



Palestine Monetary Authority

جمعية البنوك في فلسطين
Association of Banks in Palestine

ESAF Program
Expanded and Sustained
Access to Financial Services

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Palestine Banking Services Company

Business Plan 2012 to 2016

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1. Executive Summary

1.1. Role and objectives

This is a business plan setting out the argument and methodology for establishing a Business Services Company (BSC) in Palestine. The role of the BSC will play is to be the Ancillary Services Provider to the financial services sector. The BSC will be a neutral provider of payments infrastructure in order to provide the benefits to all its members and shareholders. In the first instance the BSC will be the central point of payment clearing interconnectivity between all Financial Institutions in Palestine. In the future it may develop other services which are agreed will support the industry as a whole.

The strategic objective and vision of the BSC is to contribute to the pervasiveness of electronic payments infrastructure in Palestine in order to allow all deposit taking institutions to offer their merchant and consumer customers the benefits of electronic purchases and access to cash in and cash out at a significantly increased number of points of presence regardless of the ownership of the device.

1.2. Benefits

This co-operative approach to implementing and supporting payments infrastructure will be to reduce costs by avoiding the duplication of investment in hardware and systems by different institutions as well as the cost benefits that can be achieved by maximizing the number of transactions using each device and the central switch. This will provide benefits to individual bank that can cost effectively increase their geographic footprint for their customers, to the merchants and consumer customers who will have access to a range of valuable services and to the Palestinian economy as a whole.

1.3. Neutral and co-operative approach

The BSC will focus on providing services that are agreed to fall into the non-competitive space and remaining a neutral provider of such services, giving all members equal and fair access. This will be achieved by ensuring that all shareholders own equal shares of the company and that the company is managed by a professional staff reporting to a board that acts in the interests of the company. The company will be licensed and subject to the oversight of the Palestinian Monetary Authority (PMA) and its members and shareholders will themselves be licensed by the PMA.

Interoperability will be ensured through the use of global standards and where local modifications are required, these standards will be published so that they are generally available.

1.4. Project implementation

The implementation of the business is planned so that:

By 31 January 2012 the central switch is operational

By 31 January 2012 all deployed ATMS in Palestine will be indirectly connected to the switch

By end Q2 2012 all USAID funded terminal devices will be connected to the BSC switch

The founder shareholders will be connected to the switch and functionally ready to trade with merchants before the BSC is launched to the market. In order to recruit the merchants the BSC sales staff will work with the sales teams of the member banks. Merchants will sign two separate agreements with the bank and the BSC.

1.5.Acquiring services

The services the BSC will provide to its member acquirers will be post sales technical installation and ongoing technical support and business support to the merchants.

1.6.Procurement

All procurement will follow a formal process in the implementation of the project beginning with a Request for Proposals (RFP). The plan outlines the:

- business requirements for the switch technology,
- the selection criteria,
- the components,
- the functionality
- the class and type of transactions to be available
- PoS device selection criteria
- PoS software requirements

1.7. Revenue drivers

The revenue drivers for the business consist of:

- 1) ATM switching based on a flat fee per transaction with a minimum monthly fee equating to two transactions per month per registered cardholder.
- 2) PoS acquiring based on an average merchant fee of 2% of which 1% will be passed to the issuing bank
- 3) PoS terminal rentals based on \$5 per month for a 3 year full maintenance lease
- 4) International card gateway based on a merchant fee of 3.5% of the value of transactions using a foreign card

1.8.Costs

The main costs of the business consist of:

- 1) Visa charges which are listed in detail below
- 2) Marketing mainly relating to sales teams working with member banks
- 3) Customer support through a call centre and field teams
- 4) Staffing the operation initially employing 16 employees and growing over the first five years of operation to a complement of 73 staff members
- 5) \$500,000 will be retained from each year's revenues to be used for the development and implementation of new products and services

1.9.Total capitalization

The total capitalization cost of the system, Disaster Recover site, all related site enhancements, office infrastructure and PoS devices by the end of 2016 is expected to be \$21.18 million. Much of this capitalization is funded out of retained earnings within the business.

1.10. Principal assumptions and key financial indicators

The following tables show the principal assumptions made in the financial model and the key financial indicators for each of three scenarios.

The analysis of the scenarios shows that the returns of the business are particularly sensitive to the number of banks participating in the business. This is due to the fact that the banks are the source of business and the route to market for the BSC. The effect on the business is derived from the market share of the participating banks and therefore the number of actual and planned volumes of cards by each bank. The assumptions regarding customer behavior have been provided by the banks and moderated against the 2010 statistics provided by the association of banks.

The returns are also very sensitive to the number of PoS devices rolled out, given the existing very low base in the country. The scenarios use different percentages of the addressable market.

Economic participation by shareholders	Shareholding split equally between all banks. Voting power on the board of the company split equally between the banks.		
	Low case	Expected case	High Case
Banks participating			
Number of banks	7	17	18
% of banked individuals represented	67%	82%	100%
Percentage of merchant base served	60%	60%	60%
Number of merchants served (2016)	25 778	25 778	25 778
Card revenue assumptions			
Merchant acquiring commission	2%	2%	2%
Issuer commission	1%	1%	1%
Net acquiring commission	1%	1%	1%
Switching fee revenue assumptions			
ATM switching fees	\$0.70	\$0.70	\$0.70
ATM owner remuneration	\$0.49	\$0.49	\$0.49
Net ATM switching fees	\$0.21	\$0.21	\$0.21
International Gateway fees			
Terminal rental assumptions			
Monthly rental fee per merchant	\$5	\$5	\$5
Inflation rate of monthly rental	4.6%	4.6%	4.6%
Company Net Present Value	\$7.7 mil	\$10.6 mil	\$ 28.9 mil

Investment return to Shareholders			
Direct benefit	Low case	Expected case	High Case
BSC NPV over 5 years	\$7.7 mil	\$10.6 mil	\$ 28.9 mil
IRR of BSC investment (Direct benefit only)	10.08%	15.35%	42.35%
Peak funding	\$10.8 mil	\$9.1 mil	\$4.6 mil
Timing of peak funding	2014	2014	2014
Terminal value of BSC	\$16.14 mil	\$17.6 mil	\$30.4 mil

1.11. Implementation plan

It is proposed that a limited liability company is established. There should be a minimum of five founding shareholder banks that will each hold an equal shareholder. Given the importance of transaction volumes to the success of the business it is recommended that the founding shareholders should represent a minimum of 50% of the market.

Each of the shareholders will commit to putting all their interbank switching through the BSC, marketing the PoS to their best merchant clients, and marketing the ATM network and PoS purchasing network to their consumer clients.

Phase one of the project plan, the implantation plan, is expected to run from 1 September 2011 to January 2012.

1.12. Pre-implementation dependencies

Before the project is initiated the following activities need to have taken place:

- 1) Work towards a set of industry wide, agreed standards and norms relating to payments products, to which the BSC will adhere.
 - a. These could be established through the implementation of an industry wide payments association under the auspices of the PMA. If this route is chosen, then membership of this association should be mandated for all banks.
 - b. Participation in the Palestinian payments stream should be made contingent on participation in the payment association
 - c. Participation in the payment association DOES NOT imply or require participation in the BSC
 - d. The rules and norms thus established will apply equally to all participants in the payments industry.
- 2) A group of initial shareholder banks is assembled and ready to enter into shareholder agreements
- 3) The capital of \$3 mil is ready to be deposited into the account of the company to be formed
- 4) A steering committee of decision makers from the shareholders is identified and able to steer the project team in its work throughout the run of the project.
- 5) The consultancy, which is to perform the work, is identified and hired.
- 6) The project team is able to work in Palestine, under the guidance and sole authority of the steering committee in an unfettered manner
- 7) All support and assistance required in obtaining access to resources, including commercial suppliers and or government agencies is provided by the steering committee.

1.13. Recommendation

Based upon its strategic and commercial merits, the BSC is a viable business.

Banks that invest in it and use its services will benefit financially, both through the dividends derived from the company as well as through operational efficiencies within their organizations.

Strategically – the BSC is important in that it will, over time, diminish Palestine's dependence on cash, which will reduce the impact of the current logistical challenges presented by checkpoints throughout the country.

It is therefore recommended that the banking community unite and invest in the BSC as a jointly held service company that services the industry as a whole.

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2. Vision

To provide pervasive electronic payment acceptance infrastructure in Palestine, such that any person holding an account at any financial institution which is registered with the PMA and which allows its customers electronic access to its accounts is able to effect electronic payments and or perform cash in and cash out transactions.

The benefits of this to the Palestinian economy are:

- 1) A potential reduction in the levels of cash held by the people,
- 2) Increased levels of cash held in the banking sector (increased cash floats),
- 3) Convenience and security for the Palestinian people,
- 4) Infrastructure sharing between the banks, thereby reducing the overall cost of the payments infrastructure in Palestine, and
- 5) Growing consumer confidence and acceptance of electronic payments in the country by leveraging the network effect of the deployed infrastructure.

3. Mission

- 1) To provide interbank connectivity at the lowest possible cost to all Palestinian FI's and merchants, thereby ensuring viability of the payments environment by ensuring that the payments environment is affordable to the average Palestinian person.
- 2) To provide a level playing field for all participants in the industry by:
 - a. Charging all FI's according to a single, published tariff sheet for their services,
 - b. Acting as an issuer independent acquirer of card transactions in the market,
 - c. Serving all payment instrument issuers according to a single set of industry approved and maintained standards,
 - d. Maintaining the payment system's standards for the Palestinian FI's, and
 - e. Managing transaction disputes between merchants and issuers, and between ATM owners and card issuers.
- 3) To be the central point of payment clearing interconnectivity between all financial institutions within Palestine thus ensuring access to all deployed infrastructure by all holders of Palestinian accounts on an equal access basis.

4. Goals

- 1) Implementation of the initial central switch and operating company before 31 December 2011.
- 2) Indirect connectivity of all deployed ATMs in Palestine by 31 December 2011.
- 3) Conversion of all USAID funded terminal equipment to connect to the BSC switch by end of Q1 2012.

5. Tactics

- 1) **The industry neutrality** of the BSC within the financial sector in Palestine will be assured by:
 - a. Allowing all financial institutions in Palestine, which are licensed by the PMA to hold customer deposits, the opportunity to own an equal portion of the voting shares in the company.

- b. Ensuring that no single institution holds a sufficiently large equity share to effectively give it control over the BSC.
 - c. The BSC will be managed by a full time, dedicated, professional management team, which reports to a board of directors who represent the shareholders of the company.
 - d. After the initial phase of intensive merchant sign-up, expected to span the first 36 months of the company's trading, the company will operate independently of its shareholders, thus enabling it to be publicly listed on a stock exchange, if so decided by the shareholders at that stage.
 - e. The company will have its own offices, systems and systems hosting environment.
- 2) **The compliance** of the company to PMA rules and regulations will be assured in two ways:
- a. The entity itself, as a payments services company, will be licensed by the PMA and subject to its oversight.
 - b. The banking shareholders are already licensed by the PMA and are therefore subject to its oversight.
- 3) **The interoperability** of the company will be assured by:
- a. To the maximum extent possible, the technology and payments standards utilized by the company will be designed to global payment industry standards.

Where deviations from these standards are necessitated by realities on the ground, such as the business requirement to adopt and use the existing base of ATM cards in Palestine, a comprehensive set of standards and operating practices will be published and maintained by the BSC and all licensed FI's in Palestine will be able to use these

6. Customers

The BSC has two classes of client. The first class is any bank registered with the PMA, while the second class of client is all merchants who will receive payments via the Banking services company. All bank customers of the company will have the option of also being shareholders in the company.

6.1. Customer value drivers for banks

The banks are direct customers of the BSC for products that are non-competitive within the banking sector. The banks, in turn, leverage the services of the BSC to deliver products and services to their customers; the people and businesses in Palestine.

6.1.1. Cost reduction in core business

The presence of an efficiently operating BSC within Palestine will allow all banks to access all deployed acceptance infrastructure (ATMs and POS devices) and thereby support infrastructure sharing within the market. This will reduce the need for duplicated investment in assets. Having BoP as a competitor in the market may lead to there being more than one POS device in certain outlets, but the overall objective remains to keep this to a minimum.

6.1.2. Extending the geographical footprint of the business

For any given bank, geographical extension will be provided by two principal mechanisms:

- 1) Access to terminal infrastructure of all banks in any target geography.
- 2) Use of merchants as cash in and cash out points, thereby recycling cash in remote areas and opening the possibility of servicing customers off non-traditional banking infrastructure.

These two mechanisms working in tandem will enable all banks to service all of their clients in any part of Palestine where there is either an ATM or a merchant who is willing to act as a cash in or cash out point.

6.1.3. Provision of more cost effective services to customers

Sharing infrastructure within the market will reduce the industry's capital and operational expenditure on payments related hardware, software and operations overheads. With reduced and predictable input costing, the retail banks will be in a better position to price their own products accurately in the market.

It is believed that this could create an opportunity to reduce the selling price of banking products and services to the consumer, while simultaneously maintaining the current operating margins in the banks. Such reductions in fees, could lead to a greater penetration of banking services within the Palestinian un / under banked markets.

6.1.4. Broadening banking services

Phase 1 of the implementation of the Banking Services Company will see the formalization and structuring of the payments industry within Palestine. Once complete, this phase lays the groundwork for broader services, such as mobile banking and bill payments. These extensions could be agreed upon by the industry via the mechanism of the BSC board, and implemented within the BSC as Phase II projects.

6.1.5. Further industry efficiency extension

Once established, the BSC could take on additional roles, which are necessary for the operation of payments products by the bank, but which are not competitive in nature. Centralizing these functions would result in economies of scale, while simultaneously removing unnecessary management burdens from the Banks.

These services could include:

- 1) Issuer support services
 - a. Card personalization
 - b. Card delivery
 - c. Call centre operation
 - d. Lost card administration
- 2) Acquirer support services
 - a. Bank owned ATM management
 - b. Bank owned ATM re-cashing
 - c. Fielding bank brand neutral ATM's
- 3) Branch Support Services
 - a. Cash collection / delivery to branches
 - b. Form and stationery warehousing and delivery

These extensions are not part of the initial installation and are not covered in this business plan. The BSC board, once formed, will agree on the sequence of rollout of the extended services.

6.2. Customer value drivers for Merchants

Merchants are direct customers of the BSC for transaction authorization and funds settlement from the issuers.

6.2.1. Offer convenience to customers

POS give customers the ability to pay for goods and services directly from their bank accounts either immediately or using a credit facility.

6.2.2. Increased sales volumes

Direct access to credit for customers leads to greater spending ability. Clients do not have to pre-prepare for purchases by drawing the correct amount of cash. This removes the constraints on sales volumes imposed by insufficient funds in customers pockets while shopping.

6.2.3. Improved cash flow

Funds are cleared in the merchant's bank account on the same night as the settlement.

6.2.4. Risk management

Reduced dependency on cash leads to lower cash holdings in the cash register and thus lowers the risk of robbery. Transactions once cleared are underwritten by the acquiring bank and therefore the merchant need not fear that he will not be paid.

6.2.5. New product offering to customers

The BSC will enable merchants to offer their customers cash in and cash out services, at cash volume levels pre-agreed between the acquiring bank and the merchant. This additional service will enrich the relationship between the merchant and the client while simultaneously allowing the merchant to earn revenue by delivering this service.

7. Operating model

6.1 Proposed role of the BSC

The BSC's role is that of an Ancillary Services Provider to the financial services sector.

In this capacity, the company provides all of the switching, settlement calculations and merchant management roles required to connect the banks to each other, and to connect the banking industry to the merchant base, without actually handling or managing customer funds, which the registered banks manage.

In its capacity as switch, the BSC receives instructions from each bank and delivers the same, unaltered, to the destination bank, returning the response to the initiating bank.

In the case of acquiring, the BSC would deliver the authorization request to the issuer on behalf of the acquiring bank, advising both the merchant and the acquiring bank of the result of the transaction.

At day end, the BSC provides and reconciles the settlement totals of all banks, and calculates the net position between all banks. These net positions could then either be communicated to

the respective banks for onward transmission to the RTGS, or be submitted directly to the RTGS for settlement on behalf of the banks.

6.2 Product strategy

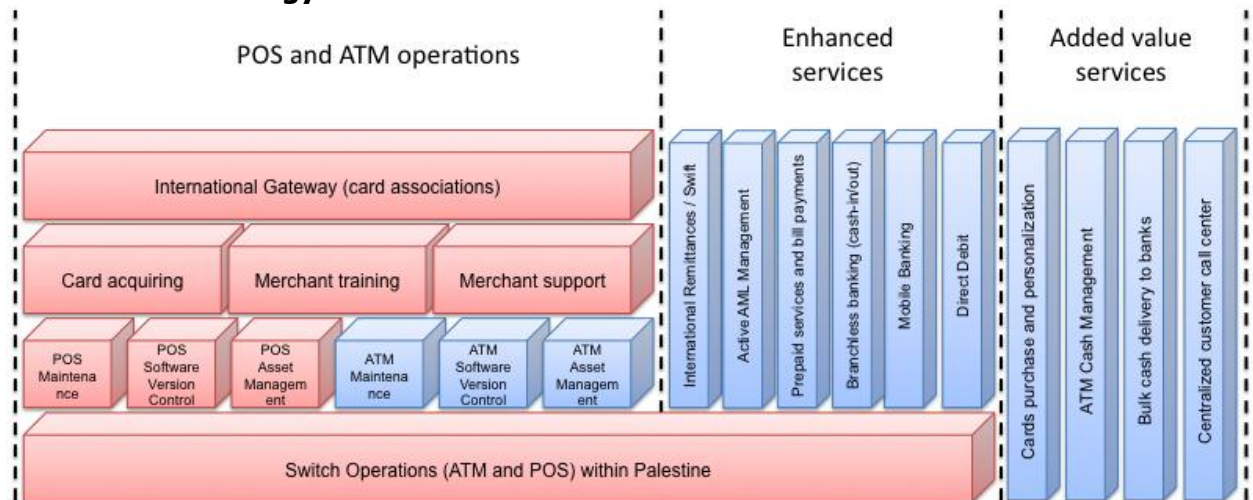


Figure 1 Launch product portfolio

The following products are offered at launch:

- All interbank switching relating to POS devices and ATM
 - The POS devices will be directly connected to, and managed by, the BSC systems.
 - ATM's will remain linked to the owner banks, but the BSC will route all interbank transactions emanating from the ATM's.
- Merchant acquiring processing.
- The BSC PoS devices will accept all VISA and MasterCard cards, as well as all ATM cards, issued in Palestine for payments and cash withdrawals at merchants.
- All ATM's attached to the BSC will accept all VISA and MasterCard cards, as well as all ATM cards, issued by member banks for cash withdrawals and balance inquiries.
- The POS network will be managed by the BSC:
 - Hardware deployment,
 - Hardware maintenance,
 - POS software version control, and
 - Retailers will be able to obtain POS devices from the BSC for a monthly rental.
- The BSC will provide training and day to day technical support to the merchants.
- The BSC will provide a day end settlement service to the merchants and to the banks.
- The BSC will use the VISA Access Point (VAP) for its member banks, facilitating international inbound and outbound card transactions.

6.3 Target Market and segmentation

6.3.1 Banks – addressable and target market

The addressable market of banks is all banks which are licensed by the PMA to hold deposits in Palestine, this currently is 18 banks.

The target market of the BSC is all banks within Palestine, who have opted to work with the BSC, and purchased their portion of its capital.

6.3.2 Merchants – Addressable and target market

The addressable market within Palestine is the 28,951 merchants in the target economic sectors who have an annual turnover in excess of \$15 000.

The initial focus within addressable market will be on merchants who are already customers of the banks, who are customers of the BSC. This group of merchants will be referred to as 'The initial target market' in this document. To ensure maximum impact of the service within Palestine, merchants will be targeted for acquisition in descending order of monthly turnover amount.

6.4 Marketing

6.4.1 Marketing strategy

In the interests of cost containment, the BSC will conduct no above the line marketing¹ such as billboard or TV advertising. VISA will be invited to conduct above the line marketing activities, to promote the use of card as a category, once the service is established in the market.

The core of BSC marketing will be based primarily on below the line activities in conjunction with the banks, directed towards their existing merchant customers. The banks will be encouraged to market card usage to their own consumer customer base.

The BSC will engage sufficient marketing resources, such that dedicated marketing teams can be established with the marketing departments of each of the member banks to rapidly market to all existing merchant customers of that bank. The merchant will need to conclude two separate agreements with the bank, and the BSC for this business, which addresses the following aspects:

- 1) Nominate an account with the bank through which all funds relating to cards will pass
- 2) Authority to deposit and withdraw funds from the merchants bank account
- 3) Agreement with the schedule of charges of the BSC
- 4) Agreement with the standard terms and conditions of the BSC

The BSC will sign up all merchants in the initial target market and make them operational within 24 months of launch.²

6.4.2 Branding

The BSC will have a public brand, which will be used as a support brand in the market to indicate to customers, which ATM's are linked to the BSC, and are therefore shareable between the customers of those banks.

This brand will also appear on BSC POS devices, to indicate to customers which POS devices will accept the ATM cards of the participating banks for payments and offer cash withdrawals in retail outlets.

¹ Above the line Marketing (ALM) is the terminology used to express the use of advertising, promotion and communication tools to reach mass market.

² Subject to the restrictions imposed on the importation and deployment of POS devices by Israel.

The consultants recommend that a naming competition be conducted for the BSC shortly before its launch date, as part of the market awareness campaign of the service.

6.4.3 Sales, Distribution and Service

The customer relationship establishment with the initial shareholder banks will be concluded during the implementation project, such that the shareholders are connected to the switch and are functionally ready to trade with merchants before the BSC is launched to market.

In selling to the merchants, the operating model of the BSC relies heavily on cooperation of and coordination with the sales teams of the shareholder banks. Coordinating in this way leverages and extends existing relationships to include the card product. This mechanism also allows for clear prioritization according to income levels.

6.4.4 Sales Channels

At launch, the BSC will assign sales teams at each shareholder bank, and these teams will work in conjunction with the sales teams of the banks to market the acquiring product to the merchant customer base.

The sales process will consist of product demonstration, selling of benefits, and form filling. A dedicated technical team will follow the sales teams and perform terminal installations, and merchant training in the use of the terminal.

6.4.5 Distribution

Terminal distribution will be managed through a rented warehouse in Ramallah, with terminals being issued directly to the installation teams on an order-by-order basis. Printer roll and other consumables will also be distributed through this warehouse and will be delivered to the merchants during their periodic meetings with the aftersales support team.

6.4.6 Service

The service model of the BSC is conducted in 3 overlapping layers: post sales technical installation, ongoing technical support, and business support.

Technical installation

Mobile teams of installers will deliver and activate PoS terminals at the merchants, following successful sales to the merchants.

Technical support

The technical services are delivered by mobile technical teams, which will deliver on site technical support to maintain a terminal availability in excess of 99%. A call centre that will log calls from merchants and walk merchants through their initial attempts to resolve problems themselves supports this team. If no merchant remedy works, a technician is dispatched to assist the merchant.

Business support

Teams of business support agents will visit the merchants on a roster, weekly for the first month after installation, monthly for the next 12 months and then quarterly for those merchants who are successful and operating independently. During these visits, the support agents will review the merchant's recent transactional activity on the terminal, discuss any problems and encourage the merchant to grow their use of the terminal. Paper rolls, and any promotional material will also be distributed during these meetings.

6.5 Technologies**6.5.1 Switch Technology****6.5.1.1 Business requirements to be supported**

The proposed switch technology will support all business requirements of the proposed Banking Services Company (BSC) in Palestine to ensure successful implementation and support of the proposed business model.

The technology will support the following business requirements:

- Connect up to 18 Palestinian banks
- International gateway to card associations
- Administer interbank ATM transactions
- Connect POS infrastructure for merchants
- Support POS software management
- Monitor POS deployment
- Proposed initial core switch technology to support additional future business requirements, as well as potential enhanced services and value added services required by the banking / payments sector of Palestine.
- Proposed switch technology to comply with regulatory industry standards such as EMV, PCI-DSS, PA-DSS, VISA-PABP.
- The proposed switch technology will provide the necessary back-office functionality required by the business such as reporting, data extraction, settlement, adjustments, reconciliation, etc.
- Proposed switch technology will also make provision for switch operational aspects such as a test / development and disaster recovery (DR) environments.

6.5.1.2 Technology requirement categories

The core business of the BSC will be to operate as the national payments switch of Palestine and for this reason, the proposed technology will be subject to and prescribed by the switching solution procured and implemented by the company. With reference to this, the proposed technology requirements will be subdivided into the following categories;

- Switching Solution (Software Product)
- Switching Solution Software Requirements
- Switching Solution Hardware Requirements
 - Servers for switching solution
 - Cryptographic equipment
- Switch Solution Communication Requirements
- POS devices
- POS device software

6.5.1.3 Switch solution vendor

As the core business driver of the BSC is switching, the switching solution that will be implemented will be critical to the success of the business. The solution that will be selected and implemented must be acquired from a reputable switching solution software vendor. In addition, the vendor must have the track record of delivering such solutions, with the relevant and reference sites throughout the world.

The BSC will engage with such vendors by means of a formal procurement process. The consultants propose that this selection process take the form of a formal RFP process during the implementation phase of the project.

6.5.1.4 Switch solution criteria

The BSC will consider the following criteria, when selecting the switching solution to be implemented:

- Solution must support the business requirements
- Solution must incorporate an integrated payments engine
- Solution must support multi-payment channels
- Solution must support multi-currency
- Solution must support traditional payment cards;
 - ATM cards³: Existing and already deployed in Palestine – for use on both the ATM and the POS infrastructure
 - Visa and MasterCard branded cards
- Solution must administer interbank transactions
- Solution must be able to drive POS devices and manage their deployment
- Solution must be able to connect to other switching solutions
- Solution must support the required back-office requirements
- Solution utilises industry-standard technologies such as Java, C++ and XML

6.5.1.5 Switch solution components

The proposed switch solution will comprise the following components at a minimum:

- Core payment engine / platform
- POS driving component
- Interfaces:
 - Card Associations
 - Other switching solutions
 - RTGS
- Card management component
- Monitoring component
- Component that supports back-office requirements

³ Banks whose cards comply with the track 1 and track 2 standards of the BSC will be able to avail themselves of this service

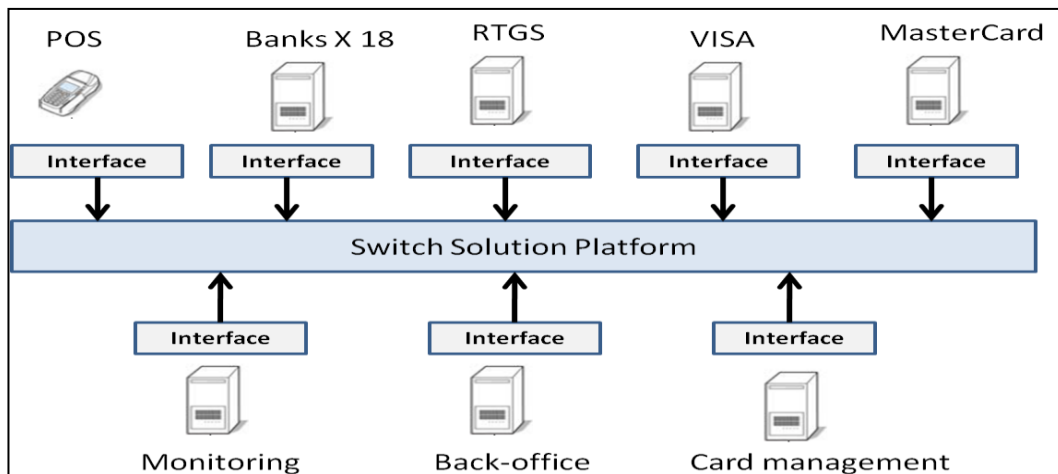


Figure 2: Switching Solution Components

6.5.1.6 Switch solution functionality requirements

The following will be the minimum functional requirements of the switching solution that will support the above mentioned evaluation criteria and required switching solution components:

- Support ISO 8583 transaction message types
- Drive POS devices
 - Terminal authentication capabilities
 - Basic POS configuration capabilities
 - Solution must accommodate multi-lane POS devices
 - Monitor POS deployment
 - Support POS software management
- Monitoring functionality
 - Monitor switch and related functions
 - Monitor ATMs
 - Monitor POS devices
- Connect to the following switching solutions of proposed member banks who will connect to the BSC;
 - Bankworks (RS2 – www.rs2.com)
 - BankWorld (CR2 - www.cr2.com)
 - Open/2 (S2 /TSA – www.tsainc.com) *Additional information: S2 was acquired by TSA, whom has more recently been acquired by ACI.*
 - Select System (S2M – www.s2m.ma)
 - Way4 (Openway – www.openwaygroup.com)
 - Postilion (S1 – www.s1.com)
- Authorisation functionality:
 - Administer and support negative / hot card files
 - Administer and support positive file with balances
 - Administer and support stand-in authorisation
 - Administer and support stand-alone authorisation
 - Administer and support store & forward
 - Administer and support funds and off line limits
- Administer and support payment instruments:
 - Mag-stripe debit / credit card
 - EMV debit / credit card
 - Private label card

- Security functionality requirements:
 - Transaction security services
 - Pin encryption and verification
 - Message authentication support
 - Support dynamic key exchange
 - Support remote key distribution
 - Support security industry standards
 - Support EMVⁱ
 - Support Triple Desⁱⁱ
 - Support Public Key Infrastructure (PKI)ⁱⁱⁱ
 - Support DUKPT^{iv}
 - Support TSL/SSL^v
- Online fraud / risk detection and prevention functionality
- Support the following multicurrency environment
 - USD: US Dollar
 - JOD: Jordanian Dinar
 - ILS: Israeli Shekel
 - EUR: Euro
- Provide dynamic currency conversion at rates specified and provided by each bank each day
- Support back-office functionality:
 - Data extraction
 - Relevant reporting capability
 - Reconciliation
 - Settlement
- Synchronization of the primary and backup servers:
 - Cold backup. A full database backup of the primary system is restored to the backup server once a day. In this way, on average, only the last 12 hours of transaction data might be lost in a total system failure.
 - Warm backup (or log shipping). The database transaction log is truncated periodically (for example, every five minutes) and copied to the backup server and applied to its database. The time lag between the primary and backup servers is never more than a few minutes.
 - Hot backup (or data mirroring). An add-on solution writes file updates on the primary server to corresponding files on the backup server. The data lag between the primary and backup server is seldom more than a few seconds.

The BSC operational standards and procedures will potentially implement all three synchronization methods defined above from an operational view point. With reference to DR and high availability industry standards, including the proposed DR installation, the consultants propose hot backup as the primary synchronization, with both or one of the other as secondary pending the final operational procedures defined at switch solution implementation.

6.5.1.7 Class and types of transactions

The proposed switching solution will handle six classes of transactions:

- debits – funds are deducted from cardholder accounts, e.g. via cash withdrawal, purchases
- credits – funds are added to cardholder account, e.g. via refunds, deposits, adjustments
- inquiries – provide cardholders with information about their accounts, via balance and available funds inquiries, mini-statements
- transfers – funds are transferred between accounts and institutions

- payments – funds are deducted from cardholder accounts and credited to third-party beneficiaries
- administration transactions – actions related to the maintenance of accounts, such as placing a hold on an account or changing a PIN

In support of transaction classes, the following transaction types must be supported;

- ATMs
 - Balance Enquiry
 - Cash withdrawal
 - Mini Statement
- POS
 - Purchase
 - Refund
 - Purchase with cash back
 - Cash back

6.5.1.8 Switch solution installation

For purposes of implementing a switching solution for the BSC business, the installation requirements will require the following three installation phases;

Operational installation

Operational installation of the Realtime switching solution to be procured by the BSC running on the prescribed servers with high availability features and characteristics within a secure environment on their operational site.

Development / test installation

A replicated Realtime switching operational installation for on-going testing and certification of new customers or external links, or for hot-staging of existing and new software installations located at the operational site.

Disaster recovery installation

A replicated Realtime switching installation located at the disaster recovery (DR) site with equivalent capacity to the operational Realtime switching installation.

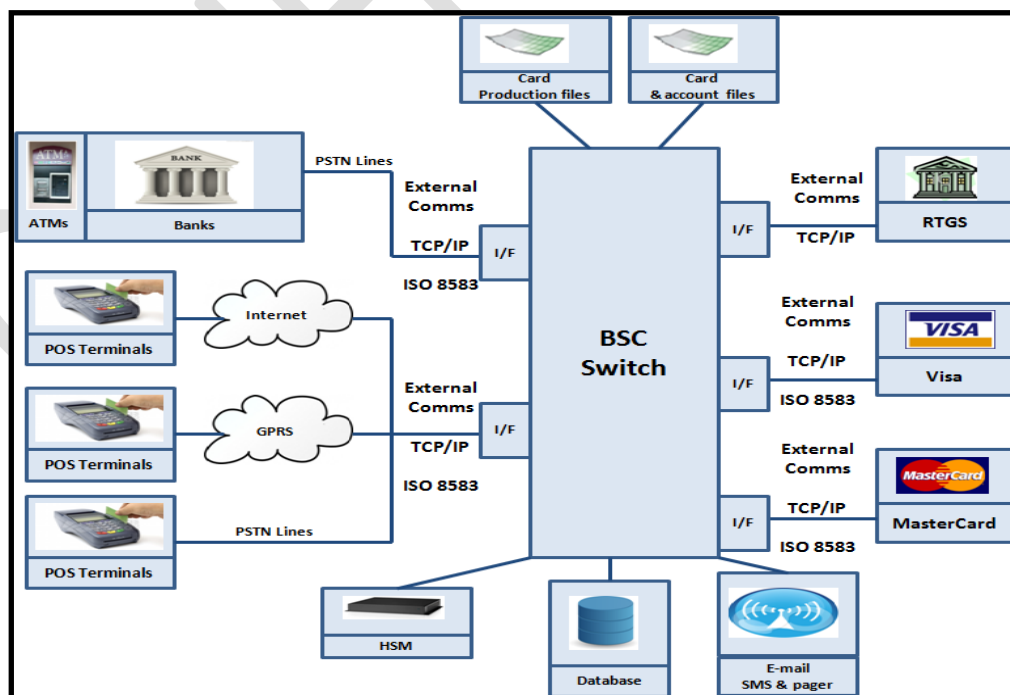


Figure 3: Switch solution architecture

Figure 5 above represents a graphical representation of the required architecture for the proposed switching solution to be implemented by the BSC.

The architecture supports the following;

- inter bank ATM transactions
- POS transactions
- international gateway, accepting both Visa and MasterCard transactions
- administer required reconciliation and settlement functions
- administer settlement files to be provided to the RTGS

6.5.1.9 Switch solution operating system and database software requirements

The switching solution that will be selected and implemented will determine the operating system and database software requirements. For example, a specific switching solution will support Microsoft Windows or IBM AIX for example. The choice of operating system will determine the underlying database software – MS SQL Server in the case of Windows as operating system, or IBM DB/2 in the case of the AIX operating system.

To ensure optimum-operating efficiency, all systems software must be upgraded with the latest service packs at all times.

6.5.1.10 Optional disaster recovery software requirements

Online transaction processing systems require a robust disaster recovery strategy to maintain business continuity, offering uninterrupted service, and satisfying legal obligations. The consultants propose that optional additional disaster recovery software be considered as these options guarantee that disaster recovery is performed reliably and economically. This optional additional software will be dependent on the actual switching solution procured by the BSC, as some switching solutions suggest specific types of additional software options.

This type of disaster recovery software is a hardware-independent real-time data replication software solution that enables the switch support staff to select mission-critical data for protection and that replicates this data from the production server to a "hot standby" backup server (or target).

6.5.1.11 Switch Solution Hardware Servers

Most of the top international switching solution software vendor's systems run on Intel-based servers such as Stratus, HP, IBM, and Dell for example. The hardware servers to be installed by the BSC will be dependent on which switching solution is selected and implemented. Aspects such as the actual switching solution architecture, transactions volumes, capacity requirements, etc. will also impact the server's size and their configuration. Reliability features of hardware servers will form part of the evaluation criteria. The most critical evaluation criteria will be availability / uptime that servers can provide.

6.5.1.12 Cryptographic equipment

All switching solutions and their required server implementations require access to hardware security module(s) (HSM) to provide security services in a tamper-resistant environment. The HSM must be dual, redundant to limit exposure to failure.

The switching solution that will be finally selected through the relevant procurement process of the BSC will determine what cryptographic equipment will be installed and utilised. International switching software solution vendors most often suggest and support the likes of Incognito TSM HSM device(s), Thales HSM device(s), Atalla HSM device(s) or Futurex HSM device(s).

The HSM's will provide the necessary data encryption and cryptography requirements for the BSC network to comply with international standards and protect the funds of the people of Palestine. This is normally done through an exchange of secure keys between the switch and the connecting devices located at external entities. It can therefore be stated that HSM's will support the required encrypted transaction processing and protection for the keys and applications that underlie the critical security processes required by the BSC to operate as a switch.

6.5.1.13 Switch solution communication requirements

The proposed switch solution is required to work within a pure TCP/IP environment. With reference to POS devices connecting to the BSC switching solution, the communication types to be supported is as follows;

- GPRS
- ADSL and Ethernet connection
- Dial-up connection using regular PSTN lines

6.5.2 POS technology

6.5.2.1 POS devices

The proposed switching solution to be implemented by the BSC will be able to connect international accepted branded POS devices such as the following:

VeriFone



See www.verifone.com for additional information for reference purposes.

Hypercom



See www.hypercom.com for additional information for reference purposes.

Ingenico



See www.ingenico.com for additional information for reference purposes.

PAX



The consultants propose that one of the above mentioned or a combination of the above be considered when selecting a POS device for roll-out purposes.

6.5.2.2 POS device selection criteria

The selection criteria for POS devices will include the following:

- Local distribution and support
- Functionality
 - Accepts credit / debit cards
 - Accepts ATM cards currently deployed in Palestine
 - Must accept both magnetic-stripe and smart cards
 - Minimum security requirements:
 - Must meet MasterCard and Visa security requirements
 - Must incorporate Triple DES encryption and Fixed, Master Session, and DUKPT key management
 - Must support application separation at the hardware and software levels which minimizes the need to recertify existing payment applications every time an application is added or modified
 - Must include integrated privacy shield for cardholder data protection
- Features:
 - The device must offer an acceptable graphical display
 - Display must offer multi-language font support
 - Key pad must be user friendly for customers to use when entering PINs and merchant entering transaction detail
 - Device must have compact and lightweight, ergonomic design, so the PIN pad can be used as a handheld, countertop, or wall-mounted device
 - Device must have locking PIN pad cord ensures device will not come unplugged when handing to customer – causing loss of valuable data
 - Must have sufficient RAM and flash memory to support multiple applications simultaneously
- Pricing (including possible taxation / import duties)

6.5.2.3 POS software

POS software is divided into two sub-categories, namely;

- Operating system
- POS software application

Both the operating system and application software will be POS device dependent. Therefore depending which device is procured by the BSC, the device will prescribe / define both the actual operating system and the application software. The POS operation system makes provision for software separation, so all required POS applications can co-exist separately on the device.

The POS application must allow for script downloads, application upgrades, real-time and batch terminal information updates, etc. from the switching solution implemented by the BSC. One of the POS applications should also support Hotcard file downloads. In addition, the POS application software must support the required monitoring capability that will be implemented within the switching solution environment.

6.6 Revenue drivers

The BSC's revenue is sourced from four products:

- ATM Switching
- PoS Acquiring
- PoS terminal rentals
- International card gateway

6.6.1 ATM Switching

Banks will pay the BSC a flat fee of JD0.45 per transaction, with a monthly minimum volume of 2 transactions per month per card registered on their base.

6.6.2 PoS Acquiring

The average merchant will pay a merchant acquiring commission of 2 % of which 1% will be passed on to the card issuer. This pricing is seen as aggressive in the Palestinian context.

6.6.3 PoS terminal rentals

The merchants will rent the terminals for \$5 per month, on a full maintenance lease basis for a minimum period of 3 years.

6.6.4 International card acquiring

Merchants will pay an acquiring commission of 3.5% for transactions conducted with foreign cards in Palestine.

6.7 Expenditure drivers

6.7.1 VISA charges

6.7.1.1 VISA setup costs

The following fees have been budgeted for establishing the relationship with VISA International.

Principle membership	\$80,000
Cross Border associate membership	\$50,000
Cash disbursement membership	\$20,000
Merchant acquirer fees	\$55,000
VisaNet Direct access	\$60,000
Visa First programme fee	\$8,000
Certification Costs	\$80,000
Total	\$353,000

6.7.1.2 VISA operating fees

The following fees have been budgeted for maintaining the relationship with VISA International on day to day basis. These fees are applied to the volume of transactions on VISA cards, however, they are not applied to transaction volumes on the Palestinian ATM cards in issue.

Quarterly Card Service Fee (QCSF)

Principal Members who report a Quarterly Operating Certificate (QOC) are required to pay a Quarterly Card Service Fee (QCSF).

The QCSF is a fee applied to the US dollar value of QCSF volumes reported through the QOC. QCSF volumes are defined as:

- total point of sale (POS) volume
- international ATM volume
- "off-us" manual cash volume

This volume is the consolidated spend from all card programmes and from all sponsored Members.

Effective for Operating Certificates submitted up to or on 31 December 2008, the Quarterly Card Service Fee (QCSF) is charged as follows.

Members in <u>Middle East and African</u> countries ^(Appendix A)	
QCSF \$ volume per quarter	Fee per quarter
\$0 and above	\$10,000 fixed
Plus	
QCSF \$ volume per quarter	Fee as a percent of QCSF volume
\$0 to \$14,999,999	0.045%
\$15,000,000 - \$24,999,999	0.040%
\$25,000,000 - \$49,999,999	0.035%
\$50,000,000 - \$99,999,999	0.030%

International Acquiring fee

Effective from 18 April 2009, the International Acquiring Fee will be assessed as in the following table:

Merchant Location	Issuer Location	Rate until 17 Apr 2009	Rate on & after 18 April 2009
Central and Eastern Europe*	AP, Canada, LAC, U.S.	0.15%	0.25%
	Europe	0.15%	0.15%
Central and Eastern Europe*	Middle East and Africa	0.15%	0.25%
	Central and Eastern Europe	0.15%	0.15%
Middle East and Africa*	AP, Canada, LAC, U.S.	0.10%	0.20%
	Europe	0.10%	0.20%
Middle East and Africa*	Central and Eastern Europe	0.10%	0.20%
	Middle East and Africa	0.10%	0.20%

An additional monthly fee of \$36,000 per annum as VAP membership fees.

6.7.2 Marketing

The only marketing costs which will be borne by the BSC are the costs associated with the sales teams which will be dispatched to work with each of the banks. To allow staff level flexibility during the startup phase of the business contract workers will conduct these marketing activities.

The table below indicates the expected number of staff in this category as well as their associated salary and commission costs.

		2011	2012	2013	2014	2015	2016
HEAD COUNT & SALARIES							
Year End Outsourced Staff	POS Sales Representatives	0	10	11	12	3	3
Salaries Outsourced Staff	POS Sales Representatives	-	216,000	248,292	283,053	73,948	77,275
Bonuses	Performance Based Bonuses	-	-	63,140	-	-	-
Sales Commissions	POS Deployment	-	135,505	160,879	190,301	35,966	40,178

6.7.3 Customer support

The BSC will provide first line customer support via a call centre, backed up with a field team, which will travel to the client premises to attend to issues that are more complicated.

6.7.3.1 Call centre

The BSC will field a call centre to support both merchants and the partner banks. The call centre has been scaled in the model at a rate of 1 seat per 5000 merchants.

This call centre will operate on a 24/7 basis and will provide first level support to all merchants and schedule technical call outs as required.

Permanent staff will staff the call centre. The overall permanent staff information is provided under the heading Staff, below.

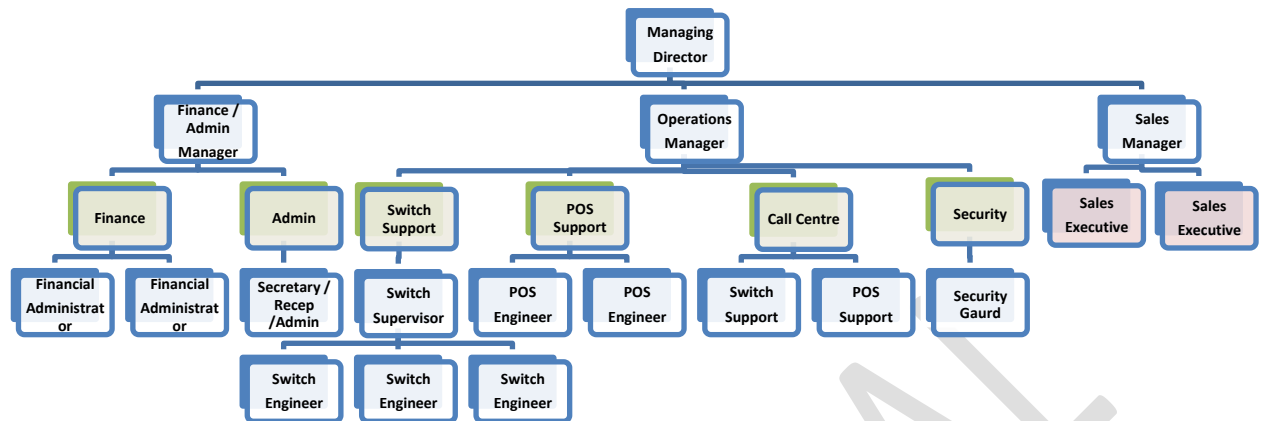
6.7.3.2 Field staff

The field staff will perform the initial installation of the terminals and support them after installation. Mobile technical units will be created for this purpose, each with a leased car and a cell phone. The number and salary costs of these staff are given in the table below.

		2011	2012	2013	2014	2015	2016
HEAD COUNT & SALARIES							
Year End Outsourced Staff	POS Support Staff	0	2	3	5	5	6
Salaries Outsourced Staff	POS Support Staff	-	43,200	67,716	117,939	123,246	154,550

6.7.4 Staff

The BSC will have a full complement of staff to support its operations. These will be managed by a Managing Director who will report directly to the Chairman of the board of directors.



6.7.4.1 Reporting lines, roles and responsibilities

1. **Managing Director:** Person responsible for managing the BSC in its totality and who reports to the Chairman of the Board.
2. **Finance Manager:** Reports to the Managing Director and manages both the Financial and Administrative aspects of the BSC.
3. **Operations Manager:** Reports to the Managing Director and manages all the support related aspects of the BSC. Support includes call centre support, as well as the technical support team responsible for the operational aspects of the implemented switch. In addition, the technical POS support team responsible for supporting the merchant POS devices in the field also forms part of his or her responsibility.
4. **Sales Manager:** Reports to the Managing Director and is responsible for client relationships with the member banks of the BSC. For purposes of the business plan / strategy, the sales manager will have sub-contracted sales executives reporting to him or her, who will be responsible for selling and signing on merchants as part of the POS roll-out.
5. **Sales Executive:** Reports to the Sales Manager and is responsible for signing up merchants to the BSC against targets derived from the business plan.
6. **Switch Supervisor:** Reports to the Operations Manager and is responsible for all technology requirements of the switch implemented by the BSC. In addition, all the switch technical support staff report to the supervisor responsible for all technical support and operational aspects of the switches 24x7 availability.
7. **Switch Support Engineer:** Reports to the Switch Supervisor and is responsible for supporting the implemented switch solution.
8. **POS Engineer:** Reports to the Operations Manager and is responsible for the POS device installations and support at merchants connecting to the BSC switch.
9. **Financial Administrator:** Reports to the Finance Manager to support and administer all financial administration including aspects such inter bank settlements and relevant financial reports.
10. **Call Centre Staff:**

- a. **Switch Support:** Person responsible to administer switch related calls about bank connectivity to the switch.
- b. **POS Support:** Person responsible to administer and support POS related call concerning POS devices installed at merchants and that connect to the switch.
11. **Secretary / Administrative / Receptionist:** Person responsible for administering the reception and all other administrative tasks required by management.
12. **Security Guard:** Person responsible for physical security at the BSC premises.

6.7.4.2 Headcount

The permanent head office staff complement of the BSC is seen as being the following over the first 5 years of its existence:

		2011	2012	2013	2014	2015	2016
HEAD COUNT & SALARIES							
<i>Year End Head Count</i>	General Manager	1	1	1	1	1	1
	Finance Manager	1	1	1	1	1	1
	Operations Manager	1	1	1	1	1	1
	POS Sales Manager	1	1	1	1	1	1
	Switch Solution Supervisor	1	1	1	1	1	1
	Switch Solution Engineers	3	3	3	3	3	3
	Financial Administrator	2	2	2	2	2	2
	Administrative Staff	1	2	3	4	5	6
	Call Center POS Support Administrator	3	9	15	27	33	48
	Call Center Switch Support Administrator	1	2	3	4	5	6
	Security Guard / Driver	1	1	2	2	3	3
	Total Head Count	16	24	33	47	56	73

6.7.4.3 Salary costs

The salary costs in the organization are set as follows. These figures represent the cash packages paid as the salary overhead is built in under "Overheads" below. It has been assumed that the average staff member will receive 14 salary cheques per year.

		2011	2012	2013	2014	2015	2016
HEAD COUNT & SALARIES							
<i>Salaries BSC Staff</i>	General Manager	6,500	91,000	95,095	99,374	103,846	108,519
	Finance Manager	4,000	56,000	58,520	61,153	63,905	66,781
	Operations Manager	5,000	70,000	73,150	76,442	79,882	83,476
	POS Sales Manager	4,000	56,000	58,520	61,153	63,905	66,781
	Switch Solution Supervisor	3,500	49,000	51,205	53,509	55,917	58,433
	Switch Solution Engineers	7,500	105,000	109,725	114,663	119,822	125,214
	Financial Administrator	3,500	49,000	51,205	53,509	55,917	58,433
	Administrative Staff	800	22,400	35,112	48,923	63,905	80,137
	Call Center POS Support Administrator	6,000	252,000	438,900	825,571	1,054,437	1,602,745
	Call Center Switch Support Administrator	2,500	70,000	109,725	152,884	199,704	250,429
	Security Guard / Driver	500	7,000	14,630	15,288	23,964	25,043
	Total Salaries	43,800	827,400	1,095,787	1,562,469	1,885,206	2,525,993

6.7.4.4 Overheads

In addition to the salaries above, the following has been allowed with regard to operating costs.

		2011	2012	2013	2014	2015	2016
NON-SALARY OPERATING EXPENSES							
<i>General Operating Expenses</i>	Office Rent	5,760	103,680	148,975	221,725	276,071	376,073
	Electricity	2,280	27,360	28,591	29,878	31,222	32,627
	Office Cleaning Services	500	6,000	6,270	6,552	6,847	7,155
	Telecommunications	7,680	138,240	198,634	295,633	368,095	501,430
	Office Supplies	8,333	100,000	104,500	109,203	114,117	119,252
	Legal Fees	2,400	28,800	30,096	31,450	32,866	34,345
	Accounting & Audit	1,500	18,000	18,810	19,656	20,541	21,465
	Car Leasing	-	27,600	43,263	75,350	78,740	98,741
	Fuel	-	12,000	18,810	32,761	34,235	42,931
	Other Expenses	1,135	17,900	22,449	30,024	34,333	42,897
	Total General Operating Expenses	29,588	479,580	620,398	852,232	997,067	1,276,916
<i>Maintenance</i>	Switch Solution Maintenance & Support C	-	244,360	335,474	436,379	503,321	579,165
	Office Repair & Maintenance	4,167	50,000	52,250	54,601	57,058	59,626
	Other Expenses	-	-	-	-	-	-
	Total Maintenance Expenses	4,167	294,360	387,724	490,980	560,380	638,791

6.7.5 Product development

The BSC has significant potential to expand the levels of support it is able to give to its shareholders. Therefore, it needs to retain an amount each year to implement new services. An amount of \$500,000 has been set aside from revenue annually to conduct new product development and implementation.

The Board of directors of the BSC will guide management on the prioritization of service rollout.

6.7.6 Asset base

The total capitalization cost of the system, DR site and all related site enhancements is, office infrastructure and POS devices, by the end of 2016 will be \$21.18 million, which is made up as follows:

		2011	2012	2013	2014	2015	2016
CAPEX INVESTMENTS (BALANCE SHEET)							
<i>IT Systems Total Value</i>	Switch Solution Software	565,000	565,000	565,000	565,000	565,000	565,000
	Switch Solution Implementation Project	1,365,010	1,365,010	1,365,010	1,365,010	1,365,010	1,365,010
	Switch Solution POS Licenses	-	172,425	377,180	618,251	662,970	712,818
	Switch Solution Transactions Licenses	-	188,100	406,505	634,738	897,092	1,196,176
	Visa Membership Fees & Certification	353,000	353,000	353,000	353,000	353,000	353,000
	Operating System	50,000	50,000	50,000	50,000	50,000	50,000
	Database Software	45,000	45,000	45,000	45,000	45,000	45,000
	DR Software Solution	50,000	50,000	50,000	50,000	50,000	50,000
	Total IT Assets	2,428,010	2,788,535	3,211,695	3,680,999	3,988,073	4,337,004
<i>Hardware Total Value</i>	Operational & DR Servers	200,000	200,000	200,000	200,000	200,000	200,000
	Dell/HP Servers	60,000	60,000	60,000	60,000	60,000	60,000
	Test Servers	30,000	30,000	30,000	30,000	30,000	30,000
	Hardware Security Module	25,000	25,000	25,000	25,000	25,000	25,000
	PCs & Laptops	32,000	48,720	68,376	100,329	121,794	164,165
	Total Hardware Assets	347,000	363,720	383,376	415,329	436,794	479,165
<i>PPE Total Value</i>	Security System Module	29,500	29,500	29,500	29,500	29,500	29,500
	Computer Room Equipment	100,000	100,000	100,000	100,000	100,000	100,000
	General Office Equipment	11,200	11,200	11,200	11,200	11,200	11,200
	General Furniture Equipment	5,600	5,600	5,600	5,600	5,600	5,600
	Staff Working Stations	3,600	6,108	9,056	13,849	17,069	23,425
	Total PPE Assets	149,900	152,408	155,356	160,149	163,369	169,725
<i>POS Value</i>	POS Devices	-	4,103,715	8,698,410	14,140,061	15,143,565	16,192,227

7 Benefits to Palestine

Palestine will benefit at two levels, namely the customer and the banking industry as a whole.

7.1 Benefits to Palestinian consumers and merchants

The existence of an in country switch will benefit the Palestinian consumers and merchants in the following ways:

- 1) Consumers
 - a. Cost effective electronic funds,
 - b. Pervasive acceptance infrastructure,
 - c. Instant access to their accounts – for both purchases and cash withdrawals,
 - d. Ability to receive and use their salaries, which is not linked to the challenges of moving physical cash around WBG, and
 - e. Increased reliability of access to their funds internationally.
- 2) Merchants
 - a. The ability to continue selling, irrespective of cash supply irregularities.
 - b. Clients in store have direct access to all available funds in their accounts, therefore the propensity to impulse buying increases, leading to higher sales volumes.
 - c. A pervasive electronic infrastructure opens the way to instant bank lending to their customers, thus expanding the purchase capability of the clients.
 - d. Reduced dependence on cash leads to a reduced need for the merchants to manage cash within their own operations.

7.2 Benefits to the Palestinian Banks

The Palestinian banks will benefit from the switch in the following ways:

- 1) Operational benefits
 - a. Reduced dependence on cash will reduce cash management costs and management burden over time.
 - b. As customers develop a card shopping mindset, they will tend to leave their funds in their bank accounts for longer periods, improving the float management function at the banks.
 - c. An electronic relationship, which allows the banks to service their customers more frequently allows the banks to do the following:
 - i. Profile their client's behavior, which will assist in developing more focused products
 - ii. Determine the customers spend profile, which assists in credit vetting clients – which enables lending
- 2) Strategic benefits
 - a. Position the industry for more electronic services. Examples of such services include a possible, centralized mobile banking service offering.
 - b. The existence of a jointly owned, jointly controlled entity will form a point of industry connectedness to develop other, mutually beneficial, non-competitive services, such as card issuing and cash management.

7.3 Financial benefits to the shareholders

7.3.1 Principal assumptions in the model

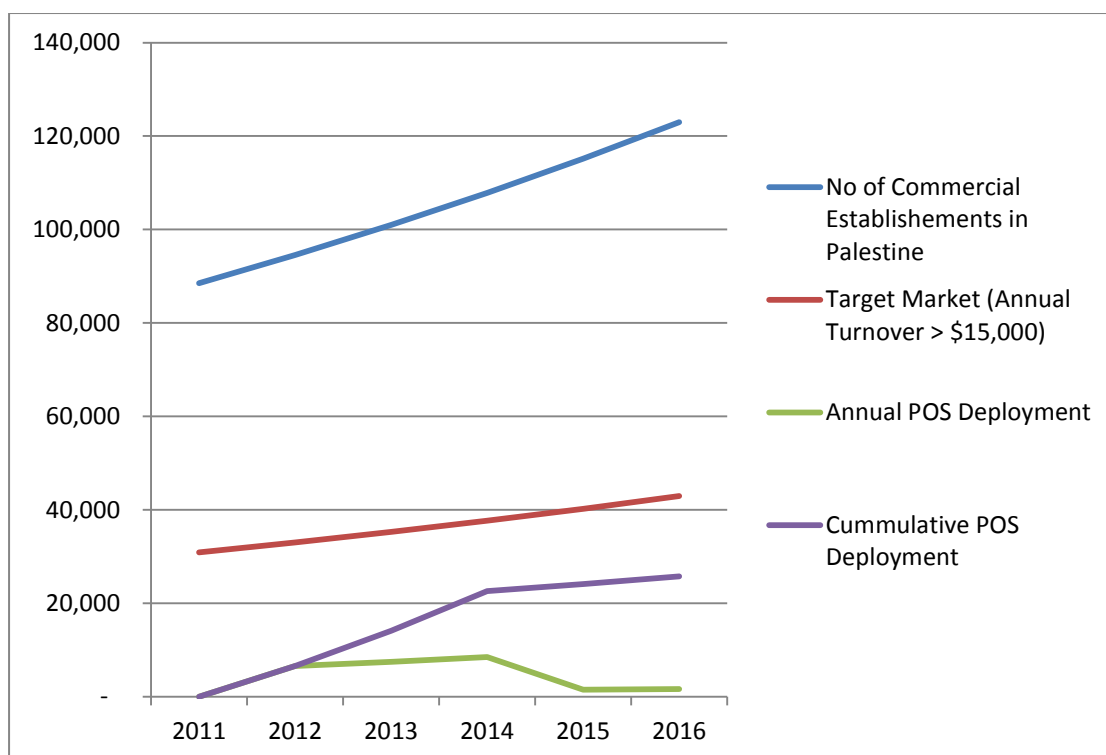
The Table below depicts some of the main assumptions included in the model.

The choice of the expected case being that only 17 of the 18 banks would participate was driven off the mandate provided to the consultants at the commencement of this project.

Economic participation by shareholders	Shareholding split equally between all banks. Voting power on the board of the company split equally between the banks.		
	Low case	Expected case	High Case
Banks participating			
Number of banks	7	17	18
% of banked individuals represented	67%	82%	100%
Percentage of merchant base served	60%	60%	60%
Number of merchants served (2016)	25 778	25 778	25 778
Card revenue assumptions			
Merchant acquiring commission	2%	2%	2%
Issuer commission	1%	1%	1%
Net acquiring commission	1%	1%	1%
Switching fee revenue assumptions			
ATM switching fees	\$0.70	\$0.70	\$0.70
ATM owner remuneration	\$0.49	\$0.49	\$0.49
Net ATM switching fees	\$0.21	\$0.21	\$0.21
International Gateway fees			
Terminal rental assumptions			
Monthly rental fee per merchant	\$5	\$5	\$5
Inflation rate of monthly rental	4.6%	4.6%	4.6%
Company Net Present Value	\$7.7 mil	\$10.6 mil	\$ 28.9 mil

7.3.2 Merchant take up curves

In modeling the business, the team assumed that the merchant acceptance would occur according to the following curves. The maximum penetration of the merchant base is capped at 60% of those merchants with a turnover of \$15 000 per annum or more. By 2016, this implies that some 26 000 merchants out of a total base of some 122 000 will be being served. This is a market penetration of 21% of the merchants in Palestine.



7.3.3 Financial Summary

From an income perspective low, medium and high case scenarios have been prepared and the results are summarized as follows:

7.3.3.1 Investment and return to Shareholder Group

The shareholder returns under the three scenarios of bank participation are given below:

Investment return to Shareholders			
Direct benefit	Low case	Expected case	High Case
BSC NPV over 5 years	\$7.7 mil	\$10.6 mil	\$ 28.9 mil
IRR of BSC investment (Direct benefit only)	10.08%	15.35%	42.35%
Peak funding	\$10.8 mil	\$9.1 mil	\$4.6 mil
Timing of peak funding	2014	2014	2014
Terminal value of BSC	\$16.14 mil	\$17.6 mil	\$30.4 mil

There is a clear correlation between the value of the business and the level of participation in it by the various banks in Palestine. It remains the recommendation of the consultants that a single, national acquirer / switch be established, which serves the industry as a whole.

The detailed financial statements are set out in Annexure A hereto.

7.4 Financial model

7.4.1 Key Assumptions and sensitivity analysis

The following assumptions have the largest impact on the business case:

7.4.1.1 Number of banks participating in the project

The business is highly sensitive to the number of banks participating because the banks are the conduit source of business to the BSC, as well as its route to market.

Not only is the absolute number of banks important, but so too is the bank's own market share, and level of development in electronic banking, such as the number of cards in issue and the number of ATM terminals in the market, or planned.

The impact of the number of banks participating is clearly shown by the changes in value of the business between the low, expected and high cases above.

7.4.1.2 The rate of take up of terminals in the market

Palestine has a relatively underdeveloped POS infrastructure, and, as such the BSC has limited deployed infrastructure upon which to draw.

Because of this, the business is fairly sensitive to the POS rollout plan adopted, as depicted in the table below. (All cases are based upon the expected case of the financial model)

The percentages in each of the years refer to the penetration level of the addressable market in each of the years under review.

The second row is the curve currently in use in the model, while the other 2 rows serve to demonstrate the sensitivity of the business to merchant acquisition rates.

2012	2013	2014	2015	2016	NPV
10%	20%	30%	40%	50%	(\$12.1 mil)
20%	40%	60%	60%	60%	\$10.6 mil
20%	40%	60%	80%	100%	\$44.5 mil

7.4.1.3 Terminal rental fees

A significant component of the BSC balance sheet, (approx. 80%) consists of PoS devices, which are rented to the merchants for their use.

The level at which that rental is set has a significant impact on a number of issues, the higher it is set, the higher the valuation of the company, but the lower the inclination of the merchants to accept the terminals. The lower the rental is set, the lower the valuation of the company, and, below a certain level, the merchant utilization of that terminal also diminishes.

In the sensitivity table below, the link between rental price and company value is explored.

Monthly rental fee	NPV
\$0	(\$82 529)
\$5	\$10.6 mil
\$10	\$23.2 mil

7.4.1.4 Consumer behavioral assumptions

The assumptions as to customer behaviors used in the model were provided to the team by all banks in Palestine and were moderated by the team against 2010 statistics provided by the association of banks.

The model is sensitive to the level of performance of the consumers, as can be seen in the table below.

The percentage loading and discount applied is applied to all market behaviors, such as card swipes per customer, ATM usage per customer as well as the international transactions effected by the clients.

Sensitivity % applied to all customer behaviour	NPV
70%	(\$3 mil)
100%	\$10.6 mil
115%	\$17.26 mil
125%	\$24.3 mil

8 Implementation plan

8.1 Structure of the business

It is proposed that the BSC be incorporated as a company of limited liability, which is owned by the banks as an Associated Company. It is anticipated that at least 5 banks will subscribe to the company, leading to a potential 20% share to each of the banks.

The memorandum and articles of association of the company should include a clause compelling all shareholders to dilute their holdings pro rata, at market value, to allow other banks to become shareholders over time.

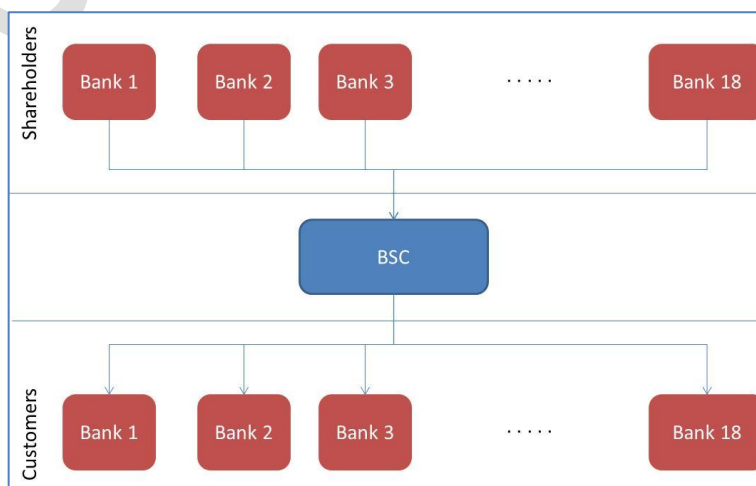


Figure 4: Structure of the BSC

To guarantee the BSC's success, all shareholders will contribute the following to the venture:

- 1) All of their interbank switching will be through the BSC.
- 2) They will actively market the POS terminals to their most valuable merchants, in conjunction with the BSC sales team.
 - a. Each of the shareholder banks will accept and achieve sales targets in this regard.
- 3) All of the shareholder's existing and future ATMs will be made available across the switch.
- 4) All shareholders will market the use of all networked ATM's to their consumer customers.
- 5) The shareholders will market card-based purchases to their own consumer customers.

8.2 Selection of the startup shareholder banks

Perhaps one of the most important decisions in this initiative is that of the selection of the initial banks. To ensure the maximum growth rate of the company, it is highly recommended that the founding shareholder banks would be those banks serving at least 50% of the Palestinian customer base.

8.3 Project plan / timing

The implementation project will require 100 cycle days, commencing on 1 September 2011, and completing in January 2012.

The deliverables of this project are:

- 1) A registered, licensed company
- 2) The company is licensed, equipped and all processes in place to sustainably carry on the business of VISA acquirer and VAP operator
- 3) Offices which are opened, and equipped,
- 4) A set of systems and the necessary software to perform the roles required for the initial product
- 5) Systems housed in a VISA certified facility, with a VISA certified DR site
- 6) The systems of all registered shareholder banks connected to the BSC systems
- 7) 10 working terminals, and the necessary software ready to be downloaded into future terminals purchased by the entity
- 8) Recommendations to the shareholders as to whom they should appoint as CEO, CFO and CIO of the BSC

This will be a challenging project plan to deliver within this timeframe, so it is proposed that a dedicated team of consultants, with experience in implementing such projects be engaged to conduct the implementation project on behalf of the shareholders.

Linking to the shareholders is going to require active support from the operations and systems departments of the banks.

The table below indicates the major tasks on the implementation project plan:

		Name	Duration	Start	Finish	Predecessors
1		Build BSC	100 days	01/09/11 08:00	18/01/12 17:00	
2		Project setup	8 days	01/09/11 08:00	12/09/11 17:00	
3		Define and initiate project steering committee	5 days	01/09/11 08:00	07/09/11 17:00	
4		Define project RACI	3 days	01/09/11 08:00	05/09/11 17:00	
8		Obtain steering committee approval of RACI	3 days	08/09/11 08:00	12/09/11 17:00	3;7
9		Form the BSC company (incl. legal / regulatory)	72 days	02/09/11 08:00	12/12/11 17:00	
10		Legal work	38 days	13/09/11 08:00	03/11/11 17:00	
19		Set up offices	65 days	13/09/11 08:00	12/12/11 17:00	
24		Setup data centre and Disaster recovery sites	64 days	02/09/11 08:00	30/11/11 17:00	
32		Prepare acquirer relationship	59 days	11/10/11 08:00	30/12/11 17:00	
41		Systems and POS devices	99 days	02/09/11 08:00	18/01/12 17:00	
65		Define processes, forms, training and management sy...	27 days	02/11/11 08:00	08/12/11 17:00	
66		Merchant	27 days	02/11/11 08:00	08/12/11 17:00	
76		Consumer	9 days	02/11/11 08:00	14/11/11 17:00	
80		RTGS	25 days	02/11/11 08:00	06/12/11 17:00	
BSC implementation - page1						

All costs associated with conducting this project have been included in the initial share capital amount of \$3 million, which is contained in the financial model.

Achieving the above project plan, on the dates indicated in it, is contingent upon the following being completed before 1 September 2011:

- 1) A group of initial shareholder banks is assembled and ready to enter into shareholder agreements
- 2) The capital of \$3 mil is ready to be deposited into the account of the company to be formed
- 3) A steering committee of decision makers from the shareholders is identified and able to steer the project team in its work throughout the run of the project.
- 4) The consultancy, which is to perform the work, is identified and hired.
- 5) The project team is able to work in Palestine, under the guidance and sole authority of the steering committee in an unfettered manner
- 6) All support and assistance required in obtaining access to resources, including commercial suppliers and or government agencies is provided by the steering committee.

9 Recommendation

Based upon its strategic and commercial merits, the BSC is a viable business.

Banks that invest in it and use its services will benefit financially, both through the dividends derived from the company as well as through operational efficiencies within their organisations.

Strategically – the BSC is important in that it will, over time, diminish Palestine's dependence on cash, which will reduce the impact of the current logistical challenges presented by checkpoints throughout the country.

Based upon these factors, it is recommended that the banking community unite and invest in the BSC as a jointly held service company which services the industry as a whole.

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Annexure A – Low Case

Income Statement – Low case

ESAF Financial Model Feasibility Study for a BSC						
Survey Based						
SHOREBANK INTERNATIONAL						
	Investment 2011	2012	2013	Projected 2014	2015	2016
Revenues						
Switching Operations	0	161,152	187,734	200,862	214,831	229,950
International Gateway	0	3,856,145	5,407,982	6,064,511	6,801,815	7,632,211
POS Rental & Acquiring	0	1,666,106	2,830,030	3,715,332	4,481,676	5,076,835
Total Revenues	0	5,683,403	8,425,745	9,980,706	11,498,322	12,938,996
Costs						
Switching Operations	0	106,403	124,506	133,221	142,547	152,526
International Gateway	0	1,343,357	1,965,858	2,216,564	2,503,260	2,828,864
POS Rental & Acquiring	0	729,535	1,075,761	1,229,334	1,404,835	1,605,389
Total Costs	0	2,179,296	3,166,126	3,579,120	4,050,641	4,586,778
Gross Profit	0	3,504,107	5,259,620	6,401,586	7,447,681	8,352,218
Other Revenues						
Other Revenues 1						
Other Revenues 2						
Non-Operative Revenues	0	0	0	0	0	0
Other Costs/Expenses						
Product Development	0	0	500,000	437,422	0	0
Other Costs/Expenses						
Non-Operative Costs	0	0	500,000	437,422	0	0
Pre-Operating Profit	0	3,504,107	4,759,620	5,964,165	7,447,681	8,352,218
Operating Expenses						
BSC Staff Salaries	43,800	827,400	1,095,787	1,562,469	1,885,206	2,525,993
Management Bonus	0	0	82,740	109,579	0	0
Outsourced Staff Salaries	0	259,200	316,008	400,992	197,194	231,826
POS Deployment Sales Commissions	0	135,505	160,879	190,301	35,966	40,178
General Operating Expenses	29,588	479,580	620,398	852,232	997,067	1,276,916
Maintenance Expenses	4,167	298,749	405,872	523,507	612,941	707,054
Depreciation	48,124	652,549	1,563,323	2,599,534	3,726,110	3,967,325
Total Operating Expenses	125,679	2,652,983	4,245,006	6,238,613	7,454,483	8,749,291
Profit Before Taxation						
EBT	(125,679)	851,124	514,614	(274,449)	(6,802)	(397,073)
Taxes						
Income Tax	0	127,669	77,192	0	0	0
Net Income	(125,679)	723,455	437,422	(274,449)	(6,802)	(397,073)
Reserve						
Net Profit Reserve for PD&E	0	500,000	437,422	0	0	0
Dividends						
Paid Dividends	0	0	0	0	0	0
Net Income after Reserve & Dividends	(125,679)	223,455	0	(274,449)	(6,802)	(397,073)

Balance sheet – Low case

ESAF Financial Model Feasibility Study for a BSC						
Survey Based						
SHOREBANK INTERNATIONAL						
	Investment 2011	2012	2013	Projected 2014	2015	2016
ST Assets						
Cash and cash equivalents	(2,465)	(3,003,159)	(6,658,873)	(10,864,572)	(8,575,930)	(6,526,767)
Other Short Term Assets						
LT Assets						
Assets Investment	2,924,910	7,429,278	12,535,259	18,551,430	19,982,095	21,503,184
Cumulative Depreciation	(48,124)	(700,673)	(2,263,996)	(4,863,529)	(8,589,639)	(12,556,964)
Other Long Term Assets						
Total Assets	2,874,321	3,725,445	3,612,390	2,823,328	2,816,526	2,419,453
ST Liabilities						
Income Tax Payable	0	127,669	77,192	0	0	0
LT Liabilities						
Debt	0	0	0	0	0	0
Bonds	0	0	0	0	0	0
Total liabilities	0	127,669	77,192	0	0	0
Equity						
Share Capital	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000
Net Income Reserve	0	500,000	437,422	0	0	0
Retained Income / (Loss) Previous Years	0	(125,679)	97,777	97,777	(176,672)	(183,474)
Retained Income / (Loss)	(125,679)	223,455	0	(274,449)	(6,802)	(397,073)
Total Equity	2,874,321	3,597,777	3,535,198	2,823,328	2,816,526	2,419,453
Total Liabilities & Shareholders Equity	2,874,321	3,725,445	3,612,390	2,823,328	2,816,526	2,419,453

Cash flow statement – Low case

ESAF Financial Model Feasibility Study for a BSC							
Survey Based							
		2011	2012	2013	2014	2015	2016
Operating Activities	Net Income	(125,679)	223,455	0	(274,449)	(6,802)	(397,073)
	<u>Adjustment for entries that do not involve cash:</u>						
	Depreciation	48,124	652,549	1,563,323	2,599,534	3,726,110	3,967,325
	Capital Reserve						
	Cash Flow before Changes in Working Capital	(77,555)	876,005	1,563,323	2,325,085	3,719,307	3,570,252
Changes in Working Capital							
	(Increase)/Decrease in operating assets						
	Other Short Term Assets	0	0	0	0	0	0
	(Decrease)/Increase in operating liabilities						
	Income Tax Payable	0	127,669	(50,477)	(77,192)	0	0
	Debt	0	0	0	0	0	0
	Bonds	0	0	0	0	0	0
	Cash Flow from Operating Activities	(77,555)	1,003,673	1,512,846	2,247,893	3,719,307	3,570,252
Investments							
	Investment in Fixed Assets	(2,924,910)	(4,504,368)	(5,105,981)	(6,016,171)	(1,430,665)	(1,521,090)
	Net Investment Activities	(2,924,910)	(4,504,368)	(5,105,981)	(6,016,171)	(1,430,665)	(1,521,090)
Financing							
	Equity	3,000,000	0	0	0	0	0
	Capital Reserve	0	500,000	(62,578)	(437,422)	0	0
	Net Cash from Financing	3,000,000	500,000	(62,578)	(437,422)	0	0
	Change in Cash	(2,465)	(3,000,695)	(3,655,714)	(4,205,699)	2,288,643	2,049,163
	Opening Cash balance	0	(2,465)	(3,003,159)	(6,658,873)	(10,864,572)	(8,575,930)
	Closing Cash Balance	(2,465)	(3,003,159)	(6,658,873)	(10,864,572)	(8,575,930)	(6,526,767)

Annexure B – Expected Case

Income Statement – Expected case

ESAF Financial Model Feasibility Study for a BSC						
Survey Based						
SHOREBANK INTERNATIONAL						
	Investment 2011	2012	2013	Projected 2014	2015	2016
Revenues						
Switching Operations	0	182,017	215,962	230,916	246,839	264,049
International Gateway	0	4,529,386	6,414,800	7,201,338	8,085,322	9,082,381
POS Rental & Acquiring	0	1,869,796	3,178,285	4,113,301	4,936,455	5,596,526
Total Revenues	0	6,581,199	9,809,047	11,545,556	13,268,616	14,942,956
Costs						
Switching Operations	0	120,141	143,369	153,405	164,144	175,635
International Gateway	0	1,614,924	2,381,968	2,691,040	3,043,727	3,444,956
POS Rental & Acquiring	0	831,380	1,249,889	1,428,319	1,632,224	1,865,234
Total Costs	0	2,566,445	3,775,226	4,272,763	4,840,095	5,485,825
Gross Profit	0	4,014,754	6,033,821	7,272,792	8,428,520	9,457,131
Other Revenues						
Other Revenues 1						
Other Revenues 2						
Non-Operative Revenues	0	0	0	0	0	0
Other Costs/Expenses						
Product Development	0	0	500,000	500,000	430,363	293,916
Other Costs/Expenses	0	0	500,000	500,000	430,363	293,916
Non-Operative Costs	0	0	500,000	500,000	430,363	293,916
Pre-Operating Profit	0	4,014,754	5,533,821	6,772,792	7,998,158	9,163,216
Operating Expenses						
BSC Staff Salaries	43,800	827,400	1,095,787	1,562,469	1,885,206	2,525,993
Management Bonus	0	0	82,740	109,579	156,247	188,521
Outsourced Staff Salaries	0	259,200	316,008	400,992	197,194	231,826
POS Deployment Sales Commissions	0	135,505	160,879	190,301	35,966	40,178
General Operating Expenses	29,588	479,580	620,398	852,232	997,067	1,276,916
Maintenance Expenses	4,167	303,138	414,848	542,069	636,511	741,092
Depreciation	48,124	652,898	1,567,867	2,608,842	3,744,184	3,990,604
Total Operating Expenses	125,679	2,657,721	4,258,526	6,266,483	7,652,375	8,995,128
Profit Before Taxation EBT	(125,679)	1,357,033	1,275,295	506,309	345,783	168,088
Taxes Income Tax	0	203,555	191,294	75,946	51,867	25,213
Net Income Net Income	(125,679)	1,153,478	1,084,001	430,363	293,916	142,875
Reserve Net Profit Reserve for PD&E	0	500,000	500,000	430,363	293,916	142,875
Dividends Paid Dividends	0	0	0	0	0	0
Net Income Net Income after Reserve & Dividends	(125,679)	653,478	584,001	0	0	0

Balance Sheet – Expected case

ESAF Financial Model Feasibility Study for a BSC						
Survey Based						
SHOREBANK INTERNATIONAL						
	Investment 2011	2012	2013	Projected 2014	2015	2016
ST Assets						
Cash and cash equivalents	(2,465)	(2,517,802)	(5,506,017)	(9,143,977)	(7,014,834)	(4,772,862)
Other Short Term Assets	0	0	0	0	0	0
LT Assets						
Assets Investment	2,924,910	7,450,178	12,578,000	18,639,817	20,094,332	21,665,269
Cumulative Depreciation	(48,124)	(701,022)	(2,268,888)	(4,877,731)	(8,621,915)	(12,612,519)
Other Long Term Assets	0	0	0	0	0	0
Total Assets	2,874,321	4,231,355	4,803,094	4,618,109	4,457,583	4,279,888
ST Liabilities						
Income Tax Payable	0	203,555	191,294	75,946	51,867	25,213
LT Liabilities						
Debt	0	0	0	0	0	0
Bonds	0	0	0	0	0	0
Total liabilities	0	203,555	191,294	75,946	51,867	25,213
Equity						
Share Capital	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000
Net Income Reserve	0	500,000	500,000	430,363	293,916	142,875
Retained Income / (Loss) Previous Years	0	(125,679)	527,800	1,111,800	1,111,800	1,111,800
Retained Income / (Loss)	(125,679)	653,478	584,001	0	0	0
Total Equity	2,874,321	4,027,800	4,611,800	4,542,163	4,405,716	4,254,675
Total Liabilities & Shareholders Equity	2,874,321	4,231,355	4,803,094	4,618,109	4,457,583	4,279,888

Cash flow Statement – Expected case

ESAF Financial Model Feasibility Study for a BSC							
Survey Based							
		2011	2012	2013	2014	2015	2016
Operating Activities	Net Income	(125,679)	653,478	584,001	0	0	0
	<u>Adjustment for entries that do not involve cash:</u>						
	Depreciation	48,124	652,898	1,567,867	2,608,842	3,744,184	3,990,604
	Capital Reserve						
	Cash Flow before Changes in Working Capital	(77,555)	1,306,376	2,151,867	2,608,842	3,744,184	3,990,604
Changes in Working Capital	(Increase)/Decrease in operating assets						
	Other Short Term Assets	0	0	0	0	0	0
	(Decrease)/Increase in operating liabilities						
	Income Tax Payable	0	203,555	(12,261)	(115,348)	(24,079)	(26,654)
	Debt	0	0	0	0	0	0
	Bonds	0	0	0	0	0	0
	Cash Flow from Operating Activities	(77,555)	1,509,931	2,139,606	2,493,495	3,720,106	3,963,949
Investments	Investment in Fixed Assets	(2,924,910)	(4,525,268)	(5,127,822)	(6,061,817)	(1,454,515)	(1,570,937)
	Net Investment Activities	(2,924,910)	(4,525,268)	(5,127,822)	(6,061,817)	(1,454,515)	(1,570,937)
Financing	Equity	3,000,000	0	0	0	0	0
	Capital Reserve	0	500,000	0	(69,637)	(136,447)	(151,041)
	Net Cash from Financing	3,000,000	500,000	0	(69,637)	(136,447)	(151,041)
	Change in Cash	(2,465)	(2,515,337)	(2,988,215)	(3,637,960)	2,129,144	2,241,971
	Opening Cash balance	0	(2,465)	(2,517,802)	(5,506,017)	(9,143,977)	(7,014,834)
	Closing Cash Balance	(2,465)	(2,517,802)	(5,506,017)	(9,143,977)	(7,014,834)	(4,772,862)

Annexure C – High Case

Income statement – High case

ESAF Financial Model Feasibility Study for a BSC						
Survey Based						
SHOREBANK INTERNATIONAL						
	Investment 2011	2012	2013	Projected 2014	2015	2016
Revenues						
Switching Operations	0	265,969	317,006	339,033	362,524	387,832
International Gateway	0	6,266,837	8,457,789	9,505,582	10,687,680	12,026,958
POS Rental & Acquiring	0	1,997,965	3,345,097	4,303,926	5,154,293	5,845,463
Total Revenues	0	8,530,771	12,119,892	14,148,541	16,204,497	18,260,253
Costs						
Switching Operations	0	178,908	214,100	229,087	245,123	262,283
International Gateway	0	1,947,152	2,756,827	3,114,780	3,522,696	3,987,719
POS Rental & Acquiring	0	895,465	1,333,295	1,523,631	1,741,143	1,989,703
Total Costs	0	3,021,524	4,304,222	4,867,498	5,508,962	6,239,704
Gross Profit	0	5,509,247	7,815,671	9,281,043	10,695,534	12,020,548
Other Revenues						
Other Revenues 1						
Other Revenues 2						
Non-Operative Revenues	0	0	0	0	0	0
Other Costs/Expenses						
Product Development	0	0	500,000	500,000	500,000	500,000
Other Costs/Expenses						
Non-Operative Costs	0	0	500,000	500,000	500,000	500,000
Pre-Operating Profit	0	5,509,247	7,315,671	8,781,043	10,195,534	11,520,548
Operating Expenses						
BSC Staff Salaries	43,800	827,400	1,095,787	1,562,469	1,885,206	2,525,993
Management Bonus	0	0	82,740	109,579	156,247	188,521
Outsourced Staff Salaries	0	259,200	316,008	400,992	197,194	231,826
POS Deployment Sales Commissions	0	135,505	160,879	190,301	35,966	40,178
General Operating Expenses	29,588	479,580	620,398	852,232	997,067	1,276,916
Maintenance Expenses	4,167	316,305	446,361	592,753	707,230	837,981
Depreciation	48,124	653,943	1,581,863	2,640,376	3,794,046	4,060,032
Total Operating Expenses	125,679	2,671,933	4,304,035	6,348,702	7,772,955	9,161,445
Profit Before Taxation						
EBT	(125,679)	2,837,314	3,011,636	2,432,342	2,422,580	2,359,104
Taxes						
Income Tax	0	425,597	451,745	364,851	363,387	353,866
Net Income	(125,679)	2,411,717	2,559,890	2,067,490	2,059,193	2,005,238
Reserve						
Net Profit Reserve for PD&E	0	500,000	500,000	500,000	500,000	500,000
Dividends						
Paid Dividends	0	0	0	0	0	0
Net Income after Reserve & Dividends	(125,679)	1,911,717	2,059,890	1,567,490	1,559,193	1,505,238

Balance sheet – High case

ESAF Financial Model Feasibility Study for a BSC						
Survey Based						
SHOREBANK INTERNATIONAL						
	Investment 2011	2012	2013	Projected 2014	2015	2016
ST Assets						
Cash and cash equivalents	(2,465)	(1,099,176)	(2,646,458)	(4,678,597)	(876,739)	2,983,454
Other Short Term Assets						
LT Assets						
Assets Investment	2,924,910	7,512,878	12,728,062	18,881,172	20,431,089	22,126,644
Cumulative Depreciation	(48,124)	(702,067)	(2,283,929)	(4,924,306)	(8,718,351)	(12,778,383)
Other Long Term Assets						
Total Assets	2,874,321	5,711,635	7,797,674	9,278,270	10,835,999	12,331,715
ST Liabilities						
Income Tax Payable	0	425,597	451,745	364,851	363,387	353,866
LT Liabilities						
Debt	0	0	0	0	0	0
Bonds	0	0	0	0	0	0
Total liabilities	0	425,597	451,745	364,851	363,387	353,866
Equity						
Share Capital	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000
Net Income Reserve	0	500,000	500,000	500,000	500,000	500,000
Retained Income / (Loss) Previous Years	0	(125,679)	1,788,038	3,845,929	5,413,419	6,972,612
Retained Income / (Loss)	(125,679)	1,911,717	2,059,890	1,567,490	1,559,193	1,505,238
Total Equity	2,874,321	5,286,038	7,345,929	8,913,419	10,472,612	11,977,850
Total Liabilities & Shareholders Equity	2,874,321	5,711,635	7,797,674	9,278,270	10,835,999	12,331,715

Banking services company

Cash flow statement – High case

ESAF Financial Model Feasibility Study for a BSC							
Survey Based							
		2011	2012	2013	2014	2015	2016
<i>Operating Activities</i>	Net Income	(125,679)	1,911,717	2,059,890	1,567,490	1,559,193	1,505,238
	<u>Adjustment for entries that do not involve cash:</u>						
	Depreciation	48,124	653,943	1,581,863	2,640,376	3,794,046	4,060,032
	Capital Reserve						
	Cash Flow before Changes in Working Capital	(77,555)	2,565,660	3,641,753	4,207,867	5,353,238	5,565,270
<i>Changes in Working Capital</i>	(Increase)/Decrease in operating assets						
	Other Short Term Assets	0	0	0	0	0	0
	(Decrease)/Increase in operating liabilities						
	Income Tax Payable	0	425,597	26,148	(86,894)	(1,464)	(9,521)
	Debt	0	0	0	0	0	0
	Bonds	0	0	0	0	0	0
	Cash Flow from Operating Activities	(77,555)	2,991,257	3,667,901	4,120,973	5,351,774	5,555,749
<i>Investments</i>	Investment in Fixed Assets	(2,924,910)	(4,587,968)	(5,215,184)	(6,153,111)	(1,549,916)	(1,695,555)
	Net Investment Activities	(2,924,910)	(4,587,968)	(5,215,184)	(6,153,111)	(1,549,916)	(1,695,555)
<i>Financing</i>	Equity	3,000,000	0	0	0	0	0
	Capital Reserve	0	500,000	0	0	0	0
	Net Cash from Financing	3,000,000	500,000	0	0	0	0
	Change in Cash	(2,465)	(1,096,711)	(1,547,282)	(2,032,138)	3,801,858	3,860,193
	Opening Cash balance	0	(2,465)	(1,099,176)	(2,646,458)	(4,678,597)	(876,739)
	Closing Cash Balance	(2,465)	(1,099,176)	(2,646,458)	(4,678,597)	(876,739)	2,983,454

Footnotes - Explanation of selected technical terms

ⁱ EMV stands for Europay, MasterCard and VISA, a global standard for inter-operation of integrated circuit cards (IC cards or "chip cards") and IC card capable point of sale (POS) terminals and automated teller machines (ATMs), for authenticating credit and debit card transactions. The EMV standards define the interaction at the physical, electrical, data and application levels between IC cards and IC card processing devices for financial transactions. See www.emvco.com for additional EMV related information.

ⁱⁱ In cryptography, Triple DES is the common name for the Triple Data Encryption Algorithm (TDEA or Triple DEA) block cipher, which applies the Data Encryption Standard (DES) cipher algorithm three times to each data block. Because of the availability of increasing computational power, the key size of the original DES cipher was becoming subject to brute force attacks; Triple DES was designed to provide a relatively simple method of increasing the key size of DES to protect against such attacks, without designing a completely new block cipher algorithm. See www.tropsoft.com/strongenc/des3.htm for additional information regarding Triple DES.

ⁱⁱⁱ Public Key Infrastructure (PKI) is a set of hardware, software, people, policies, and procedures needed to create, manage, distribute, use, store, and revoke digital certificates.[1] In cryptography, a PKI is an arrangement that binds public keys with respective user identities by means of a certificate authority (CA). The user identity must be unique within each CA domain. The binding is established through the registration and issuance process, which, depending on the level of assurance the binding has, may be carried out by software at a CA, or under human supervision. The PKI role that assures this binding is called the Registration Authority (RA). The RA ensures that the public key is bound to the individual to which it is assigned in a way that ensures non-repudiation.

The term trusted third party (TTP) may also be used for certificate authority (CA). The term PKI is sometimes erroneously used to denote public key algorithms, which do not require the use of a CA.

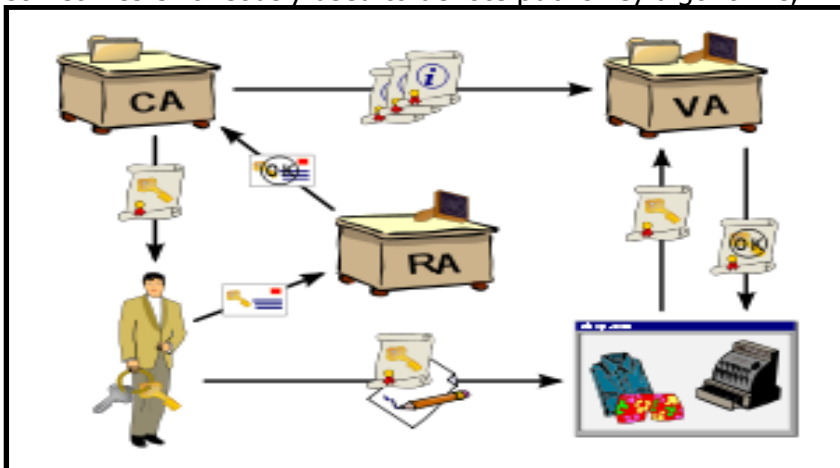


Figure Error! Main Document Only.: Diagram of Public Key Infrastructure

^{iv} In cryptography, Derived Unique Key Per Transaction (DUKPT) is a key management scheme in which for every transaction, a unique key is used which is derived from a fixed key. Therefore, if a derived key is compromised, future and past transaction data are still protected since the next or prior keys cannot be determined easily. DUKPT is specified in ANSI X9.24 part 1.

DUKPT allows the processing of the encryption to be moved away from the devices that hold the shared secret. The encryption is done with a derived key, which is not re-used after the transaction. DUKPT is used to encrypt electronic commerce transactions. While it can be used to protect information between two companies or banks, it is typically used to encrypt PIN information acquired by Point-Of-Sale (POS) devices.

DUKPT is not itself an encryption standard; rather it is a key management technique. The features of the DUKPT scheme are:

- enable both originating and receiving parties to be in agreement as to the key being used for a given transaction,
- each transaction will have a distinct key from all other transactions, except by coincidence,
- if a present key is compromised, past and future keys (and thus the transactional data encrypted under them) remain uncompromised,
- each device generates a different key sequence,
- originators and receivers of encrypted messages do not have to perform an interactive key-agreement protocol beforehand.

^v Transport Layer Security (TLS) and its predecessor, Secure Sockets Layer (SSL), are cryptographic protocols that provide communication security over the Internet.[1] TLS and SSL encrypt the segments of network connections above the Transport Layer, using asymmetric cryptography for privacy and a keyed message authentication code for message reliability.

Several versions of the protocols are in widespread use in applications such as web browsing, electronic mail, Internet faxing, instant messaging and voice-over-IP (VoIP).

TLS is an IETF standards track protocol, last updated in RFC 5246 and is based on the earlier SSL specifications developed by Netscape Corporation.