

Alternatives for Banks to Offer Secure Mobile Payments

White Paper Summary Presentation

[Download the white paper](#)

Overview of presentation

This presentation will provide you with:

- An overview of the Mobey Forum white paper entitled: *'Alternatives for Banks to Offer Secure Mobile Payments'*.
- An outline of the current mobile financial services (MFS) ecosystem, the main stakeholders, and value chain.
- A summary of the secure element (SE) role, and the different form factors that are available.
- The key questions that financial institutions should address before advancing activity in the MFS landscape.
- Future industry recommendations.

The white paper

The white paper examines the role of the SE in delivering MFS to end users. It will be of interest to **senior management** and other **decisions makers** in financial institutions, and will assist them in deciding the role they will adopt in the MFS value chain.

The document achieves this by:

- Providing an analysis of the MFS ecosystem.
- Detailing the role of the SE, a tamper-resistant hardware element located in a mobile device.
- Highlighting the features, application and impact of different SEs – stickers, secure micro SD card, universal integrated circuit cards (UICC), embedded secure elements and the trusted mobile base.
- Offering a comprehensive matrix comparing the requirements and benefits of alternative SEs for MFS.

The paper aims to **promote collaboration** and is intended to reduce the complexity of the ecosystem by educating readers on how the SE will empower stakeholders and offer new, creative commercial opportunities.

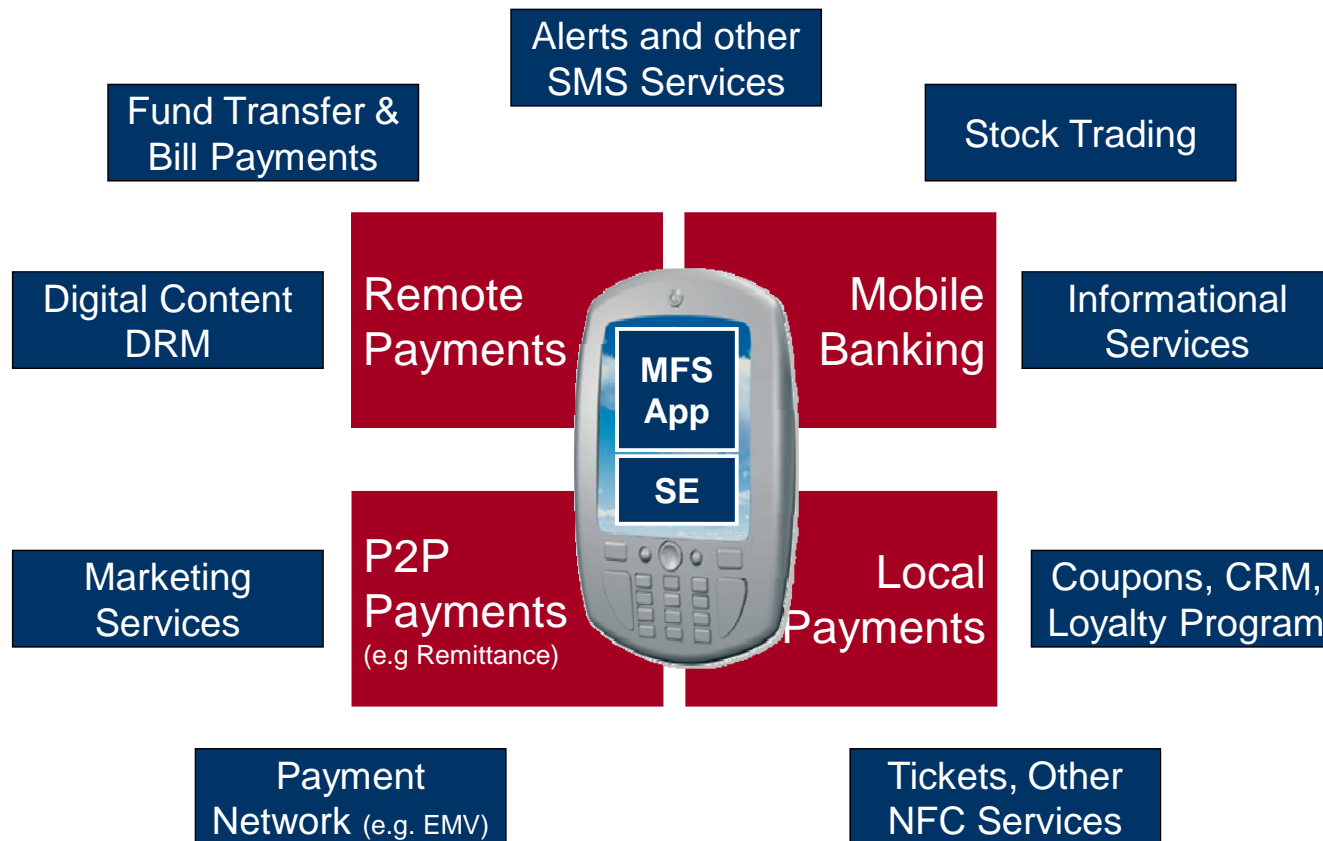
The MFS ecosystem

Key challenges

- Positive feedback from NFC payment pilots to date – fast, convenient and innovative.
- Advancement more challenging than expected due to complexity and fragmentation of the MFS ecosystem.
- MFS stakeholders represent organisations across a range of industries and sectors, including financial institutions, mobile network operators (MNO), handset vendors, merchants and other service providers.
- The main barrier to advancing MFS is defining the role and responsibilities of each stakeholder.

Examples of MFS applications

Adopting SE technology when delivering MFS becomes particularly important as transactions volumes increase beyond marginal payments.



* Please note that the outlined MFS applications can also be executed without leveraging an SE, particularly in a card-not-present environment, such as online transactions.

The main stakeholders

- **The SE Vendor (SEV):** The physical producer of the SE.
- **The SE Issuer (SEI):** The entity that sources the SE from the SEV, controls the SE's root keys, brands the SE and provides it to the end consumer.
- **The Application Issuer (AI):** The party that offers an SE-related application to the end consumer for its own business purposes, e.g. a bank, transport authority, or customer loyalty programme.
- **The Trusted Service Manager (TSM):** An entity that AIs or SEIs may use in different phases of the SEs and applications' lifecycle to manage distribution, updating and trouble-shooting.

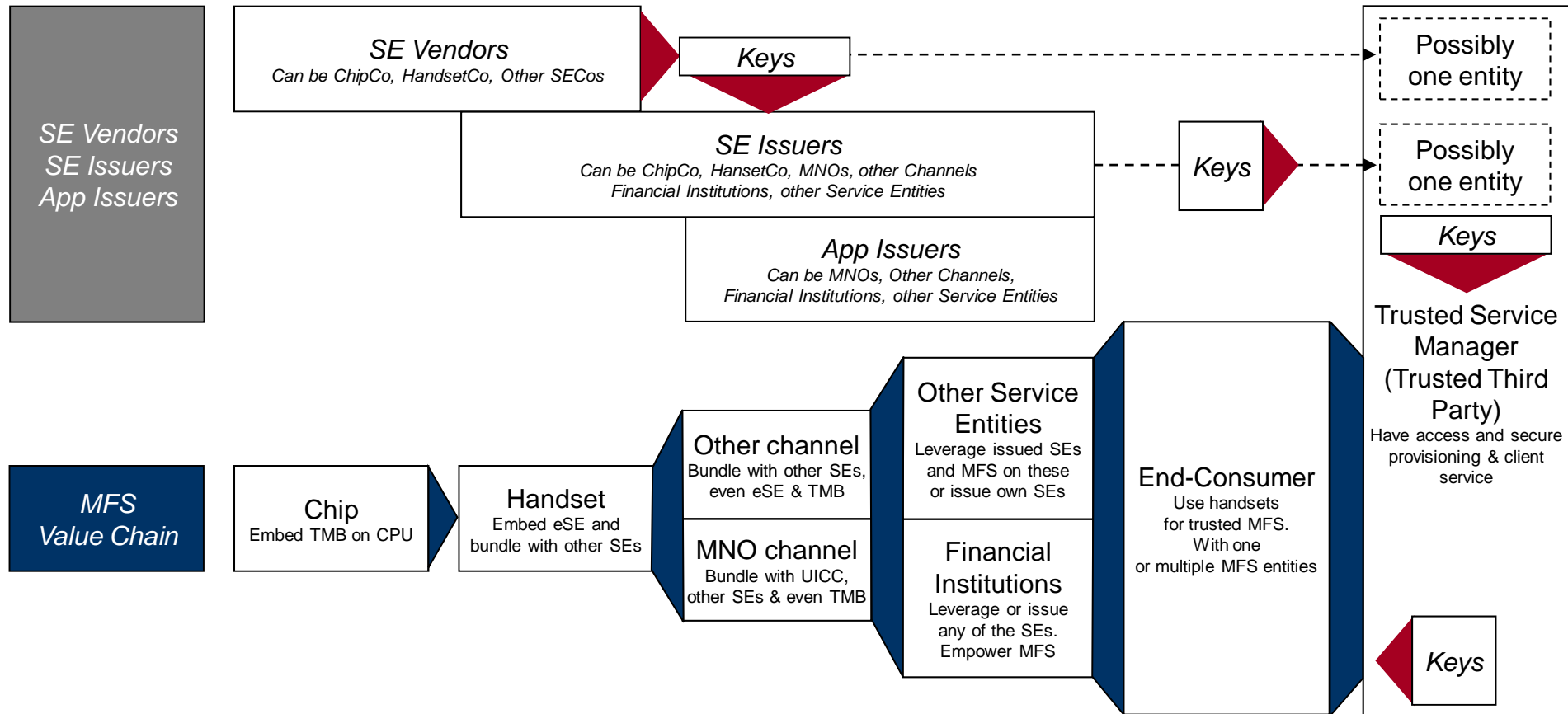
The value chain

The structure of the MFS value chain means that an unlimited number of business models can be adopted. For example a financial institution can decide to:

- Be a SEI and have full control over the SE. If desired, it can 'open' the infrastructure to other AIs, generating additional revenue and effectively becoming a TSM.
- Be an AI and only control the specific keys of its own financial services application. In this scenario, the financial institution will work with a SEI.
- Partner with a TSM, which will have existing relationships with one or several SEIs, AIs and SEVs. This means that only one business relationship needs to be formed to deliver financial services to end users.

By defining precise value chain positions and outlining the SE technology available, financial organisations can identify the most interesting partnerships and implementation models open to them.

The MFS value chain



SE technology

Understanding the SE options can assist in selecting a deployment model that aligns with current business requirements and technical architecture.

- **Technology summary.** Contactless cards, manufactured in the form of a sticker that can be personalised and processed through existing distribution infrastructures. Customers place stickers on their phone for NFC payments. New 'active' stickers will also establish a connection between the sticker and the mobile phone user interface.
- **MFS value chain position.** Of interest to payment, loyalty and transport service providers eager to enter the MFS market today.
- **Opportunities.** Cost-effective, easy to deploy and integrates into existing technical infrastructure. Suitable for convenient, small value purchases and a good educational step for end users to engage and benefit from the technology. The interactive combination of 'passive' sticker technology and web-based services could provide strong marketing opportunities.
- **Challenges.** Passive Stickers do not support contactless EMV applications. 'Active' stickers are still emerging technology and can currently have disrupted connection.

Secure micro SD card

- **Technology summary.** Memory card product that holds an embedded chip which can be used in a mobile device as a SE. The SD card connects to the mobile device through a dedicated slot.
- **MFS value chain position.** An opportunity for all stakeholders to extend their services in the mobile domain and broaden established distribution channels:
 - Financial institution can issue the card directly and open the infrastructure to others
 - MNOs can also issue SD cards, selling application 'space' to service providers
 - Retails can sell a blank SD card on behalf of different service providers.
- **Opportunities.** Allows distribution of MFS to a wide consumer base and independently of MNOs. Distributed via existing issuance systems, or opportunity to enter new distribution channels. Removable card so extended usage across the end users electronic devices such as laptops. Multi-application and over-the-air functionality.
- **Challenges.** Not all end users' mobile devices will be compatible and the end user will need to install the technology which may require additional consumer education. No industry-wide interface standards at present.

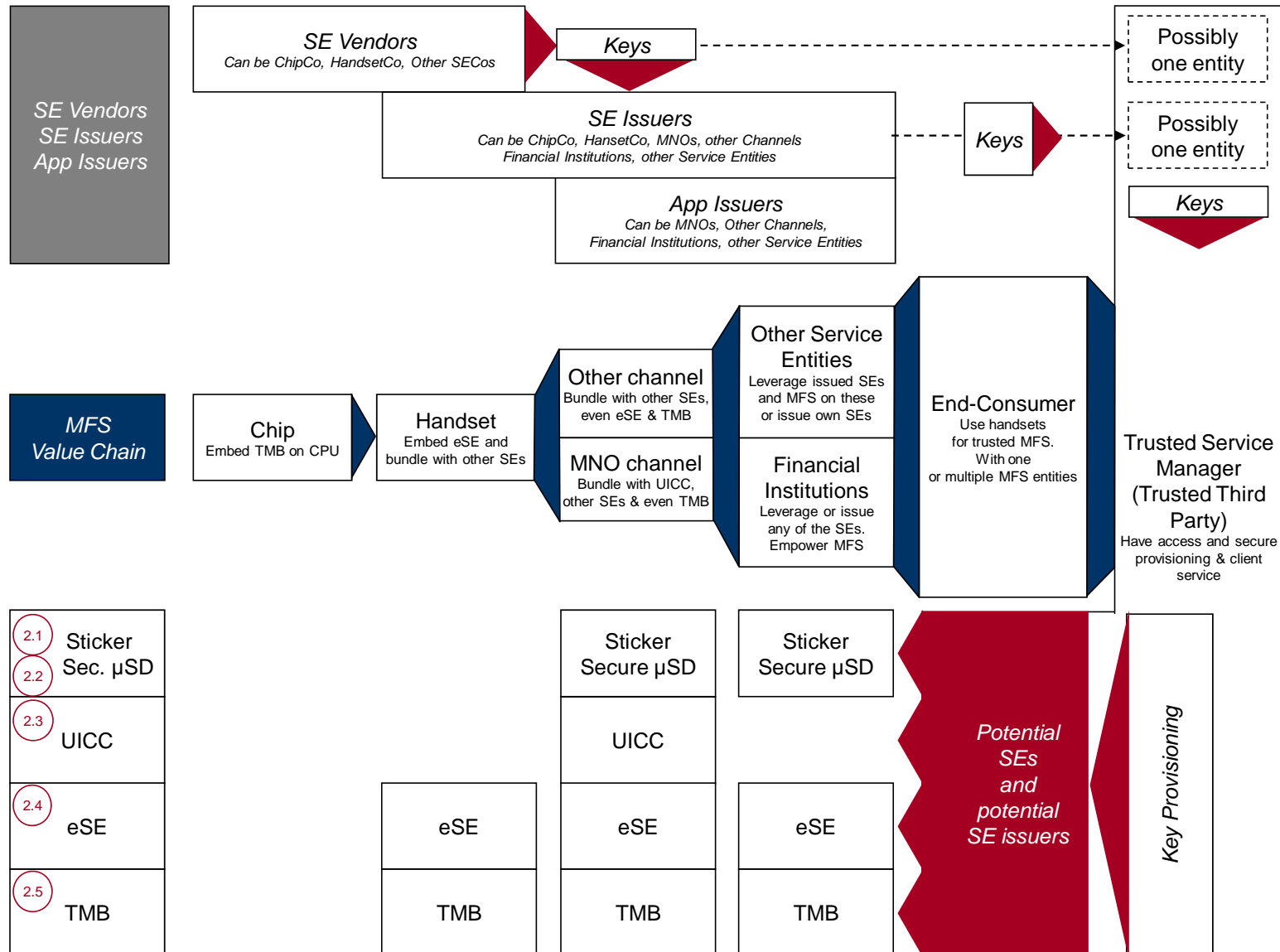
- **Technology summary.** A generic platform for smart card applications in 3G phones. It is issued by one party who will include at least one application on the card.
- **MFS value chain position.** To date, UICC cards have been deployed by MNOs. Financial institutions will most likely form alliances with the MNOs as SEI. Multiple service providers will 'share' space on the UICC. Numerous business models available.
- **Opportunities.** Envisaged to be a widely deployed technology in 3G handsets. Can use applications such as information-on-demand menus and SIM-based browsers, enabling the end user to directly interact with the application via the mobile device screen. Multi-application and over-the-air functionality.
- **Challenges.** Limited branding opportunities [at present]. Can a single MNO cover a financial institution's entire customer base globally? To achieve this, SE interfaces need to be standardised and industry-wide business agreements need to be established. Unsure of MNOs strategic direction and desire to 'open up' the UICC.

- **Technology summary.** A security component which is embedded in a mobile handset at time of manufacturing, and capable of storing and processing business and personal information.
- **MFS value chain position.** Different business models available. Examples include:
 - Exclusive deal with a handset manufacturer to deliver a specific phone with a specific application that will appeal to a targeted audience.
 - TSM manages space on behalf of the handset provider. End users activate the secure element.
- **Opportunities.** Good level of technical maturity. Market trend for handset providers to offer portfolio of services (e.g. the iPhone). The technology is a certified smart card component by the payments industry. Multi-application and over-the-air functionality.
- **Challenges.** Although there is a current drive from handset manufacturers to enter this market, service providers will need to 'push' implementation of embedded SEs as handset vendor incur an additional cost. Liability and ownership of the 'blank' user activated model requires clarification.

Trusted mobile base

- **Summary technology.** A secure and isolated section located in the central processing unit of a mobile device. The technology is an open platform which links to the secure user interface, other SEs and applications.
- **MFS value chain position.** Technology promotes MFS in the core of the mobile device and empowers the entire value chain. Numerous service providers can activate single sections within the trusted mobile base. The technology can interact with other SEs, i.e. this could be implemented in addition to a sticker. Trusted mobile bases can be opened up to a TSM or directly to a service provider, resulting in unlimited business models.
- **Opportunities.** Entirely open technology which is expected to reduce market fragmentation. Offers the highest levels of certified security and is standardised. 'Natural' distribution as it is a requirement within the mobile devices' processor, and as such, no additional hardware costs. Multi-application and over-the-air functionality.
- **Challenges.** Management of the trusted mobile base and definition of business models is still to be finalised and is likely to require service-based agreements. An advancing technology – yet to understand full potential.

Overview of the MFS ecosystem



Key questions

A Financial Institution must:

1. Define its position within the ecosystem, the resources it is prepared to invest and the role it will play.
2. Select which SE technology best aligns with its business needs and existing technical architecture.
3. Consider the distribution and management of applications - which process of key provisioning will be implemented, and will the applications lifecycle be managed in-house or by a TSM?
4. Have a long-term vision. What kind of interesting partnerships could be established in both the short and long-term? What are the perceived needs of the implementation and will the business decisions made today be scalable and flexible to future requirements?

Future industry recommendations

Recommendations

- **Financial Institutions need to:**
 - Discuss and define their position on MFS and how the technology will be delivered.
 - Decide if they want to implement contactless payment and NFC enabled services immediately, using widely available SEs such as secure micro SD cards and stickers, or invest in solutions that are still advancing, for example the UICC technology.
- **The industry needs to:**
 - Continue cross-industry collaboration and discussions to ensure the successful convergence of these different market sectors, and development of a secure, interoperable and scalable ecosystem that will be flexible to future market requirements.
 - Educate the marketplace on the opportunities available by providing independent and accessible information, such as *'Alternatives for Banks to Offer Secure Mobile Payments'* white paper.

[Download the white paper](#)

If you are interested in shaping the future of this market and engaging in active dialogue with the leading players in the financial services and mobile industries, become a Mobey Forum member.

Contact Tanja Viskari for further details:

Tanja.viskari@mobeyforum.org / +358 40 750 3942