# MOBILE PAYMENT

Founded in 1997 by Professor K.Y. Lam, PrivyLink is geared to meet the strong industrial demands for high-assurance delivery channels in secure electronic transactions and information exchange. We have established ourselves as the key innovator of strong security solutions. Our products offer adaptive end-to-end security protection for applications and data exchanged over fixed networks and mobile channels. In addition, we have been engaged by reputable organizations to provide consulting services, security system design and review. Our clients include government agencies, financial institutions and MNCs.


## Trusted channels for mobile banking and payment services

PrivyLink's Mobile-Payment solution takes banking and payment services to people on the move. The solution can be deployed to turn virtually all models of GSM-compliant cellular phones and mobile devices into user-friendly payment platforms trusted by consumers, banks and service operators. The solution reflects PrivyLink's long-standing commitment of developing high-assurance products for mission critical applications.

For more information, please visit our website at
http://www.privylink.com/ or contact us by
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PrivyLink

# a borderless & phone neutral solution

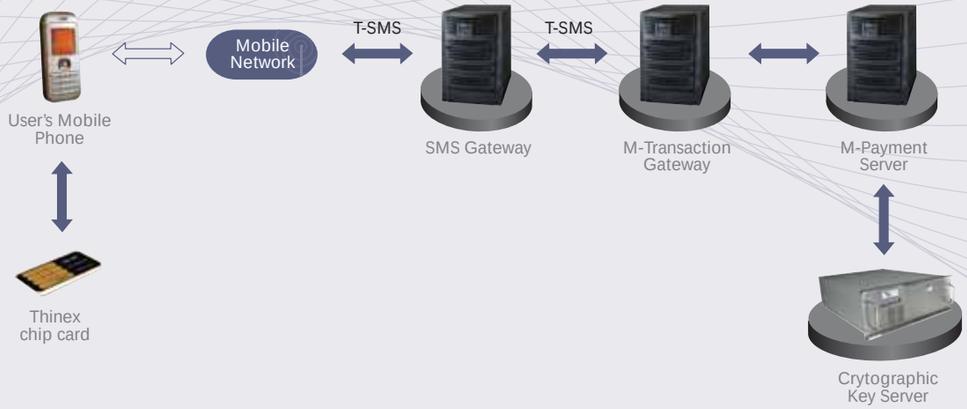
## Trusted Messaging

Mobile-Payment is implemented in mobile phones and it provides convenient and trusted payment and banking services, anywhere and anytime. Payment messages and instructions are delivered over our unique Trusted Short Messaging Service (T-SMS). T-SMS overcomes the security inadequacy associated with the deployment of instruction-based services using SMS.

Behind T-SMS is our patent-pending Thinex on-chip payment message engine, which protects payment instructions transported over SMS links. Thinex chip cards are designed to attach to and interface with the SIM (subscriber identity module) cards widely used in mobile phones.

## How Mobile-Payment Works

In our Mobile-Payment system, payment data packets consist of session and user IDs, options, service information and payment instructions, which are transported via T-SMS between a user's mobile phone and the M-payment server. For typical mobile banking services, the trusted SMS data is exchanged between the SMS gateway of a mobile telecom operator and a M-transaction gateway, which further routes the payment data to the M-payment server of the intended bank / payment operator. A key server is connected to the payment server for recovering the original payment data from the incoming T-SMS, as well as generating outgoing trusted SMS. The PrivyLink CKS key server is best suited for this application as it provides key management and authentication operations in a secure and tamper-proof environment.




## Mobile-Payment versus Conventional Solutions

SMS has emerged as the most prevalent application in mobile communications. The wide global adoption of GSM and the convergence of the third-generation cellular standards have turned SMS into a borderless communication tool. Unfortunately, exchanging payment related instructions with banks and merchants via SMS presents a major risk and hence liability to all parties involved.

With Mobile-Payment, banks and merchants can truly take advantage of mobile payment services to boost productivity, service standards and corporate image. The integrity and confidentiality of user data, payment and service instructions are assured.

Existing means of protecting SMS messages using software encryption requires significant computational resources not readily available to many mobile devices. Furthermore, the risk of storing cryptographic keys in the memory of mobile devices should be carefully assessed and is often difficult to mitigate.

In contrast, Mobile-Payment implements trusted SMS channels with Thinex, which is a hardware-based payment message engine. As a result, Mobile-Payment does not require any client software download or installation in users' mobile devices.

## Embedded Engine

Thinex cards are configured as thin extension of the SIM cards commonly used in mobile phones or cellular devices. Thinex cards can easily be snapped on to users' SIM to provide value-added applications. They work seamlessly with cellular devices compliant with the widely supported GSM STK / 3G USAT standards. In addition, they are compatible with virtually all GSM-compliant SIM / 3G USIM.

Each Thinex chip card provides the processing engine for creating trusted payment instructions. When used with Thinex, a mobile phone becomes a convenient mobile tool emulating the many functionalities offered by automated teller machines. The phone keypad and display provide the interface necessary for invoking operations and displaying information.

Application parameters stored in Thinex can be remotely administered by the service providers. Key revocation and renewal may be performed over the air.

## Trusted Solution

Mobile-Payment offers easy-to-use and trusted payment and mobile banking convenience to consumers, anywhere and anytime:

- Fast and simple to use
- Browser interactivity
- Compatible with virtually all GSM-compliant 2G / 3G phones
- SIM card independent
- Cross-border operations & transactions
- No client software download and installation
- User registration, service initialization and customer administration all accomplishable over the air
- Great value-added services trusted by banks, merchants and consumers
- Seamless to deploy