THE TRUSTED SERVICE MANAGER (TSM)
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As we see NFC being more widely deployed and the eco-system starting to develop (which will be discussed in the next article), there is a very clear role for what is defined as the Trusted Service Manger (TSM).

The TSM's role is to:

- Act as the single point of contact for the service providers to access their customer base through the MNOs (Mobile Network Operators).
- Manage the secure download and life-cycle management of the mobile NFC application on behalf of the service provider.

The TSM needs to fulfil certain requirements, in particular:

- The ability to contract with and support a high number of partners
- A good business reputation in handling services securely
- Being seen as a trusted partner in the ecosystem

The TSM does not participate in the transaction stage of the service, thus ensuring that the service provider's existing business model is not disrupted. Depending on the national market needs and situations, the TSM can be managed by one MNO, a consortium of MNOs, or by independent Trusted Third Parties. The number of operating TSMs in one market will depend on the national market needs and circumstances. (1)

The TSM, amongst other things, provides a simpler interface through which all parties can communicate with each other, allowing many relationships to exist in the deployment of NFC.



The TSM addresses both the operational and business requirements that need to be in place for a successful NFC Mobile Payments deployment. This approach, which is endorsed by the GSMA and is now being widely implemented, albeit in different ways, is seen as having the advantage of being highly and rapidly scalable, which is vital as more users come onto the system and new parties start to become involved.

The main role for the TSM in an NFC deployment is to allow the interested service providers to securely distribute and manage contactless services for their customers, using the networks of the mobile operators. However, the TSM does not participate in actual contactless transactions using any of the NFC devices. These transactions are processed normally in whatever system the service provider and its merchant partners have already put in place. In addition, the role of the TSM is being expanded to act as a commercial intermediary that facilitates contractual arrangements and other aspects of ongoing business relationships between service providers and mobile operators.

The TSM needs to have a number of key capabilities that break down into four broad areas of activities, each being independent of the other. They include:

- MNO Management
    - Contractual Relationship
    - Secure Connection
    - Business rules and authentication
    - Billing, reporting and reconciliation
    - User registration

- **OTA (Over The Air) Provisioning /Handset Management**
    - OTA provisioning
    - OTA post-issuance/content delivery
    - Chip management
    - Wallet management
    - Handset management
    - Secure element key management
    - MNO, handset and end-customer lifecycle management
    - Fraud/security management
    - End-customer support

- **Service Provider Application Management**
    - Chip data preparation
    - Application key management
    - Service Provider, application and end-customer lifecycle management
    - Fraud/security management
    - End-customer support

- **Service Provider Management**
    - Contractual Relationship
    - Secure Connection
    - Data preparation
    - Business rules and authentication

- Billing, reporting and reconciliation
- User registration

This clearly shows that the role of the TSM covers two distinct areas – the Mobile Operator and the Card Issuer or Bank, and each clearly needs to maintain its own information relating to the user. Whilst this segmented model is one that is becoming the preferred model throughout Europe, with one or two exceptions, it is not without risk as both parties seek to control the key relationships with the end-user. Whether this model is correct or not and which model of TSM use becomes the norm is yet to be decided. However, what is clear is that the TSM should be neutral from the mobile operator and the card provider or bank. We are starting to see organisations enter the market that have a trusted history within the mobile and banking environment that are able to offer this neutrality to the market. The neutral TSM opens the entire mobile commerce economy to everyone and allows all parties to offer additional services to both the mobile operator and the issuer with no impact on each party. The power of the NFC device can be increased via more applications such as advertising, couponing, ticketing etc. This model can best be described as a partner driven TSM, and potentially offers the greatest scope for a critical mass of consumer, service provider and merchant activity that would draw other participants into the TSM environment.

1. (Source GSMA – http://www.mobilemoneyexchange.org/wiki/trusted-service-manager)