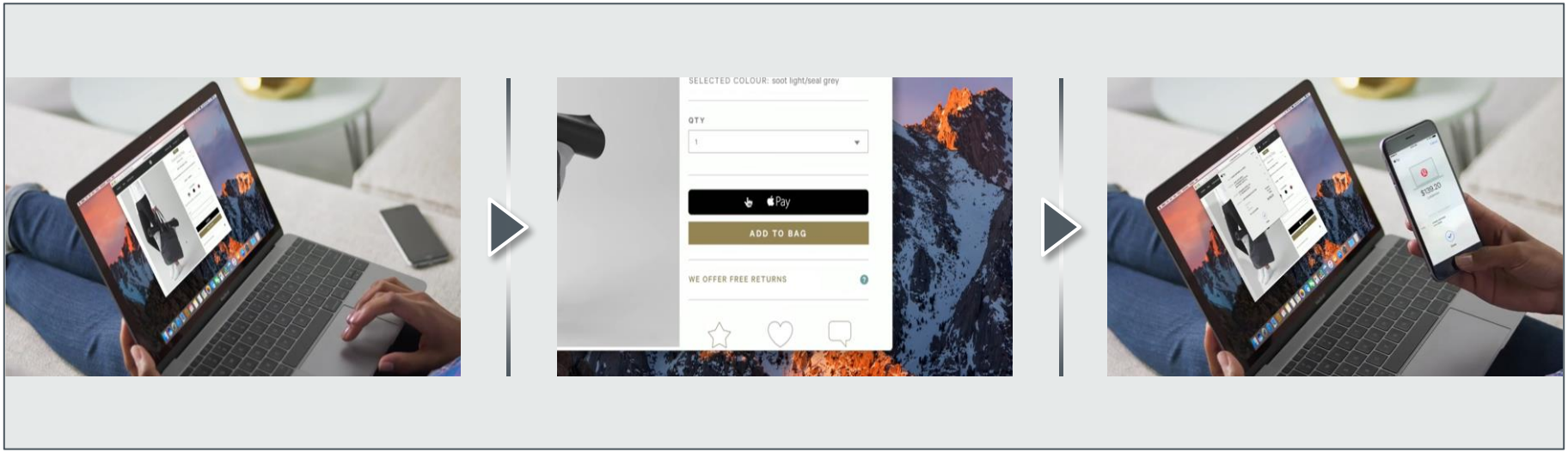
“The cards will be reshuffled”

A Vision for Request to Pay

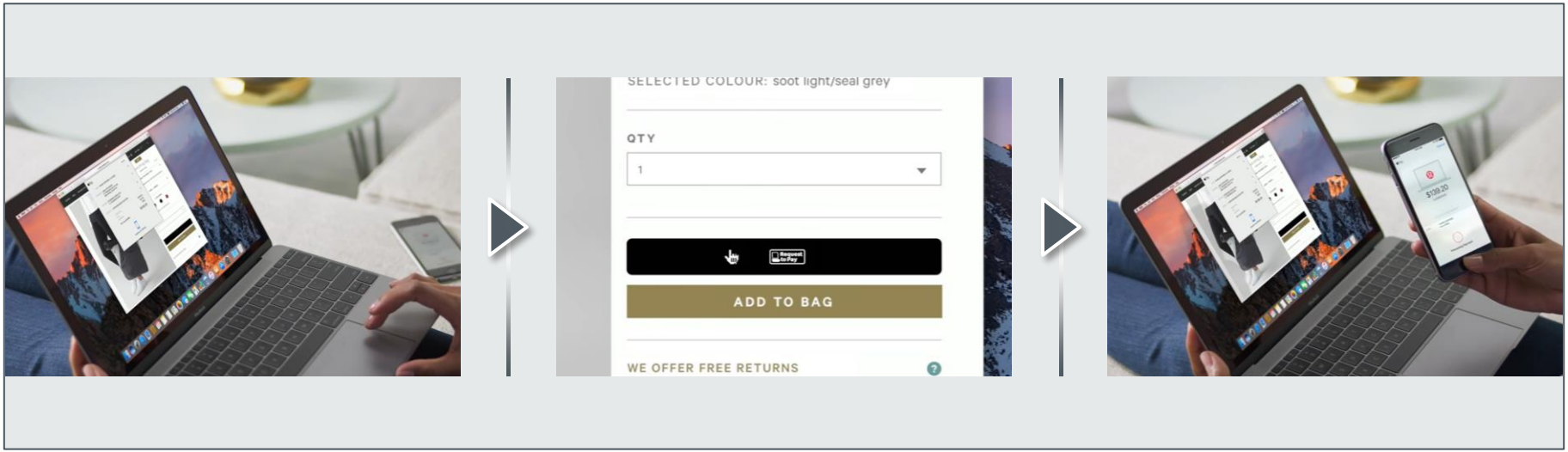
Swiss Banking Service Forum 2022

Zurich, September 7th , 2022

I E-commerce Apple Pay Transaction



E-commerce Request to Pay transaction



I Everything changes in payments nowadays, but is it?

E-commerce Apple Pay Transaction

Can you see the eye-catching difference?

E-commerce Request to Pay transaction

“The cards will be reshuffled”

A Vision for Request to Pay

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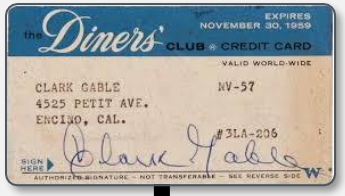
I

The 4-party model has established itself as the “gold-standard” for payments since the foundation of the Diners club card in 1950

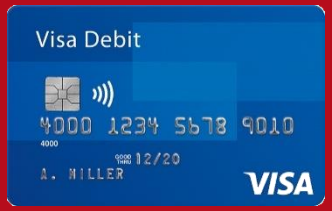
Diners Club



Credit Card

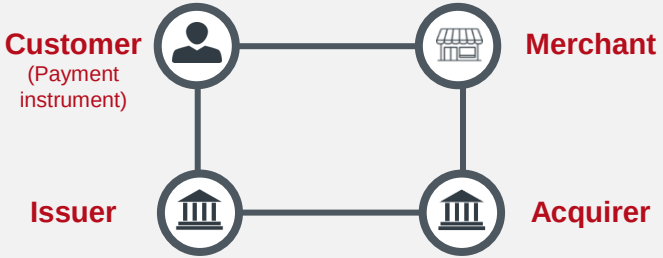
Debit Card

Fast forward



1950 1958 1968 today

The principle and the backend process of the transaction of credit/debit cards has not changed in years.

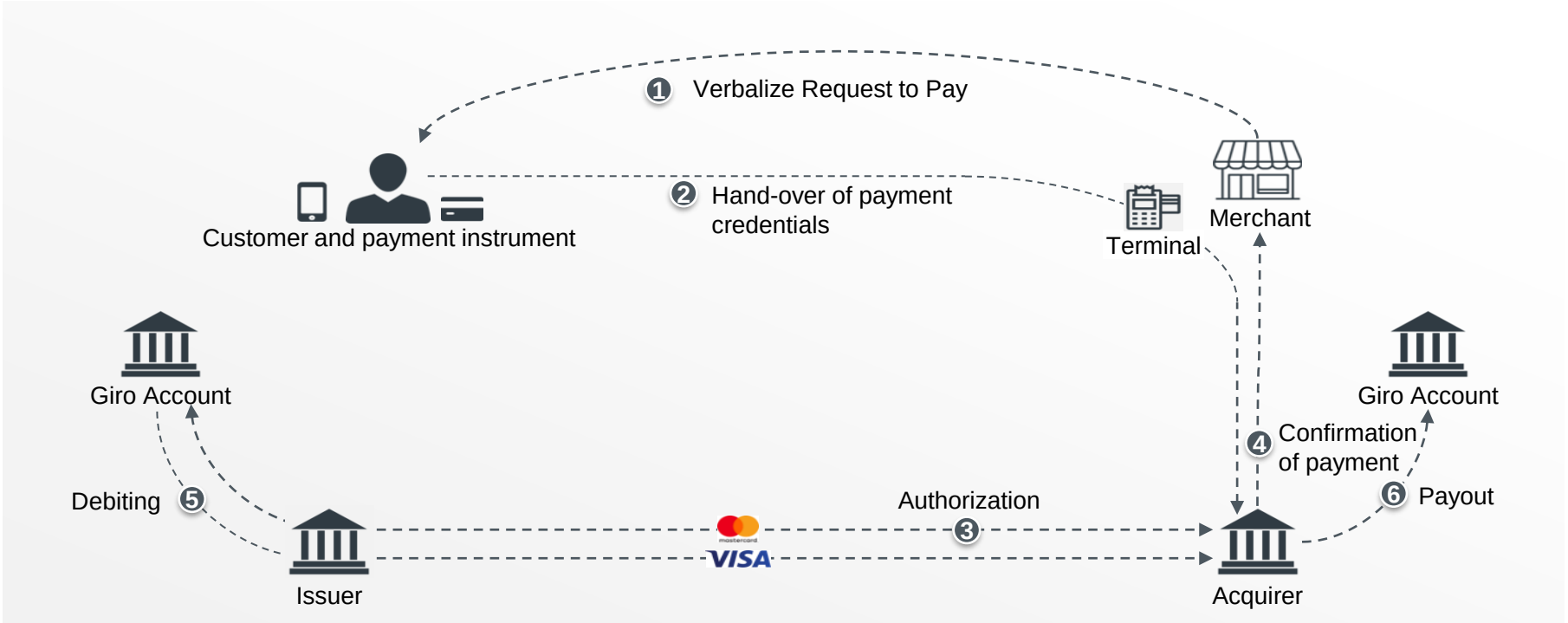


Source: COREinstitute | 1: Or any other applicable & accepted pairing mechanism

I The 4-party model has established itself as the “gold-standard” for payments since the foundation of the Diners club card in 1950

Standardized 4 party model transaction process

Conventional card-base procedures



Source: COREinstitute | 1: Or any other applicable & accepted pairing mechanism

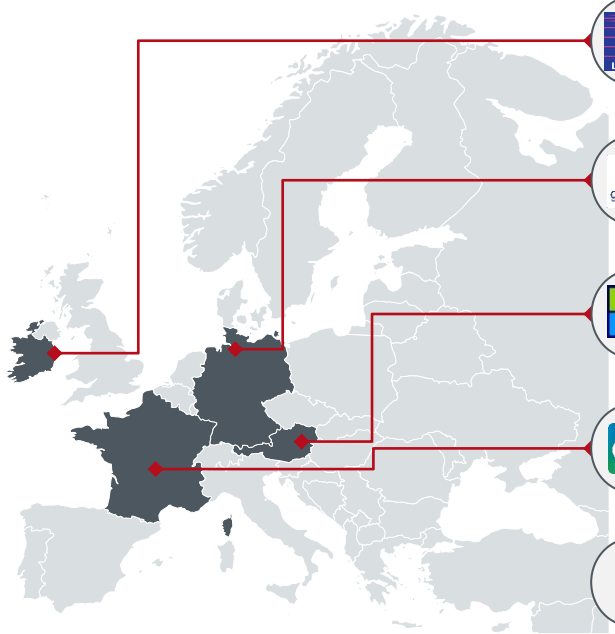
I Over the last 5 years, international card schemes enabled technical interoperability of debit & credit, displacing National Schemes in Europe

Strategic approach of internat. card schemes

- International card schemes acknowledged that a majority of cardholders prefer a direct charging of their account for most transactions
- The next generation of debit cards (Debit Mastercard / Visa debit) are technically based on credit cards
- The most important change is that 16-digit PANs start fully supporting e-com. and tokenization
- Merchant acceptance retains the same global reach, and could be even larger than for credit card acceptance
- Functional benefits enable tactical displacement of existing national payment schemes, with a simultaneous approximation of scheme fees

Both Maestro and V-Pay have announced their decommissioning for the next years

Observable market development (selection)



DMC/ VD already substituted Laser

Ulster Bank · Bank of Ireland

DMC/ VD competes with Girocard

DKB · ING

DMC substitutes Bankomatkarte in the near future

Raiffeisen Meine Bank. · ERSTE Bank

DMC/ VD competes with Carte Bancaire

Hello bank! · FORTUNEO BANQUE · ONE Bank · orange bank

… …

I Also, for Issuers these next generation debit cards appear promising – but impact on positioning against credit cards to be considered

Issuer perspective on next generation debit cards

Cardholders expect transactions to be **visible on the current account and "real-time"** – which also implies **more visibility and interaction points for the account holding banks**

Full **eCom- and Wallet-readiness** as crucial benefit as **large amount** of purchase **volumes** shifts to **digital channels**

Debit cards are **scaling even better**, as they can more easily be issued for **low-scored** or **underaged customers**

Further trends

CDCVM
Consumer Device Cardholder Verification Method

SoftPOS
mPOS and SoftPOS methods

Redesign of Checkout process

I Another recent development is Invisible Payments, where the „active“ Payment process for the user is abolished

Invisible Payments describes Payment transactions that are **not actively triggered by the customer** and are processed entirely in the background

tegut... teo

amazon go

Uber FREENOW

Switch as of 8. March 2021*

SmilePay

Burger King Beijing facial recognition payment

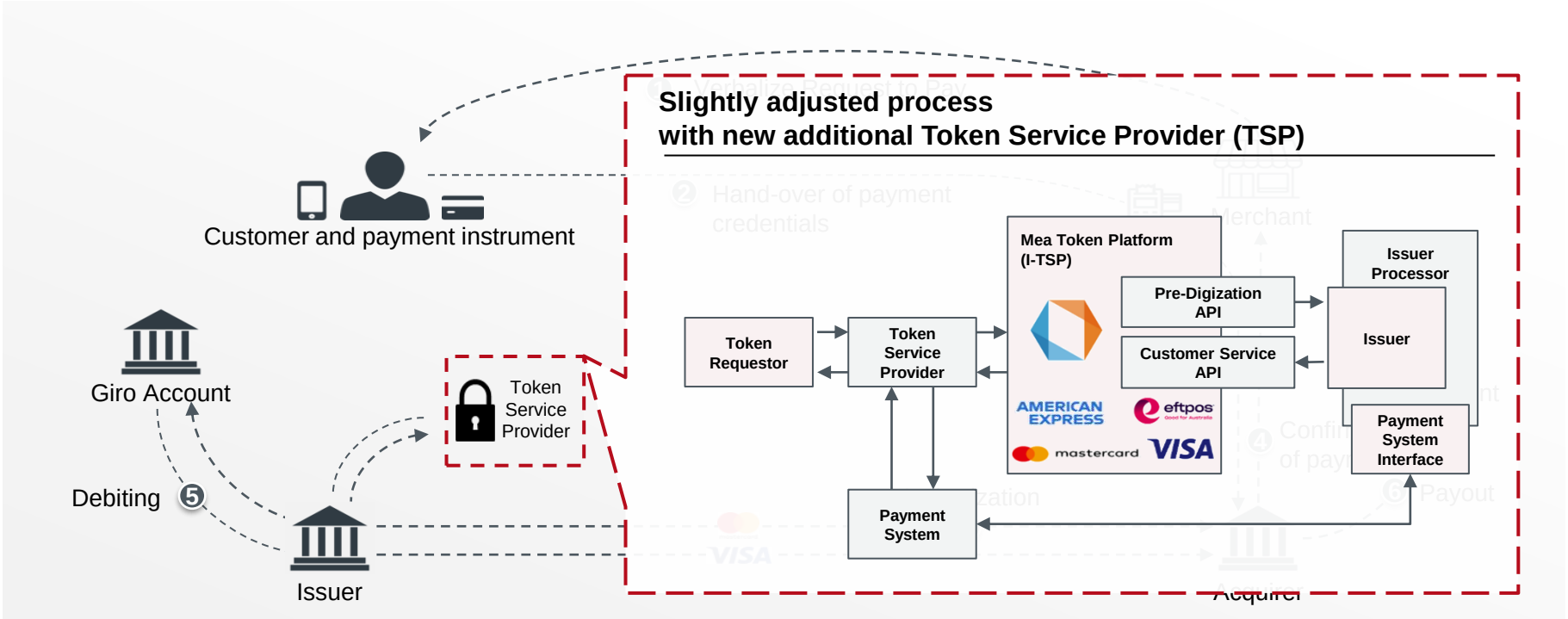
*Introduction of "QuickPay" at FEE NOW from 8.3.21. The payment process will then be initiated automatically at the end of the journey, possibly driven by PSD2 to comply with the corresponding SCA exception.
Sources: AFP; https://www.bloomberg.com/news/articles/2019-12-19/germany-bans-uber-services-citing-anti-competitive-practices; https://kinzig.news/8574/tegut-zum-selbstkassieren-digitaler-store-auch-im-mkk-denkbar.html; https://Freenow.de

I The commonality of all these innovations?

The 4-party model is used, only partly complemented by a TSP

Standardized 4 party model transaction process

Conventional card-base procedures



Source: COREinstitute | 1: Or any other applicable & accepted pairing mechanism

To put it into a nutshell, by 2022 the client dimension of payments has seen tremendous innovations, whereas the “backend-side” remains more of less unchanged

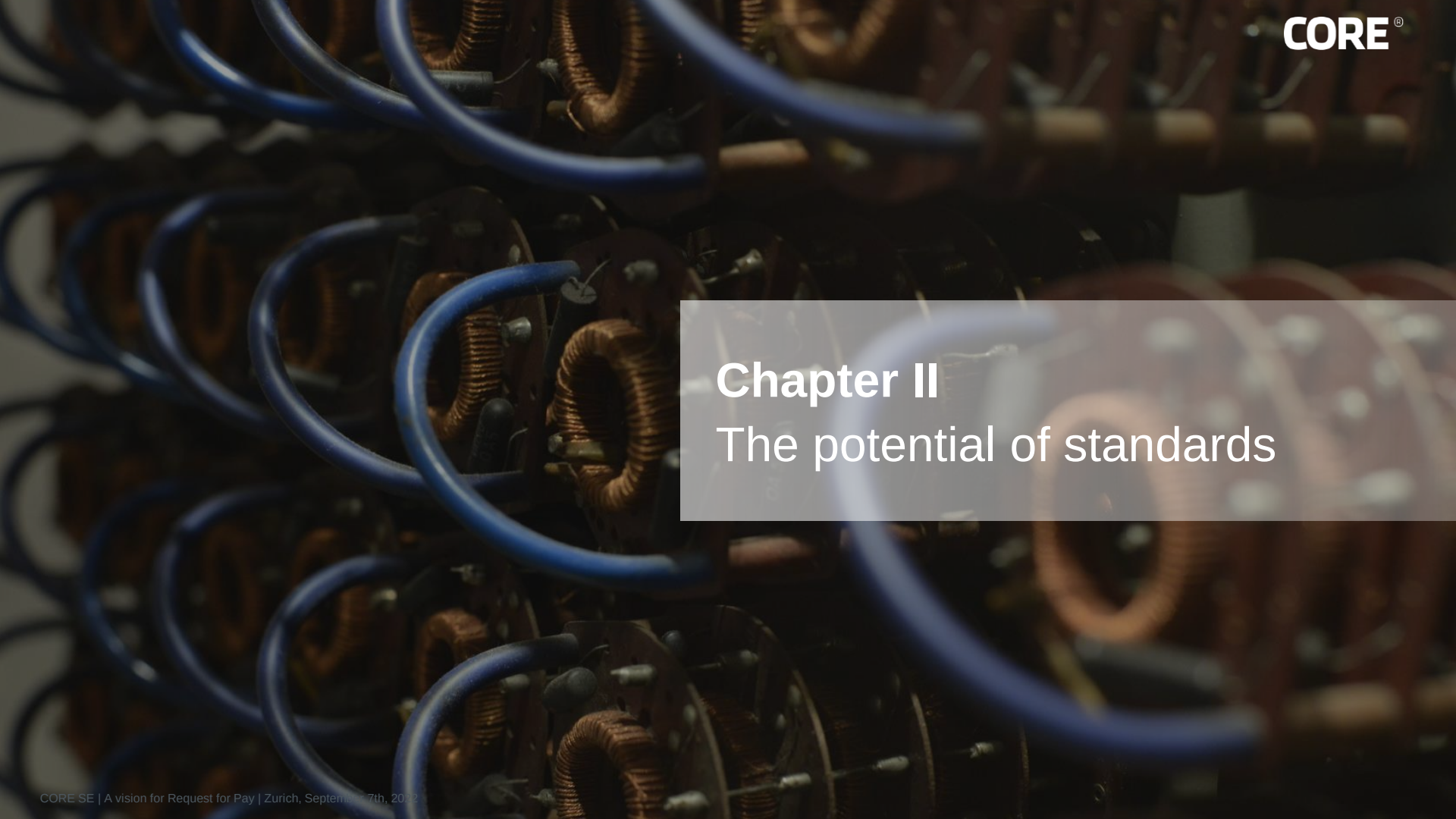
Content already imparted

Impact on Client Dimension

- Complete **overhaul of the frontend**
- **Embedded** and **easier** execution of transactions
- Usage of mobile and **new biometrics** authentication

Backend effects

- Except for Token Service Provider there are **no real variations in payment processing**
- Slight changes in procedural structure
- Structures rather **electrified than overhauled**



Chapter II
The potential of standards

II Technological standards have and may further increased the standardization of elements of the payment value chain

Technology Standard	Short description	Recent developments
a  **Instant payments**	▪ **Instant settlement of account-to-account payments** within a specified targeted maximum execution time (10 sec. for SCT Inst and SIC-IP Service) ▪ **Originator bank receives a notification** that the funds are made available for the beneficiary	▪ **Go live of the SIC IP Service in Nov 2023** with a market launch in Q4 2024; mandatory for the top 50 banks in Switzerland ▪ **Version 1.2** of the SCT Inst rulebook issued on 25th May 2022. Effective date will be on 25th April 2023
b  **RTP**	▪ The RTP scheme offers the possibility for a payee to **request funds from a payer**. ▪ With V2.0 of the rulebook the **payee can request a payment guarantee that the payer can optionally respond to** prior to actual settlement	▪ The **effective date of the first release was set to 15 June 2021**. ▪ The **second version of the RTP rulebook** was published on **Nov. 30th, 2021**
c  **Standardization of QR-codes & MSCTs**, as well as **SEPA Payment Account Access (SPAA) Scheme**	▪ **Standardization** of **QR-codes** for Mobile ▪ Initiated **SEPA** (Instant) Credit Transfers	▪ The European Payments Council (EPC) published version **2.0 of the Proxy Lookup (SPL) scheme** rulebook currently on hold ▪ Last timing for release was cancelled (should have been between 1st Feb until 30th April 2021)

Current observations

- Regulatory forced market standards are product **elements to build payment networks upon.**
- However, even though they do have a **high degree of standardization within their category** they currently still **need to gain significant market reach** and they usually **do not cover the complete value chain** required for a payment scheme

Once those standards will have significant market penetration, they will also enforce the competitive pressure for the cards industry.

https://www.europeanpaymentscouncil.eu/what-we-do/other-schemes/sepa-proxy-lookup-scheme

One example is Instant Payment, where 22 European countries have adopted SCT Inst since 2017

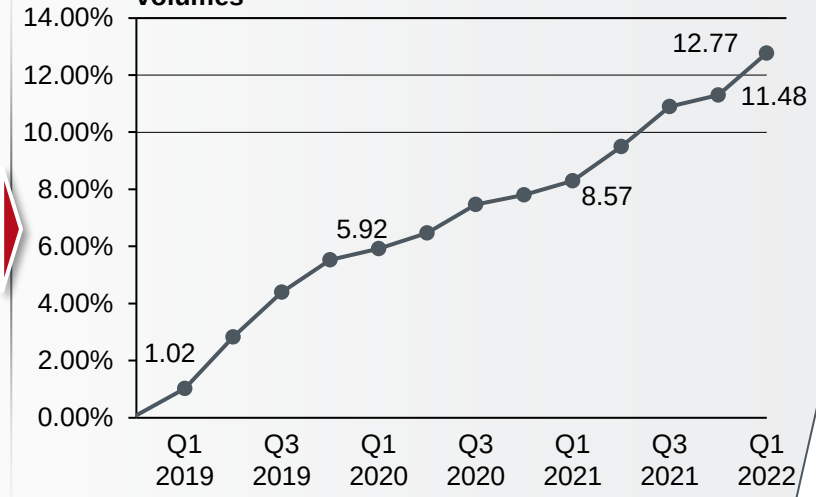
SCT Inst implementation in Europe

At least 1 SCT Inst. participant and a majority of payment accounts in the country

At least 1 SCT Inst. participant but no majority of payment accounts in the country

No SCT Inst. scheme participants in the country

Estimated share of SCT Inst volumes in total CT[1] volumes



Results since launch in Nov. 2017

- **2.360 PSPs have joined the scheme**, meaning **61% of European PSPs[3]**
- **42 CSM organizations[3] announced compliance** with the SCT Inst scheme
- **In Q2 2022, around 12,8% of all SEPA Credit Transfers were processed instantly** - over 99% of transactions were completed in less than five seconds

Source: COREinstitute | 1: SCT+SCT Inst.; SCT Inst. scheme largely enumerates those having the most significant volumes in their countries | 2: SEPA Scheme Participants Status (as of June 10th 2022); 42 CSM overall registered in SEPA schemes

II These standards can be the puzzle pieces to built a modular a payment system is, which is highly fitted to specific use cases

Every Payment Process has 4+1 elements:

1. **Digital identities and SSI or Interaction** with the **Wallet via QR** code, **BLE** or **NFC**
3. **Interaction** with the **Wallet or 2nd factor of bank (biometric)**
5. **Enhanced features**, like BNPL, Analytics, Spending analysis, trading

Coupling between payer and payee (plus transfer of verified IBAN from the Wallet)

Initiation of the Payment **process by** the **merchant** (transfer of payment details)

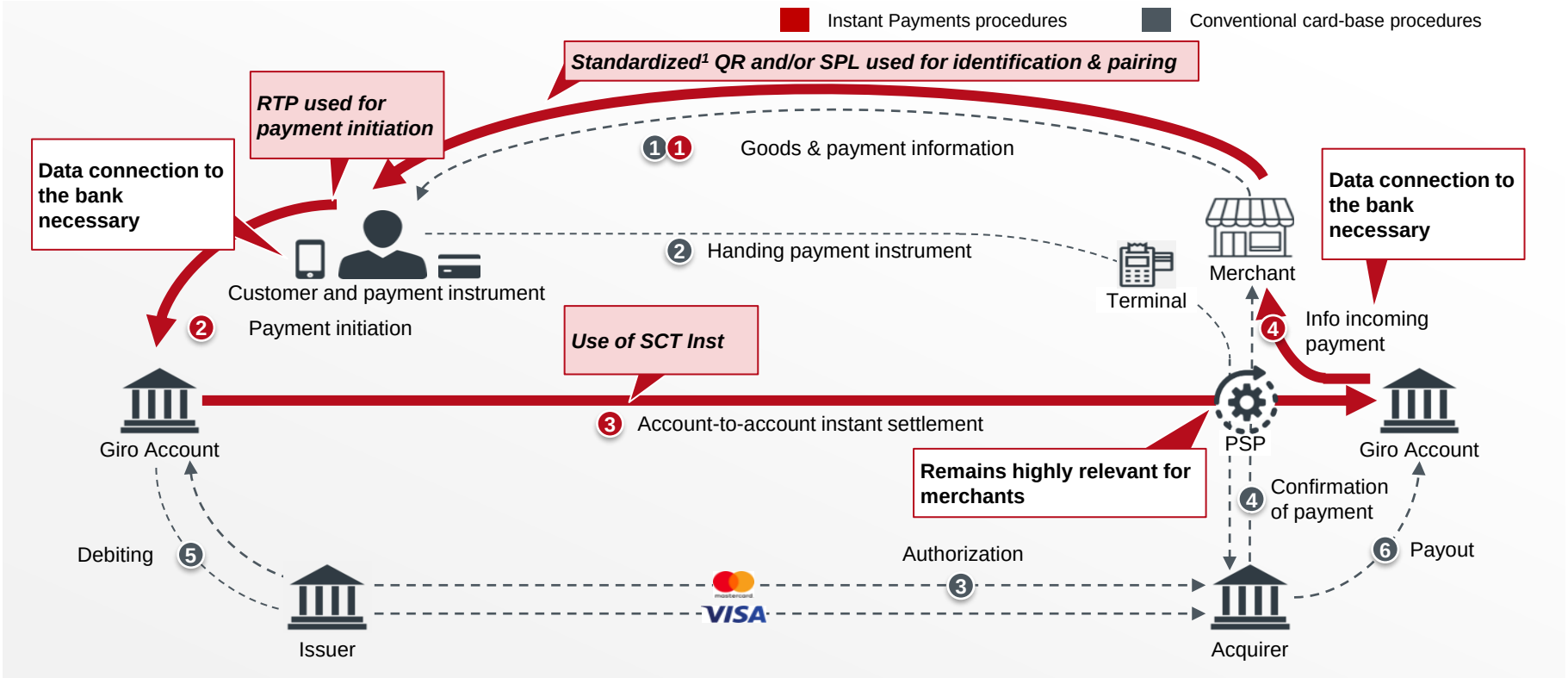
Authorization by the **end customer** through **Biometric identification** or **code**

Clearing & Settlement on an Account-to-Account Payment Basis

Value added Service

2. Cash register systems with **SEPA request-to-pay** or **Payment Initiation Service (PIS)**
4. SEPA **Instant payments** or **normal** SEPA payment

II Utopia: the joint-effects of introducing instant payments and other solutions with the potential to alter the power structure in the payment ecosystem

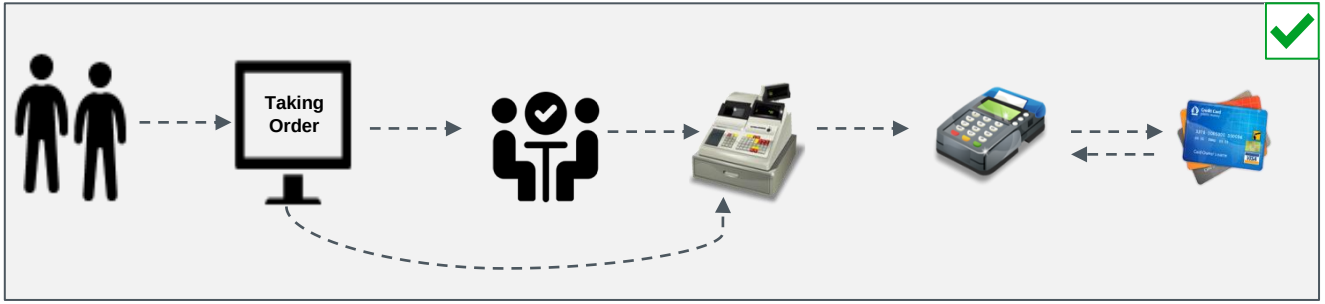


Source: COREinstitute | 1: Or any other applicable & accepted pairing mechanism

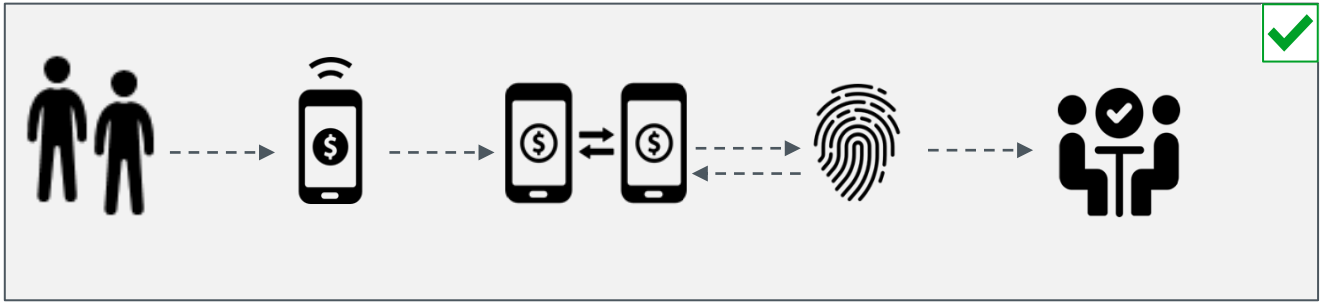
II Who benefits from these new payment methods? There are plenty of use cases where this procedure can be adapted 1/2

Use case 1: Paying in restaurants, gastronomical industry

Transactions with classic 4 party model:



Transactions with Request to Pay:



What is going to change?

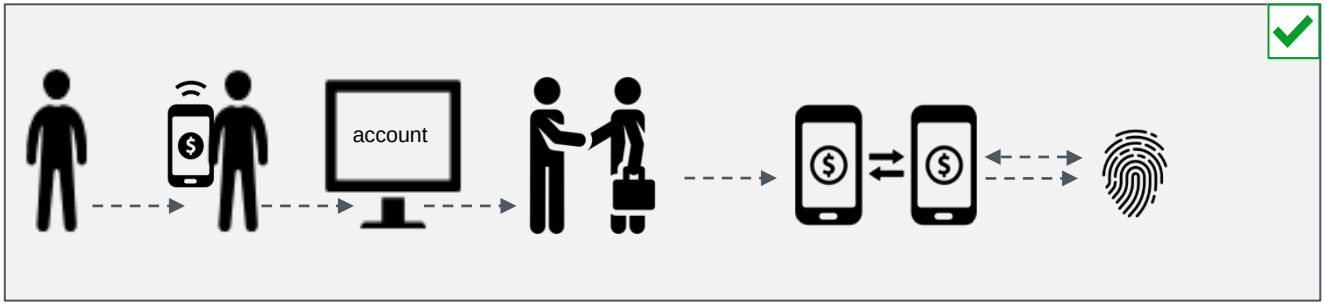
- **Today's** gastronomical institutions provide **two types of management systems.**
  - One system for their business administration (orders, logistics..)
  - One system for payments
- In RtP each order can be already **placed in app** and can be **paid in app**.
- Here-by the **provider** of the **restaurant software gains the fee** which was before taken by VISA/Mastercard for their card terminals.

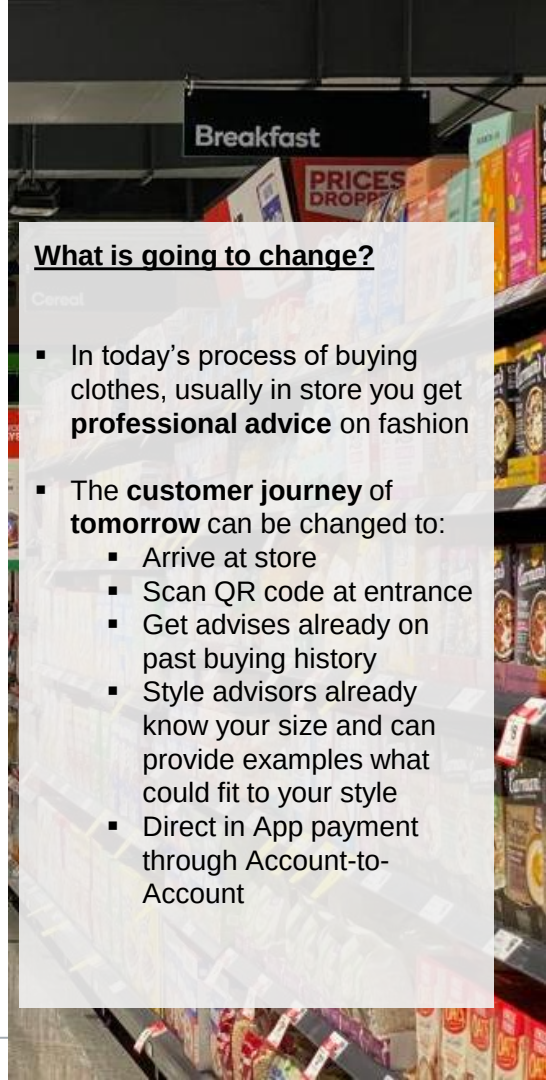
II Who benefits from these new payment methods? There are plenty of use cases where this procedure can be adapted 2/2

Use case 2: Paying in retail trade

Transactions with classic 4 party model:

Transactions with Request to Pay:





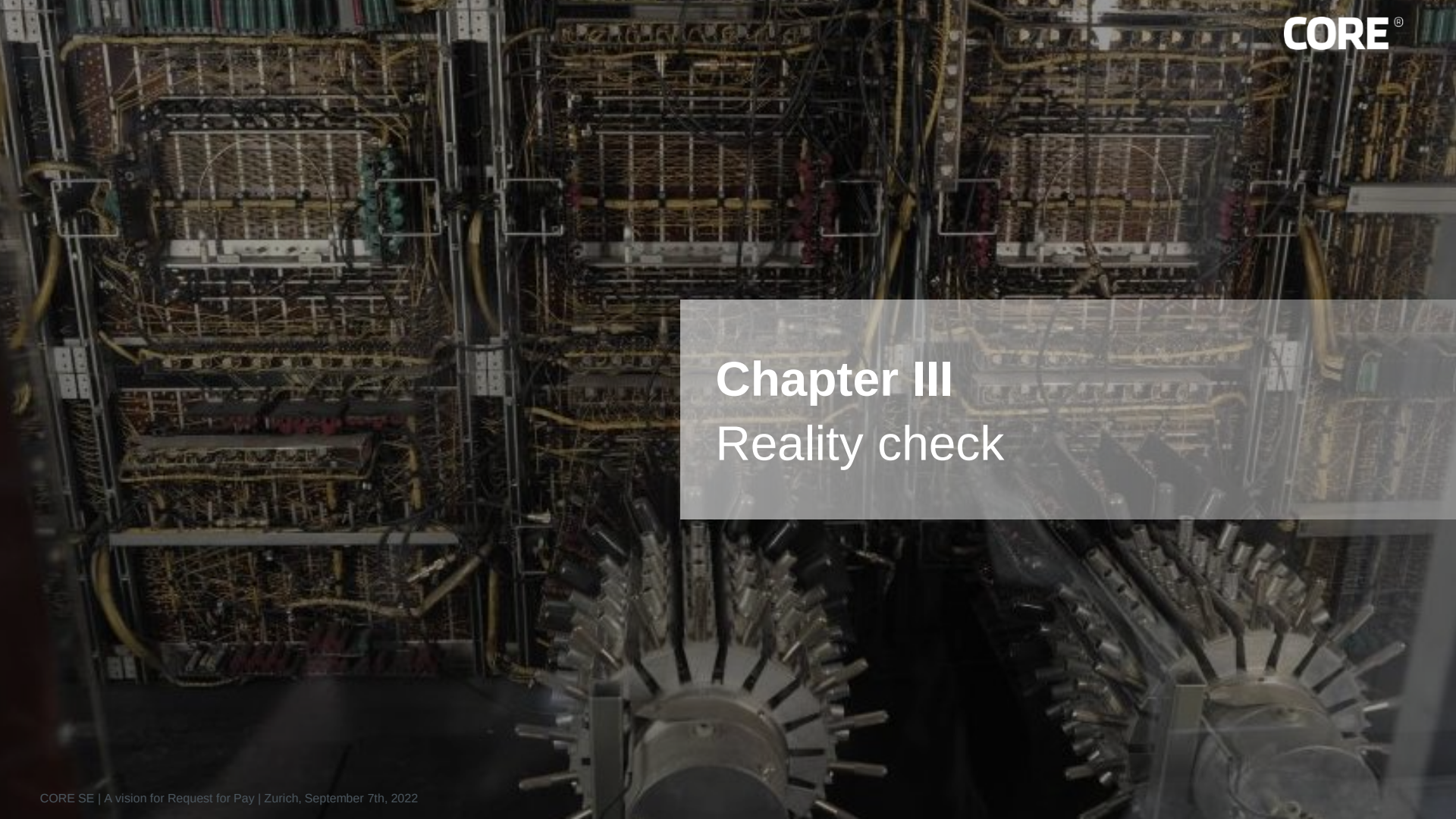
What is going to change?

- In today's process of buying clothes, usually in store you get **professional advice** on fashion
- The **customer journey** of **tomorrow** can be changed to:
  - Arrive at store
  - Scan QR code at entrance
  - Get advises already on past buying history
  - Style advisors already know your size and can provide examples what could fit to your style
  - Direct in App payment through Account-to-Account

II Utopia or Dystopia?

Decide for yourself ...

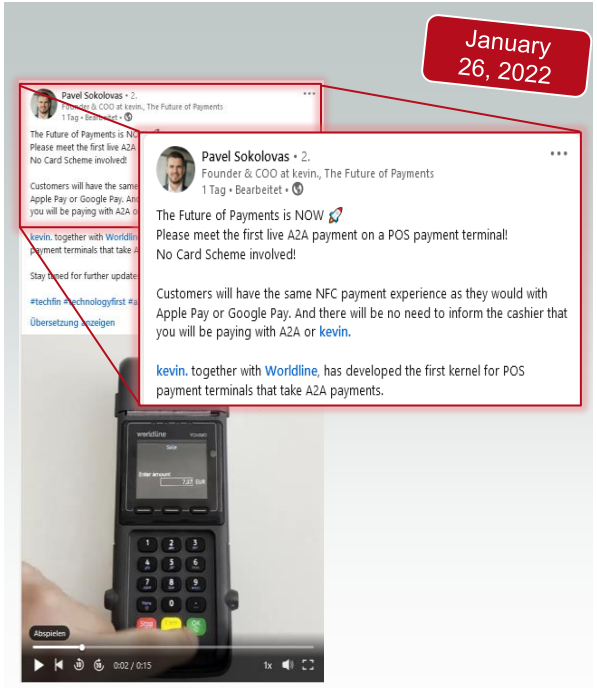
Scheme	Merchant	Issuing Bank	Acquirer	Client
				
▪ There is **no need for classical scheme** ▪ Therefore **no scheme fees**	▪ New **role, with either deeper value chain or new partners** ▪ **Better** financial **conditions**	▪ **No interchange** anymore ▪ Needs to **restructure** their **current** business model and **refocus**	▪ **Change** of roles, bot terminal provider, but technical partner ▪ **No reconciliation, but other services required**	▪ **Simplified transaction and value add** ▪ **Cheaper (?) payment products**
Classical scheme not required anymore	**Reduced fees and fitted process**	**Requires new structuring, looses Interchange**	**Industry and technical user journey experts required**	**UX is key**



Chapter III
Reality check

III This is not necessarily just an utopia, but already in development or live!

Point of Sale based



eCom based

Emirates Pay in UK and Germany live since May 2021!

Current payment methods hinder sector profitability

- Airline industry pays US ~$8 bn./year in card transaction fees alone

IATA Pay leverages Open Banking/Request–to-Pay schemes

- Customer just approves the charge via online or mobile banking app
- Payments settled in 24h with minimum fee, enhancing airline liquidity
- Developed in collaboration with Deutsche Bank

Trustly

Trustly provides payments for Ikea since Nov. 2021!

Trustly and IKEA create a better global payment experience together

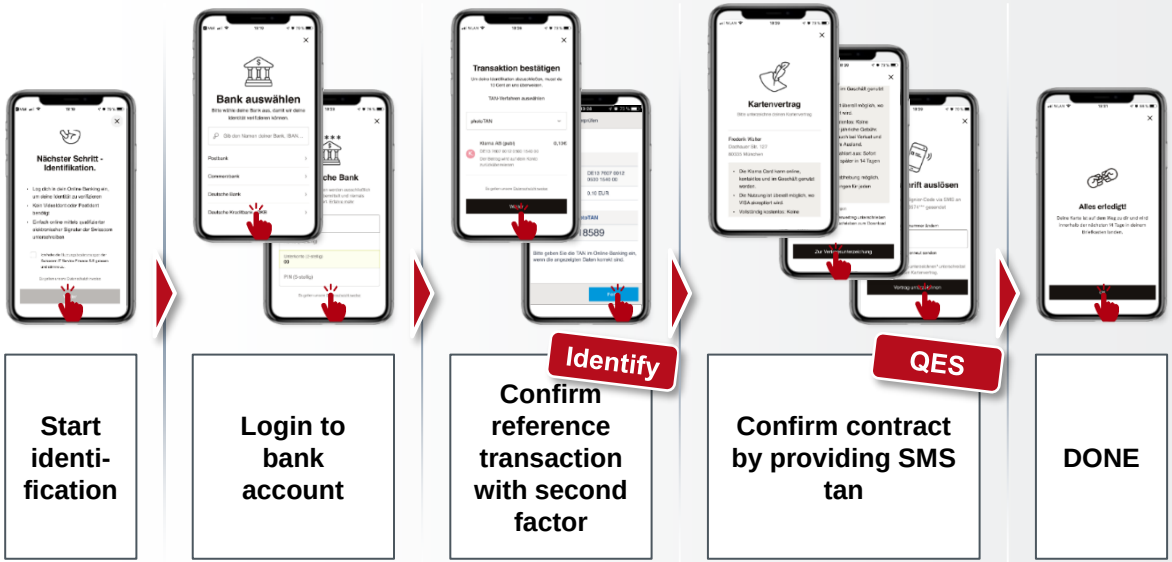
- Offering direct account-to-account solution through one API-integration
- High average transaction volume
- Less administrative effort for Ikea

Trustly provides a low cost approach, simple and secure way for costumers to pay

- Fast settlement
- Reduced fraud
- Instant refunds for buyers

III Lean identification process by leveraging existing bank account in combination with a Qualified Electronic Signature (QES) e.g. opens doors

Exemplary identification with QES at Klarna



Start identi-fication	Login to bank account	Confirm reference transaction with second factor	Confirm contract by providing SMS tan	DONE

The onboarding process is easy for users to go through, scalable and there is no human interaction necessary

Solaris Bank and Samsung Pay followed a similar path

- **Samsung** and **Solaris Bank** entered a **partnership** to **introduce Samsung Pay** in **Germany**
- They **bypassed established banks** by **engaging** with **Visa**:
  - **Customers receive** a **virtual Visa debit card** which is issued after **lean KYC process** making use of the QES (See left)
  - **Purchases** from Samsung Pay customers are then **collected via direct debit from existing current account** of the customer and credited to Solaris Bank card account
  - **Interchange fees** will be **credited** to **Solaris Bank** (And potentially Samsung Pay)

A QES shall have the equivalent legal effect of a handwritten signature

III Case Study: In a market setting with immature infrastructure, institutions need to be creative in order to deliver services, i.e., payments or cash without ATMs

Payment flow overview – *FIB*

FIB User has the app and is registered

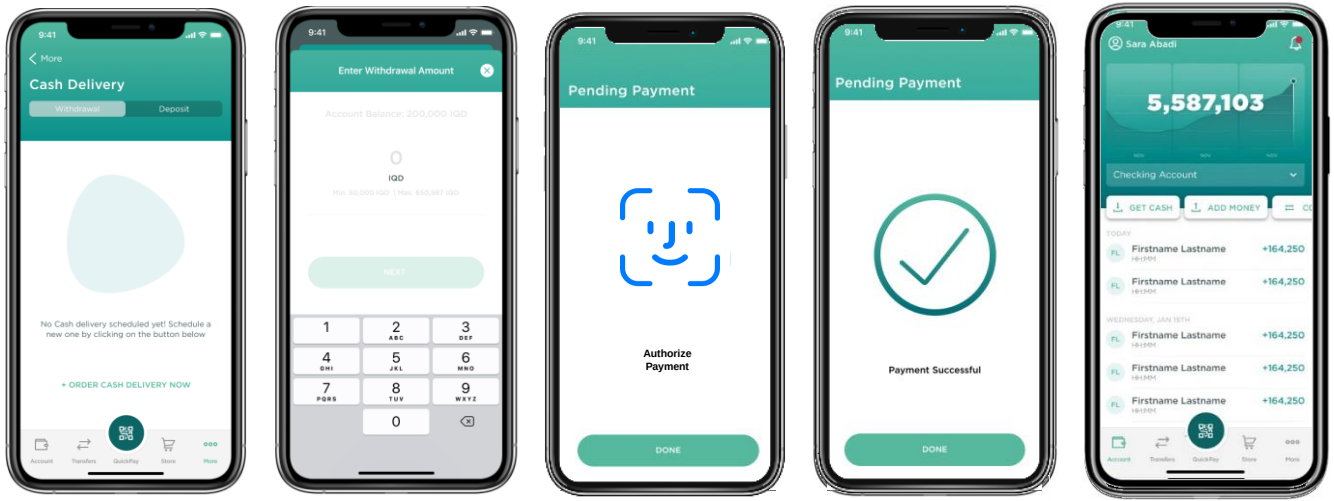
FIB Business User makes a payment request via the app

Mapping between both users, e.g. via barcode

Payment authorization and A2A request

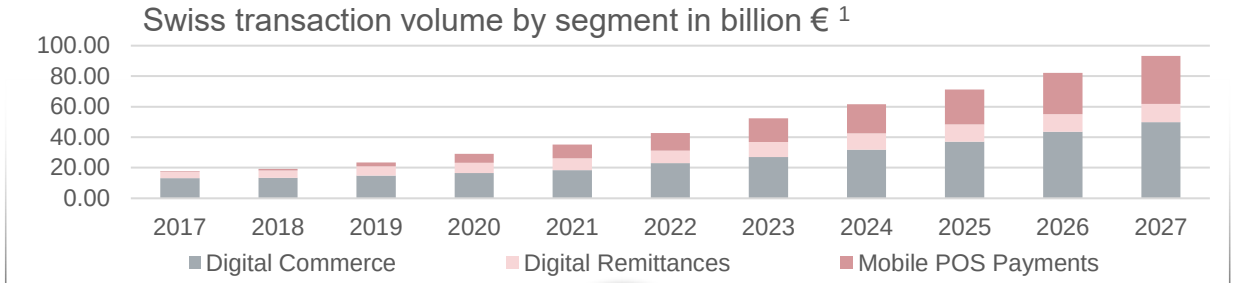
Payment success message

Process Completed



Chapter IV
Outlook & Trends

IV Covid-19 crisis as accelerator for rising transaction volume as well as penetration rate of mobile …



Research and Markets reported in their **Global Embedded Payments Market Report 2022** that the embedded payments industry alone is expected to **grow by over 40%** globally and is to reach **$124 billion value in 2022**, and **$380 billion by 2029**.

Key findings:

- There will be a significant **rise** in digital payment means
- **Average penetration** of Switzerland is in comparison to all countries listed up in the statistics in **top ten ranking of rates**
- Forecast on **Penetration rate greater than >22%** by 2027

Key learnings:

- Change in Switzerland is **accelerating** in the next years
- **There will be more** and **rising payment** possibilities for **digital suppliers**
- **Positioning** must happen **now** to **participate** in **market growth**

[1] https://de.statista.com/outlook/dmo/fintech/digital-payments/swiss#anlagevolumen [2] https://de.statista.com/outlook/dmo/fintech/neobanking/weltweit?currency=EUR

IV … and the conjunction of development has the potential to change the whole payment value chain fundamentally in the next years

1 Disintermediation of customer interface

- **New competitors** identified potential of payments as instrument for customer loyalty and cross selling
- Some players built **parallel ecosystems**
- Technology like **voice recognition, IOT** and **smart home** as catalyst

2 Regulatory requirements for banks

- **Margins** in Payment under pressure due to regulatory initiatives (e.g. MIF)
- At the same time, enforced **market liberalization** increases competition (e.g. PSD2)
- **Regulatory requirements** with regards to KYC, Sanction Screening and Risk Prevention **increasing**

3 Strategic dependencies and (political) initiatives against it

- Banks as well as Merchants **suffer from dependency to card schemes**
- **Private initiatives** foster alternatives, e.g. **EMPSA**
- **Politics** recognized payments as critical, e.g. EU promotes **Pan-European alternatives** or **Russian FPS**
- Initiatives as **EPI** gaining traction in the market

4 Technologies enabling new solutions and services

- **Sweeping** and **Variable Recurring Payments (VRPs)**
- **RTP**, esp. in combination with Instant Payment **enables substitution** of payment rails based on trust-networks
- **Blockchain** technology enables decentralized payments as well as **CBDC**

5 Conversion of acquiring und processing market

- Acquiring and Processing are **primarily fix-cost business**
- Product **differentiation is hard to achieve**, leverage **economies of scale** appears as appropriate alternative
- As a result, **increasing market consolidation observable**

Payment as strategic pillar!

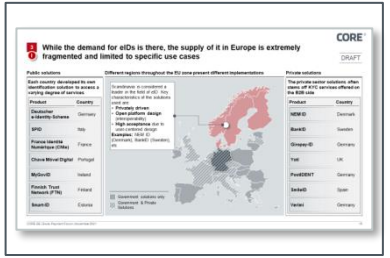
Source: CORE

IV eID solutions will play an integral role, even if neither a specific technology, nor a vendor is dominantly established yet

I

Options in the European market

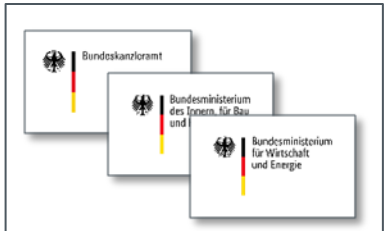
- Large number of public, private and public + private initiatives around Europe, but each with a limited scope of application
- The limited interoperability of the available options and the limited convenience of the interoperable ones, creates an extremely fragmentedd market with no clear leading solution



II

Regulatory approaches at the German and European federal level

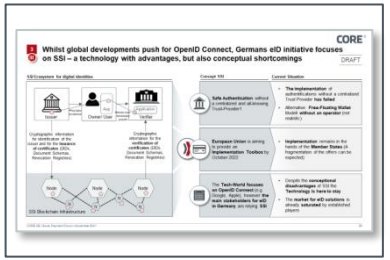
- European amendment to eIDAS regulation, planning on a European Digital Identity Wallet
- In Germany, several projects are being pursued in parallel (e.g. Bundeskanzleramt, BMWi, BMI)



III

SSI Solution

- All the different SSI implementations so far share the same technical design flaws (endpoint compatibility issues, privacy concerns with DLT, central authentication server…)
- Delays in the implementation of a Europe-wide tool box drive nationalism and patchwork; any changes at the base technical architecture counteract the initial decentralized approach



One the one hand side, Apple rolled out its own solution in the US, enabling citizens in 8 states to travel with their digitized driving licenses and ID cards

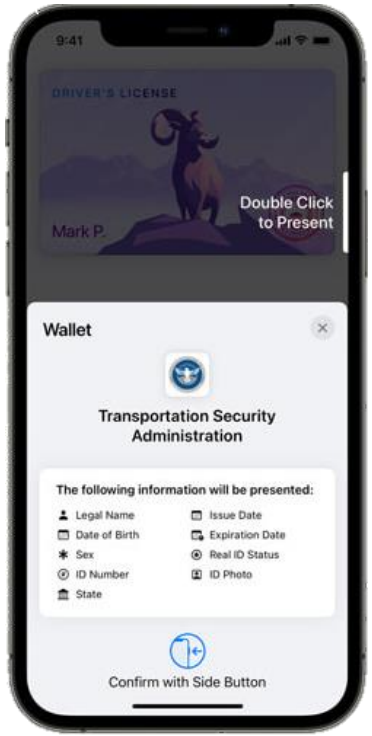
Apple defined own identification standards and is a first mover in the US market

Easy verification process:

- A picture of the ID
- Face ID confirmation
- A final verification by the state

Robust privacy measures:

- Neither Apple nor the state know when or where the user is presenting his/ her ID or driving license
- No-touch encrypted transmission of data to the identity reader
- Guidelines ISO 18103-5 mDL for personal identification



Bottom Line

- In **Europe**, the regulation-first **approach** with **implementation burden** on the states **reached questionable results**
- In the United States, Apple is establishing a **highly certified and safe eID** system that defines its **own standards**

Key Take-Aways

1. Market forces are often **more efficient** than **regulatory** stimulus
2. If we don't **define our own standards now**, we will have to **adapt** on the **currently** establishing **industry standards**

IV On the other hand side: Will the regulator stop Apple's predominance?

Apple under pressure due to illegal NFC interface

EU Competition Complaint

EU Competition Commission communicated **objections** to **Apple** in **May 2022**, finding that access to the **NFC interface may have been unlawfully restricted.**

The regulators benefit

The regulatory intervention should be seen in the **context** of the **tendency of big techs** like Apple, Google & Co. to **successively open up (finance) value chains.**

Does it reshuffle the market participants?

Should Apple be **forced to open the NFC interface**, potentially far-reaching market **movements in mobile finance** could result.

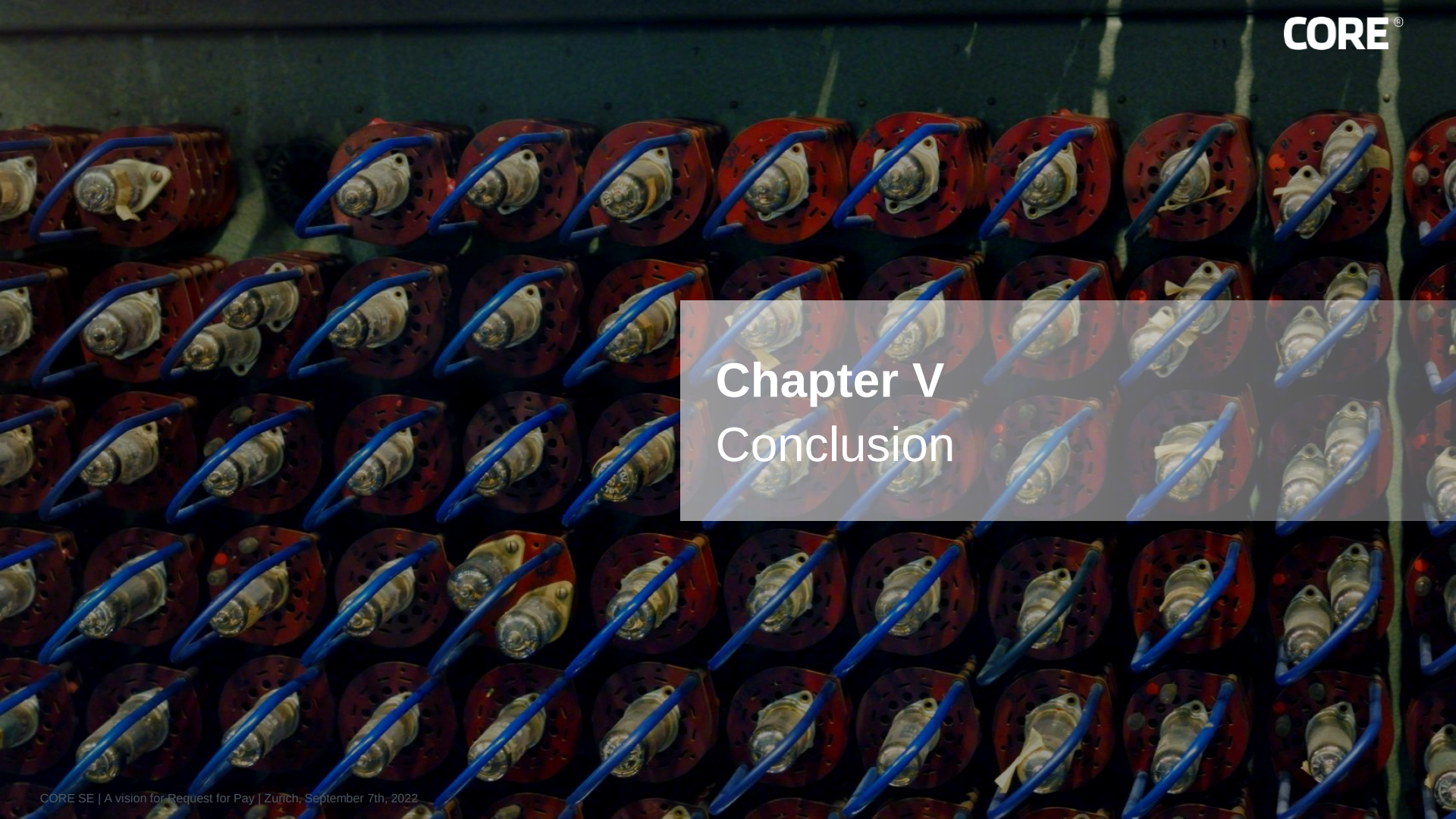
Apple seems to not care about this

Undeterred, Apple **launches** next finance **product** with **integrated BNPL solution** and enters lending business. For the first time, and contrary to expectations, with its **own license** and **operational management**.

Apple's loss, Banks opportunity

Banks should therefore not assume that anybody will solve challenges, but use **opportunity to reflect on own positioning** regarding **cooperation** and competition with xPays and **update their (payments) strategies.**

https://germany.representation.ec.europa.eu/news/apple-pay-praktiken-eu-kommission-ubermittelt-apple-mitteilung-der-beschwerdepunkte-2022-05-02_de



Chapter V
Conclusion

V Short- and long-term measures are required, in order to defend & strengthen individual market position

How to react to these developments as a card issuer?

Solution dimensions

Short-term: Improvements and optimizations of card portfolio, by…

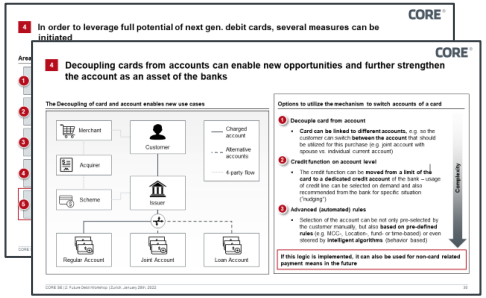
- …enable market differentiation by new features and VAS
- …enable new card related revenue streams
- …increasing efficiency

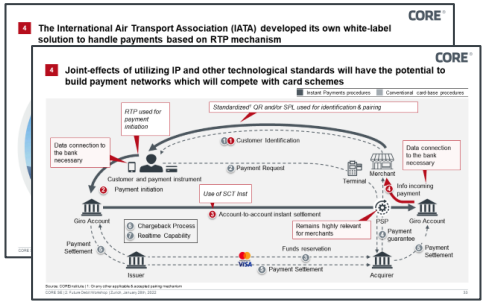
Long-term: Build strategic solutions, by…

- …leveraging new technological standards (e.g., Instant Payments, SEPA RTP & SEPA Proxy Lookup)
- …mobilizing strategic partnerships

and don´t think payments only!

Deep dives in backup





THANK YOU FOR YOUR ATTENTION

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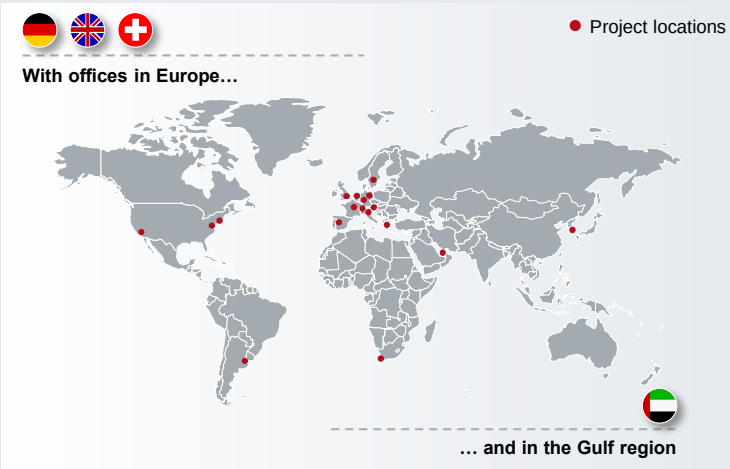
CORE – International technology think tank & trusted partner of IT-driven institutions

CORE is the trusted partner for international business-critical technology transformations



Key facts

2010 Year of foundation	**~135** Experts	**Berlin, Frankfurt, London and Zurich** Headquarter

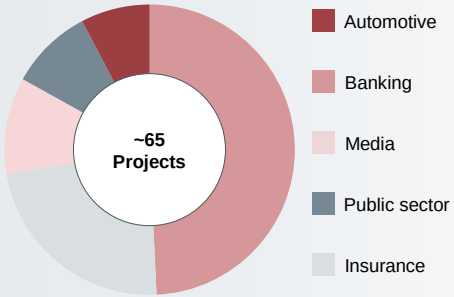
CORE is an independently managed consultancy as subsidiary company of EPAM Systems.

CORE – Experts in automotive, IT-research, IT-strategy development, IT-solution design and IT-implementation management

Tech Think Tank	Transformation Engineers	Venture Builder
Consulting boutique for applied strategy consulting and technology-driven business models.	Specify. Design. Implement. Test. Repeat. - We turn ideas into technologies and products for our customers.	Building Ventures – Translate ideas into successful businesses with the right partners.

Generalists and specialists working with the methods of strategy consultants and the tools of software engineers, compiling focused IT strategies and developing software for industries where IT is critical to business success.

With a total of 65 projects in 2021, CORE covers five industries and sectors, acting as a trusted tech think tank



CORE is a trusted partner for clients and institutions

- Membership of DIN reg. industry standards and ISO 27001 certified
- Membership of Bitkom e.V.
- Membership of Bundesverband Mergers & Acquisitions
- Regular exchange with German ministries and european authorities

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