



# **STATE BANK OF PAKISTAN**

## **Concept Paper on e-Payment Gateway**

**Payment Systems Department**

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**ACRONYMS**

ADC	Alternative Delivery Channel
ATM	Automated Teller Machine
BB	Branchless Banking
CUP	China Union Pay
e-PG	Electronic Payment Gateway
FMU	Financial Monitoring Unit
PCI DSS	Payment Card Industry Data Security Standards
POS	Point of Sale
PSD	Payment Systems Department
PSS	Payment and Settlement System
SECP	Securities & Exchange Commission of Pakistan
SBP	State Bank of Pakistan

## DEFINITIONS

**Acquiring Bank (or acquirer)** is the entity or entities that hold(s) deposit accounts for card acceptors (merchants) and to which the card acceptor transmits the data relating to the transaction. The acquirer is responsible for the collection of transaction information and settlement with the acceptors.

**Automated Teller Machine (ATM)** means an electromechanical device that permits authorised users, typically using machine-readable plastic cards, to withdraw cash from their accounts and/or access other services, such as balance enquiries, transfer of funds or acceptance of deposits. ATMs may be operated either online with real-time access to an authorization database or offline.

**Branchless Banking** means conduct of banking activities as outlined in Branchless Banking Regulations by Authorized Financial Institutions for customers having a branchless banking account. It does not include the information services already being provided by various FI's to their existing customers using channels like, phone, internet, SMS etc.

**Consumer** means any person who or which avails the facility of electronic fund transfers or other banking services.

**Designated Payment Gateway** means a payment gateway designated by State Bank of Pakistan under Section 4 of PSEFT Act, 2007 to be a Designated Payment Gateway.

**Designated Payment Instrument** means a payment instrument designated by State Bank of Pakistan under Section 12 of PSEFT Act, 2007 to be a Designated Payment Instrument.

**Electronic** includes electrical, digital, magnetic, optical, biometric, wireless or electromagnetic technology.

**Internet Banking** is a system whereby individuals perform banking activities via internet.

**Issuing Bank** is the bank where a customer maintains his account and the bank issues plastic cards directly to the consumers.

**Mobile payment** or m-payment is an access method to activate an existing means of payment for financial transactions processed by banks between bank customers. An m-payment involves a wireless device that is used and trusted by the customer. M-payments may be card based or non-card based, in both the real and virtual world.

**Operator** means any financial or other institution or any person authorised by State Bank of Pakistan to operate any designated payment system.

**Payment Gateway** is an e-Commerce application service that authorizes payments for e-businesses, online retailers, bricks & clicks and any other electronic payments.

**Point of Sale (POS)** refers to the use of payment cards at a retail location (point of sale) to facilitate payments using an electronic device. The payment information is captured either by paper vouchers or by electronic terminals.

**Service Provider** includes an operator or any other electronic fund transfer service provider.

**State Bank or SBP** means the State Bank of Pakistan established under section 3 of the State Bank of Pakistan Act, 1956 (XXXIII of 1956).

**SCOPE OF THE DOCUMENT**

This document will discuss the regulatory requisites and other relevant pre-conditions for entities to become eligible for applying for designation as e-PG operator mandated to safely route, process and authorise local and cross border financial transactions performed by customers using various Alternative Delivery Channels (ADCs). While defining the essential prerequisites for designating eligible entities as operators of e-PG, this paper also attempts to highlight the main functions, purpose and benefits attached with payment gateways. Finally the oversight mechanism of e-PG has been discussed in detail to ensure compliance of the regulations issued by SBP from time to time and to oversee the operational activities of payment gateways in vogue to ensure sustainability and smooth functioning of the entire mechanism.

## **INTRODUCTION**

Banking has undergone immense transformation from the primitive physical brick & mortar to a modern paperless environment. Thus, implying a radical shift from conventional to electronic banking which has redefined the very functions of conventional banking. Technology has improved, and so have challenges. The world over, traditional paper based payment modes have evolved significantly to include new and efficient ADCs such as Automated Teller Machines (ATMs), Point of Sale (POS) machines, internet banking, mobile banking etc. These have transformed the very concept of banking to include sophisticated e-payment instruments, thereby making it more convenient for people to conduct transactions across the globe any time even while sitting at home. However, to accommodate the rapidly increasing volume of electronic transactions it is necessary to have a secure and efficient e-payment infrastructure in place.

An important infrastructural component to facilitate the electronic transactions is establishment of a payment gateway. A payment gateway is an e-commerce application service provider to authorise payments of e-businesses by acting as an intermediary between an acquiring institution and the issuing institution. The entire process of authorising an e-transaction is completed within a few seconds.

In the absence of a payment gateway, switches operating in Pakistan, viz. 1-Link (Guarantee) Limited and M-Net (Pvt.) Limited, have been facilitating transfer of payment details between e-channels to authorise e-transactions using debit, credit and prepaid cards.

In the wake of rising trend in the use of ADCs, SBP finds it necessary to ensure provision of a secure & efficient mode to facilitate e-payments. This will ultimately boost public confidence and further promote e-commerce in the country. To serve the said purpose, SBP is issuing regulations for establishment of payment gateways in Pakistan.

An e-payment gateway will facilitate authorisation of local and cross border transactions in such a way that local transactions will be routed, processed and authorised domestically and only cross border transactions will be routed via international payment schemes operating in Pakistan such as VISA, MasterCard etc. for authorisation.

## PURPOSE & BENEFITS OF e-PG

Purpose and benefits of e-PG are varied. Some are as follows:

1. All local e-commerce transactions, with a payment gateway in place, will be routed and processed for authorisation by using domestic channels. Thus, reducing the burdensome costs associated with the current authorisation mechanism;
2. Protects the card number and other critical details by encrypting all sensitive information related to the transaction being processed so that the same cannot be intercepted and obtained by anyone for fraudulent purposes;
3. e-PG will help develop a secure environment for routing and authorising transactions which will instill public confidence in use of ADCs as a secure mode of payment. This will ultimately result in rapid growth of use of electronic payment instruments.
4. Establishment of e-PGs will facilitate interoperability of various ADCs;
5. e-PG will facilitate payment of utility bills and other payments by providing a direct interface between all the banks and the respective entities (on whose behalf payments are to be collected), thus providing all banks equal opportunity to reap the benefits for provision of agency functions;
6. e-PG will serve as an effective tool to detect and prevent fraudulent transactions by alerting the merchant about lost card being presented for payment etc., thereby preventing the transaction before it is processed.
7. It allows merchants to minimize manual tasks and redundant work load associated with standalone systems;
8. It will help merchants expand their business by improving customer service, increasing profit and minimizing late payments. Thus, protects merchants from redundant expenses;
9. Assures error-free computations and a much faster processing time. For customers, it means that they no longer have to bear long lines at the counter. They can complete the entire transaction either by simply swiping their plastic cards at the POS terminals or with a few clicks of a mouse via internet banking;
10. Allow people to conduct transactions from across the globe with an internet connected computer within the comforts of their home;



**FUNCTIONS OF e- PG****Secure Transmission of Details**

Payment gateway sets up a secure link to protect all critical details of customers by encrypting sensitive information related to the transaction being processed so that the same cannot be intercepted and obtained by anyone for fraudulent purposes.

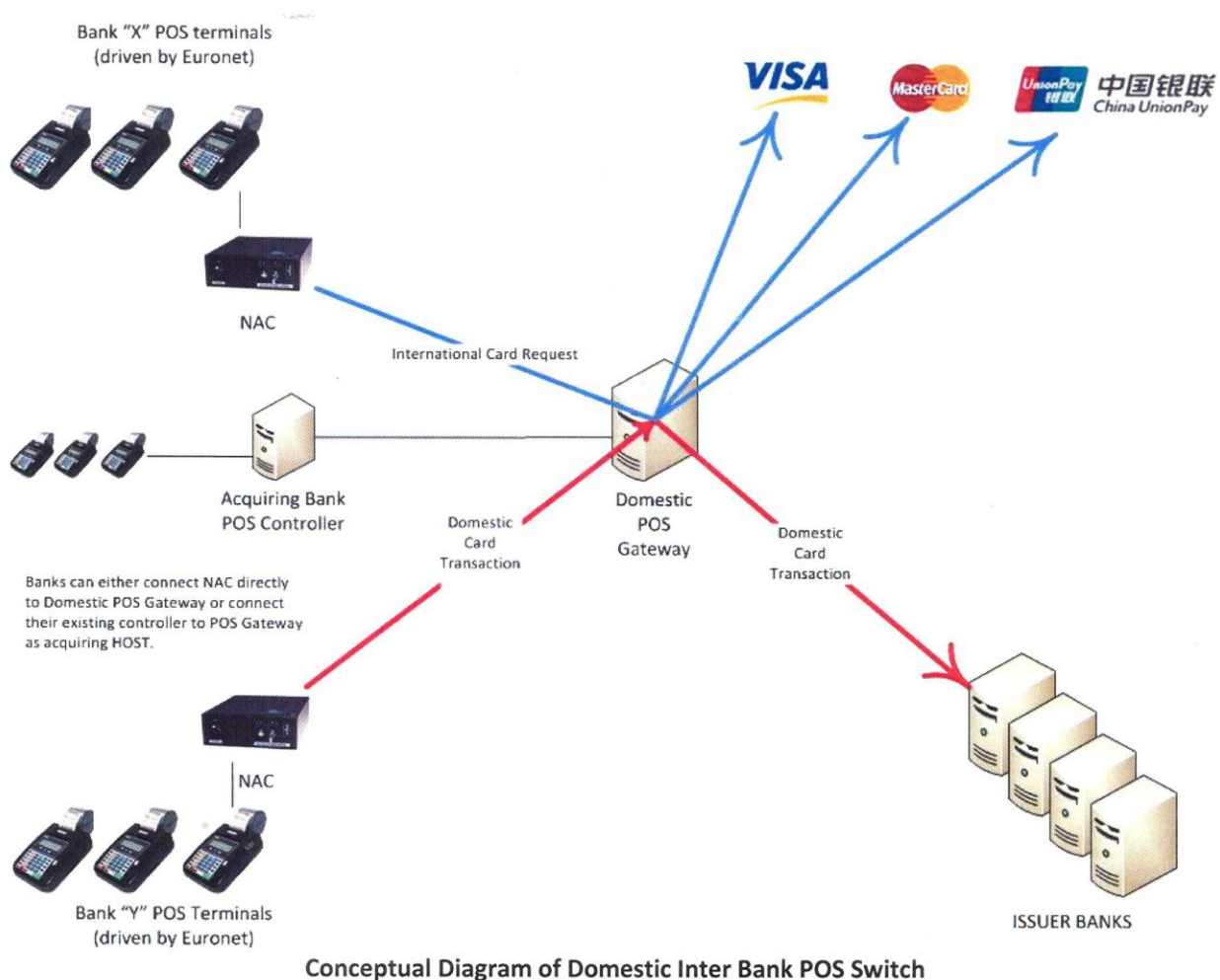
**Authorization of Transaction**

All the transactions routed via ADCs require authorisation either to confirm or reject the transaction. Payment gateway facilitates the process by sending the transaction details for verification to the issuing bank in case of local transaction or to the relevant card association operating in Pakistan such as VISA or MasterCard etc. in case of cross border transactions. After verifying the details, e-PG will confirm authorisation of the transaction if so verified by the issuing bank.

## TRANSACTION FLOW FOR AUTHORISATION

### Transactions conducted via POS terminals:

- Merchant swipes the plastic card of a customer at the POS terminal
- The transaction is routed for authentication to the e-PG via acquirer bank's system
- e-PG processes the transaction details by verifying the account number and amount details from the card issuer bank
- After verifying the transaction details, an authorisation message is sent to merchant and acquirer banks' system and the customer's bank account is debited



*Source: Euronet*

**Transactions conducted via ATM of acquiring bank:**

- Customer enters his/her card into the ATM to conduct a transaction
- The designated e-PG operator sends the transaction to the issuing bank for verification
- If approved by the issuing bank the designated e-PG operator authorises the acquiring bank to complete the transaction.

**Transactions conducted via Internet:**

- Customer places order on the website
- Details of the transactions are sent to the merchant's web server in encrypted format
- Web server routes the details to the e-PG
- If the payment mode is via credit card, e-PG will forward the transaction details to the merchants' acquiring bank which will send the information to issuer bank via e-PG and e-PG will route it to VISA/ MasterCard/ China Union Pay (CUP) for domestic as well as for international payments; in case of Debit card e-PG will get it confirmed from the issuer bank
- The issuer bank sends a response back to the e-PG which includes a decision of pay or no pay.
- E-PG will forward the response to the merchant's server.
- At merchant's server the response is encrypted again and is relayed back to the customer.

## OVERSIGHT FRAMEWORK OF e-PG

Oversight of payment systems is an essential function of central banks the world over aimed at ensuring smooth functioning of payment and settlement system and contribute to financial stability. Pursuant to the mandate, PSD-SBP oversees PSS related operational activities of commercial banks and Switches operating in Pakistan and ensures compliance of the statutory regulations concerning PSS issued by SBP.

With the commencement of payment gateway to facilitate e-commerce transactions, it becomes necessary for SBP to regulate and oversee the entire functioning of the payment gateway to ensure its sustainability and avoid any systemic risk. For this purpose it has to be ascertained from time to time that e-PG operators comply with the regulations of SBP by monitoring the activities of the payment gateway operators.

### Principles of Effective Oversight

- **Transparency**  
PSD, SBP will be transparent about the oversight policies to ensure that e-PG operators comprehend and comply with the applicable policy requirements and standards.
- **International Standards**  
PSD, SBP will embark on such policies which are in conformity with internationally accredited standards concerning safety and efficiency to enhance PSD's oversight of e-PG.
- **Effective Power and Capacity**  
PSD will ensure that its powers to obtain information and induce change in e-PG are in line with its oversight responsibilities and have sufficient resources to be used effectively.
- **Cooperation with other authorities**  
PSD will cooperate with other relevant stakeholders and authorities to promote safety and efficiency of e-PG. Cooperative arrangements provide mechanism whereby overseers of e-PG and other authorities can realize their respective responsibilities in a more fulfilling manner.
- **Assessment of System as a whole**

A preeminent essential of effective oversight is to carry out periodic comprehensive assessments of the design and operation of e-PG as a whole to continually review performance of the system.

### **Approach to Oversight of e-PG**

- **Fact finding**

At the very outset, efforts will be made to find facts relating to payment gateways.

- **Risk analysis**

Risk analysis will be done to prevent systemic risk.

- **Development of Oversight Standards**

Oversight standards and considerations will be developed for effective oversight of payment gateways.

- **Consultation of relevant players**

All relevant stakeholders will be consulted to so that no issue remains unaddressed.

- **Development of Assessment Methodology**

Such an assessment methodology will be developed which will serve as a complete guide for a comprehensible and efficient assessment of payment gateways against the oversight standards.

- **Collection of Statistics**

Statistics relevant to payment gateways will be collected on a periodic basis to assess the system.

- **Adoption of common procedure for practical Implementation of Oversight**

Common procedure for the practical implementation of oversight activity relating to payment gateway schemes will be adopted.

### **Oversight Standards**

- **Sound legal basis**

Provision of a comprehensive, enforceable and sound legal frame work is vital for governing payment gateway and thereby maintaining an efficient system of check and balance. SBP will establish rules for governing e-PG in such a way that provides a dynamic framework for effective oversight.

- **Comprehensive information**

Clear, comprehensive and up to date information aids oversight of e-PG. Proper compilation of most recent facts and data related to payment systems is vital for effective oversight.

- **Adequate degree of security, operational reliability and business continuity**

The oversight mechanism of payment gateways will employ adequate degree of security, operational reliability and business continuity to avoid operational risks which would otherwise have serious implications.

- **Governance arrangements**

It is certain that poor governance will only adversely affect the oversight mechanism and can cause financial loss to relevant stakeholders. The oversight mechanism will implement effective, accountable and transparent governance arrangements.

## **Oversight Activities**

### **Monitoring**

To implement an effective oversight mechanism of e-PG, a wide range of information on payment gateway will be collected by PSD from the e-PG operators on a regular basis and on ad hoc basis as mandated by Section 69 of Payment System & Electronic Fund Transfers (PSEFT) Act of 2007. It is binding on the service providers to furnish information or data pertaining to payment gateway in line with the instructions contained in various Circulars issued from time to time.

### **Assessment**

The information so collected will then be assessed against the oversight objectives of PSD. Additionally, regular monitoring, examination and research will be conducted to review developments in payment gateway.

### **Inducing Change**

Having collected the required information and analysed the system in line with the predefined policy requirements and standards, it is obvious that where PSD finds the affairs of the e-PG

operator to be in conformity with the regulation issued by SBP, it will conclude that the system has sufficient degree of safety and efficiency and therefore, no further action will be required. Conversely, in case of non compliance of the regulations, PSD will persuade the defaulting entity to abide by the instructions of SBP either by moral suasion or by issuing warnings or by imposing fines etc.

### **Onsite Inspections**

For effective oversight of payment gateways, Banking Inspection Department will conduct onsite inspection to assess the infrastructure of e-PG installed by the designated operator and the contingency arrangements etc.

Relevant data will be collected for review which may include SLAs, SOPs, relevant policies, details of business functionalities etc. Parameters of review will comprise of CIA i.e. confidentiality, integrity and availability for the intended recipient. This may follow other procedures to be followed for onsite inspection.

### **Offsite Supervision**

Similarly offsite supervision will be carried out in an appropriate manner by making it binding on the relevant stake holder to strictly abide by the instructions issued by PSD to ensure efficient oversight of e-PG.

For offsite inspection, a wide range of relevant information and data will be gathered on a periodic basis. After making a detailed assessment of the data, corresponding action will be taken. Relevant stake holders will be made accountable for ensuring smooth working of the system without posing any sort of risk to the system.

### **Imposition of Penalties**

As per Section 74 of PSEFT Act, 2007 in case any financial institution or service provider fails to comply with the statutory regulations mandated by SBP, it may impose a penalty which may extend to one million rupees.