient processes, the elimination of paid middlemen, and above all the decentralized character and interconnectedness. In general, the secret to the success of future financial technologies and applications is precisely this interconnectedness: the linking of devices, data, completely different products, services and platforms, currencies and payment options. In particular, however, the billion-dollar population groups that have so far been excluded can be integrated into a global financial system. Although they are already resorting to alternatives today, they lack convergence.

The world is therefore waiting for a transparent financial platform for global exchange. We call it *Utopicash*. This fundamental inclusion means nothing less than the democratisation of the financial system, indeed of the entire social system, with breathtaking prospects: namely, the potential for the just integration of all people. It is a utopia, but many rules and procedures are based on principles that we describe in this book—and it provides solutions that are bitterly needed by the changing economy and society.

This financial revolution with completely new currency and money mechanisms will have drastic effects on the entire society of the future—banking and finance are only partial areas. Therefore, the thread running through this book is far more a heavy, braided rope: namely, what these changes have for social, economic and political consequences. What happens when suddenly everything, really everything, is organized in block-

chains—for example through “global, decentralized and self-determined management systems” and open applications? All this and the possible driving forces and actors of the coming financial revolution will be presented in this book, which we explicitly understand as a positive outlook.

At the same time, the completely new, blockchain-based foundations of our coexistence and operations are unleashing forces that have so far been useless, inefficient, and fruitlessly tied up in often technocratic working environments. The bottom line is that there will be differentiated ways of management and taxation—with reduced administrative effort. And incidentally: earlier excesses in the financial markets could also be a thing of the past with these new rules.

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I. STATUS QUO

An antiquated financial system

Wherever we look, actors, organizations and elements of the financial system are put to the test: there is less and less faith in the hard value of currencies—and often rightly so, because they are unsecured and have often proved in the past that they are nothing more than printed paper. Banks appear to be a phase-out model. Many means of payment are expensive, restrictive and impractical. It is a story of endless failure with fragmented, isolated and incompatible solutions for the sector. When it comes to corporate control and audit systems, we are truly back in the Stone Age. All these inadequacies, adversities and the current state of the respective sub-areas are dealt with in this chapter—as well as freshly emerged solutions and new players who now have a strong influence on the financial market.

Above all, there is the fundamental transformation of our economy, the creative disruption/destruction in many industries, the (shifting and changing) needs of customers, as well as the great opportunities that new technologies bring—to offer customers new and better and often even their first-ever financial products. The revolution is in full swing: 25 years after the triumph of the Internet and laptops, mobile devices, technolo-

gies and methods are enabling the digital revolution. With FinTechs, a completely new industry has emerged, a mixture of finance company and high-tech that is strongly data-driven.

And when means of payment and currencies reach their limits—then people look for something new. We will also examine these alternatives, some of which have now become established. They have their charm and their advantages. But also flaws which is why even they are only a new building block that feeds its justification from the deficits of others, rather than a path to an overall solution.

So who are the major players on the market, and what are the major innovations? Why is all this happening now and not already with Internet 2.0? We will present the context, the drivers, the actors, the political and economic framework conditions of the current situation in a comprehensive stocktaking before we go into more detail on the individual solutions in the following chapter.

Banks as discontinued models— at least as we know them today

The counter clerk used to be an honourable citizen—and the position above all a sought-after profession. The changing of guard probably started with the introduction of ATMs. It has gradually come to replace the respected cashier. We have been doing our banking ourselves for a long time, from the computer, or they have become automated by means of direct debiting and standing orders. The counter hall with its bank statement printer seems like a relic from days of yore—and is therefore no longer as venerable as it was 100 years ago, but often looks like the photocopier nook in any given company. At the most, before

travelling abroad, one withdrew a few hundred dollars at the branch, or €10,000 to buy a used car—but thanks to other payment methods, this is now a thing of the past. And now there are robo-advisors, which replace investment advisors.

Nevertheless, banks, and with them online banks and financial service providers of all kinds, were able to defend their business model for a long time. Until now. Today, tens of thousands of young companies, the FinTechs, are attacking the business models of the established order with their apps and applications. Programmers, engineers, technology freaks and marketing experts seem to have all but replaced the bank clerk. Digitalisation is laying the foundations for this, and the revenue models continue to come under pressure, especially as the new virtual institutes have a different cost structure. And, of course, they only are picking out a few pieces of the whole picture for now; there are really no equivalents to universal banks. The focus is often on accounts, payment transactions and investments.

For financial institutions, the central question is therefore: “What else do we earn money from?” The answers are crushing:

- Loans: much too cheap and only worthwhile in the order of magnitudes
- Investment products: function with difficulty; are under extreme margin pressure and have hardly any unique selling points
- Higher fees: hardly enforceable
- Insurances: also offered by others
- Real estate agencies: high competition, but definitely an area with potential
- Investment banking: a key income component, but struggling with increasing regulation

A reason for the tense situation and the tightening of the cost screw is the large number of players, especially in Germany with its state-funded savings banks. In addition, there is the increasing fragmentation—whereby we see the exact opposite of the future of the financial sector. Banking expert André Bajorat says: “In fact, today there are only a few people left who have all the classic banking services at one bank. This development has become more dynamic with the Internet: it was easy to out-source loans, construction financing and investments to second or third-party providers, depending on who had the best conditions. Suddenly they had a credit card from another provider and a PayPal account.”¹

The number of visits to branches—and thus the number of branches themselves—has fallen dramatically. While in the past the branches of all the major institutes used to be in close proximity to one another in the most important shopping streets, their number has shrunk, first through mergers, and now through the simple fact that they are hardly needed anymore. Drugstore chains, clothing stores and mobile phone shops have taken over. At the same time, they drag themselves around with tens of thousands of staff on site and at headquarters. So you don't have to be a financial specialist to ask yourself: How is all this going to work? Are they still needed? Do banks have any future at all? The drama has increased in recent years, especially as coping with the financial crisis has distracted people from turning things around in time and tapping new sources of revenue.

Kai Pfirsich, a banking specialist, speaking of the German market, says clearly: “In the future, work in a bank, including customer contact, will only be partly done by people, so we must not be under any illusions. In the case of private banks, the ef-

fect will not be quite as great, but in the case of universal banks, around 40 per cent of employees work in customer contact, of which possibly only half will be left.” Pfirsich says not a stone has been left standing: robots “can analyse, make forecasts and develop scenarios.... Artificial intelligence can also reveal the legal consequences of investment decisions, identify anomalies and cluster risks and propose solutions.... Chatbots can already make simple investment decisions today. Robo-advisors are becoming more complex; they can take tax issues into account or reallocate investments so that they are less risky as investors approach retirement age.”² Robo-advisors automate investment and asset management. Once an investor has entered all the necessary personal and financial data, an algorithm takes over the selection and control of the portfolio—and costs only around one per cent of the investment amount in fee. Billions of dollars are already being managed through robo-advisors in Germany alone, an increase of \$88 billion in just two years. The consulting firm Deloitte reports of market estimates for 2020 of \$2.2 trillion to \$3.7 trillion.³

But all is not lost yet. In this section, we will describe not only the devastating figures and developments, but also the solutions and strengths of banks. First of all, banks have an enormous customer base as assets—which is part of the problem at the same time. This is due to the fact that many customers only incur costs and do not pay off. Deutsche Bank and Postbank (which was merged into Deutsche Bank in 2012) have a whopping 20 million customers, about half of whom carry out banking transactions digitally.⁴ This means that—at least technically speaking—the bank has almost daily contact with its customers, depending on their personal behaviour. This wealth can and must be a starting point to get revenue-related business going

again. One possibility would be to see oneself increasingly as a marketplace where customers can also purchase and use products from other suppliers. To explore all this, Deutsche Bank has entered into a research partnership with the renowned MIT, where experts in the “Initiative on the Digital Economy” are working on new business models and exploring “how people and businesses will work, interact, and grow in an era of profound digital transformation”.⁵

Moreover, as we shall see, banks are also increasingly participating in FinTech companies. This is mainly due to the experience that the corporate culture of established corporations alone often makes innovation from within impossible.

97 per cent of all Germans have an account. The remaining three per cent do as well, but in these cases, the account of the partner/spouse is used; in the UK, at 98.9 per cent, almost all are account-holders, as in the US, with a figure of 95 per cent. The wealth that banks have in the form of their customers is therefore also a huge treasure trove of data: almost everything you can afford in the way of larger purchases goes through your account. We will come to cash later, cash being number one in some countries, most notably Germany, in terms of the number of transactions. But when the chips are down, i.e. for €50 or more, banks are back on board with their giro and credit cards, standing orders, bank transfers and direct debits. In this way, they know how much you pay for rent and petrol, that you like shopping at airports, that you repay your uncle a loan of €100 a month, which streaming service you prefer and that you have apparently become a real estate owner, because recently every month a large instalment is due and payable to the mortgage bank (unfortunately not to that of your own house). The latter example thus also stands for large or outstanding positions that

indicate important stages in life—and are therefore not insignificant for providers of financial products.

Banks know a great deal about their customers. The main payment flows—provided they are not cash or alternative channels—cross their desks. But they haven't yet done anything decent with all this data, even though they depict the entire financial life of every person, cash purchases in supermarkets, the occasional coffee and evening pub visits aside. All these expenses could be optimised to a great degree, above all for the benefit of the customers—and thus mediated and sold, even on very specific occasions. Anyone who has bought a house or just arranged for an expensive wedding has entered a new phase of life—which should also be backed or secured by special financial products. Banks could score here. User behaviour and time spent on the application is a key factor in assessment at FinTech companies. For example, ten minutes a day on the provider's app is equivalent to several hours' worth of insights from individual "bank consultancy"—every single month. This leads to meticulous insights from the field of search engine optimisation via user behaviours, such as the length of stay on subpages or clicking away from the page because information was too irrelevant or boring. Such returns are impossible to achieve through physical counselling.

Deutsche Bank, which has been in a deep crisis for years, is trying to break new ground. Markus Pertlwieser, Digital Head of Private and Business Customers, sums up the situation for his company and a possible way out: "The classic revenue models are working less and less, the number of branch visits continues to decline. At the same time, in the digital sphere, many offers are becoming more quickly interchangeable, because the next offer is usually just a click away. The position of an aggregator

who bundles all these offers and has a direct customer relationship—that is what will pay off in the future.”⁶ Deutsche Bank has taken up the marketplace concept in order to no longer cater for its own platform alone. Pertlwieser continues: “He who owns the rack is strategically better positioned. And that’s why we’re building a rack.”⁷ The challenge, however, is this: there must also be suppliers who want to fill this rack.

Francisco Gonzáles, Head of Banco Bilbao Vizcaya Argentaria (BBVA), the second-largest bank in Spain, goes even further in his outlook for the future of his bank: “At the end of the day, we will no longer be a bank, but a digital company.”⁸ Anyone who hears the word “digital company” should hear alarm bells ringing. The term shows where the journey is headed, where the main driver of development lies—and what the great danger for established financial institutions is. Just as a digital company today buys books, downloads music or uses a navigation service (namely Amazon, Apple or Google), so could the entire banking process also be handled by a digital company—since the core issues are no longer currencies, transfers or the availability of cash, but a great user experience, efficient technologies, algorithms, low costs, analysis of data, networking and all the corresponding infrastructure, such as large storage and computer capacities. Just as no bookstore, record store or traditional supplier of map material has won the race in the aforementioned sectors, so could things turn out for banks in their own field: either a digital company will come—or they themselves will become one.

It is hardly a good thing that the predecessor of the current Deutsche Bank boss Christian Sewing, John Cryan, only described the IT systems of his own bank as “lousy” in May 2016.⁹ Kim Hammonds, then Head of IT, went one better: the compa-

ny was the “most dysfunctional company” she had ever worked for, she said at an executive conference. At the same time, under her leadership, having been in charge since 2013, the number of IT systems had been reduced from 45 to 32. As a target, she stated four as the number. Before she could tackle this ambitious mark, however, the American was replaced in April 2018—even after being promoted to the four-member Executive Board as Chief Operating Officer in 2016.¹⁰

In order to give a fair view of the state of affairs, it must be added in banks’ defence that they have, i.e. have “inherited” a “tech legacy”, these usually being outdated systems, whereas FinTechs can make a fresh start from square one. In contrast to the construction process of many a new building, the renovation of an old building is invariably expensive, elaborate, complex, risky and lengthy. As mundane as such an aspect sounds—software/IT is the backbone of financial firms; therefore, it is crucial. It is not for nothing that the management consultancy EY has identified this factor as one of the distinguishing features in the study *Technology disruption and the future of wholesale banking*—where FinTechs are therefore ahead and conversely traditional banks are weak. Other “minuses” include:

- The ability to drive innovation
- Less pressure from regulation
- Agility and speed in going to market
- Technological expertise
- Ability to improve existing products¹¹

So nobody can say from today’s standpoint whether banks will be in the lead in the complete restructuring of the industry, or renowned online big names, up-and-coming FinTechs or even

online comparison platforms that have grown to great popularity with their electricity and petrol price comparisons, and now also broker loans, insurance and financial investments. What is decisive, however, is Francisco González's remark about the BBVA: the company will probably only call itself "bank" by name. It has been clear for a number of years how much the borders are blurring: the comparison portal Verivox has bought FinTech Outbank, Google now also offers Google Pay, and gains access to customers via credit card companies and the card-issuing bank. The established online giants and retailers in particular use their market power. Because they also have a huge customer base, they have as a result direct access to the end consumer—but communicate with them in a quite different manner, which we will examine in a moment. Rakuten, Japan's largest online merchant, offers credit cards, financial products, mortgages and securities trading. Ant Financial, a subsidiary of Chinese online giant Alibaba, has a whopping 500 million customers in China and over 100 million more in other Asian countries. Ant accounts for 51 per cent of the \$11 trillion of annual online transactions in China, 16 times as much as PayPal.¹² The Ant Financial Services Group has achieved a market power that even the "Committee on Foreign Investment in the United States" found to be excessive. Ant was preparing to buy the American money transfer specialist Moneygram (347,000 agencies in 200 countries) for \$800 million, but the committee overruled.

And what does the world's largest online retailer do? Amazon is not at all a retailer, but an IT company with hundreds of millions of customers, billions of data, IT and data specialists and, incidentally, a cash cow called Amazon Web Services (AWS), one of the world's largest cloud computing providers, which is itself

used by competitor Netflix. It is easy for Amazon to expand its business portfolio, which has now moved a considerable distance away from books, to include banking. Because Amazon, thanks to its sophisticated algorithms, often knows what its customers want before they do, it is world champion in the evaluation of consumer data (and exclusively for its own purposes) and knows how to constantly expand its range, especially since all the prerequisites we have already presented for the bank of tomorrow are in place here: IT personnel, IT infrastructure, and even the company's own end devices are all at hand, and transactions are constantly at stake, not to mention the customer base of millions with almost daily customer contact. Amazon has had its own credit card for quite a while, Amazon Pay is a payment service and Amazon Lending already extends loans to small businesses. Soon there will also be a current account, in cooperation with a US bank.¹³ Amazon, and other online big names, have so far repeatedly managed to enter completely new fields themselves, such as the production and screening of films—money transactions would not even be far away from online purchases, and very close to consumers.

The decisive factor during the war is therefore customer contact—but also data. This is where API comes into play: APIs, Application Programming Interfaces, are digital programming interfaces through which data is made available and combined with other data. This makes completely new financial services possible. Most as well as the key transaction and money data is still in the hands of banks. And the insights gained through API can be used to generate new services and business. In our eyes, API is another technological keyword—and at the same time the basis for opening such important platforms that need to be accessible in any case. Deutsche Bank has therefore also set up a 35-person

API team. Its director, Joris Hensen, says of his wealth of data: “In contrast to information that large Internet giants have, payment data is much more meaningful, because it is based on reliable facts.”¹⁴

However, as of September 2019, all institutions in the EU will have to offer some of this data via interfaces within the framework of the EU Directive PSD2 (Payment Service Directive). PSD2 requires, for example, that transaction data be made available for the preceding six months. Of course, six months does not give an overview of the entire year, especially since, as is generally known, many payments are only due on an annual basis. Deutsche Bank would also like to have access to the annual transaction list paid for by any cooperation partners.¹⁵ It is a question of balance. As shown, open access and cooperation are sorely necessary in order to be broadly positioned, to receive suggestions and developments from all sides and to offer a wealth of different financial products and solutions—an open system that has long since worked in other industries. API boss Hensen of Deutsche Bank says: “For a platform to grow and benefit from network effects, it is important that access for all parties involved is as smooth as possible.... Every obstacle that could prevent someone from registering must be removed.”¹⁶ Here, the Payment Services Directive facilitates matters for many FinTechs. They can benefit from banks’ open access commitment to third-party providers. From a technical point of view, the aforementioned API interfaces provide access to customers’ account information. One need not be a proven expert to recognise that this arrangement means the loss of an important competitive advantage for banks. Resourceful FinTechs will process the data and cobble together cheap, modern offerings from it. At the same time, however, PSD2 also covers FinTechs, provided