BSK Position paper

Continuous development of the Norwegian payment infrastructure

Introduction

The Norwegian banks have set the following ambition for the payment infrastructure in Norway, described in a strategy document mandated by Finance Norway's Payment Infrastructure Board (BBI):

VISION: The world's best infrastructure for payments and payment related information
MISSION: Provide the community with user friendly, cost effective, secure and stable solutions through profitable commercial activities
GOAL: Maintaining the bank account as the core of customers' financial lives and ensuring that each individual bank has a strong customer relationship

This is a position paper written by BSK to outline a process to move towards a future proof infrastructure to support the vision, mission and goals outlined in the strategy process. As we see there are several driving forces and external demands which make it necessary to modernize the payment infrastructure that we as late as 5 years ago considered to be among the most efficient in the world.

This paper has four main chapters:
1. A description of the current situation
2. A list of the driving forces
3. An outline of desired characteristics of the payment infrastructure
4. An overall process and activities to take us in the right direction.

If we neglect to kick off the proposed process, it will become increasingly difficult for Norwegian actors to survive in an international competitive market which is primed for free competition.

This document will take an analytical approach to see how we can evolve the Norwegian payment infrastructure.

The term payment infrastructure will in this context relate to hardware, software applications, networks and business processes required to allow execution of payments and transfer of payment related information from a payer (usually the sender) to a payee (usually the beneficiary). The payment infrastructure will include functions for clearing and settlement between the participants.

The definition above might seem confining and makes it clear that not all needs for exchange of information between banks, service providers and customers are catered for here. However, if the payment infrastructure is built and organized in a structured and open way, it is reasonable to believe that many aspects of the payment infrastructure will be a central part of a larger "financial market infrastructure".

1. Current situation

The Norwegian payment infrastructure consists of two major multilateral infrastructures and numerous bilateral infrastructures. The infrastructures are designed to facilitate for access to specific service providers/operators and common services like clearing and settlement and centralized domestic acquiring for card payments.

The Norwegian banks have often collaborated when building new solutions. This has been done to get benefits from cost sharing and reachability when launching new solutions. The infrastructure providers to the Norwegian banks have been included in efforts to develop the infrastructure, both in strategic discussions and the decision process. The providers have managed to be flexible and solution oriented even within contract periods. Functionality, trust and common effort for better solutions has been more important for both the banks and service providers than short time economical results. Low turnover in both technical and strategical staff have provided us with the ability to take a broader perspective on changes and avoid repeated mistakes.

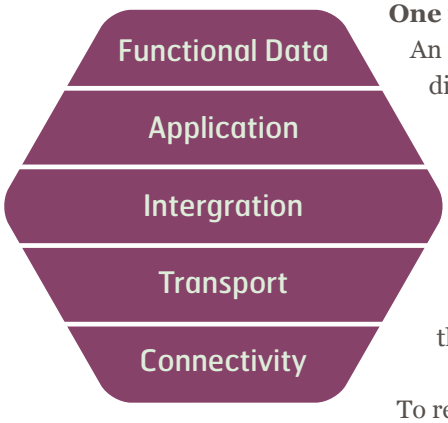
For the card infrastructure online to issuer and several backup solutions have resulted in a high level of trust both by merchants and card holders. We have 99.8 % online PIN verification (included 0.2% STIP) and 0.2% signature validation by merchant. The security in the infrastructure has been managed by a trusted party owned by the banks, BSK. The result is no competition on security and no risk based pricing for customers. The distribution of payment terminals have been driven by banks promoting the local infrastructure and not by acquirer of international schemes.

The above mentioned have secured us a payment infrastructure that we have regarded to be amongst the very best in the world; online, cost efficient, robust and secure. Security incidents have been few and performance has been good. The Norwegian payment market is one of the most mature in the world where online payments to a very large extent have replaced use of cash (and cheques).

However, this payment infrastructure relies heavily on proprietary software and solutions which is rapidly becoming outdated. Without great focus on modernization it is unlikely that we will be in a position to solve challenges and demands of the future, eg. opening the infrastructure to new players, real time capabilities, supporting mobile payments and global interoperability.

Self regulation
The Norwegian payment infrastructure has been allowed a great deal of self regulation due to high levels of trust, both by users and authorities. This has

given the Norwegian banks the opportunity to determine timing, scope etc. of new initiatives to develop the infrastructure, which undoubtedly have saved money for the banks and set the banks in a position to take a holistic view on the infrastructure eg. when responding to new legislative requirements. It is vital to keep a strong focus on maintaining the earned trust and authority. We need to preserve our long tradition of low levels of fraud as well as good stability in our infrastructure.



One infrastructure

An IT-architecture can be described as a stack with service layers that serves different purposes. The upper half consists of layers which contain service functionalities like the customer service functionality in the BankAxept payment authorizations or cheque validation. The bottom levels represent infrastructure necessary to handle transport of messages between different parties. In between the service layer and infrastructure is the integration layer, which is there to handle the rules and mechanisms needed to identify, validate and direct way for the particular service through the infrastructure.

To reconnect with the original perspective as one “payment” infrastructure, there are several functionalities in the service layers which are essential to the scope of a complete banking infrastructure. These functionalities are described as common services like NICS (Clearing and Settlement), STRAKS (real time payment engine), KAR which is a mapping register for account numbers and their owner identified by their fødselsnummer (“social security number”) or tax ID number for businesses. These services support components for numerous customer services. The complete infrastructure currently also includes some of the customer service components like BAX COI (BankAxept acquiring) and BankID COI (Certificate Authority and Verification mechanisms). We also provide infrastructure elements for the integration, transport and connectivity layers, where Baltus 2.0 plays a vital role to give online connection between the banks, but also to connect the banks with service providers, collaboration partners and in the future TPP’s.

2. Driving forces

The infrastructure, which until a few years ago seemed to be adequate and efficient, is being challenged from a market with increasing dynamics as well as from regulatory authorities. The banks and the payment infrastructure have enjoyed a high level of trust, but trust is fragile, and there is a need to ensure that services will be implemented in an efficient, controlled and secure manner in order to avoid this trust being eroded.

Changes in domestic governance
The governance model of the joint infrastructure is being increasingly challenged by changes in domestic governance. Several changes are relevant to mention here:

- The banks withdrew the financial control as shareholder of Nets/BBS. BBS and later Nets has played an important role in the development of the Norwegian infrastructure making sure that it has been modernized and operated in accordance with best practices. The change of ownership requires the banks to take on a more active role when it comes to holistic infrastructure planning.
- To boost innovation and keep up the speed in the sector service development, the banks organized sector services in separate independent companies directly owned by the banks. New legal entities with different strategic goals and priorities all depend-ent on the same infrastructure, requires a strong holistic infrastructure planning process.
- EU regulators have taken a major position as financial regulator also with domestic effects including reduced possibility for the banks to self regulate in the payments area.

Consolidation of actors in the market
Further consolidations are expected in the pay-ment sector, both regarding banks and their service providers. The number of small domestic service providers are decreasing, at the same time as inter-national service providers enters the scene.

Globalization
With Norway closely linked to the EU through the EEA agreement, and through extensive trade with foreign countries, Norwegian payment infrastructure can no longer be based on proprietary solutions. As a small country outside the EU, Norway has limited resources and impact on international communities.

As a result of mergers and purchases a large part of the banks participating in the Norwegian bank infrastructure have become Nordic with operation in several Nordic countries. These banks have an interest in further consolidation and interoperability in the Nordics.

Customer needs
Previously, banks have been the driving force of innovation within the industry, and have had exclusive use of the infrastructure. That is not the case anymore. As legislators within the European Union are moving toward opening of the infrastructures in order to facilitate competition within the market, a range of new service providers is expected to enter the market, enabling consumers and industrial players to pick and choose their required services. In this climate, innovation will arise from customer requirements.

> "Banks are no longer alone in driving innovation in the payment industry."

One-transaction-dialogue and real time services
The 2-transaction-dialogue still dominates the traditional payment and card based services, as a legacy of the eighties to compensate for unavailability in the infrastructure. Real-time services are not only technological feasible with current technology, but is also expected by customers. This will also transform the transaction dialogue.

Other payment infrastructures
Globalization is one of the main drivers of change in most mature payment markets. In order to meet future demands of any payment system part taking in the global market, there is a growing realization of the need to collaborate and interact with relevant peers in the international banking community; this also includes adapting to global standards such as ISO 20022.

Enhanced collaboration with experts from across different sectors (multi stakeholder) and from across international borders is, in our view, one of the emerging trends which will have to continue in order to be able to deliver relevant services in the future. In our view comparison of services among strategic partner countries to harvest the best solutions, evaluate need for interoperability and/or seek for mutual efficiency measures will also be important.

New actors entering the payment infrastructure
The implementation of PSD II will no doubt have a profound impact on the payment infrastructure in the years ahead. PSD II requires banks to provide third party payment providers (TPPs) with access to the infrastructure. The current lack of streamlining and flexibility of the payment infrastructure in the customer-bank interface will enable TPPs to offer services which are of interest to customers. This will bring a new dimension to the payment landscape and it will have a major impact on the infrastructure.

A flexible infrastructure which can support a variety of services is likely to improve the banks' competitiveness. Further on a well defined single interface to the infrastructure will increase the possibility to collaborate with other parties.

MIF regulations
Regulation of multilateral interchange fees for card-based payment transactions will result in reduction of profits from card transactions by reducing maximum to 0.2% on debit cards and 0.3% on credit cards, regardless of whether the transaction is made within the issuer country or elsewhere.

Terror finance intelligence
As government agencies are given increasing powers to follow the financial trail of new, globalized, financially resourceful terror organizations, new demands will be placed on the infrastructure to enable speedy and efficient delivery of relevant information to the correct agencies, while ensuring that it is restricted to those having a legal claim to the information. These are costly provisions, particularly if all stakeholders are forced to implement them in their solutions.

3. Desired characteristics of the payment infrastructure

In order to ensure continuous importance of account based funds for the customers, the Norwegian banking community's ambition is to be prepared for the challenges of today, as well as for the future.

Essential characteristics of a modern infrastructure
In order to be able to recognize the ideal infrastructure when we see it, as well as to set targets toward getting our systems to the desired state, we need to identify some characteristics which have to be present in tomorrow's leading payment infrastructure. We have identified the following characteristics:

Undisputed trustworthy governance model to substantiate collaboration.

Secure connectivity between services providers and account based funds.

Message standards and interfaces, founded on recognized international standards for best practice.

Compliance with national and international regulatory demands, international principles and recommendations which follow BIS, i.e. CPSS/IOSCO, and standardized according to recognized, international regulations, for example EU regulations or national and international legislation with regard to combating money laundring or terror finance.

Support convenient, intuitive and reliable self service solutions for account administration.

Overall requirements
We have defined the following requirements for a future proof infrastructure:

- Scheme Management which ensures all stakeholders needs, along with a well documented governance model based on international best practice with clear division of responsibilities and requirements for all stakeholders.
- The payment infrastructure has to be cost efficient, and offer standardized services enabling users (customers and suppliers) familiar interfaces.
- Minimum robustness requirements and service levels must be defined.
- The infrastructure should be agile and flexible to new technology, customer demands and new actors joining.
- The infrastructure should be transparent and as open as possible. It should allow for easy, standardized ways for approved new service providers to connect. Approval criteria should be standardized and available to interested parties. Equally, the infrastructure should be divided into different sets of adherence according to what a payment service supplier is approved for (some may only wish to offer certain services, while other require full access).
- The level of settlement risk between banks should be controlled and information about this readily available to all relevant parties.
- The infrastructure should be independent of all suppliers, technologies or devices.
- Services need to be efficient and fast on a technical level, and account information available in real time.

4. An overall process and activities to take us in the right direction

There is no doubt that changes in infrastructure will require investments. The cost of adapting and tuning our current infrastructure to the emerging reality may be high. Module based thinking, challenging the existing infrastructure, is essential to achieve success. A fundamental problem in the further development is the lack of a centralized funding source for the maintenance and development of the collaborative infrastructure. This leads to slow decision processes for new initiatives, and it creates challenges in running projects and gives low focus on benefit realization.

A multi-stakeholder collaboration between banks and service providers is a prerequisite for success. The collaboration (management and use of the infrastructure) must be regulated in binding mutual agreement, clearly pinpointing that the infrastructure is a non-competitive area for the business owners. The current financial model is primarly aimed for maintenance cost sharing, primary based on use / access. In order to ensure future development it will also be important that there are mechanisms in place to finance new projects. It is vital that all stakeholders that are in a position to decide new projects to further development in the infrastructure also have responsibilities when it comes to ensure proper funding. Centralized funding should also be considered to speed up decision processes, reduce project risk and increase focus on benefit realization.

Activities currently underway
BSK has already started some large activities as the crucial first steps to build a payment infrastructure responding to the challenges.

- **BALTUS 2.0**
  BALTUS 2.0 is a future oriented transport infrastructure designed for an evolving payment and information market, allowing for more stakeholders and an increased amount of services, including TPP's. BALTUS 2.0 is not just an infrastructure, but also a governance model to support the multi stakeholder collaboration.
- **TIFI**
  BSK are currently developing a set of requirements for how third parties may enter the banking infrastructure. The aim is to create a robust set of regulations, ensuring a uniform and secure way of entry.
- **ISO 20022 Implementation**
  BSK are in the process of implementing ISO 20022 as a new standard for payment messaging standards in the Norwegian banking infrastructure, for the whole value chain, regardless of channel.

Building knowledge
We have outlined some new demands and very real challenges which lie ahead for the payment infrastructure in the years to come. The key question is of course, how we should go about attempting to reach the goals in order to create the best infrastructure possible.

In short, we need to strengthen competence within technology, regulatory demands and have a flexible basis in order to be able to adapt to changing demands emerging as a result of evolving technologies, new regulations and development of new international standards. Our focus needs to be on preparing for changing demands to the infrastructure, and creating an infrastructure which is robust, but flexible enough to adapt to the changes imposed by actors outside our own realm.

Tactical steps ahead
We need to be able to prioritize technological impacts, identify in which areas we need to be at the forefront of technological developments, and separate those from where we should be prepared and ready to implement best practices, standards and solutions as they become available. This measure is clearly a process to expand and evolve BSKs global collaborating resource network. We anticipate an increase in the number of different players, schemes and services, supported by the consumers and empowered by regulators.

As new technology emerges, the banking sector is led to implement solutions for an ever increasing number of platforms on which customers are engaging in electronic- and internet banking. There is a need to

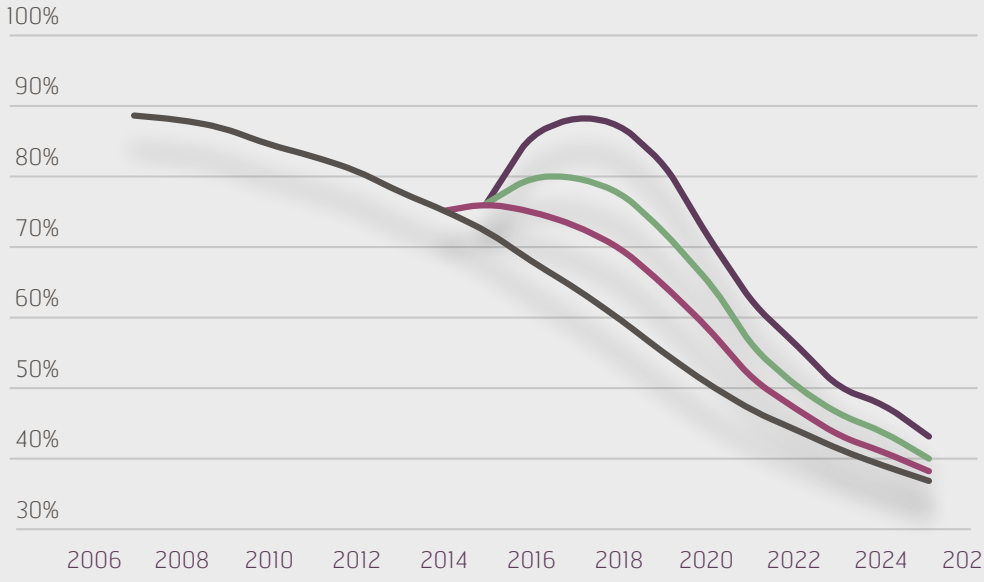
> "By acting now we may take advantage of emerging possibilities rather than being left behind."

establish a governance model to allow and support a continuous rethinking what an ideal payment infrastructure should look like, and how it may be achieved. Major forces inducing this are public demands that focus on availability, immediacy as well as security and, of course, price. This coincides with the vast changes in regulatory demands introduced by the EU, such as implementation of PSD II.

The implementation of new legislation forces banks to increase their focus on measures designed to cut costs. Increased efficiency will allow banks to meet the new challenges presented to them. The implementation of BALTUS 2.0, ISO20022 and TIFI will be able to provide a flexible foundation based on recognized international standards on which banks can build their services for the future, allowing them to adapt quickly to new service demands, as well as allowing for collaboration with new service providers based on mutual agreements.

The process proposed in this document does not describe a onetime stunt, based on the current activities. This initiative requires a fundamental and pervasive change in order to ensure that we will avoid finding ourselves in the same (or worse) situation again, within a short period of time. Given a situation where there are increasing growths in market demands. The following graphical representation attempts to illustrate this:

Norwegian payment infrastructure compared to known best practice



The table represents BSKs subjective view regarding the effect of current initiatives. "Known best practice" in not a comparison to an established framework, but our view based on current collective knowledge.

The Norwegian banking community needs to be aware that we are a relatively small constituent in a diverse international banking and payment providing community, and that our role is regulated by the EEA agreement. Our banking community does not have the weight to drive through international standards by ourselves.

As such our aim should not be to be the frontrunner for new, innovative solutions. Our focus should be on collaborating with, and contributing to relevant international forums for standardization and/ or identifying strategic collaboration partners and infrastructures in order to gain influence so that we may influence development internationally.

Furthermore, a crucial prerequisite for successful development in the globalized market will be to attract strategic alliances from beyond the realms of the Nordic states.

Good timing is crucial for a success. We therefore propose the following steps in order to give us the foundation for right decisions.

Comparative international analysis
- Identify alternative infrastructural activities internationally and best practices.

Establish relevant colloberation
- Establish collaboration with relevant international peers

Local organization
- Establish a forum for technical architecture for Norwegian banks to define the future needs and goals to be met by the infrastructure

Determine strategy
- Define a roadmap for how to move from today's situation enabling us to meet the new challenges.

Communicate with key stakeholders
- Banks
- Service providers
- Regulators
- Internationally
- Bank customers and service organizations

Implementation
- Project mandates
- Business cases
- Gather sponsors
- Define ownership
- Make the needed decisions
- Execute projects

Contact

Do not hesitate to contact BSK if you want more information or want to contribute in the process:

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