



THE PAYMENT MEGATRENDS

THE SIX MAJOR TRENDS
THAT WILL HAVE A MAJOR IMPACT
ON THE PAYMENT INDUSTRY

MAY 2018



CONTENTS

2

30

<u>INTRODUCTION</u>	3
<u>MEGATREND #1: A CASHLESS WORLD</u>	4
<u>MEGATREND #2: ARTIFICIAL INTELLIGENCE</u>	8
<u>MEGATREND #3: INTERNET TECHNOLOGY AND IOT</u>	12
<u>MEGATREND #4: BORDERLESS PAYMENT</u>	15
<u>MEGATREND #5: FINANCIAL INCLUSION</u>	20
<u>MEGATREND #6: THE FRICTIONLESS CUSTOMER EXPERIENCE</u>	24
<u>ABOUT THE AUTHOR</u>	29
<u>COMPANY INFORMATION</u>	30

INTRODUCTION

3

30

By Markus Eichinger

Executive Vice President Group Strategy, Wirecard



Digitalization changes everything: In this series, I'd like to give some background on the digitalization-driven megatrends that will have a profound impact on the payment industry this year and in the upcoming years.

Everybody is talking about digitalization these days. Every business sector is affected – let it be manufacturing, agriculture or professional services. Even our private lives are becoming more and more digitalized.

The payment industry has driven digitalization for more than a decade already. But there are still plenty of new opportunities deriving from a more digitalized world.

In this 6-part series, we'll have a closer look at the six megatrends that we see as driving change within the payment industry.

So let's get started with a view into the future of payment.

PAYMENT MEGATREND #1: A CASHLESS WORLD

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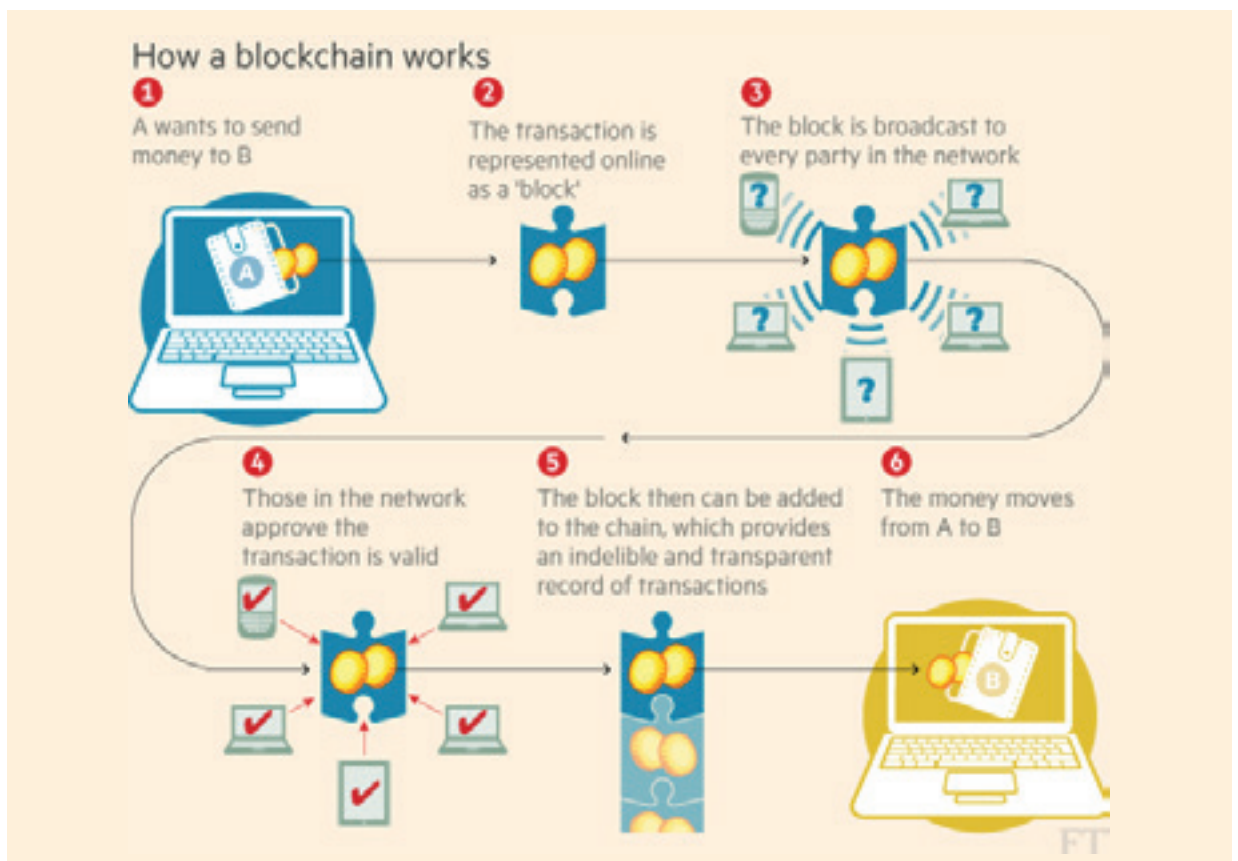
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In payment, the move “from cash to plastic” is something that we’ve been talking about for years. But since recently, there is more: The explosion of the virtual currency Bitcoin’s exchange rate has driven a lot of attention to the [blockchain technology](#).

However, while currently the media is mainly focused

on stories about the hype of bitcoin, there is much more potential in it – thanks to the underlying Distributed Ledger Technology (DLT). [Wikipedia](#) aptly describes DLT as “a consensus of replicated, shared, and synchronized digital data geographically spread across multiple sites, countries, or institutions. There is no central administrator or centralized data storage.”



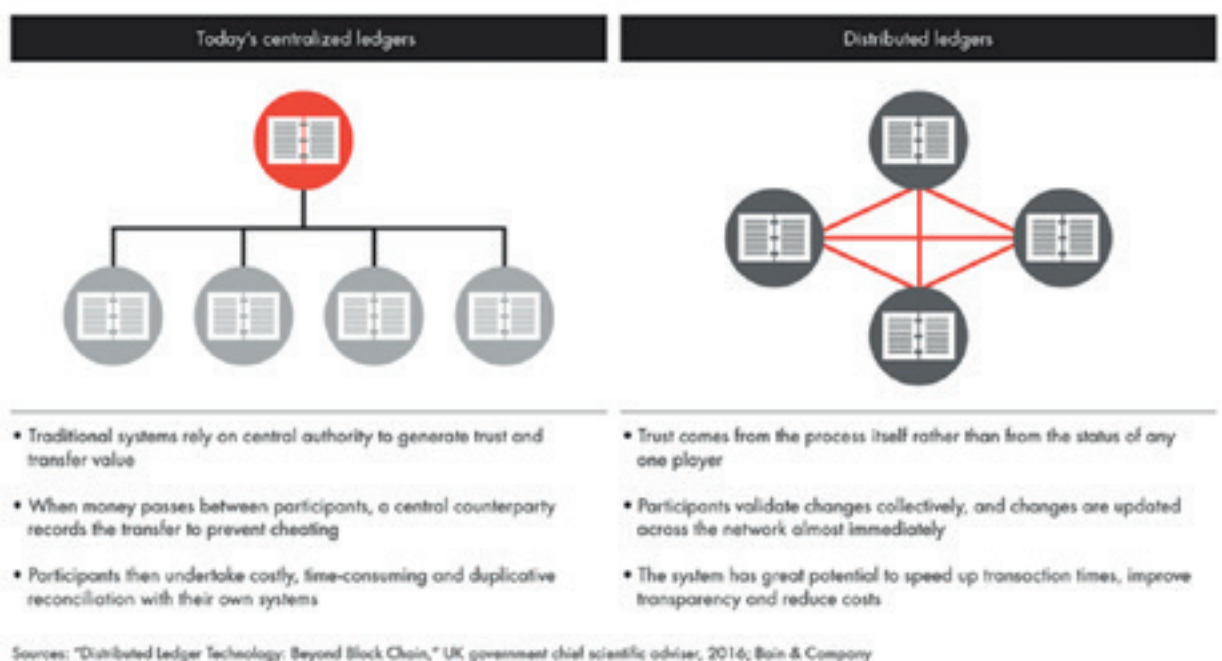
Source: [Financial Times](#)

Virtual Currencies and Distributed Ledger Technology will grow and become more mature

While there are many well-founded reasons to be skeptical about the long-term perspective of bitcoins and “anarchic” virtual currencies in general, for the distributed ledger technology, I am not skeptical at all.

Here is why: How do you check the validity of coins and bank notes? By means of security features such as security threads, holograms and so on – everybody can va-

litate coins and bills, and nobody is excluded from the ecosystem. In the virtual currency world, this validation is done by the network, using data saved in the blockchain. As the blockchain belongs to everybody, there is no need for a central authority deciding on the validity of a transaction. That’s the true power of DLT – bringing the democracy of cash into the electronic era.



How payment systems used to work – and how they will increasingly work in the future, thanks to distributed (instead of centralized) ledgers

Now here is what I pay special attention to: We see more and more central banks with activities in the virtual currency space. But not for the creation of a new currency, instead with the goal of virtualizing the domestic currencies.

Here are just some examples:

- [The Monetary Authority of Singapore is prototyping virtual currencies](#)
- [The Russian Central Bank pushes for the “Cryptorable”](#)
- [The central bank of Sweden is discussing the “e-krona”](#)

What does this mean for the payment industry?

With DLT, for the first time ever, “cash” becomes technically processable!

Whereas previously, the whole payment industry was only dealing with book money (money that is recorded in a bank account), now the doors open for working with cash-like money as well. This trend might be the biggest game-changer for the payment industry within the next decade and will allow for all-new forms of business for PSPs, banks and merchants.

PSD-2 becomes effective, opening up new opportunities

The second driver behind cashless society originates out of the regulatory framework in the EU: From 13 January 2018 on, the "[Payment Services Directive 2](#)", better known as PSD-2, becomes effective law in most EU countries.

This means a lot of new opportunities for payment companies. You'll also find many opinions that would rather focus on the challenges, but I prefer on the chances.

Here's why: The new Payment Initiation Service Providers (PISPs) will allow consumers to initiate bank transfers on their behalf via [Application Programming Interfaces \(APIs\)](#). So there will be no need to log onto the online banking platforms any more.

Basically, what happens is the following: By entering credentials into an app or on a payment page, a PISP service will initiate a bank transfer directly to the merchant's bank account. That works just like a prepayment, but is processed instantly and is seamlessly integrated into the billing and settlement processes.

Thanks to PSD2, payment will become faster, cheaper and more diverse

In our opinion, this will significantly enhance the portfolio of available secure payment methods, while reducing costs for merchants and users. Thus, it will further drive the transition from cash to electronic payments, especially in countries like Germany where there is still a vast majority of cash transactions.

Under PSD-2, we will also see a new quality of personal finance services, as the new "Account Information Service Providers" (AISPs) will have access to the bank account data of consumers (or Small Businesses) on their behalf. Finally, the screen scraping technology will be replaced by a more reliable and secure API-based access. We're now talking about a new quality of data that will be used to create great services such as personal finance optimization, tailored credit services, better risk scoring or quicker account verification.

No Surcharge Rule: From 2018, no single payment method may be overpriced in comparison to the others

Last but not least, the so called "no surcharge rule", also a part of PSD-2, will further push the acceptance of electronic payments. Even though this rule is interpreted differently by each EU country, the baseline is that under multiple payment acceptance methods, no method should be discriminated by adding an additional charge ("surcharge") to it. This will further drive the attractiveness of scheme-based payment methods such as Visa or Mastercard.



For the European Union, this is a "historical screenshot" as surcharges will be

banned by law very soon thanks to PSD-2 regulations

(source: itsecurityexpert.co.uk)

Of course, this short abstract on PSD-2 does not claim to be complete. There are a lot of other requirements such as Strong Customer Authentication that will improve the overall security of electronic payments, and also heavily support the megatrend towards a cashless society.



Instant Payments: Improving money transfer

The historic way of processing bank transfers in a central clearing house is batch-oriented – this means, the transactions were only processed once or several times a day. The result: We all know from our own experience how long bank transfers can take.

While internationally there are many instant payment systems around (in 30 countries as of today, as can be seen on the [“InstaPaytracker”](#)), in Europe the SEPA-wide system “SEPA Instant Payments” is clearly belonging to the runners-up group and went live in the autumn of

2017.

Simply put, instant payments are not changing the way how money transfers are made in general, but they allow for faster execution and settlement of the funds – features that were formerly attributable mainly to alternative schemes such as PayPal.

The success of PayPal and other instant money sending services shows clearly the huge market for instant payments – a market that is now opening up for new entrants, as what has been a technical barrier so far, now



Conclusion: This is why a cashless world will become more and more reality

The trend towards a cashless world will be supported by two key drivers in 2018 and beyond:

1. Further increase of electronic payments, supported by regulation and technical improvements such as instant payments
2. The game-changing revolution of blockchain tech-

nology, enabling electronic processing of cash-like virtual money

Thus, a cashless world is certainly anything but just a buzzword. It is something that is currently happening and will continue to disrupt the way how we deal with money for the upcoming years.

PAYMENT MEGATREND #2: ARTIFICIAL INTELLIGENCE

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Artificial Intelligence (AI)? Some may think of Hollywood movie-inspired dystopian future worlds, but what was considered a technical utopia a few years ago, has now become reality – although it comes in a subtler form.

In fact, AI has already arrived in our everyday world: Just think about your e-mail spam filter, natural voice recognition, online shopping recommendations – or simply about the predictive keyboard on your smartphone.

In this second part of my [series on payment megatrends](#) which will strongly influence the industry in 2018 and beyond, I will focus on Artificial Intelligence and why it will be a huge game changer for payment.

Definition: What is Artificial Intelligence?

Artificial intelligence is an umbrella term used for a set of hardware and software technologies, some have already been around for many years, some are brand-new. In a nutshell, artificial intelligence describes the ability of a technical system to replicate “human” behaviors such as learning and problem solving.

There are two subcategories:

- Strong Artificial Intelligence in this respect aims at creating a machine whose thinking skills cannot be distinguished from those of a human being – this basically means, creating a machine that can pass the [Turing Test](#). No technological system has yet passed this test, and there are various predictions on when

this will be achieved. Back in the 1950s, its famous inventor Alan Turing predicted the year 2000, whereas newer predictions range between the year 2020 and 2029.

- Weak Artificial Intelligence, however, is a category for applications that focus on solving real-world problems with machines rather than with humans (which is why this kind of AI is more relevant for business applications).

Here's an example:



Picture 1



Picture 2

You'd surely agree that both pictures illustrate the handwritten number “4”. Every child can easily solve this task, but when it comes to “explaining” this to a machine, things get complicated. Algorithm-oriented ways of describing the “4” might work for a small sample size, but when it comes to handwriting recognition, this approach no longer works.

Instead, Deep Learning (or Machine Learning) technologies come into place, and they are evolving with ever increasing speed. They could be described as an AI function that imitates the way the human brain works in processing data and by doing so, creates patterns from training data that are able to predict behavior for new data.

Neural networks are like human brains: Experience makes them wiser

Deep learning technologies are commonly based on neural networks that are trained with existing sets of data and can be seen as the brains of modern AI. A neural network consists of a multitude of neurons, i.e. collections of connected units or nodes – analogous to the biological neurons in a human brain.

These artificial neurons are designed to perform simple decisions, based on input data. The power of the network then lies in the combination of multiple layers of neurons and their weighting.

Explaining how neural networks work in detail would surely exceed the possibilities of a blog article. Instead, I'd like to recommend this [free online book](#) for a good and easy-to-read introduction or [this video](#) for a quick overview.

However, the quality of a neural network is not that much driven by algorithmic excellence, but rather by the amount and quality of available training data. At Wirecard, we use datasets ranging back up to 10 years to train our AI-based risk systems.

Reduce the risk: the use of Deep Learning technology in payments

Risk decisions in payments are never 100% clear, therefore they are the perfect playing field for Deep Learning technologies.

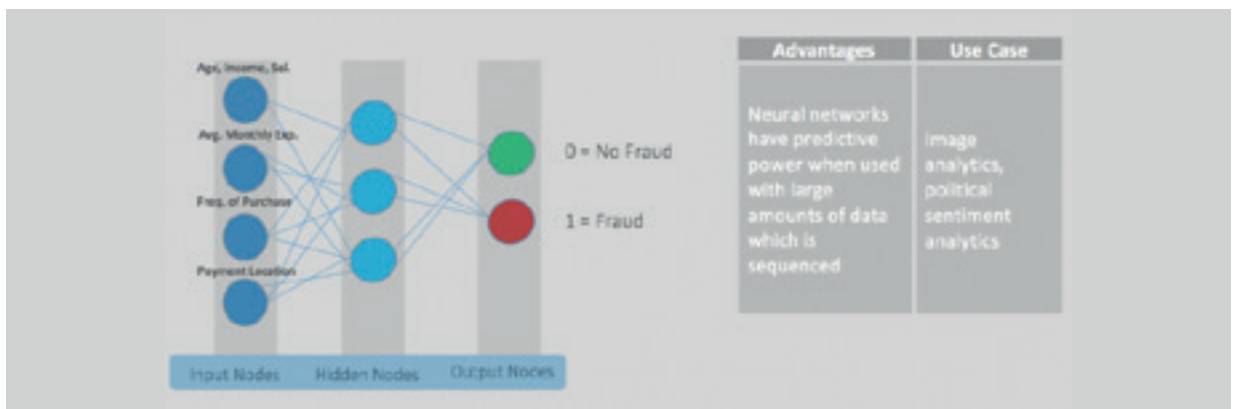
How are risk decisions made? As a merchant or acquirer, you do not want to accept a payment where there is a high probability for a fraudulent action or a high likelihood for a chargeback. On the other hand, rejecting a "good" payment normally results in conversion loss and thus, lost revenue for the merchant.

To decide on acceptance or decline of the payment, many different factors are available to be taken into account, for example:

- Time & date – e.g., is a credit card used at normal shopping times?
- Merchant category codes – is it used at a supermarket or for online games?
- IP-addresses – where is the device used for online shopping located?

Social information – the use of social media data is quite a new application in payment risk detection.

By training a neural network with historic risk data, the network will learn and improve and therefore be able to better predict risk for future payments. However, it is important to point out that the most important driver for deep learning quality is the grade and amount of training data – not the actual algorithm!



Neural net learning consists of multiple hidden layers and mimics the behavior of the human brain. Deep learning included multiple neural networks put one after the other

(Source: Sunil Kappal, [Deep Dive Into Machine Learning](#), published at DZone)

Pay with your voice or your face: Upcoming applications of Deep Learning and Artificial Intelligence

The payment industry has a long history of working with data to make qualified risk decisions. For sure, risk analysis is the “bread and butter” application of Deep Learning technology within a payment company.

In the upcoming years we expect many new applications, driven by AI technology that will significantly influence the industry, both in payment and commerce in general.

Just to list a few:

- Chatbots and AI-assisted shopping

Chatbots will enter the field of commerce and help consumers to find and research products more easily. Widely used applications such as [WeChat in China](#) will provide the reach for merchants and are already offering a

platform for shops and payments.

It will be AI-powered chatbots that will resolve the disadvantages of the smartphone’s limited display size and browsing capability and thus open up all-new sales channels for merchants that require flexible and well-integrated payment solutions.

- Natural voice processing

2017 was the year of natural voice processing services such as Amazon Alexa or Google Assistant. They not only found their way into home appliances such as Amazon Echo, the Sonos speaker system and even cars, but they also significantly improved in quality and intelligence.

While creating the whole shopping experience within the “voice channel” is still a bit of a cumbersome process, putting items into a shopping basket via voice certainly is not and works just fine. This will pose new challenges on designing an optimal checkout process and also on how to integrate payment in the right way.



“Alexa, could you put milk in my shopping basket?” In 2018, it has become perfectly normal to buy something online by just saying what you need – thanks to Artificial Intelligence (Source: [Wikipedia](#))

- Smart Data for Offers & Advertising

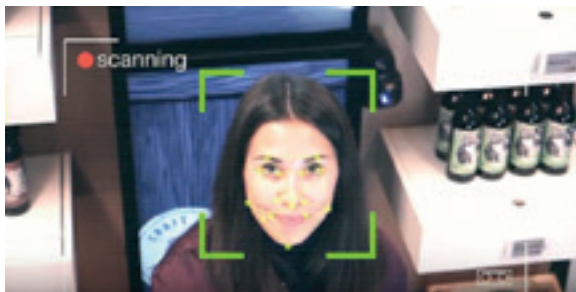
The way of how we work with data to create offers and advertising for customers used to be largely based on market studies, focus groups, samples – saying: on metrics that are not tailored to the single individual. We can see that AI technology makes it possible to target offers better to consumers with the sample size one, and thus open up new possibilities for merchants to reach their customers.

Payment services and especially mobile payment services will play a key role here, as they already exist and are readily available channels to process data, mostly in real-time.

- Facial Recognition Technologies and Biometric Identification

Most biometric identification technologies are based on AI-supported technology for decision making. In 2017, Apple launched a sophisticated facial recognition technology in the new iPhone X and we expect more applications of this “contactless identification” to evolve within the near future.

This will revolutionize checkout-processes completely and make payments online and in-store more secure. We also expect that sophisticated identification technologies will make physical cards less predominant and drive the demand of virtualized payment instruments.



One example of biometric face recognition for payment purposes – this is a still image taken from our [video](#) about Wirecard's “Connected Store”.



Conclusion: AI's implications for the payments industry

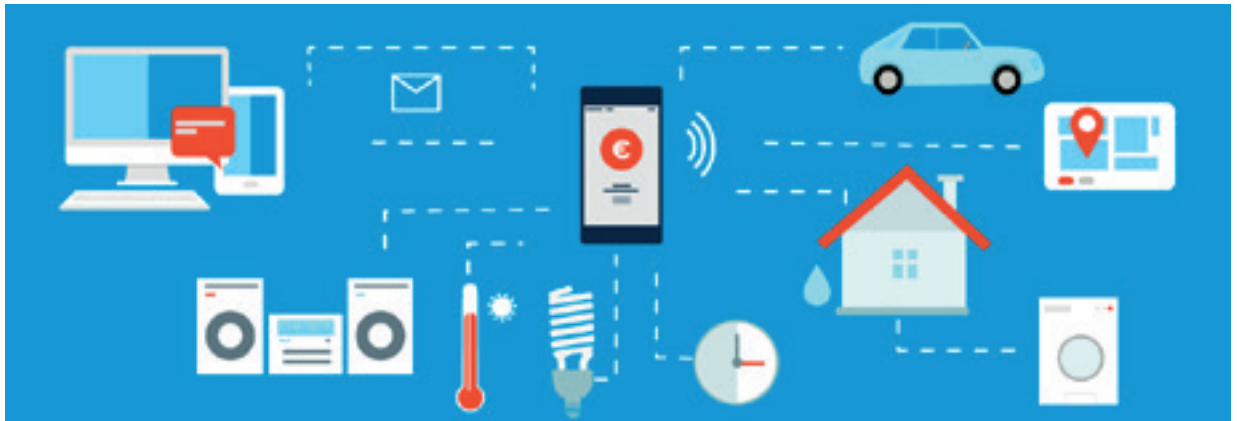
The battle for the “best AI” is already being fought in full swing within the “Big Four” of the tech industry: Apple, Facebook, Amazon and Google. But also for the payment industry, AI will open up completely new opportunities to develop products that will improve the top line and bottom line – i.e. revenues and profits – of a retailer's P&L.

I think it is crucial for payment companies to think far beyond payment data and to develop in-house capabilities and competences in the field of Artificial Intelligence and, more specific, in Deep Learning technologies. AI-based technologies will change the online and physical conversion process significantly and lead to higher conversion rates and improved security – thus, we expect that AI will impact the whole industry significantly in the years to come. In my opinion, AI will at some point become the key differentiator for technology and payment companies. Given the explanation above of how AI works, it's never too early for payment companies to “start learning”.

PAYMENT MEGATREND #3: INTERNET TECHNOLOGY AND IOT

12

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A world without internet? Nowadays, this would almost be like a world without electricity – both seem completely unimaginable. This is why most people take the internet for granted, using it daily, without really thinking about it.

However, in order to understand how internet technology is enabling the Internet of Things (IoT), a major innovation that will fundamentally change our world and also the way we pay. That's why it is worth to take a closer look.

Internet technology – the three layers enabling the modern world



This graphic is taken from the insightful blog article "[OSI Model – How Internet Works](#)" by Zbigniew Gargasz.

Internet Technology is a term commonly used to describe a collection of standards, protocols and topologies that are used in the internet and are particularly popular. This starts with the lowest layer, the physical layer, and ends at the highest layer, the application layer. This layer model has existed since the early days of the internet and was already published back in 1983.

The layer model describes the protocol stack that is used to establish a communication or data exchange between two hosts (most commonly, you would say a "computer" and a "server"). The most widely used protocols that can

be referred to as "internet technology" are:

- Ethernet
Physical layer (layer no. 1 in the graphic above) – defines cables, plugs, and basic protocols
- TCP/IP ("Transmission Control Protocol / Internet Protocol")
Networking and transportation layer (no. 3) – defines how packets of data are transmitted between hosts in order to assure, for example, data consistency

- HTTP, MQTT
Application layer protocols (no. 7) that allow for specific applications (Hypertext Transfer Protocol) or machines and devices (Message Quing Telemetry Transport – for machine-to-machine communication) used to exchange data

Now why is this model so powerful?

Simply put, each layer does not have to care about all the other underlying layers. You experience that yourself when you surf the internet: Your websites look the same, regardless if you are using a cable, are on Wi-Fi or using your mobile phone.



The APIzation of the world: the triumph of Application Programming Interfaces

In addition to these standards, “Internet Technology” also means that application-based exchange of data is done through (published) APIs (Application Programming Interfaces). APIs allow for the simple and standardized exchange of data between two applications.

All of this might sound a bit nerdy, especially if you have grown up with no memory of what it used to be like to get your internet up and running in the early days – but in fact, it’s not. A core element of the EU payment directive PSD-2 (which I wrote about in my [recent blog article](#)) is “access to accounts” – that’s nothing else than the “APIzation” of bank accounts that were up to now hidden within core-banking applications.

Here’s another example: A new breed of cash register software such as [Enfore](#) allows for easy integration of external applications through programming interfaces. For web shop systems this has always been standardized, but for brick-and-mortar, open APIs are just now evolving.



Open APIs allow for a new generation of cash register software – this is one

example (Source: [Enfore](#))

A cashless payment is just an API call and sending data packets

This technological and legal development is changing the whole industry: what was formerly a closed system (the bank, the retail store) can now be accessed more easily by 3rd parties such as startups to provide new services and applications.

This also applies to payments. In the ecosystem of internet technology, a payment transaction is nothing more than an API-call and packets of data sent from one host to another.

Why not add more data to this exchange of information and use that data for services that complement the value chain, such as loyalty services? I think it will be paramount for payment companies in the future to allow for this flexible exchange of data in single calls, by also assuring compliance, data integrity and security.

Affordable sensors and wireless technology enable IoT anywhere

How does the “Internet of Things” (IoT) play into this? The IoT is a vision in which physical and virtual objects communicate among each other.

Here’s an example: Checking and controlling the room temperature within an app on your smartphone. The IoT

received a big push within recent years (and this will continue into the near future) as it becomes cheaper and cheaper to produce sensors and actors that can independently access the internet. Before that, you'd have to wire all the different sensors and actors and integrate them to a proprietary server system and then connect the system to the internet – that was costly and tedious.

IoT technology, instead, allows each single device to become a host within the global internet. That's why it is so easy nowadays to automate your home, just install Amazon Echo or Google Home. Are you using the Amazon Dash buttons? That's IoT at its best.



Whether for detergents, coffee, razor blades or any other consumables – thanks to IoT technology, Amazon's Dash button allows you to order replenishment with just one click (Source: [Wikicommons](#))

For payments, this also means quite a lot of changes. More and more purchase decisions made by humans in stores or online will in the future be made by machines.

The most commonly used example is the fridge that automatically re-stocks goods. And indeed: Last year, LG was one of the first companies to integrate [WebOS and Alexa into a fridge](#).

There are many more use cases that are not so obvious, but will also significantly change the payment industry: Just think of the car that automatically pays for gas at the filling station – no need for terminals nor tapping cards. Or look at Wirecard's [Connected Store concept](#) or at [Amazon Go](#), which after a testing period has now been [opened to the public](#): Just walk in a store, take goods and walk out – no more cards or cash required.

What does this imply for payment companies?

In my opinion, central storage of payment instruments, tied to a user account, is absolutely key – in the IoT world, there is no need to enter card numbers, expiry dates nor CVC codes. Without the payment instrument already linked to the user account, payment companies will not be involved. The best solution is not only a centralized account, but a centralized wallet that is loaded by the user. Besides, Amazon is currently introducing such accounts and adding incentives to top them up.

The reason is simple: Many IoT transactions are small or micro transactions, and in some cases money is not only debited, but also credited. It is far cheaper and quicker to do that with central e-money accounts than going all the way through card schemes.

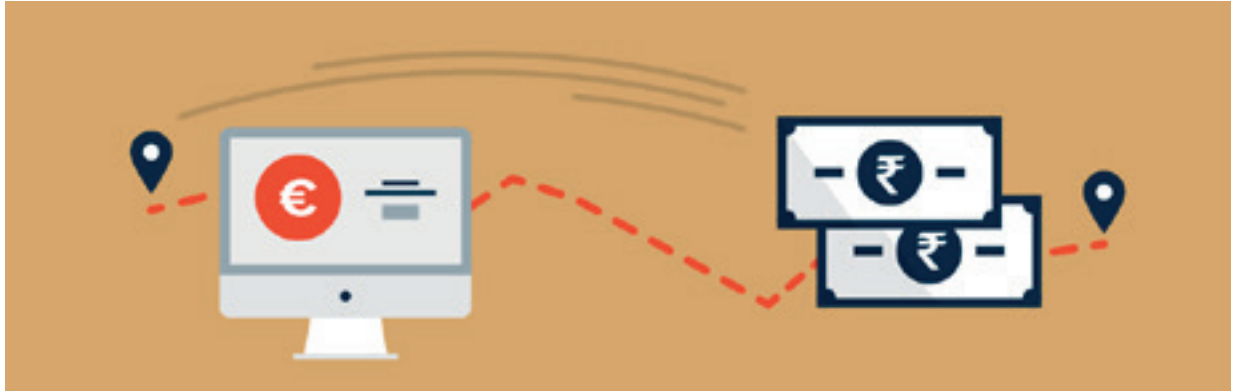
To conclude, I firmly believe payment companies will have to offer a fully digital eco-system of acceptance solutions and loadable user accounts in order to be ready for the IoT age. These must all be easily accessible through programming interfaces and built on one single digital platform.



PAYMENT MEGATREND #4: BORDERLESS PAYMENT

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Borderless – this is how we like to think about our world when we dream of traveling, roaming with the finger on the map. However, in reality there are all kinds of borders and restrictions; not only for people, but also for money transfer.

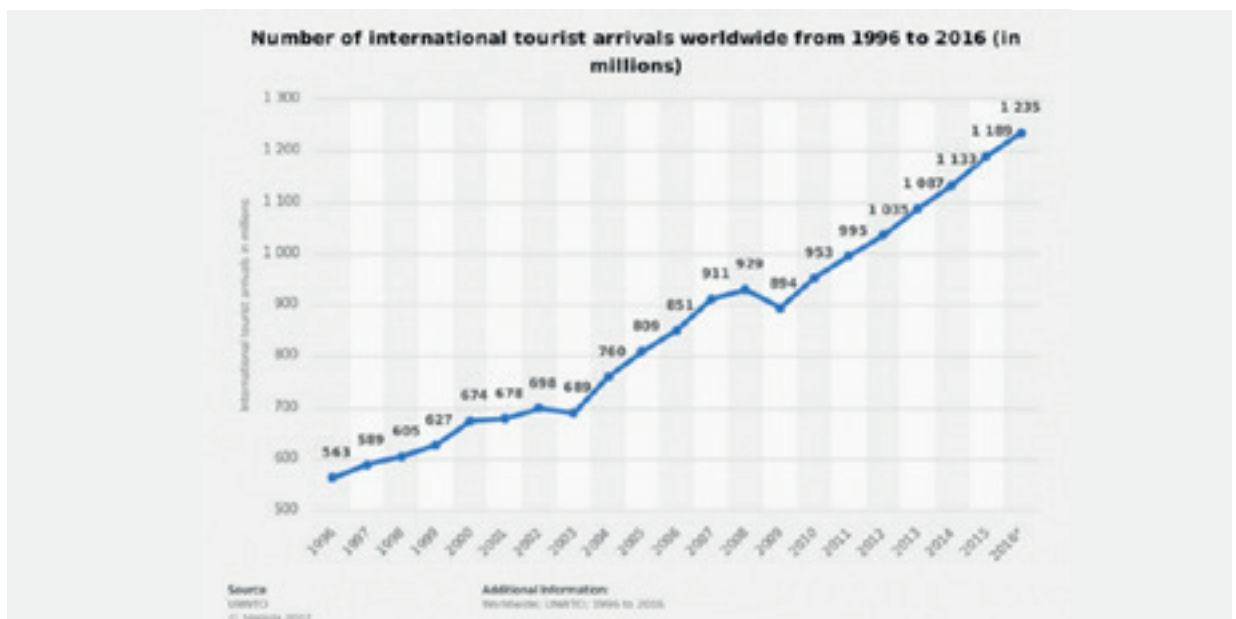
In this 4th part of our Payment Megatrends series, learn more about how thanks to technology the payment borders are becoming increasingly permeable – and why borderless payment solutions have a huge potential.

A mobile world

Global travel is a blast. Since 1950, travel has increased by a factor of 50. Just looking at recent years, tourism grew by nearly 120% in past two decades.

But it's not only global travel, it is also global workforce migration that drives the demand for cashless cross-border money transfer.

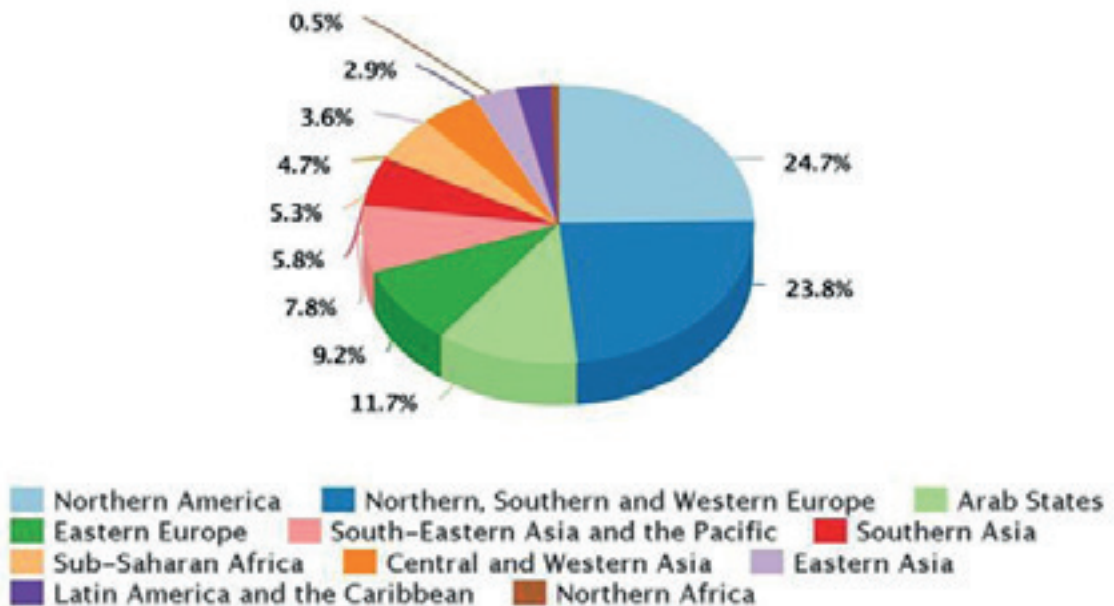
According to the “[Global Estimate on Migrant Workers](#)” of the [International Labor Organization](#), globally more than 150 million people are migrant workers – that is 4.4% of all working population worldwide.



Source: [Statista](#)

Distribution of migrant workers around the world

Women and Men



Highcharts.com

This is where migrant workers live – nearly half of them in North America and in the western part of Europe (Source: Vita International: „150 million migrants in the global workforce“)

These people increasingly demand for cheap, quick and reliable ways to transfer parts of their salary to relatives or the family at home.

Expanding mobility drives international money transfer volume

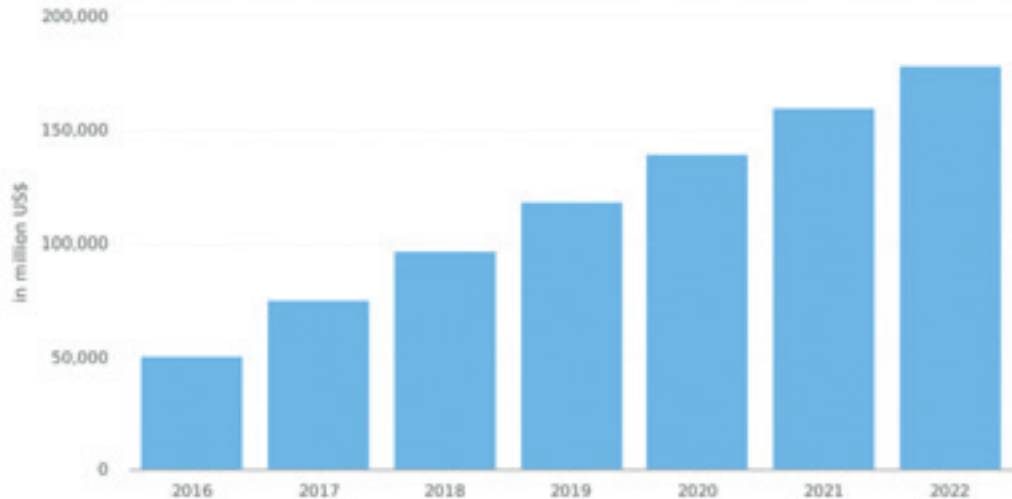
This is why international money transfer is a huge and highly dynamic market. International peer-to-peer (P2P) money transfer is a [growing business](#) and also correlates with the distribution of international workforce and labor migration: Most money is sent to countries abroad from the US (25,993 mn US\$ in 2017), followed by the United Arab Emirates and Great Britain.

The total amount of international P2P payments accrued to US\$ 74,740 mn in 2017 and is estimated to reach US\$ 178,472 mn in 2022 – that's a CAGR of 19% – in payments, this is undoubtedly one of the most interesting business opportunities.



Transaction Value in the P2P Money Transfers market

In million US\$ (worldwide)



Source: Statista, December 2017; Selected region only includes countries listed in the Digital Market Outlook

statista

Source: [Statista](#)

That growth is not only fueled by the growing demand in numbers of people – they also send higher average amounts of money. Studies expect an increase of

the average transaction size of international P2P transactions from US\$ 412.04 in 2017 to reach US\$ 938.95 in 2022.

av. Transaction Value per User in the P2P Money Transfers market

in US\$ (worldwide)



Source: Statista, December 2017; Selected region only includes countries listed in the Digital Market Outlook

statista

Source: [Statista](#)

International money remittance: from shabby to chic

While sending money internationally has long-time had a bit of a "sub-prime" touch, innovative FinTechs such as [Transferwise](#) are now entering the market with mobile-based products. And rightfully so, because there's a huge potential for them to grow.

I also appreciate a lot that the terms and conditions are becoming fairer for the consumer: From complex fee structures and hard to validate exchange-rates, business models are now evolving to a transparent fee structure and exchange rates that are based on official central bank rates.

HOW TRANSFERWISE WORKS

TransferWise is the new, smarter way to send money abroad. There's no exchange rate mark-up, and one small, fair fee that's shown upfront. Here's how it's possible.



Transferwise offers a very competitive transfer rate by actually crowdsourcing the money people want to transmit (Source: [Transferwise](#))

Travel smart – and save high foreign

In the field of global travel, I also expect many new services to come up within the next years. All and foremost traveler's cards that are made for the international use and that support multiple currencies – such as the [Fair-FX Currency Cards](#).

There's a lot to save for the international traveler, as for-

foreign exchange fees still range between 1% and 2% for issuer-based currency conversion. When it comes to Dynamic Currency Conversion (DCC), the added cost base is even higher for the consumer – up to 5% in mark-up, depending on the local acquirers and merchant agreements.

Borderless payment – the lifeline for global trade

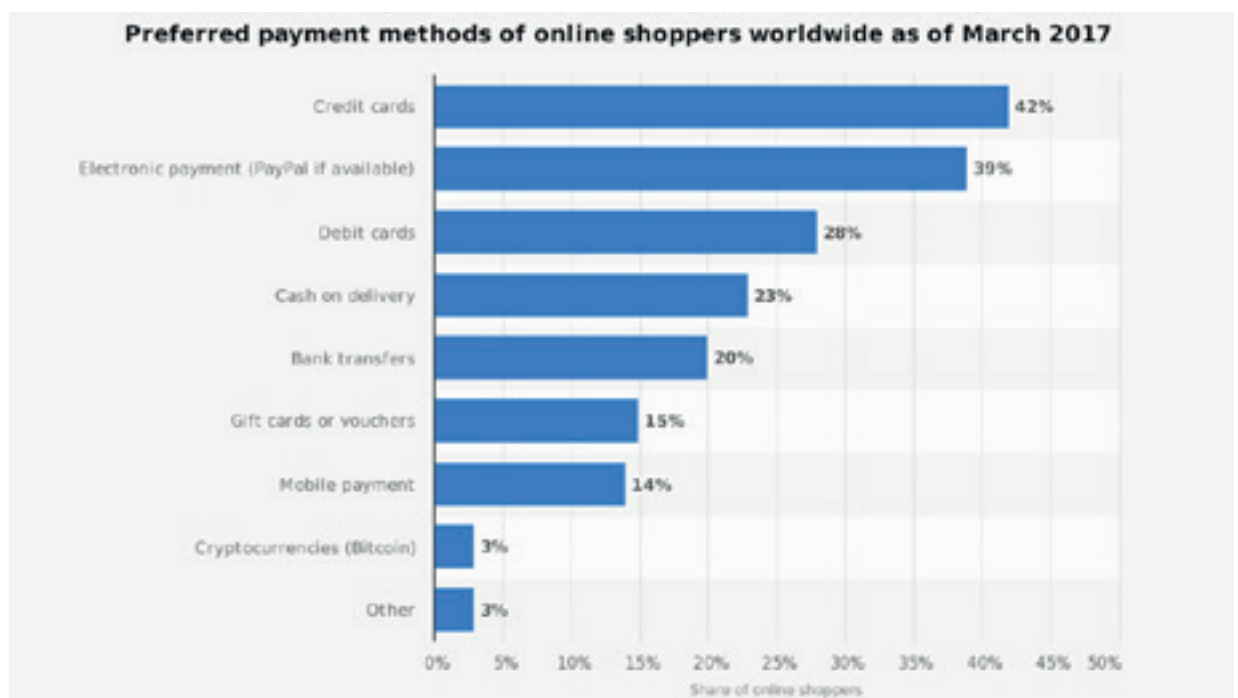
But it's not only international travel that is pushing the demand for cross-border money transfer. Global trade is even more impressive. As an example, the China-based Alibaba Group, a pioneer of global trade services, increased its revenues from international trade with a CAGR of 24% between 2010 and 2017 – while domestic trade grew with a CAGR of 5% in the same period of time.

It's not only the big players who are active in international or even global trade. More and more often, smaller players are selling internationally as well.

A recent [study by Statista](#) shows that more than 85% of the respondent merchants agree or strongly agree that international trade will play an increased role in the future.

Furthermore, more than 75% agree that offering local currencies significantly reduces the abort rate of check-outs.

Regarding payment instruments for international e-commerce, global schemes such as cards or PayPal are clearly leading – invoices or direct debits range behind.



Source: [Statista](#)

Conclusion: This is why Borderless Payment is a megatrend

Especially for smaller ecommerce players, cross-border payment acceptance and multi-currency pricing are still big challenges. As a result, I expect a significant uptake in services and applications around international money transfer and foreign exchange services especially for this group of customers.

This is why providing intelligent borderless payment so-

lutions is a huge growth market for established players in the finance business as well as for new market entrants from the FinTech world. Needless to say there is a strong dependency to the other megatrends such as cashless society or financial inclusion, which by the way will be the topic of the next issue of this series.

PAYMENT MEGATREND #5: FINANCIAL INCLUSION

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How do you receive your salary? By a transfer to your bank account?

If your answer is “yes, of course,” then quite likely you’re from a high-income [OECD country](#). But what about the other regions of the world where people often don’t have a bank account or lack access to financial services?

In this article, which is the 5th of our Payment Megatrends series, we will take a closer look at Financial Inclusion, at how smartphones have helped the unbanked to gain access to financial services and why offering financial services in those developing markets is a great opportunity for companies in the financial sector.



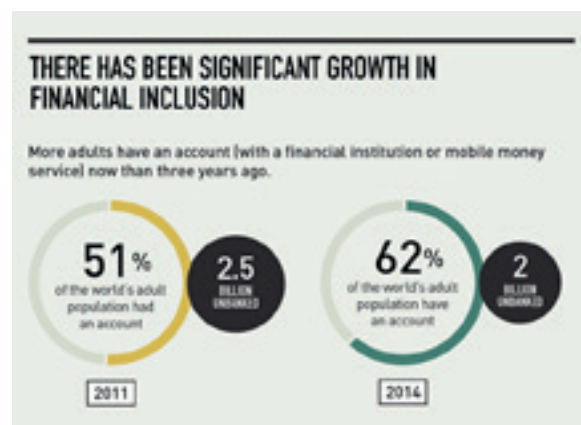
Definition: What is Financial Inclusion?

An estimated 2 billion working-age adults worldwide are financially excluded.

This means they do not have access to financial services that are delivered through a regulated financial institution, i.e., a bank or central bank. However, the term is

broadly used across areas like savings and deposit services, payment services, money transfer services, credit and loans as well as insurance. In this article we’ll focus particularly on account ownership and payments.

There has been a lot of progress in the last five to eight years, as numbers from the World Bank’s most recent available Findex report from 2014 show: In only three years, there has been a reduction from 2.5bn unbanked to 2bn unbanked – a 20% increase of financial inclusion.



Source: World Bank Infographic “[Global Findex 2014](#)”

Furthermore, according to the World Bank, this is not only a phenomenon in a few countries. Increased access to account ownership is a trend that can be found in nearly every developing country. There is little doubt that account ownership and, consequently, electronic money is the basis for financial inclusion.

But why did this trend particularly accelerate in the last few years?

PAYMENT MEGATREND #5: FINANCIAL INCLUSION

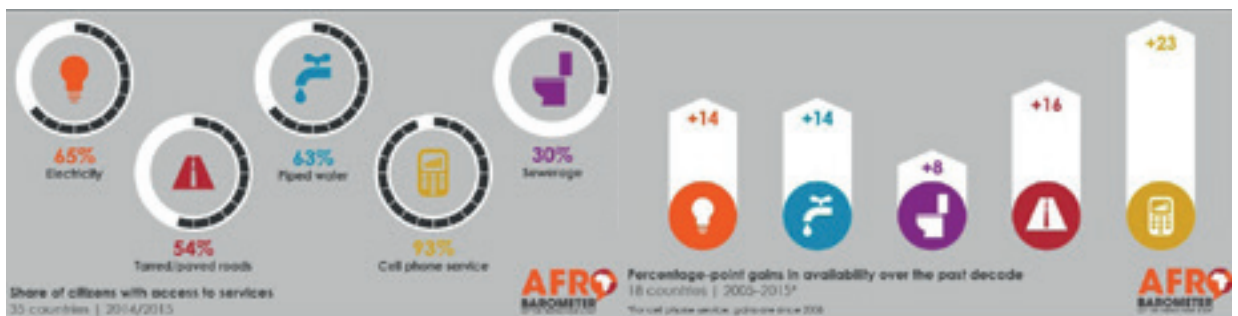
21

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Key to financial inclusion: Mobile Moneyexchange fees

Mobile cell phone coverage has exploded in recent years in most developing countries. Let's take the example of sub-Saharan Africa. According to [AfroBarometer](#), in Africa far more people have access to cell phone service than to piped water or sewage facilities:

Mobile phone coverage is also the area with the largest growth in recent years – a 23% increase from 2005 to 2015, whereas access to other essential facilities only amounts to a low 2-digit growth.

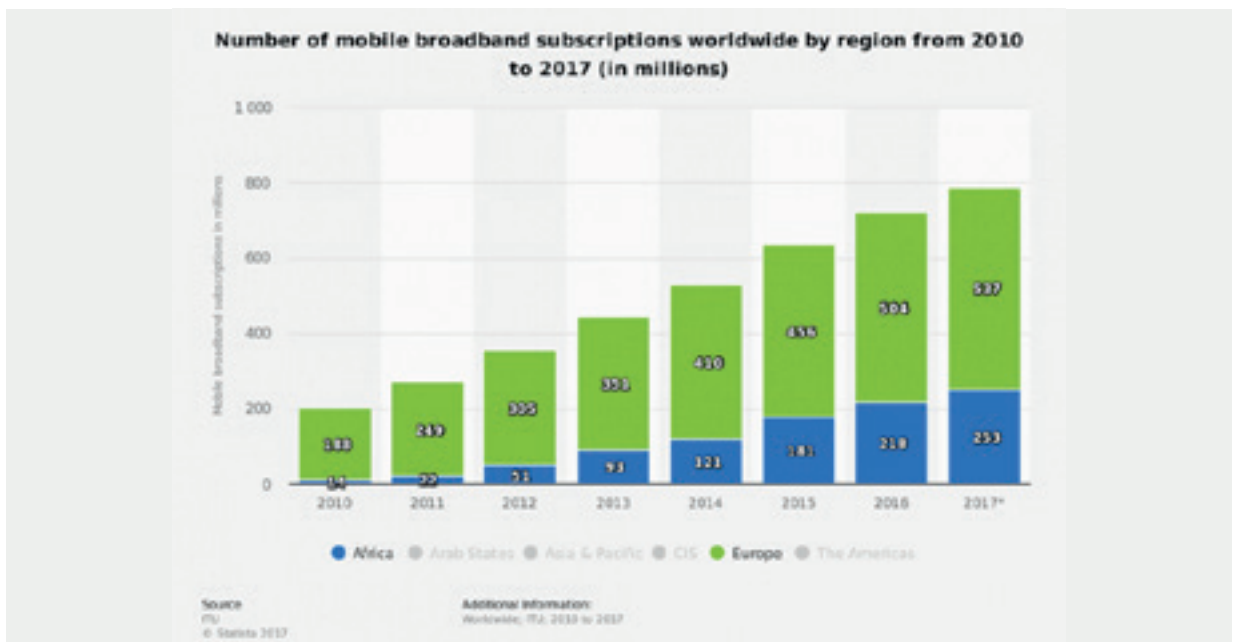


Source: [AfroBarometer](#)

A big technological leap, thanks to mobile phone networks

Obviously, there are still huge differences among individual single countries, but overall it can be stated that the biggest technological leap in most developing countries – also outside Africa – has been mobile and broadband coverage.

In 2017, 253mn Africans had access to mobile broadband coverage – that's an 18-fold increase from 2010! Compare it to Europe: Since 2010, the number of mobile broadband accounts "only" increased three-fold, from 188mn to 537mn.



Source: Statista

PAYMENT MEGATREND #5: FINANCIAL INCLUSION

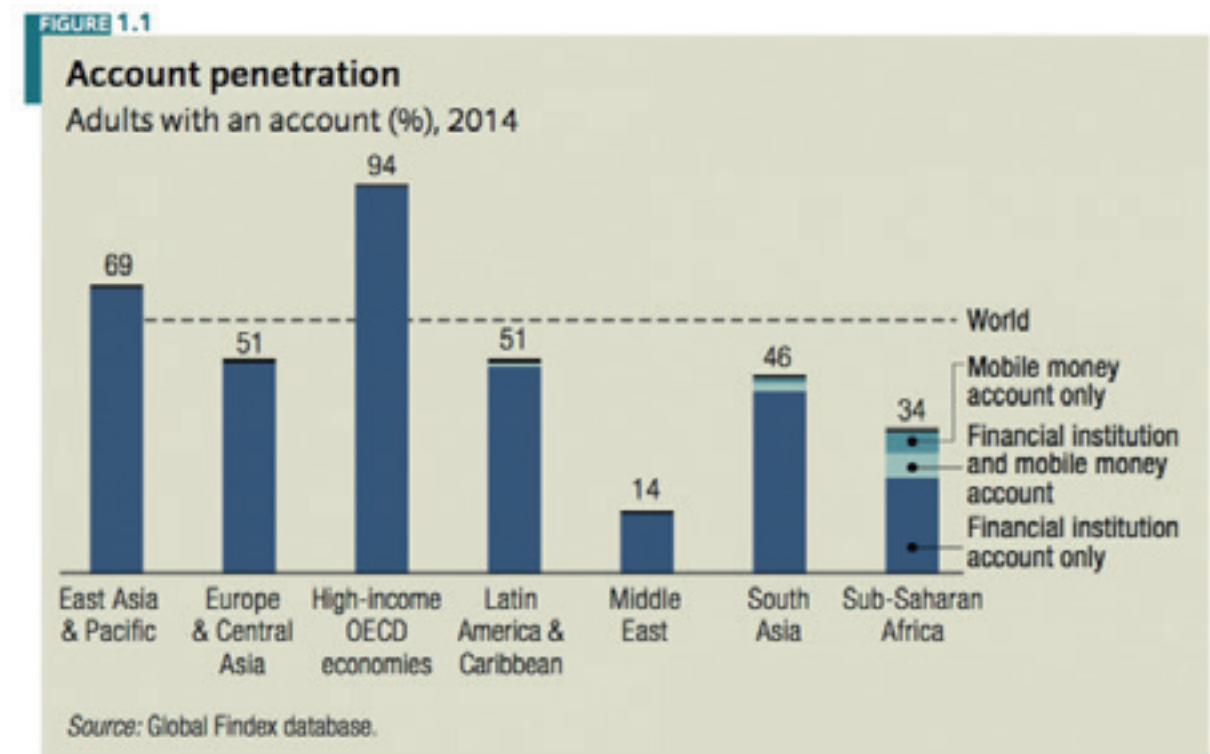
22

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This means, now more than [one out of three Africans](#) above the age of 15 has access to mobile broadband, which is required for services such as mobile banking, mobile money transfer and social media.

It is not surprising to see that mobile money accounts

(for example the services offered by M-Pesa, developed by Safaricom in cooperation with Vodafone) are the growth driver of account ownership and financial inclusion. In some countries in Africa, more adults own a mobile money account than an account at a financial institution:



Source: [Global Findex Database](#)

Whereas in Europe and the high-income OECD States, mobile money accounts virtually did not exist back in 2014, sub-Saharan Africa was already leading in this respect.

Certainly, these numbers are from 2014 and since then, there has been a lot of growth of mobile money, especially in Asia and China (just look at [WeChat Pay](#) and [Alipay](#)), but when we look at Europe, there has been by far no comparable growth in pure-play mobile money.

This is certainly going to change, and I think developing countries are in many ways showing how a financial ecosystem could look if designed without boundaries – or after fintechs have disrupted the market.

For wages and utility bills, cash is still king – but the throne is shaking

Whereas for citizens of developed countries it is pretty normal to just wire funds or use their bank account to pay for school tuition or utility bills, this still is not the case for many developing nations.



PAYMENT MEGATREND #5: FINANCIAL INCLUSION

23

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It starts with how wages are earned. If you exclude the high-income OECDs, on average, nearly 50% of the world's population still receive their wages in cash:



Source: Global [Findex Database](#)

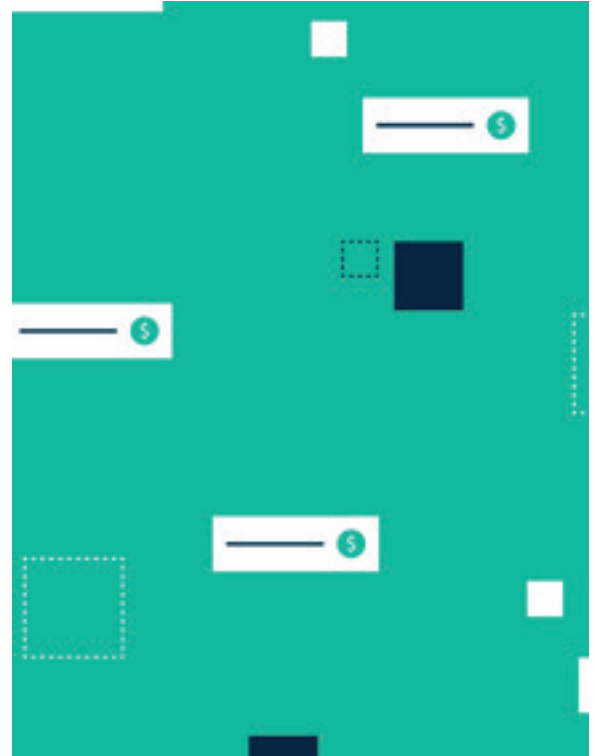
And where there is cash, people will obviously use it to pay for their living expenses, such as paying utility bills (e.g., gas, water, electricity). In the Middle East and Africa, in 2014 nearly 100% of all utility bill payments were still paid in cash:



Source: Global [Findex Database](#)

This means mobile money is not only a phenomenon of consumer-to-consumer money sending, as we might perceive it in Europe when we think of peer-to-peer payments. Mobile money, for most people, means the first ever opportunity to electronically pay for their living, thus becoming more independent from cash.

Needless to say, based on these electronic money accounts, many more services can be rendered to the people: Small credits, payday loans, small business financing, cash2e-money services, selling of insurance or micro insurance – all becomes possible just from a smartphone.



Conclusion: This is why financial inclusion is a megatrend

To finish this article with a picture – just imagine the example of a farmer in a developing country. He needs to make a small investment and requires a credit to buy seeds or wants to get insurance for a newly bought tool: Without a proper financial infrastructure, these services cannot be rendered cost-effectively. Yet, with mobile money accounts and a smartphone infrastructure, the game totally changes, opening up access to millions of individuals and SMEs. And this radical change is what we're witnessing at the moment and what we'll experience in the years to come.

And that's why this megatrend is so important for the payment industry: It's not only about huge business opportunities, it's also about how a progressive financial ecosystem could look if designed from scratch and tailored to the needs of the customer.

PAYMENT MEGATREND #6: THE FRICTIONLESS CUSTOMER EXPERIENCE

24

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Your Windows is not booting up?

That's easy, just remember to modify config.sys in order to enable DOS to access the High Mem Area and do not forget to include EMM386.EXE for memory management – after that, just load your device drivers to High Mem with the DEVICEHIGH command, e.g. DEVICEHIGH=CDROM.SYS and you should have enough Base Memory to startup Windows.

No idea what I am talking about? This was the Windows 3.1 customer experience for some users, more than 25 years ago.

But what I am actually talking about is the frictionless customer experience, also known as seamless customer experience.

That will be the sixth and final part of this series about megatrends that will influence the industry in 2018 and beyond.

If you're in your late 30s or early 40s, you have probably experienced the "friction" described above when it came to boot up your favorite games, programs or even operating systems. Now compare it to the experience that 12-16-year-old teens have today when they load and start their favorite iOS game.

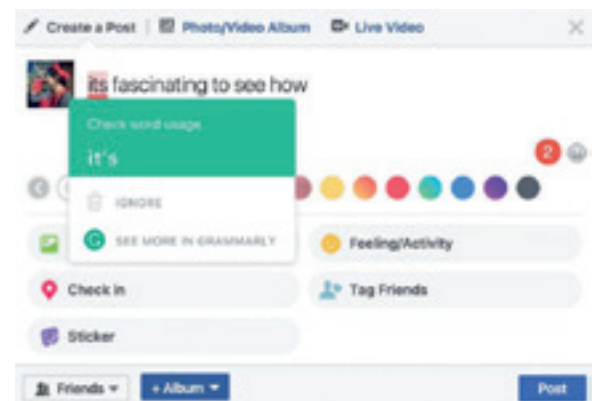
Smoothing out all bumpy spots: This is a frictionless customer experience

I personally define frictionless customer experience as a user interaction flow that:

- does not pose unnecessary stress on the user,
- does not require unnecessary information,
- focuses on the actual desired outcome and
- predicts and delivers with high accuracy.

Do you want a very simple example of an "accurate prediction and delivery?"

Well, it can be as trivial as an automatic proof-reading of your Facebook post with Grammarly, delivering the correct spelling.



In addition, Grammarly's integration and use doesn't stress the user nor does it require any unnecessary information – instead, it reduces the user's stress level by clearly focusing on the desired outcome, exactly in the moment of need to make your social media posts grammatically correct, so you don't look like a fool.

But let's get back to the bigger picture – and the bigger players:

All successful companies that create unique and frictionless user experiences, such as Apple, Amazon, Airbnb, Uber (and many more), are sticking to these principles.

Frictionless user experience: ecosystem ownership is the key

To deliver such an experience, there's a key element: Ownership over the ecosystem. Without end-to-end control of the respective ecosystem, it will never be possible to deliver a superior customer experience over those players who retain the control.

For example, why have car sharing platforms not been thriving as well as skyrocketingly successful platforms like Uber or Lyft? Because they did not control the entire ecosystem. There was always a certain level of stress and unpredictability for the customer when booking a ride.

Why is Amazon so successful in ecommerce and even manages to deal successfully with grocery delivery? They put predictability first and control nearly the entire ecosystem – end-to-end, including last mile delivery options.

I could easily give more examples, but there's always this key element of an end-to-end ecosystem. Ecosystem owners are the new rulers of the industry – or to say it more polemically: Cooperation is left for the weak.

The payment industry has not delivered a frictionless customer experience – until now

Let's be honest and self-critical: For a long time, our industry has failed to deliver a frictionless customer experience. Of course, regulatory authorities have further hampered the efforts, but the rules are the same for everybody, so let's not take this as an excuse.

Just take the example of contactless payment. Even though it is a superior technological solution, it's a technology and process that is getting adopted slower than expected.

Why? That's simple:

- Unpredictable results – at some merchants it worked, at others it didn't
- Unnecessary stress – why change a proven behavior and risk looking like an idiot if even the merchants did not know how it worked.

This is now changing, but it took several years.

Or take the example of strong customer authentication (SCA). There are valid reasons for this technology, and SCA is already used without even knowing it by a lot of people who use Apple devices.

But while Apple controls the whole ecosystem, in payments it's not that easy. There is an additional step required to set up text message TANs or to register for SCA. In the eyes of the customer, this is just "unnecessary information."

When confronted with the above, people in the payment industry, often start their answer with "yes, but...". That is understandable, but in a world where the ecosystem wins and where barriers of entry are lowered by regulators every other few years, this is the wrong attitude.

What is important to understand is that payment has to be frictionless in the first place – because unlike playing computer games, nobody really "likes" to pay.

PAYMENT MEGATREND #6: THE FRICTIONLESS CUSTOMER EXPERIENCE

26

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Integration is king: the ecosystem approach for payment

What does a successful ecosystem for payments look like? I'd like to propose an integrated approach here – an approach that we are also following at Wirecard.

The above ecosystem depicts, in a simplified form, how

the payment world traditionally plays together. Acquirers do their part, issuers do their part, card schemes connect both worlds. That's how it worked since the foundation of Visa and Mastercard and that's how we are all paying.



The traditional ecosystem of payment, a 4-party model (Copyright: Wirecard)

But there's a big disadvantage because this thinking and architecture goes back to the 1950s when credit card payments were still conducted by using "imprinters." By the way, they are still used today and that's the reason why the numbers on your card are embossed.

Since then, technology has thankfully evolved – but the payment ecosystem architecture has not changed significantly.

If you look at the various interfaces that are required to exchange information between all the different stakeholders, it becomes pretty clear that a lot of standardization is required – and that slows down the flexibility of the ecosystem to adapt to external changes.



A picture of an "imprinter" for credit cards: This may trigger nostalgic feelings in some – but also unbelieving head-shaking in others. (Source: Wikipedia)

PAYMENT MEGATREND #6: THE FRICTIONLESS CUSTOMER EXPERIENCE

27

30

A new mindset in payment: Customer Touchpoints and Customer Engagement Channels

This is why I strongly believe that the future for payment application lies within an integrated ecosystem.

Instead of differentiating between “Acquirers” and “Issuers,” I prefer to think about “Customer Touchpoints” and “Customer Engagement Channels.”

Customer Touchpoints are the places where customers engage with merchants – that can be the cashier, the terminal, the web shop or even the aisle, if the staff is equipped with mobile POS technology.



The integrated ecosystem for payments (click to enlarge (Copyright: Wirecard))

For customer touchpoints it is key to use that interaction to process more data than “just” the payment information. Payment companies and merchants have invested a lot of money to create a real-time data processing network for payments – so why not use this infrastructure for more than “just” payments?

On the other hand, payment instruments have to become real Customer Engagement Channels. Enabled by smartphones (and mobile payments), the payment flow is the perfect place to initiate value added services such as consumer credits, customer loyalty points or other forms of customer engagements, e.g., raffles. With this respect, a “payment interaction” becomes an actual engagement with the customer – if payment plays the second fiddle in this flow, there’s no problem.



Combining the channels: Bring together what belongs together

Combining the channels is clearly the next step: By implementing an integrated ecosystem such as the one described above, merchants benefit from a holistic and unified view on the customer. If enriched with additional customer information, the payment ecosystem can become a real driver of value – both for top-line revenue improvement (e.g., higher basket sizes) and bottom-line cost reduction (e.g. less fraud).

But besides the various benefits of working with data, the unified ecosystem allows for a smooth payment ex-

perience as well. [Alipay](#) is showing the way: The Alipay app, which has over 520 million active users, is a true customer engagement channel – and the payment at the merchant location is seamlessly integrated into the checkout process.

But there is even more: Alipay allows merchants not only to process the payment, but also to actively use the mobile app channel to advertise to consumers or place special offers. That makes Alipay the probably first real unified ecosystem for payments at the point of sales!



Summary: This is why frictionless customer experience in payment is a megatrend

Frictionless customer experience used to be the key differentiator some years ago – but nowadays, not offering the best customer experience is a competitive disadvantage. The reason is the success of closed ecosystems that define new and unique customer experiences that had not been thinkable or realizable in a collaboration (collaborative?) approach. And this is the new standard that consumers now expect.

Thus, payment companies will need to adapt and develop towards unified and integrated platforms for Ac-

quiring, Issuing and Value Added Services in order to keep up with the pace that new market entrants such as Alipay or WeChat Pay are setting. I personally see a big need for these platforms every time I talk to merchants, especially from the “traditional” brick-and-mortar retail world.

So as with every other megatrend that I covered in this series – with every challenge there comes an opportunity.

ABOUT THE AUTHOR

29

30

MARKUS EICHINGER



Executive Vice President Group Strategy, Wirecard AG

Markus Eichinger joined Wirecard in September 2014. He has held management positions in product development for mobile and value added services at Wirecard, before taking responsibility for Wirecard's Product and Group Strategy. In his current role, Markus Eichinger is in charge of setting strategical guidelines that help the company to shape the future of payment.

Markus studied engineering in Munich and Cambridge. At the beginning of his professional career he successfully founded and exited several start-up companies such as the ticket provider amiando AG (sold to Xing), where he served several years as Chief Operating Officer (COO).

COMPANY INFORMATION

30

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WIRECARD AG



Wirecard AG is a global technology group that supports companies in accepting electronic payments from all sales channels. As a leading independent supplier, the Wirecard Group offers outsourcing and white label solutions for electronic payments. A global platform bundles international payment acceptances and methods with supplementary fraud prevention solutions. With regard to issuing own payment instruments in the form of cards or mobile payment solutions, the Wirecard Group provides companies with an end-to-end infrastructure, including the requisite licences for card and account products.

Wirecard AG is listed on the Frankfurt Securities Exchange (TecDAX, ISIN DE0007472060, WDI). For further information about Wirecard, please visit www.wirecard.com or follow us on Twitter @wirecard.

The articles of this e-book first appeared on Wirecard's blog "Future of Payment" where specialists in financial payment technology with different backgrounds share their expertise and their insights.

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