
Standardisation in payments for digital commerce: Where are we, and where are we going?

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Abstract In the field of payments, standardisation is indispensable to establish successful products and services. There are good reasons to have the actual standards set by market players, driven by their business needs and foreseen opportunities. The current author believes this is to be preferred above setting a standard through the intervention of a governmental body. The latter would contain the risk of hampering future technological innovation. Nevertheless, there is an obvious push from regulatory and supervisory bodies to further harmonise standards and business rules for payment methods and processes in the European Union as part of a policy to reinforce the (digital) single market. This very policy comprises activities in the area of digital commerce on improving parcel delivery, simplifying value added tax (VAT) rules and strengthening the trust in online services—all in a cross-border context. This paper comments on the current market and regulatory forces that drive harmonisation in payments for digital commerce.

KEYWORDS: e-payments, standardisation, interoperability, European payments policy

INTRODUCTION: TWO-SIDED MARKETS

Payments services constitute a two-sided market of payers and payees.^{1,2} Market forces that apply to payments services hook on to either of these two sides and have their effect on the value of the service as a whole. From economic research,² some important characteristics of two-sided markets have been identified. First is the ‘positive network effect’ from the platform interdependence between the two customer groups in their markets. This means that the value of the platform service for a customer increases

with the number of users on the other side of the network. Second, a prerequisite for this effect to work out is a certain critical mass in the number of customers that is needed on both sides of the market. Critical mass can be obtained much more easily if different organisations cooperate and each brings its own customer base into the service. Third is the importance of price structure — that is, division of the total over the two market sides, rather than the price level of the service. Again, from economic research it was found that the chicken-and-egg problem in two-sided markets can be solved

by subsidising one of the two markets, in particular the one where price sensitivity is the highest (eg consumers in the case of payments services), and charging the one with the higher price elasticity (merchants). Such a stimulus encourages the inclusion of a sufficiently large group of consumers—the critical mass—for a payment method to become valuable for merchants and worthwhile to integrate into their processes and systems. Finally, fourth, with significant fixed costs in payments systems, there is a substantial benefit from economies of scale.

The abovementioned essential of cooperation has two complementary ingredients:

- *Specifications*—the (technical) standards and business rules that participants on both sides adhere to;
- *Organisation*—the governance of the implementation and operation of such specifications, including change management, promotion, stakeholder involvement and security and incident management.

The management of such a cooperation model is the typical task of a scheme-owning corporation. Regarding organisation, we identify active communication and open collaboration with (future) participants and stakeholders as important success factors of the online banking e-payment method iDEAL.¹

ATTRACTIVE PAYMENT METHODS

The value of a specific digital payment service is clearly different for consumers and merchants. For *consumers*, various market researchers show that trust and ease of use are the most significant values. In the context of payment methods, *trust* is a value that is required for consumers to actually consider the use of the payment method. Aspects of security, robustness, reliability and privacy contribute to this value, to an extent

that depends on the user's maturity with online trade and the cultural and historical experience with digital payment means in general. The value of trust is established by a brand—through positioning and promotion—and can increase after positive experiences with the actual use of the payment method. *Ease of use* can be defined as the degree to which a payment method is 'fit for purpose' for a certain application. Typical impediments that affect this value are the requirement for a payer to sign up for a payment method—which also negatively impacts reaching a critical mass quickly—or the functional complexity to finalise, that is, authorise a payment. Both the values of trust and ease of use cannot be measured on an absolute scale. In particular for the latter, it is important to note that this value can only be determined in comparison to other payment methods that are also available to the payer in the same context.

Values of payments services significant to merchants are reach and conversion.³ *Reach* of a payment instrument is defined as the number of relevant customers who are able to use the instrument. Merchants try to seek an optimum in the number of potential buyers and the number of payment methods contracted; and for which technical integration work needs to be done. This is of particular relevance for an online merchant selling across borders, with a diverse target group of customers with differing access to or preference for specific payment methods. The degree to which the use of a payment method ends in a successful non-revoked payment is defined as *conversion*. For those customers who have access to one of the presented payment options, the merchant wants to maximise the chance that the payment will be finalised successfully; and remains so during a period where chargebacks are possible. There are several factors of varied nature that contribute in a positive way to conversion. These range from functional smoothness such as the absence of webpage design elements that can distract

the payer, to a payment method's security and authorisation model that minimises the actual user interaction for the (authorisation of the) payment.

In an effort to further increase the level of conversion, retail merchants are looking into ways to reduce 'the pain' of payments for the consumer, by integrating the payment (more) seamlessly in the primary commerce or sales process. Seamless in these cases also means less visible. The most prominent example of this trend is the taxi service Uber, where the payment takes place fully out of sight of the user of the app, while it is entirely triggered by ordering a taxi and stepping in and out of the taxi as recorded by the various sensors in the phone, among which is the (GPS) sensor. This corresponds with the shift towards mobile-centric customer interaction, both for banking and for payments specifically. Commerces of all sorts apply mobile technology to create user experiences that are *seamless* across channels: in-store, online or on-the-go.

COSTS AND RISK

Two other factors that influence the widespread use of payment methods are costs and risk, yet both appear less dominant than the values stated before. From the few cost studies done for online retail⁴ it became clear that cost awareness with online merchants is lower than with those in physical retail,

but, more importantly, it appeared that other cost components in online retail such as marketing, fulfilment and delivery and analytics currently have a greater impact on revenues than the cost of payments.

Risk plays a role on both the side of the payer and the payee. In digital commerce, the moment of delivery and the moment of payment are often asynchronous (ie non-related timewise), which induces the risk of either non-delivery after payment or non-payment or chargeback after delivery. On the payer's side, this risk aspect is reflected in the level of trust value, whereas for the payee it is part of conversion. A more structured way of describing and analysing risk as an influential factor in online payments usage has been done with the Transaction Context model.⁵ This model describes how these values for payers and payees are determined by the transaction context in terms of the time sequence of the payment and purchase/delivery, the locations of the payer and payee and their mutual acquaintance.

PAYMENTS DYNAMICS

Given the dynamics of two-sided markets, we have analysed how the values on payer side (trust, ease of use) and payee side (reach, conversion) are related. This is shown in Figure 1. First, *trust* with payers in a payment method supports the

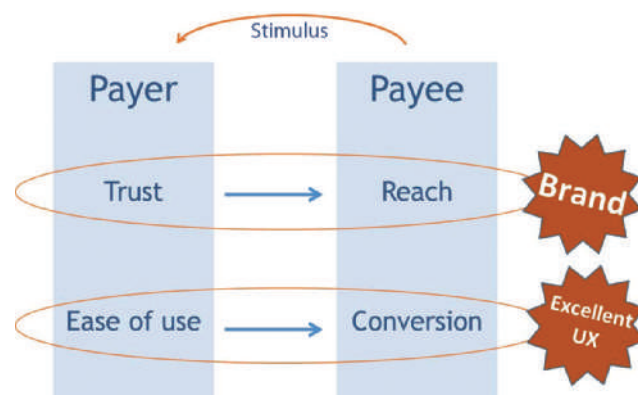


Figure 1: Dependence between payer and payee values

creation of relevant *reach* for merchants. A means to provide trust is a *brand*, with adequate brand equity. Besides supplying a logo, we believe that establishing and maintaining a relevant brand has to include active involvement of stakeholders on both sides of the market to understand their respective needs. Furthermore, the brand is based on a set of minimal business rules concerning liabilities on the inclusion of payers for acceptance of payments and the information security of payment authorisation by the payer. Second, *ease of use* and *conversion* are dependent in a way that they are two sides of the same coin. Both values benefit from excellent user interaction (UX) design of the payment flow in the context of the payee's commerce application. Typical features of such user interaction design are mentioned in the earlier paragraphs with the concepts of ease of use and conversion.

Brand equity of a payments service and a fit-for-purpose user interaction design are typically established in a scheme where participants cooperate¹ on 'specifications' and 'organisation' in a model as described before. Activities such as brand promotion and stakeholder involvement contribute to brand equity, while requirements for user interaction design are a basic part of the service definition and implementation standards.

THE ROLE OF STANDARDISATION

Regarding payments standards, after the introduction of the Euro currency and its associated real-time gross settlement system TARGET, the next step was the establishment of the uniform payment products SEPA (Single Euro Payments Area) Credit Transfer (SCT) and SEPA Direct Debit (SDD). Market players drafted the standards for these two payment schemes, while the actual date for market introduction was set through a regulation (law status). In the area of card payments, the industry has a

long history of standardisation. An important milestone was the SEPA Cards Framework, which has recently been superseded by the Cards Standardisation Volume. The Volume is the result of the Cards Stakeholder Group, a platform provided by the European Payments Council (EPC) gathering Europe's card industry's stakeholders.

To further analyse the relevance of standardisation for the landscape of payments for digital commerce, we refer to a hierarchy of payments,⁶ as depicted in Figure 2. This hierarchy shows four layers in payments, from the level of Settlement in the Euro system up to payments Services for small retail or person-2-person (P2P) payments. The layers and some of their primary forms of implementation are as follows:

- *Settlement*: deferred net settlement, real-time gross settlement;
- *Processing*: intra-bank, bilateral interbank, clearing house;
- *Instruments*: SCT, SDD, Cards, Cheques;
- *Services*: end-customer solutions tailored for integration in particular use cases, business processes and/or technological contexts.

Examples of *Services* available in the market are, for instance, wallets, online banking e-payments and P2P mobile payments. Typical characteristics of these payment products are real-time authorisation and confirmation, instant funds transfer or mobile app usage; product features that are currently not generally available in the other layers.

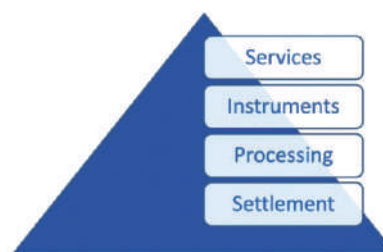


Figure 2: Layers in payments systems⁶

FIT FOR PURPOSE AND INTEROPERABILITY

Standardisation—as part of the cooperation model—is, to a certain extent, essential for the creation of a potentially successful payment method. Current standardisation on the *Instruments* level, however, seems not appropriate for merchants. Although the reach of these payment methods is excellent because of their European scope, the contribution to conversion of the instruments is inadequate. These instruments were not particularly designed with an integration into primary commerce processes and IT systems in mind. On the other hand, the available products in the *Services* level, because of the design criteria applied to them, score relatively good on conversion, whereas their reach is not as wide as demanded for by payees.⁷ This leaves a gap between current payment products in either the Instruments or Services layer, and market demand from merchants. Uniformity on business rules or technical standardisation can improve the reach of Services. Aspects for which this is especially beneficial are:

- Payee admittance criteria
- Payment authorisation and guarantee
- Technical messages and protocol, including change management
- Logo or brand, and its proper use
- Integration with underlying payment Instruments

Dissimilarities between payment Services on any of these aspects can be overcome by cooperation, based on joint business opportunities. The more similarities or uniformity on these aspects, the better the integration or interoperability between services. Moreover, from a policy maker's perspective, there is a noticeable drive to let this work across national borders.

SINGLE MARKET POLICY

In line with the single market policy, the establishment of the SEPA has been a

significant step towards standardisation of payments services in the Euro area. The policy is supported by the Payment Services Directive, which introduced the role of the Payment Institution as an entity providing plain payment services, under a less stringent supervisory regime than full credit institutions ('banks'). The obvious political objectives were to lower the barriers of entry for new players in this market of merchant payment services. This turned out to be successful given the still growing number of licensed payment institutions delivering digital payments services. These new players operate in close relationship with their clients in providing services that are partly technological and partly financial; a combination that is particularly valuable to merchants. Examples of such services are the integrated reporting over various payment streams from different payment methods or the reconciliation of payments against purchases and returned goods.

PAYMENT INITIATION SERVICES

Currently, the revised Payment Services Directive (PSD2) is in the process of transposition into national law, with a deadline of January 2018. Part of PSD2 is the introduction of a new type of Payment Service Provider (PSP), the so-called Payment Initiation Service Provider (PISP) that Payment Service Users must be allowed to use to initiate a payment order on their behalf from their bank account at their respective Account Servicing Payment Service Provider (ASPSP). This new role of PISP is expected to spark off novel digital payment services, especially in combination with the—by then imminent—instant execution of payments.

PISPs are expected to market services on the 'front end' of payments, based on SEPA Credit Transfer payment initiations. An important stipulation is that a PISP acts in the context of the PSD2, however, without the obligation for a contract with the ASPSP. Nowadays, bank clients have

access to their full bank account through an online or mobile channel. This type of access will be augmented with direct access to the payment account by means of a PISP, as shown in Figure 3. It is expected that some of the actors currently providing Services in the context of abovementioned payments hierarchy (Figure 2) will continue this or extend their offerings as a PISP.

The text of PSD2 has been published in the Official Journal of the Commission in January 2016. Part of the legislation is deferred in the form of still-to-be-drafted Regulatory Technical Standards. We have some considerations about the upcoming legislation and the impact this might have on the landscape of e-payments:

- Despite the underlying SEPA Credit Transfer standard, there is a risk of fragmentation (preventing reach for merchants) when many PISPs try to win the heart of payers. We have claimed that trust is needed to create the necessary reach, by means of a brand. This is equally valid for PISPs. Existing brands might be in a good position, although time runs out quickly to capitalise on the advance. The European Banking Authority also recognises this dilemma between setting clear requirements for a (few) standard(s) and leaving room for innovation to market players and hence probable divergence in solutions.⁸
- Harmonisation of payment methods and processes in the European Union is part

of the (digital) single market policy.⁹ However, in cross-border commerce, there are hurdles that are in contest for priority with harmonising payments. Examples of such challenges are improving parcel delivery, simplifying VAT rules, abolishing geo-blocking, strengthening the trust in online services¹⁰ or simple language barriers in sales and customer service (after-sales).

- There is no ‘one size fits all’ approach in payments. Sets of comparable payment services built on top of the same underlying infrastructure will exist along with each other, such as online banking e-payments, stored-value wallets and card payments.
- One of the effects of the two-sided—however asymmetric—market in payments and its inherent must to stimulate the payer side is that payer preference is the leading criterion in planning a merchant payments acceptance portfolio. The payee decides mainly on the value of conversion, while an aggregator PSP arranges the relevant reach. There are large differences in payer payment preferences for historical and cultural reasons. Hence, a set of payment options with good reach on domestic level combined with a good service offering of an aggregator PSP satisfies the need of merchants to a large extent.
- In addition to the previous item, payers might benefit from improved acceptance of their preferred payment method

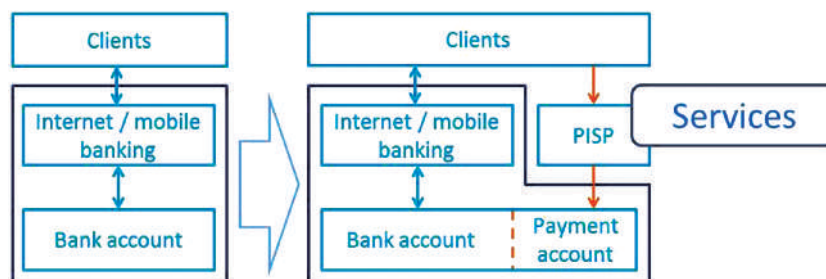


Figure 3: Impact of Payment Initiation Service Providers

through interoperability between related payment methods. The business case for such cases of interoperability is challenging, however, because of the investments needed on the payer's PSP side while revenues fall on the payee's PSP side. Especially, with the constraints on interchange fees.

CONCLUSION

We have elaborated on the basic mechanisms underlying the success of payment methods, that is, trust and ease of use for payers driving reach and conversion on the payee side. These mechanisms only have their effect when PSPs cooperate in an open model with each other and their stakeholders, based on collective standards and business rules. All this equally holds for the newly created space for PISPs. Without common criteria and governance for payee admittance and stakeholder involvement, the effectiveness of this new legislation becomes indeterminate. Domestic and international merchants alike will only add to their acceptance portfolio payment methods that provide sufficient reach and conversion among their customers. The cooperation needed will not come from the legislator, but has to be initiated by payment service providers, both incumbents and newcomers.

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