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An Investigation into Strategies Aimed at Reducing ICT Costs at the Bank of Zambia

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Abstract: The purpose of this study was to investigate strategies aimed at reducing ICT costs in financial institutions, using the Bank of Zambia as a case study. ICT has become one of the largest components of capital and operating expenditure in most institutions including the Bank of Zambia. In the year 2011 alone, the Bank of Zambia spent about 41% of the total capital expenditure of the budget on ICT. The study found that the causes of rising ICT costs in the Bank of Zambia included investment in computer hardware, computer software and ICT professional services, payments for licenses, annual maintenance and support, training, staff benefits and emoluments, consultancy and upgrade costs on ICT. In terms of reducing ICT costs at the Bank of Zambia, it is recommended to; implement cloud computing, implement anytime, anywhere computing environment, connect bank to strategic economic agents, rationalize the annual and maintenance licenses of software and hardware and use an integrated Enterprise Resource Planning (ERP) system.

Key words: ICTs, ICT costs, financial institutions, Bank of Zambia (BOZ), cost reduction strategies, Zambia

INTRODUCTION

Reducing costs is an important undertaking for any organization in order to create and sustain competitive advantage. Deployment and management costs of ICT business applications, infrastructure and professional services use up 30-45% of the Bank of Zambia budget. Considering the fact that resources are constrained, this study endeavored to investigate factors responsible for high ICT costs and then recommend strategies, best practices and management technologies to help reduce the ICT costs in the organization. According to the Bank of Zambia Strategic Plan 2012-2015, one of the reasons for under achieving in the bank's previous strategic period of 2008-2011 was due to lucky of finances. The bank was constrained financially in the aftermath of the global financial crisis of 2008. The bank's major source of revenue, being foreign exchange interest earnings reduced from about US$40 million per annum to about US$5 million due to plummeting of global interest rates from about 3-4 to 0.1%. Therefore, the need to find business areas where to reduce costs while increasing business value is abundant and ICT is that one area. Adopting effective strategies, best practices and management software technologies to optimize the organization's ICT infrastructure could help reduce ICT costs.

Information and Communications Technology (ICT): ICT it refers to technologies that provide access to information through telecommunications. It is similar to Information Technology (IT) but focuses primarily on communication technologies. This includes the internet, wireless networks, cell phones and other communication mediums (TechTerms, 2010). In other words, ICT consists of IT as well as telecommunication, broadcast media, all types of audio and video processing and transmission and network based control and monitoring functions.

ICT has of late become a very important component in almost any organization. According to Laudon and Laudon (2008), there are four main reasons why ICT makes a difference in organisations.

The first reason is that ICT has become the largest component of capital investment for many firms. For instance in 2005, US firms alone spent nearly $1.8 trillion on IT and telecommunications equipment and software and this accounted for more than one-third of all capital invested in the United States and >50% of invested capital in information-intensive industries such as finance, insurance and real estate.

The second reason is that ICT is regarded as the foundation for doing business. For instance in the United Sates alone, it is approximated that over 23 million managers and over 113 million workers in the labor force rely on information systems every day to conduct

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business (USCB, 2003). Information technology is regarded as a foundation for business in the 21st century and beyond.

The third reason is that ICT is regarded as a very important tool for productivity. ICT is one of the most important tools along with innovations in organization and management and in fact, these innovations need to be linked together. A substantial and growing body of research suggests investment in ICT plays a critical role in increasing the productivity of firms and entire nations (Zhu *et al*., 2004).

And the fourth reason is that ICT is a corporate resource and as such information costs money; collecting raw data, storage and processing. Information should not be the resource that is managed in isolation but like other resources in the organization, it should be included in the overall strategic planning and management process.

The Bank of Zambia: The Bank of Zambia (BOZ) is the central bank of the Republic of Zambia that was established by an act of Parliament under the Bank of Zambia Act of 1964. The functions of BOZ includes ensuring appropriate monetary and supervisory policies formulation and implementation, to act as the banker and fiscal agent of the government, to license, regulate and supervise banks and financial service institutions, to manage the banking, currency and payment systems operations of the Bank of Zambia, to ensure the provision of an efficient and effective service to commercial banks, non-bank financial institutions, government and other users (Bank of Zambia Strategic Plan in 2012).

The ICT Department in the Bank of Zambia: The primary role of the ICT department is to enable the bank to meet its business needs and policy decisions through the use of ICT. The department, therefore performs the following roles:

- Provision and maintenance of ICT architectures, infrastructures and solutions
- Operation and management of the bank's ICT facilities and resources in a secure manner
- Enabling through training, the use ICT systems in the bank
- Advise the bank on the appropriate and benefits offered by current and emerging technologies

The main functions of the ICT department are to administer the following:

- To preserve the confidentiality of the bank's ICT assets by establishing and maintaining an ICT security management standards and procedures
- To maintain an effective internal control and monitoring programme in order to ensure ICT remains compliant with applicable laws, regulations and industry standards
- To define and implement a strategy for effective education of all users of ICT systems in the bank
- To establish and maintain an accurate hardware and software configuration repository in order to ensure all changes are handled in a controlled manner
- To develop and maintain an ICT service continuity plan that provides for regular testing and periodic training
- To provide advisory services to the bank on the optimal business information architecture model and its utilization
- To undertake periodic business process reviews with other business units in the bank

The research presented in this study highlights ICT costs in financial institution with Bank of Zambia as a case study and proposes some cost reduction strategies.

ICT COST REDUCTION STRATEGIES

This research draws on the importance of reducing ICT costs and the more specific literature on ICT costs reducing strategies. In this study, researchers briefly survey various ICT cost reduction strategies proposed in literature as they apply to the analysis. Researchers first of all try and look at the term cost what it is as it relates to the study.

ICT costs: A cost is defined as the amount of cash or cash equivalent or the fair value of other consideration given to acquire an asset at the time of its acquisition or construction (Anonymous, 2009). At the simplest level, cost includes two components, quantity used and price. Cost is also defined as a resource sacrificed or foregone to achieve a specific objective (Horgren *et al*., 1994). Webster's dictionary defines cost as something given up in exchange. Costs are often measured in monetary amounts, such as United States dollars (US$) or Zambian Kwacha that must be paid to acquire goods and services.

An important part of the managerial task is to ensure that operations, projects, processes and costs are under control and that the organization and its constituent parts work efficiently towards agreed objectives (Lucey, 2009). ICT costs contribute significantly to a company's total overhead cost structure and sometimes may even affect an organization's competitive advantage and in uncertain, challenging and turbulent economic times, like the previous global crunch, further cutting of ICT costs is a

requirement for survival for many companies (Cassidy and Cassidy, 2010). The efficient and effective management of ICT costs to ensure that ICT is delivering cost effective services is critical for the organization's long term survival. Traditionally, ICT organizations are forced to reduce ICT costs for reasons such as enterprise-wide cuts, short or long-term sales decreases (dwindling income), company competitive pressure, reduction in government or other sources of funding, need to reinvest in other areas, shifting business priorities, bankruptcy avoidance or even to combat the perception that ICT is overspending.

Rhodes (2012) makes the following observation about costs, he says costs have a tendency to rise when paradoxically, it is always an organization's need to keep it as low as possible. Specifically, there is a need to reduce the costs of existing services without sacrificing the current state of operations. He further makes the following recommendation, in realising cost savings, there are a few stringent boundary conditions that need to be met which further augment the complexity of the issue. The quality of the product, for instance should not suffer through cost cutting. At the same time, you want to avoid losing the best staff, putting good projects to a haltand impeding the continuity of business operations. The intricacy of the cost cutting problem is apparent.

Barna (2006) in his study concluded that IT costs include PC hardware, PC software, PC support, service deskand supporting server infrastructure. His study summarized the results of an independent research conducted during 2005 at 31 government, educational and private sector organizations in the United States. The analysis compared best practice adoption rates to IT support costs and links those costs to management software technologies used at these organizations. The information in the case study can be used to develop cost reduction strategies at virtually any organization.

Reduction strategies: It has been argued that the most important attribute to an organization's growth and prosperity is the ability to gain and retain competitive advantage. One way in which an organization can do this is through what are known as strategic initiatives. MacMillan (1983) defines strategic initiative as the ability to capture control of strategic behavior in the industries in which an organization competes. Porter (1985) describes the concept of competitive advantage as the essence of competitive strategy and he lists down three competitive strategies that organizations can use to gain competitive advantage and among them is the cost reduction strategy. The other two are innovation and quality enhancement. The cost reduction strategy aims at gaining competitive advantage by being the lowest cost producer.

The need to reduce ICT costs while increasing business value is thus a necessity. A multitude of options exists to reduce ICT expenditure with several overall cost reduction strategies being very traditional. Unfortunately, no single prescription works for all organizations to reduce costs. It is important to select the combination of cost reduction strategies that make sense for the organization and culture while moulding and accomplishing the actions within the unique business environment. There are specific cost reduction tactics to be employed in various areas of ICT. However, several overarching cost reduction strategies affect all areas of ICT. As a starting point, ICT can be broken into its major components as: Business applications, technical infrastructure, ICT processesand ICT organization (Cassidy and Cassidy, 2010). There are several overarching cost reduction strategies that affect all areas of ICT. This study shall endeavor to adopt and highlight strategies proposed by Cassidy and Cassidy (2010) in their book entitled business and economics. Cassidy and Cassidy (2010) recommends the following among the many cost reduction strategies.

Look at ICT cost reduction holistically: Instead of taking a reactive approach to reducing ICT costs, management must take a strategic approach to cost reduction by reviewing the total costs and the overall impact on the business. As such, management must view ICT cost reduction within the context of overall business costs. Although, ICT savings are an important goal, caution must be observed not to affect business cost-saving efforts during the process of reducing ICT costs. The challenge is to know where the key opportunities exist.

Make sure the technology supports your strategy: Technology is great. However, improperly implemented technology can be costly and ineffective. People can become infatuated with the attraction of the latest technology without having a valid business purpose. Some companies jump to the conclusion that implementing technology solves everything. However, technology might not always support the business strategy properly and cost effectively.

Have an eye on the long haul: Although, almost any software would work in the short run, in the long run an organization might see a difference in total costs, including business process inefficiencies, software changes, support, interfaces, data corrections, training and errors. ICT must focus on both short-term cost reductions as well as long-term structural changes that would result in a lower total cost of ownership. Many technology improvements take a significant time to implement, such as a new enterprise system that has a

lower total cost of ownership. It takes time to achieve measurable and sustainable savings from some changes.

Change the game: Technology continues to advance. Oftentimes, implementing new technologies saves a considerable amount of money. Keep abreast technology trends and objectively evaluate the true financial impact that each trend will have on your environment. Frequently, new technology in the infrastructure gives you the ability to do more with significantly less money. However, implementing new technologies would only save money if ICT uses them to replace older, less cost-effective applications or if the technologies provide new functions.

Know the impact of business changes: Any change in a business can have an impact on ICT requirements and ICT services. It is important to know the business, the cost drivers and the applications and to understand the impact of the changes. If an institution changes its product and service mix, it could have a significant impact on ICT transactions, software requirements or hardware requirements. A CIO need to be involved with business discussions on how the business model will change and communicate the impact it has on the ICT environment and costs to minimize surprises down the road.

Delay costs if you can: Although, an institution must look at long-term strategic ramifications, it is often possible to delay or defer some costs without substantial strategic impact. Finding, the point of necessary investment is tricky when it comes to ICT investments. Business management must support the CIO when informed that this time has arrived. Costs can be delayed somewhat; there is need just to make sure costs are not delayed for too long.

An example of delaying costs is putting off desktop hardware and software upgrades. Many experts advise organizations that it is best practice to have a planned replacement cycle for hardware.

Simplify, standardizeand consolidate: Over time, ICT processes and environments can become too complicated. Typically, an institution accumulates a mix of hardware and software types and vendors over the years for a variety of reasons. The more variety an institution has, the more it costs to support. Whether it is multiple databases, releases of databases, operating systems, operating systems releases or version, brands of PCs, brands of servers, number of vendor packages or multiple data centers, variety costs money. Maintenance processes for each server type are different, each piece of software can react differently to different conditions, replacements parts are unique and more costlyand the list continues. Many institutions tackle projects to standardize and consolidate network, server, data center, applicationsand applications instances.

Only pay for what you use: Many institutions pay for services or products that they do not use. A few examples are software that is not implemented, excess capacity on hardware because the business thought it would growand extra software licenses to support overestimated user count. It does take a commitment of resources to understand what an institution have and to make that sure that it aligns invoices and agreements but it is worth the effort.

Consider green initiatives: Green ICT initiatives are good for environmental and cost-saving reasons because of reduced energy consumption. Automatically shutting down machines saves on power. Right-sizing power in a data center improves efficiencies. For example instead of using air conditioners or chillers, one institution found that by using an economizer which expelled hot air to the outdoors and drew outside air in, they were able to improve air quality and significantly reduce power consumption (Sherringham and Unhelkar, 2011).

Minimize waste: Waste is the result of using materials inefficiently. Waste costs are twofold you pay once for materials that you do not use and then a second time to get rid of them. By using raw materials more efficiently, recycling, reducing packaging and making production processes more efficient, you can save money and help protect the environment. Electronic waste (e-Waste) is waste resulting from discard electronic equipment such computer monitor, CPUs, keyboards printers, etc. These are best taken care of by engaging the original equipment manufacturers for recycling (Khetriwal *et al*., 2009).

Focus on what is important: In times of economic pressure, governance is critical. It is the organizational structure and process of making ICT investment, project and resource decisions and prioritization. Governance is usually the responsibility of a small group of ICT and business leaders. If an institution does not have a strong steering committee and project review and approval process in place, it needs to establish them now. Although, governance is not the sole responsibility of the

CIO, the CIO is paramount in making sure the governance process is effective or helping to fix it if it is not working properly. The disciplines and processes used in the down times would be worthwhile in the good times as making better investments never goes out of style. The governance members need to "just say no" to some of the ICT requests, particularly those that do not add value relative to the costs.

Manage and control ICTs: As technology has gotten easier to use and employees in every department have become more adept at using technology, ICT solutions have seeped into all corners of the organization. Although, this is often a good thing it can also be more challenging to institute reductions if ICT and technology investments and activities occur throughout the organization. In many institutions, ICT is compartmentalized into business units so that they are more responsive to business unit needs. During times of economic pressure, it is good to look at how ICT is organized and managed. Verify that ICT is organized in a cost effective manner. Although, centralizing ICT functions often reduces costs, the key is to manage and control all areas of ICT costs. This can be done organizing centrally or organizing in distributed fashion by business units (or a hybrid of the two) but manage the organization and costs instead of becoming complacent.

Reduce hidden ICT costs: Many organizations have hidden ICT costs or ICT functions conducted within a business area. These costs are often for pet projects, nonstandard software, hardware or tools for the business. Users often have an emotional attachment to the solution they have devised. The hidden ICT costs are in the business units' budgets and are not visible in the ICT budget. Although, it is politically difficult, ICT must identify, discussand reduce hidden ICT costs without interfering with the business benefits they have generated.

Cloud computing: According to Chou (2005), there are new imperatives for ICT today. The high price of purchasing, owning and operating on-premises software application shows no sign of abating. Gartner, the leading IT research firm, estimates that the annual cost of owning and managing software applications can be as much as 4 times the cost of the initial purchase. Companies can spend up to 75% of their total ICT budget just to maintain and run existing systems and infrastructure. Businesses have accepted these numbers as a cost of doing business (Gartner, 2007).

Traditionally, the only choice for organizations was to purchase, deploy and operate software applications on-premises, purchasing an on-premises solution. The key insight is that the internet provides an always-connected infrastructure that eliminates any value add for running and operating commodity software on-premises. Cloud vendors today have the scale to perform these tasks better and more cost effectively than an internal IT department. And they can aggregate many customers on a shared infrastructure, effectively amortizing costs across thousands or tens of thousands of clientsand dramatically improving both effectiveness and efficiency (Intacct, 2011).

MATERIALS AND METHODS

In this study, researchers report and give an analysis of the secondary data collected through extensive literature review of budgetary reports and Bank of Zambia annual reports. The research findings are then presented, discussed and the results are interpreted. The aim of this study was to investigate the strategies that would help the Bank of Zambia reduce high ICT costs. It involved collecting data from the budget reports and the Bank of Zambia annual reports for the period 2004-2011. The budgetary figures were consolidated in order to derive trends. Therefore, the research strategies for this study involved both a qualitative investigation through extensive literature review and observation of the organization. Both approaches were used so as to combine the advantages offered by either approach. Thus, this research was non-interventionist case study that employed both qualitative and quantitative means of data collection.

Data collection: Capital Expenditure (CAPEX) and Operating Expenditure (OPEX) costs are the factors influencing high ICT costs in the Bank of Zambia. The organization is challenged with an increase in the business applications, ICT infrastructureand numerous ICT processes. Over the past 5 years or so, the Bank of Zambia ICT costs have been in the range from 14-40% of the annual budgets. In the year 2010, capital expenditure on ICT (computer hardware and software) amounted to 40.6% of the total revised budget (Bank of Zambia Revised Budget 2011). Compounded with the rising costs of ICT, the Bank of Zambia has been experiencing dwindling income. Because most of the ICT depreciates with time, the maintenance and support increase the costs of management. Foreign exchange rates have a bearing on the costs procuring most ICT assets and services since, they must be paid for in US dollars. The depreciation of the Kwacha means that the organization must pay more than that which was budgeted for.

The costs of ICT hardware, software and professional services that Bank of Zambia incurs are usually priced in United States dollars. Data on initial costs for most ICT hardware and software is held in the general ledger of the Sun Systems, a business accounting management system. However, the accounting system is a multicurrency system and has data converted to the local currency, the Zambian Kwacha.

A typical Capital Expenditure (CAPEX) budget in the Bank of Zambia comprises the items such as renovations project, plant and machinery, office equipment, computer hardware, motor vehicles, fixtures and fittings, furniture and furnishings, firearms and security and other equipment. On the other hand, Operating Expenditure (OPEX) or simply recurrent expenditure is comprised of the following: Commission and fees paid on foreign operations, expenses on staff and other deposits, expenses on Open Market Operations (OMO), expenses for banknotes printing and distribution. Other operating expenses are personnel emoluments and other staff benefits, administrative expenses, assets management expensesand business development and operational expenses.

In the Bank of Zambia, ICT capital investment consists of hardware costs, software costs and telecommunication equipment costs. Other costs come from professional services, such as training and consultancy. These costs grew from 18% in 2006 to 41% in 2011. Table 1 shows the capital expenses on hardware and software over the period from the year 2005-2011.

In addition to capital expenditure, ICT recurrent expenditure involved largely costs on consultancy, training, annual licensing and maintenance.

Table 2 depicts ICT costs in terms of annual license fees for the sole purpose of maintenance and support for

Table 1: Bank of Zambia capital expenditure on hardware and software

	K'000				
Years	Hardware	Software	Total ICT cost	Overall CAPEX	Total ICT costs over CAPEX (%)
2005	2,921,308	1,438,675	4,359,983	11,834,553	37
2006	3,689,042	2,111,463	5,800,505	32,694,860	18
2007	6,176,147	1,800,000	7,976,147	27,863,604	29
2008	3,240,000	6,079,280	9,319,280	33,353,402	28
2009	1,320,000	4,000,000	5,320,000	37,289,036	14
2010	1,112,500	2,755,000	3,877,500	19,723,360	20
2011	3,603,500	1,375,736	4,979,236	12,262,061	41

Bank of Zambia revised budgets for the years 2005-2011

Table 2: ICT recurrent expenditure items, Bank of Zambia ICT license fees inventory spreadsheet as at year 2011

Software, hardware or telecommunication infrastructure	ICT process supported or narration	Approximate annual support and maintenance fee (US$)
RTGS (Real-Time Gross Settlement System)	Interbank payments and settlements/maintenance and support fees	200,711.00
T24 banking system	GRZ, commercial banks and staff accounts processing/18% of US$736,060 plus 5% annual increase	161,004.39
SWIFT	Secure international and local payment messages	151,901.50
Microsoft enterprise agreement	Group software licensing for microsoft products: Office, sharepoint, exchange, project, SQL server, windows 7, system center	118,665.66
NetApp filer	Data storage and computer management	114,837.73
Gilat internet access-direct satellite link	Direct internet access to internet backbone	74,644.52
NCompass encoder	Physical Interbank Clearing (PIC) of cheques	64,150.94
Oracle e-Business human resources management system	Human resources and payroll; self-service, talent management	53,590.94
Electronic Document Management System (EDMS)	Scan, document management, workflow, PDF	43,064.15
Bank Supervision Application (BSA)	Data storage and retrieval, analysis and early warning, licensing and registration of financial institutions	33,494.33
SWIFT trust link charges	Connection services to SWIFT via trustlink	22,641.50
SWIFT orange connection	Connection into the SWIFT cloud	20,188.67
ZAMNET internet access	Connection services to the internet	17,169.81
Gentran Integration Suite (GIS)	Integration between RTGS, T24 and SWIFT	16,037.73
Enterasys	LAN switching	13,397.73
SWIFT DR ISP local loop BT infornet	ISP local loop BT infornet	12,632.08
Websense	Internet content and bandwidth management	11,320.75
ZAMTEL MAN	Metropolitan area network	11,320.75
Symantec antivirus	Corporate antivirus software for 500 users	9,569.81
Veritas executive	Native tape backup and restore system/annul license at 18% of software cost	9,569.81
Sunsystems	Financial, accounting, procure and assets management/18% of software cost plus VAT	8,612.83
Solarwinds	Network management system/annual maintenance and support	5,741.88
ACL	Audit command language/maintenance charges	5,473.77
DMFAS 5.2	Annual support fees	4,784.90
Digital certificates for web services	-	3,827.92
E-views license	Annual support fees	3,827.92
Website	System maintenance charges	3,773.58
Oracle	Oracle database license fees/36 for sun systems and for BSA	2,501.13
SPSS	Statistical package for social scientists/license fees	2,105.28
MSDN	Microsoft developers network/subscription service	1,913.96

Table 2: Continue

Software, hardware or telecommunication infrastructure	ICT process supported or narration	Approximate annual support and maintenance fee (US$)
Library system	Maintenance and license charge	1,886.79
Bloomberg	Annual fees	2,264.15
Video conferencing equipment	Between head office and regional office	6,226.41

the various hardware, software and ICT services used in the Bank of Zambia (purchase prices are not included).

RESULTS AND DISCUSSION

The findings are presented as was established both in the literature reviewed and from findings of the primary and secondary research conducted. The acquisition of software solutions in the Bank of Zambia has traditionally not focused on bank-wide systems integration and the adverse impact is a silo approach to software acquisition resulting in long-term software licensing costs. There is a risk that the silo approach results in increased software acquisition, maintenance and support costs which continue to accumulate over time.

Further, there is a risk that the proliferation of disparate systems and/or lack of an integrated Enterprise Resource Planning (ERP) system has led to lack of economies of scaleand possibly resulted in increased costs.

The current system of budgeting for all software acquisition and maintenance costs centrally under the Information and Communications Technology (ICT) Department budget without subsequently apportioning the costs to user departments does not motivate business process owners to monitor and control expenditure on software licensing and ICT third party services. The perception that software licenses and ICT third party services are procured for ICT rather than on behalf of user departments removes the motivation for system owners to reduce software licensing and maintenance costs. Further, the budgeting for software solutions centrally, distorts cost information and decision making information.

The Bank of Zambia has not made significant progress in developing in-house capabilities in the area of software development. The extensive customisation of most software acquired from vendors invariably increases software acquisition and licensing costs in the long term. Investment in in-house software development skills is recommended.

There is an apparent lack of sufficient rigour during the process of user requirement specifications in respect of software solutions. There is a risk that this may result in introduction of additional requirements in the project specifications at a later stage, thereby increasing costs. Further, an inappropriate solution may be delivered or an incorrect number of software licenses may result. Consequently, software acquisition and maintenance costs could escalate beyond planned levels.

The current Philips iS3000 PABX which was implemented in 2003 is not optimized in order to implement unified communications for voice, video and data services. In order to improve operational efficiency, the PABX telephone system has reached end-of-technology life cycle. Small and medium institutions are upgrading to a Unified Communication (UC) system which can improve customer service, streamline product development and speed response to new opportunities.

The RTGS SWIFT Orange connection, SWIFT Trust link connection and the SWIFT foreign exchange network connectivity are not consolidated and the Bank of Zambia is losing money, through SWIFT charges. The bank must negotiate with SWIFT and consolidate the RTGS and foreign exchange SWIFT network connectivity in order to reduce costs.

The Itanium and RISC based HP-UX server operating systems are faced with end-of-technology support any time soon from HP. The bank must consider replacing these servers with open source server operating system such as x86-bit Linux which can be obtained at minimal cost.

The front, middle and back office Central Bank processes, such OMO, securities trading in Treasury bills and Government bonds, RTGS, Central Securities Depository (CSD), Single Treasury Account (STA, 0 clearing and settlement and banking services are not integrated. In order to achieve economic efficiency, it is strongly recommend that effort to integrate these applications is made.

The Bank of Zambia is operating >1 operating system on its >400 desktops, i.e., Windows XP, Vista and 7. Users are still able to install software not sanctioned by IT, password reset is not automated and automated software distribution is not based on group membership. Bank of Zambia is strongly urged to implement best practices by standardizing on a single desktop operating system Windows 7, users to only install IT-sanctioned software, automate password reset and automate software distribution based on group membership in order to save IT costs; use of Microsoft enabling technologies such active directory and group policiesand System Centre Configuration Manager (SCCM) is recommended.

CONCLUSION

Cost reduction is a journey. An organization is never done, it can always do things better. New technology and techniques continue to be developed to help organizations to reduce costs even more than ever thought possible. Companies have different cost reduction efforts, approaches and tactics such that they are at different maturity levels relative to cost reduction actions. While some organizations are just dabbling in their cost reduction efforts, other companies are fully operational by applying a formal, conscious cost reduction project. The impact of cost reduction strategies presented in this study, may vary with each organization and particular situation.

IMPLICATIONS

Although, the exact strategies and recommended order of implementation varies depending on the unique situation in any organization, the following are some generic recommendations regarding priority or order, of proceeding with cost reductions:

- Thoroughly review and understand the cost components. Start the review with the largest numbers
- A good place to typically start is telecommunications expenses as this is the area to reduce and can hold significant savings if it has been unmanaged
- Review hardware and software maintenance agreements. With cooperation of partners and vendors and careful management, reductions can be found
- Review labour both internal and contract. This typically represents a very large percentage of ICT budget and can be reduced with changes in organization structure and cuts identified

In conclusion, mention must be made that this study has potential to be extended to investigate ICT costs in the financial institutions in Zambia, rather than limiting it to an organization, in order to reduce costs. Reduced ICT costs in the country could lead to preserving the scarce foreign exchange, as most ICT software and hardware is currently imported.

RECOMMENDATIONS

The following are some key cost reduction tips mostly discussed throughout this study:

- Have the data. Know the costs. Assemble details of ICT inventory and know where the money is spent
- Engage the business, provide transparency of the costs in business terms and provide options
- Begin by looking at the large numbers in the budget. Start with low-hanging fruit such as at telecom, maintenance and supportand personnel costs
- Manage the costs reduction efforts as a project. Clearly establish the goals, identify actions and prioritize based on impact
- There is no single magic answer for cost reduction. Sustaining cost reduction requires continual focus and review with a variety of strategies depending on your situation
- Select and targeted cuts are typically more effective than broad, across-the-board cuts
- View cost reduction holistically. Consider using ICT to reduce business costs
- Communication must be honest, directand frequent. Engage the ICT department to assisting in cost reduction efforts
- Have good relationship with the CEO, CFO, Finance, CPO, Procurement and other executives

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