Information Technology Influence on Bank For Business

Ramaj Xh. Vehbi[1], Hasani I. Vjollca[2] and Shabani H. Enver[3]

***Abstract* – Enterprises in general and particular financial institutions rely on information technology (IT) services to provide the infrastructure required to support their business goals. In order to fulfill these goals, the IT services must be available and should have the capacity to grow smoothly as business requirements expand. In this aspect to verify the influence of information technology it's necessary to make a general analysis of business and technological process on Bank for Business as a research case.**

***Keywords* – Information technology, bank for business, banking software, service, and architecture.**

I. INTRODUCTION

The purpose of this technical analysis on IT infrastructure in (BFB) is simply led to the improvement and development of IT infrastructure in (BFB), and in the development and promotion of banking services in general. A typical enterprise-level organization's data center contains a complex mix of vendor hardware and software as well as technology professionals who provide services throughout the IT life cycle. These components need to be integrated to ensure that they work well together. The components range from networking devices to application servers to storage devices, and each includes the necessary software components. Each of these components has a large number of potentially valid configurations, but only a few of these configurations result in an integrated, functional system. Determining the right configurations and then implementing and maintaining them it's not an easy task but its understood that finding the right technical solution it will influence in particular on information technology department and in general in our institution as in this case Bank for Business (BFB). In General Information Technology in a explicit way influence the business flow and business operations on Banka for Business.

However, it's evident the presence of influence of information technology in all business aspects and especially it would be emphasized here on automation of business process and business development of Bank for Business.

In the cycle of information technology services should have considered various services and equipment, so each service has different orientations for the planning, design and operation in the client needs.

[1]**Ramaj Vehbi** - Faculty of Economy, Magisterial Pristine-Fushe Kosovo,10000, Pristine,Kosovo,E-mail: vehbiramaj@yahoo.com
[2]**Hasani Vjollca**- Faculty of Economy, Magisterial Pristine-Fushe Kosovo, 10000 Pristine, Kosovo, E-mail: vjollcav@gmail.com
[3]**Shabani Enver**-Faculty of Economy, Magisterial Pristine-Fushe Kosovo,10000Pristine,Kosovo,E-mail:enver.shabani@gmail.com

TABLE I

ANALYSIS OF THE OVERALL ARCHITECTURE IS DONE IN THESE AREAS AGE LAYOUT DESCRIPTION.

Architecture	Description
Network and System Infrastructure	Design factors supporting the devices of infrastructure in order to have effective communication with the organization
Security Architecture	Security Strategy including security domains, policies and procedures
IT Management	Factors of Information Technology Department Management
Storage Architecture	Factors affecting the unity and centralization of data storage networking
Core Banking Software	Improvements and updates for the core software infrastructure

II. NETWORK AND SYSTEM INFRASTRUCTURE

A. Network architecture definition

Network architecture combines a set of technological solutions in a complex environment that contains available, secure, flexible, manageable, and achievable services. Network device operate different levels of OSI (Open System Interconnection).The level of the enterprise network architecture is generally composed of the following elements and technologies.

B. Local Area Network segments

Devices that are used for switching from the second level of the OSI model are from well known brand name 3 Com with in models: XM 3 com 3300 switch, 3 Com 4250 switch, 3 Com 4226 switch T – those devices fulfills the current needs and requirements in (BFB).

Switches are connected with vertical cable Fast Ethernet ports while on horizontal cable are connected all other devices as it is required by network standards and regulations.

Those equipments support Wireless LAN technology meaning that has the possibility of traffic optimize and also increasing the level of security for network infrastructure.

TABLE II

SERVICES AND EQUIPMENT ARE INCLUDED IN THIS WORK ARE:

Service	Technologies
Network Devices	Routers, switches, virtual local area network (VLAN), load balancers
Computing Devices	Server classes, hardware requirements
Storage Devices	Direct-attached storage (DAS), network-attached storage (NAS), storage area network (SAN)
Deployment Services	Installing and configuring operating systems WinPE, SysPrep, and RIS.
Network Services	DNS, DHCP, and WINS.
Firewall Services	Perimeter and internal firewalls and Web proxy service (ISA Server).
Directory Service	Active Directory® directory service.
File and Print Services	Distributed File System (DFS), printing configurations, and print devices.
Data Services	Microsoft SQL Server, Windows clusters.
Web Application Services	Microsoft Internet Information Services (IIS)
Infrastructure Management Services	Debug facilities, deployment capabilities, and remote management and tools.
Backup and Recovery	Data and systems backup and recovery infrastructure.
Certificate Services	Public key infrastructure (PKI).
Remote Access Services	Site-to-site virtual private network (VPN), Client VPN, routing and remote access service (RRAS), Internet authentication service (IAS).
Middleware Services	.NET Framework.
Messaging Services	Microsoft Exchange Server 2003

III. WIDE AREA NETWORKS

Bank for Business branches are connected with HQ with 256 kbps speed of connection, sub branches are connected with 128 kbps speed, while HQ has 1 mbps throughput.

Wide area network in BPB is using wireless technology. Frequencies that are used to connect branches are 5 GHZ and sub branches are 2.4 GHz.

Routing devices are from well know brand Cisco Systems, Wide Area Network is managed by internet service provider. Traffic between branches, sub branches with HQ is encrypted.

Regarding the wireless technology for the banking purposes is not one of the best technical solutions if we consider rehabilitees, security and confidentiality factors but for the moment this is the only available solution and as it is right knows it is a good choice of components and technology regarding the elements mention above.

Regarding WAN management it must have some changes specifically Routing devices must be managed by BPB IT department while wireless communication lines can be managed by internet service provider.

IV. SYSTEM DEFINITION

C. Workstations:

(BFB) have various computer equipment "brand-name" and "non-brand name" with various configurations, which affects more negatively in the administrator and maintenance of such equipment. This is a critical point in the infrastructure.

It is imperative that configuring with 64 MB RAM memory must be updated with at least 256 MB. Disk Space does not appear as critical points in the case of infrastructure.

From the perspective of operating systems on workstation computers BPB use Microsoft Windows 2000 and Microsoft Windows XP Professional, those operating systems are fulfilling are need for Core Banking Software requirements.

In this case it’s preferable to have the technical notes and keep books about repairs on equipment managed by IT Department, same time it’s recommended to have one operating system for all workstation in our case best solution is Microsoft Windows XP Professional.

D. Servers

Currently Bank for Business has 2 servers dedicated and 2 workstations adapted for servers use and one Cisco ROUTER3600.

First Server has DNS, DHCP, and Active Directory Roles; second one is database server while other 2 workstations have firewall service and old core system installed.

All those servers use Microsoft Windows Server 2003.

In order to have better service, performance and security it is necessary to made an overall systems review.

This review was made based on the three main principles: confidentiality, integrity and availability including the infrastructure on hardware, network and software platform.

It is recommended to be made the standardization of all the equipments including the personal computers, servers and network. The standardization will help your organization in reduce the costs in maintenance and better services.

Due to the fact that now we have advanced physical gigabit LAN, to have it fully functional, would need for all the computers and servers to purchase network gigabit cards of network and one gigabit network switch.

For security reasons it is mandatory to have licensed antivirus.

For business contingency i would recommend the following solutions:

- For our main current server i recommend to have those rules: Active Directory; DNS/WINS service; DHCP Service
- Antivirus Server,
- Current MSISA Server to have same rule as it has right know,
- New server, i recommend to have those rules: Database Server; File Share Server.

For illustration purposes below it is presented the current situation of IT infrastructure on the bank for business.

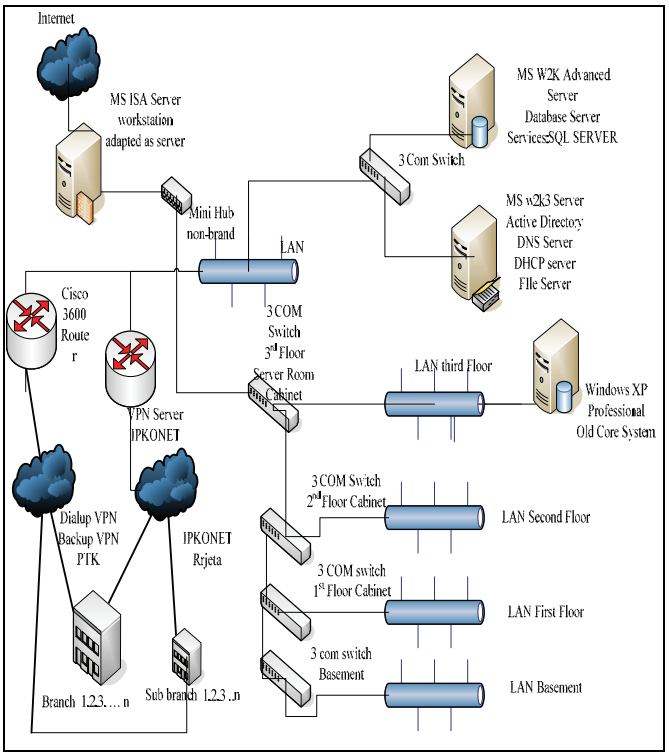

Fig. 1.Current situation of IT infrastructure

V. Security Architecture

The security considerations facing enterprise organizations and their IT (information technology) systems are considerable, with many design issues to be studied and resolved. In order to address security design issues appropriately, however, security architecture must first be looked at from a business need perspective.

People, processes, and technologies are interdependent, and the potential for a security breach increases with a deficiency in any of these elements

To determine how the security is function the most important is to define the architecture security values.

E. Assets Defined

Security architectures are designed to protect the assets of an organization, where assets are defined as resources that provide value to the organization. While there are many types of assets, this blueprint focuses on only two types of IT assets: data and tiers.

VI. Standards and Guidelines

ISO 17799 is an internationally accepted set of controls comprising best practices in information security. This standard was based on and supersedes the British standard BS 7799.

Security except all other security elements those standards mandating use of these services:

- Firewall software
- Internet Protocol Security (IPSec) software
- Anti-virus software
- Cryptography software

The following figure illustrates as a big picture how would be a proper IT (information technology) security program using available technologies for mitigating risks at each of the layers identified most of all it security programs.

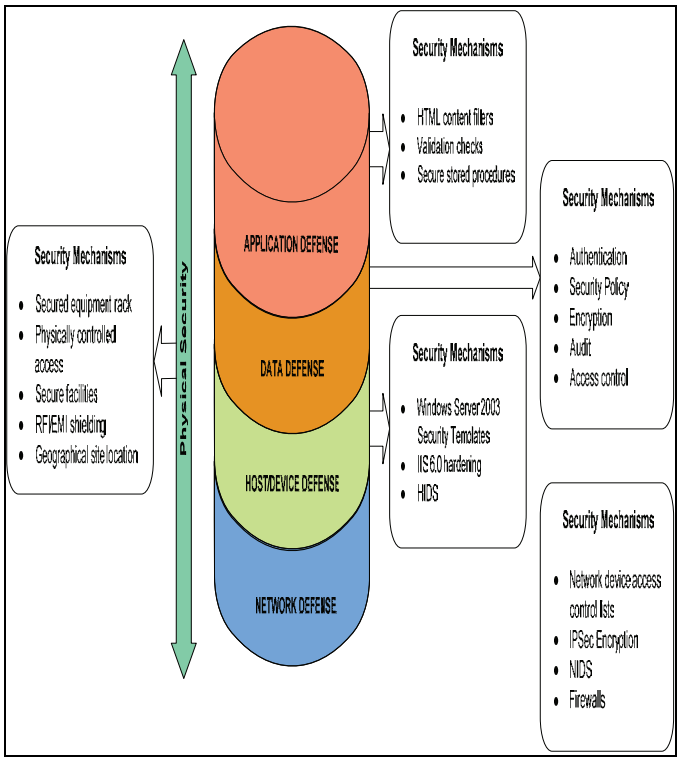

Fig.2.Security program Show Romanization

V. SECURE ACCESS TO LOCAL NETWORK

F. Dialup

A link to existing access from outside the corporate network based on discussions with workers who have made information technology service but there is certainly information technology services has no access to this service so that it is not known what equipment configuration have been essential that due security that IT workers have access to this router. Sometime where should be a policy is existing security. In the same time it dials up connection serves as backup in case of fall of the provider VPN connection. IT Services has no access to the router or the IPKO which represents the critical point in our security.

The following illustrations presents how it is connected the dialup connection:

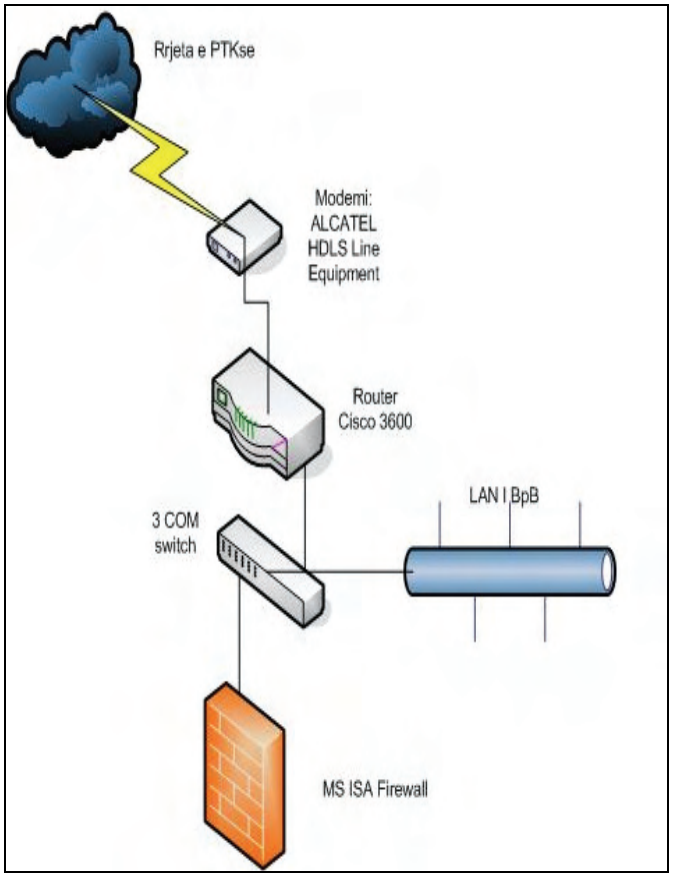

Fig.3.Conected to dialup connection

VII. CONCLUSION

The purpose of this paper is to the role and significance of information technology in the companies such as in this case,Bank for Business. Therefore the purpose of this analysis is that the impact on improving and developing infrastructure in Information Technology for Business Bank with minimum costs that directly affects the development of services and efficiency in the affairs of the bank, the documentation department of information technology, assistance for planning and design of infrastructure.In general, the network is currently operational infrastructural but wanted to make some visible correction which would help services, as well as security architecture is organized on a functional level request but require fundamental changes in architecture because of several critical security releases , a data storage architecture does not exist at all, the banking software infrastructure is well,organized!

In order to clarify the list of critical points that have emerged from this technical analysis we ranked them in several levels ofactions:

-Necessarily denoting actions that require changings in infrastructure.

-Actions for optimum represent actions which help optimazing services.

-Actions that represent continuous action that must be maintained continuously.

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