MASTER'S THESIS

L

In Search of Process Integration and Entity Collaboration

A cross sectional study of the births and deaths registry of Ghana and the

Ghana Immigration Service

Kingsley Boakye
Nancy Amos

Master of Science in Business and Economics
Business Administration

LULEÅ
UNIVERSITY
OF TECHNOLOGY

MSc E-COMMERCE AND MARKETING THESIS

IN SEARCH OF PROCESS INTEGRATION AND ENTITY COLLABORATION

A CROSS SECTIONAL STUDY OF THE BIRTHS AND DEATHS REGISTRY OF GHANA AND THE GHANA IMMIGRATION SERVICE

NANCY AMOS   (LULEA-E/08/04)

KINGSLEY BOAKYE   (LULEA-E/08/10)

Dedication

I dedicate this thesis to my wife, Akua Asamoah Boakye, and my two lovely children, Nhyira and Abrafi, for their patience, love, and support over the past years.

Kingsley Boakye

To my husband, Jojo and my children Gladys, Kwodwo, Adwoa, and Kwesi for paying the dearest price.

Nancy Amos

Abstract

Process integration refers to the management of various sets of activities that aims at seamlessly linking relevant business processes within and across firms and eliminating duplicate or unnecessary parts of the processes for the purpose of building a better-functioning supply chain. Business processes should be operated in a manner which will reduce cost, bring in more revenue as well as reducing lead time. Government of Ghana passport acquisition is cumbersome due to the procedures involved. It is essential that government agencies like the Birth and Deaths Registry (BDR) and Ghana Immigration Service (GIS) employ dynamic and best practices to enhance the acquisition of passport thereby engendering customer satisfaction and enhance customer confidence in the process.

The research questions that shaped the study were: What internal and external processes of the two (BDR and GIS) entities can be integrated to facilitate the acquisition of Government of Ghana Passport? And how can the two entities collaborate to enhance their respective operational processes?

A cross-sectional exploratory research design employing the survey, questionnaire and interview strategies were used to answer the research questions.

The major findings were that officials of both institutions thought their respective operational processes were complex; however, simplifying the processes would also compromise on the integrity and security of the inputs and end-products of birth certificates and the passport respectively. This finding however run contrary to the view of the clients and customers of the two institutions who maintained the position that the processes of the institutions were unduly long and time consuming. The findings pointed to development that the two organizations liaise with each other by regularly updating information deemed relevant for the effective discharge of their respective mandates. However, collaboration among the entities was viewed as a timely antidote with the potential to arrest the unconventional practices of multiple registrations in the acquisition of birth certificates and passports, as well as reducing the lead time.

Keywords: Process Integration, Entity Collaboration, Births and Deaths Registry, Ghana Immigration Service

Acknowledgements

It is our pleasure to acknowledge all those who helped us with their valuable support to come through with this thesis.

First, to our supervisor, Professor Esmail Salehi-Sangari for his guidance and suggestions. Secondly, we are indebted to Mr Gideon Jojo Amos for his support and contributions during the entire process of our work.

Similarly, we thank the faculty members of Lulea University of Technology and University of Winneba, Kumasi Campus who have supported us in various ways to attain the Masters Degree.

We are also indebted to our families, for their time, patience, encouragement.

Nancy Amos and Kingsley Boakye

May, 2011.

Table of Content

List of Tables

List of Figures

1.1   Background of the Study

Successful supply chain management (SCM) requires cross-functional integration of key business processes within the firm and across the network of firms that comprise the supply chain. It is focused on relationship management and the performance improvements that result. In many companies, however, executives struggle to achieve the necessary integration and, consequently, the resulting improvements. The problem is that they do not fully understand the supply chain business processes—and the linkages necessary to integrate those processes.

A supply chain is a network of interconnected organizations (Autry and Griffis 2008; Christopher 2005). Lambert, García-Dastugue, and Croxton (2005) explicitly pointed out that supply chains are not a chain of one-to-one relationships, "but a network of business and relationships" (p. 2).

The fact that SCM is a boundary-spanning activity implies that both cross-functional and inter-organizational management efforts are important (Bowersox, Close, and Stank 1999; Day 1994). Stevens (1989) emphasized that true supply chain integration includes both upstream and downstream players, while internal integration provides the foundation for both. Both internal and external integration can contribute to achieving reductions in costs, stock-outs, and lead-time, and can lead to competitive advantage (Gimenez and Ventura 2003). Therefore, a firm is likely to obtain superior performance when achieving high levels of integration both internally and externally.

By understanding the key supply chain management processes—and recognizing why and how they should be integrated—supply chain managers can successfully position their firms for higher revenues and profitability.

SCM is thus technically conceived of as a set of approaches utilized to efficiently integrate suppliers, manufacturers, warehouses, and stores so that merchandise is produced and

distributed at the right quantities, to the right locations, and at the right time, in order to minimize system wide costs while satisfying service level requirements (Simchi-Levi, D. et al 2008)

According to the Merriam-Webster Dictionary (2007), integrate means "to form, coordinate, or blend into a functioning or unified whole," and integration is "the act or process or an instance of integrating."

Integration can help firms develop efficiency-related capabilities. More specifically, process integration can contribute to cost reduction by waste reduction and more effective management of the processes. Maloni and Benton (2000) found that buyer-seller integration can help firms achieve cost savings from the following areas: economies of scale (in ordering, production, and transportation), decreased administration costs, decreased switching costs, and improved asset utilization. Process integration also ensures that operational interfaces within and between firms are synchronized to reduce duplication, redundancy, and dwell time (Rodrigues, Stank, and Lynch 2004), thus helping firms develop efficiency capabilities.

Integration has been recognized as vital to SCM. Many important studies have contributed to better understanding of this phenomenon. For example, Bowersox, Closs, and Stank (1999) proposed a comprehensive framework and categorized supply chain integration into six types: customer integration, internal integration, material service supplier integration, technology and planning integration, measurement integration, and relationship integration. While this approach provides detailed insights to supply chain integration across settings, conceptual overlaps between types of integration (e.g., relationship integration and customer/supplier integration) could cause confusion during implementation.

Integration helps mitigate distrust and conflicts among the functional units, which in turn provides an environment more receptive to innovations (Han, Kim, and Srivastava 1998). *An* relationship that fosters trust and dependence can help a firm in creating innovative business processes and services through interfunctional coordination (Gupta, Raj, and Wilemon 1986; Ruekert and Walker 1987). Furthermore, through close interactions between different parties, process integration requires a firm to develop a thorough understanding of the operations along the supply chain, which provides a solid knowledge foundation for developing supply chain innovative capability. Also, as social network analysis suggests, process integration enables cross-fertilization and stimulation of ideas through shared knowledge and

experiences among different functional areas and partnering firms (Flint et al. 2005). Therefore, a strong supply chain related innovative capability is more likely to be developed through process integration.

Process management is not a new concept in literature. The concept of organizing firm activities as business processes was introduced in the late 1980's and became popular in the early 1990's (Davenport 1993; Davenport, Hammer, and Metsisto 1989; Hammer and Mangurian 1987). A business process refers to a structured and measured set of activities with specified business outcomes for customers (Davenport and Beers 1995). Zairi (1997, p. 64) further defined business process management as: "a structured approach to analyze and continually improve fundamental activities such as manufacturing, marketing, communications and other major elements of a company's operation." With a process approach, the focus of every process is to meet customers' requirements through effective management of the processes. Functional experts are still critical, but these individuals are more likely to work in process teams (Cooper, Lambert, and Pagh 1997)

1.1.1 Background to the Births and Deaths Registry of Ghana

Registration of entities, both corporate and non-corporate in Ghana (Gold Coast as was formerly known) began as far back as 1888. However, at its inception, it was limited to the registration of deaths, mostly of expatriate workers of the then colonial government. It was not until 1912 that the registration of births was introduced. The registration system has gone through a series of transformations, just as the law establishing it has seen a number of amendments. All this was aimed at improving upon the final delivery of the system.

Starting as the Cemeteries Ordinance of 1888, it saw its first amendment in 1891. In 1912, it became the Births, Deaths and Burials Ordinance, which was once again amended in 1926.

This was finally replaced with the Registration of Births and Deaths Act 301 of 1965, which is the legislation currently in force. The Births and Deaths Registry was therefore established by the Act of Parliament of the Republic of Ghana, 301 of 1965, within the Ministry of Local Government and Rural Development, to handle and develop the births and deaths registration system in Ghana. Its core business is to "provide accurate and reliable information on all births and deaths occurring within Ghana for socio-economic development of the country through their registration and certification."

Operations of the Births and Deaths Registry are co-ordinated from the Central Registry Office, which is located in Accra, the capital of Ghana. The entire country has been divided first into ten Registration Regions, which coincide with the political and administrative regions of Ghana. The Registration Regions have further been divided into one hundred and ten Registration Districts, which also coincide with the country's administrative local authority areas. There is at least one Registry Office in each registration district manned by a Registration Assistant. There is also a District Registration Officer, who supervises the registration system through the registries and reporting centres in the district.

The Registration Assistant submits monthly, all registration forms, numbered serially to the District Registration Office, which in turn forwards them to the Regional Office for further processing and onward transmission to the Central Registry Office, where national data is compiled. Statistics of registered events are kept at all three levels to secure the information for development activities. (www.bdrghana.gov.gh)

1.1.2 Background to the Ghana Immigration Service

The Ghana Immigration Service (GIS) started as the Immigration and Passport Unit of the Gold Coast Colonial Police Force under the command of Nevile C. Hill.

On attainment of independence in 1957, the rapid expansion of the economy coupled with Ghana's role as a trailblazer in the African liberation struggle led to the country being swamped with foreign businessmen, tourists and African aliens. To control this influx, a Cabinet decision in 1960 transferred the Immigration Unit to the Ministry of the Interior as a separate department, while the Ministry of Foreign Affairs took over the issuing of passports. These measures were taken to enhance service delivery. Three years later, the Aliens Act 1963, Act 160 was enacted to give legal backing to immigration operations.

In November 1989, by PNDC Law 226, the Immigration Department was converted into a Paramilitary Service.

Established under PNDC Law 226 in 1989, the Ghana Immigration Service remains the sole institution with the statutory mandate to regulate and monitor the entry, residence, employment and the exit of foreigners in Ghana. The passage of the Immigration Act of 2000, Act 573 expanded the functions and roles of the GIS. Prominent among these are the Indefinite Residence and Right of Abode facilities. (www.ghanaimmigration.org)

Figure 1: Description of Ghana Immigration Service Supply Chain
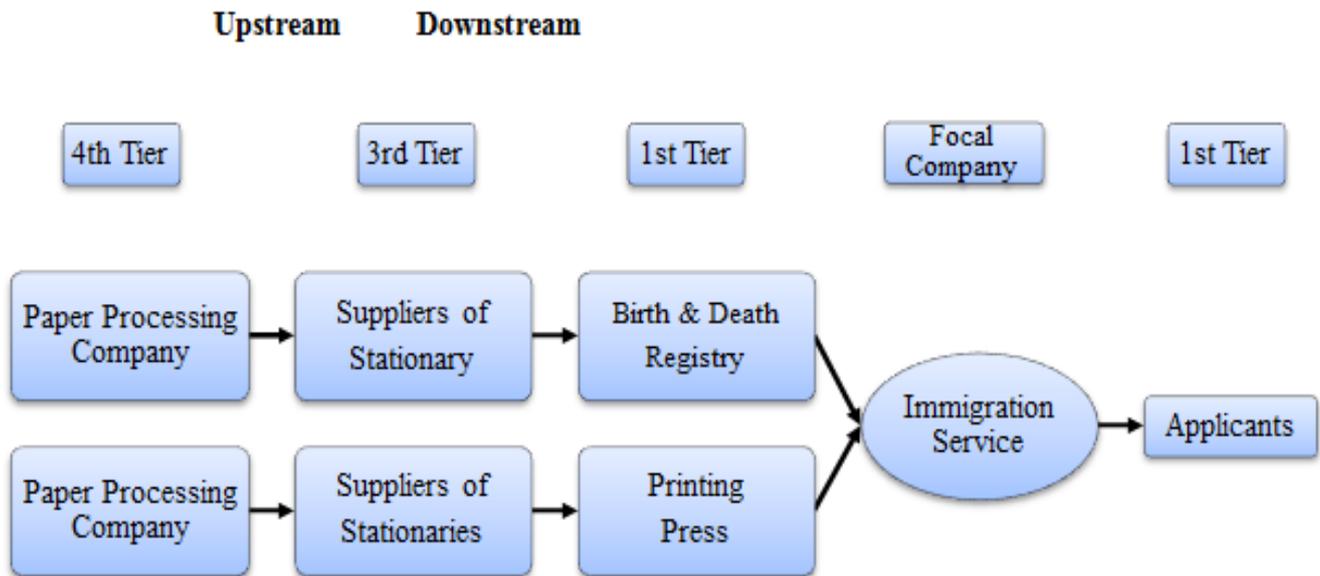
From the diagram, paper processing companies supply stationary to Printing Press to process them into Passport Booklets.

This supply chain is viewed from the perspective of the focal firm – Ghana Immigration Service. The company is depicting the relationship among its suppliers and customers. The companies are shown in columns, known as tiers which are numbered in sequence from the focal firm. Purchased goods flow from upstream suppliers through the focal firm to downstream customers. Information, however, flows in both directions as supply chain members plan and coordinate their efforts. For example, from the diagram, suppliers of stationery get finished products from paper processing companies in bulk. These suppliers then distribute the stationeries to the printing houses who transform them into booklets and passport application forms to The Ghana Immigration Service, which is the focal firm. The focal firm subsequently processes the passports based on the information received from applicants and issues them with passports.

Figure **2: Description of the As-Is Process of Ghanaian Passport Acquisition**
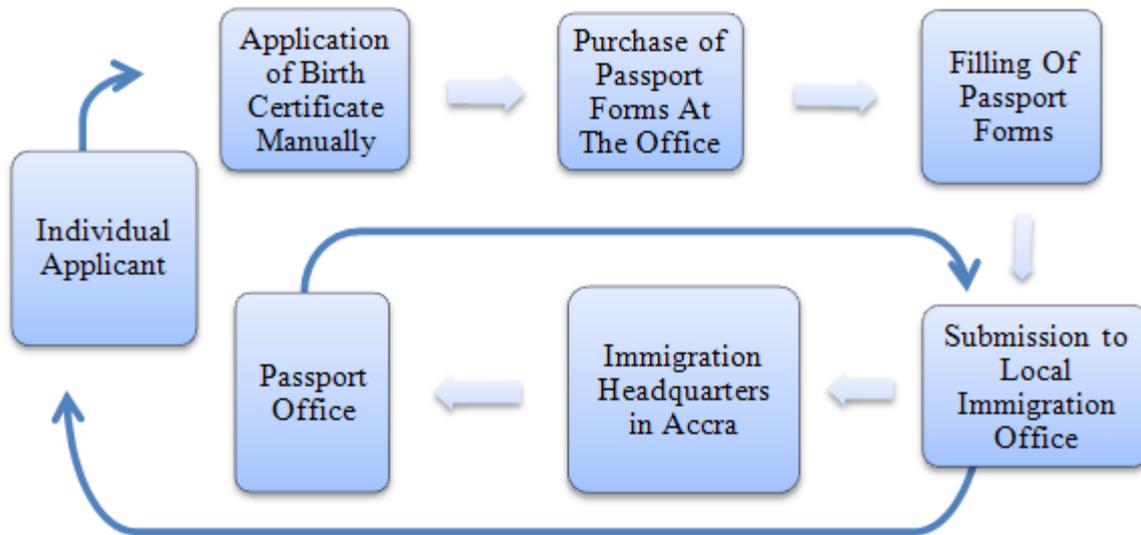
Individual applicant applies for birth certificate from Birth and Death Registry of Ghana. Upon receiving the certificate, the applicant then purchases passport form from any post office, fills it and submits to the local Immigration office in his region. The form again forwarded to the headquarters of the immigration office in Accra for further processing. The passport is then sent back to the local immigration office for and collection by the applicant.

Process Mapping

A process map is a graphic representation of a system that contains a sequence of steps that are performed to produce some desired outcome. The primary goal behind process mapping is to make complex systems visible. Once the system is depicted and understood, the maps become the focal point for identifying the \unnecessary process " complexity" that arises and leads to inefficiencies. (Fawcett Stanley et al.2007)

Figure 3: Mapping the Supply Chain
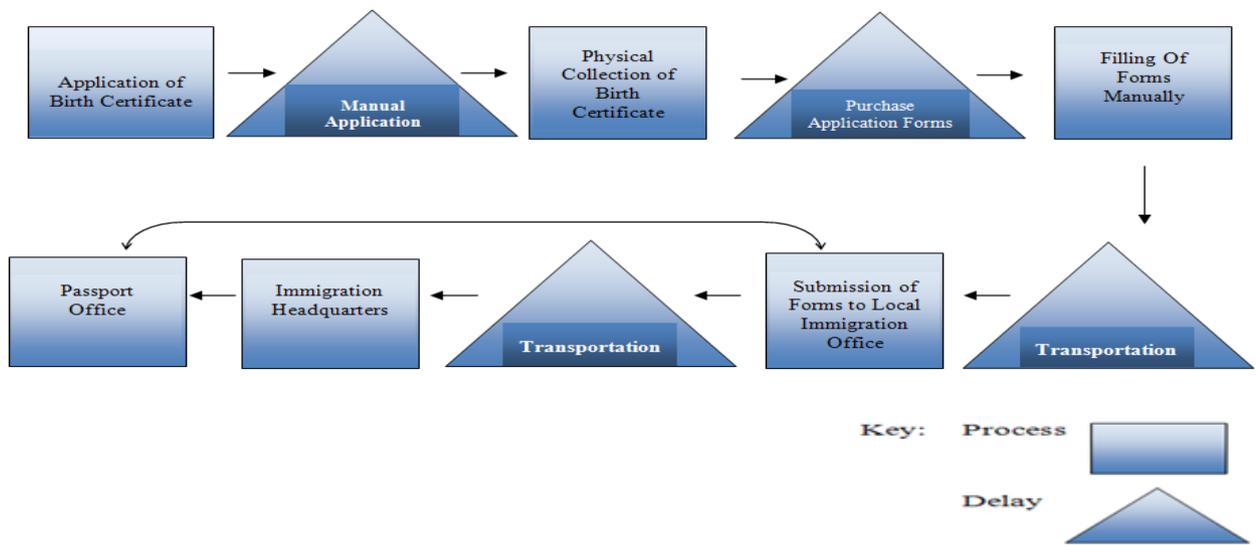
Process Analysis

Manual application of birth certificate consumes time. This is because applicant has to go to the birth and death registry physically to apply for the certificate. The applicant goes back to the registry for collection.

The applicant then proceeds to purchase the passport form from the post office, completes it and submits to the local immigration office which also delays the process.

The completed application forms are checked and compiled before they are forwarded to the headquarters in Accra for processing.

When the passports are ready, they are sent back to the local immigration office for collection.

Figure 4: Time Analysis
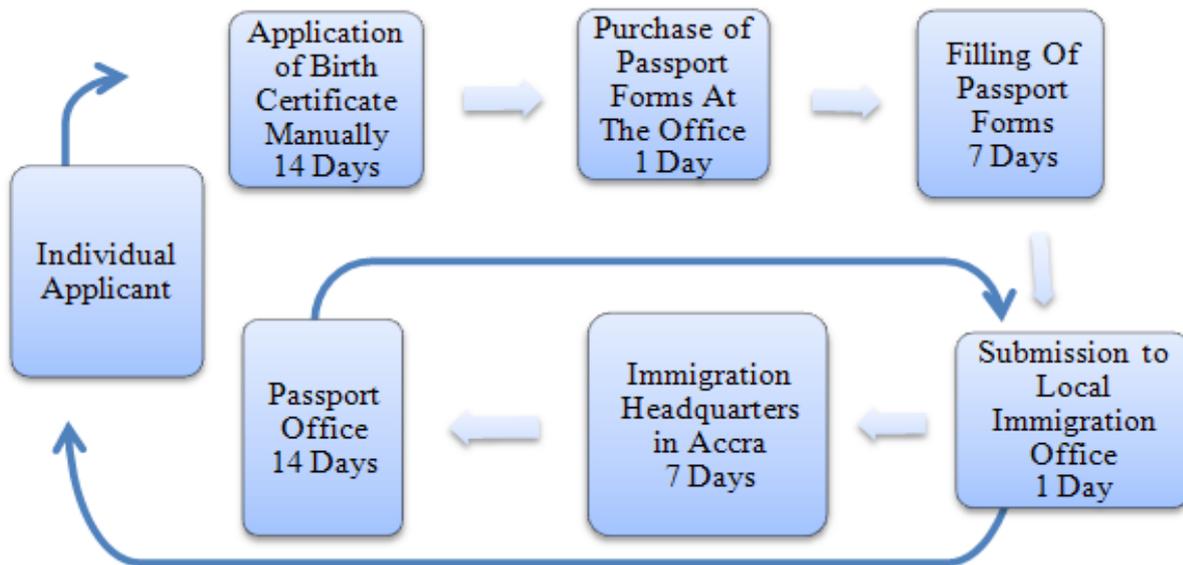
The order cycle begins with Birth and Death Registry and ends with the passport office. It is a non-productive process. All activities that make up the order cycle should be managed more efficiently to reduce the cycle time. Based on the firm's supply chain, the distance between the post office, the local immigration office, and the regional immigration office , and the passport office increase the lead time.

1.2 Justification for the study

Customer satisfaction that focus too much on what has worked in the past leave the supply chain vulnerable to the dynamics and competition of a global market. It is therefore critically essential that government agencies like the Immigration Service and Births and Deaths Registry employ dynamic and best practices to enhance the acquisition of passport thereby engendering customer satisfaction and enhance customers' confidence in the process.

Today's marketplace is more fiercely competitive than ever. Globalization, technological advancement, and demanding customers promise have combined to make mediocrity an endangered species in the global business arena. To succeed in this exciting but challenging world, mangers have begun to pursue business models that succeed in shortening processes without compromising on quality, cost, safety and security considerations. In their quest to explore, develop, and exploit their own strengths, managers have re-examined their companies' competencies, placing more emphasis on what they can do extremely well. They then work to build strong relationships with supply chain partners who possess essential

complementary capabilities. Success will depend on how well companies collaborate to manage important processes across company specific boundaries to better meet customer needs. (Fawcett, S. E. et al 2007)

For years, managers have recognised better ways to organise work. Jay Forrester, in 1958, foresaw a day when integrative, process decision making would replace compartmentalised thinking. The positive outcomes of supply chain integration have been supported by previous research studies (Gimenez and Ventura 2003; Stank, Daugherty, and Ellinger 1999), but effective integration implementation remains a mystery for many companies (Bowersox, Closs, and Stank). Supply chain process integration is a dynamic process that involves continuous effort by the *main*. Also, a review of integration-related articles in SCM/logistics trade publications found that cost and customer are the most frequently cited drivers to supply chain process integration (Ayers 2003; Drickhamer 2002).

Management is on the verge of a major breakthrough in understanding how industrial company success depends on the interactions between the flows of information, materials, money, manpower, and capital equipment. The way these five flow systems interlock to amplify one another and to cause change and fluctuation will form the basis for anticipating the effects of decisions, policies, organizational forms, and investment choices. (Fawcett S.E. et al 2007).

1.3 Problem statement

Government of Ghana Passport acquisition is cumbersome due to the procedures involved. In view of this, many potential holders of Government of Ghana Passport use or might resort to illegitimate means of acquiring their passports. The illegitimate means include the use of middlemen as conduit to connect to legitimate officials which sometimes result in the acquisition of fake passports with its attendant problems. The illegitimate, yet often the preferred means of passport acquisition make the acquisition process expensive, unreliable and corrupt.

In this era of technological advancement, business processes such as acquisition of passport should be operated in a manner which will reduce cost, bring in more revenue as well as reducing lead time. Business process reengineering (BPR) began as a private sector technique to help organizations fundamentally rethink how they do their work in order to

dramatically improve customer service, cut operational costs, and become world-class competitors. A key stimulus for reengineering has been the continuing development and deployment of sophisticated information systems and networks. Leading organizations are becoming bolder in using this technology to support innovative business processes, rather than refining current ways of doing work.

Business process reengineering is one approach for redesigning the way work is done to better support the organization's mission and reduce costs. Reengineering starts with a high-level assessment of the organization's mission, strategic goals, and customer needs. Basic questions are asked, such as "Does our mission need to be redefined? Are our strategic goals aligned with our mission? Who are our customers?" An organization may find that it is operating on questionable assumptions, particularly in terms of the wants and needs of its customers. Only after the organization rethinks what it should be doing, does it go on to decide how best to do it.

Within the framework of this basic assessment of mission and goals, reengineering focuses on the organization's business processes--the steps and procedures that govern how resources are used to create products and services that meet the needs of particular customers or markets. This research seeks to find answers to how the processes of these two entities can be integrated and streamlined to enhance faster acquisition of Government of Ghana Passport.

1.4 Main research questions

1. What internal and external processes of the entities (Births and Deaths Registry and Ghana Immigration Service) can be integrated to facilitate the acquisition of Government of Ghana Passport?

2. How can the two entities (Births and Deaths Registry and the Ghana Immigration Service) collaborate to enhance their respective operational processes?

1.4.1 Subordinate research questions

How can the processes identified be integrated effectively and efficiently?

Would integration of processes and collaboration between the entities necessarily lead to improvement in service quality?

What are the likely implications (in terms of policy, regulatory and practices directions) of the processes integration and collaboration between the Births and Deaths Registry and the Ghana Immigration Service?

What are the key drivers of satisfaction/ key areas of importance to customers?

1.5 Objectives

In this study, the researchers will attempt to accomplish the following objectives:

Search for opportunities for processes integration and collaboration within the existing systems and processes of the Births and Deaths Registry and the Ghana Immigration Service.

Examine the existing processes involved in the operations of the Births and Deaths Registry and the Ghana Immigration Service.

Search for common and potential dual beneficial processes that can be integrated to lead to the realization of operational synergies.

Suggest and develop process redesign initiatives and principles that will quicken operational processes and lead to the realization of operational synergies.

CHAPTER TWO

LITERATURE REVIEW

Knowledge does not exist in a vacuum, and your work only has value in relation to other people. Your work and your findings will be significant only to the extent that they are the same as, or different from, other people's work and findings (Jankowicz, 1995).

2.1 The scope of Supply Chain Management

Supply Chain Management (SCM) is the term used to describe the management of the flow of materials, information, and funds across the entire supply chain, from suppliers to component producers to final assemblers to distribution (warehouses and retailers,) and ultimately to the consumer. It often includes after sales service and returns or recycling (Johnson Eric M. and Pyke David F. 1999). Fawcett Stanley E. et al, (2007) define Supply chain management as the design and management of seamless, value added processes across the organizational boundaries to meet the real needs of the end customer. In addition, according to Stank Theodore P. et al, (2001) SCM is generally considered to involve integration, coordination, and collaboration across organizations and throughout the supply chain. The concept includes the broad array of activities needed to plan, implement, and control sourcing, manufacturing, and delivery processes from the point of raw material origin to the point of ultimate consumption. Cooper, Lambert, and Pagh (1997, p. 1) define SCM as "the integration of *key* business processes from end *users* through original suppliers that provides products, services, and information that add value for customers and other stakeholders." Similar emphasis on integration can be seen in the Council of Supply Chain Management Professionals' (CSCMP) definition: "In essence, Supply Chain Management integrates supply and demand management within and across companies."

2.2 Porter's value chain model

According to Porter M. (1985), it is useful to separate the business system into a series of value-generating activities referred to as the value chain. He identified primary and support activities. The goal of these activities is to offer the customer a level of value that exceeds the cost of the activities, thereby resulting in a profit margin.

The primary value chain activities are:

Inbound Logistics: the receiving and warehousing of raw materials and their distribution to manufacturing as they are required.

Operations: the processes of transforming inputs into finished products and services.

Outbound Logistics: the warehousing and distribution of finished goods.

Marketing & Sales: the identification of customer needs and the generation of sales.

Service: the support of customers after the products and services are sold to them.

These primary activities are supported by:

The infrastructure of the firm: organizational structure, control systems, company culture, etc.

Human resource management: employee recruiting, hiring, training, development, and compensation.

Technology development: technologies to support value-creating activities.

Procurement: purchasing inputs such as materials, supplies, and equipment.

The firm's margin or profit then depends on its effectiveness in performing these activities efficiently, so that the amount that the customer is willing to pay for the products exceeds the cost of the activities in the value chain. It is in these activities that a firm has the opportunity to generate superior value. A competitive advantage may be achieved by reconfiguring the value chain to provide lower cost or better differentiation.

Figure 5: Value chain model
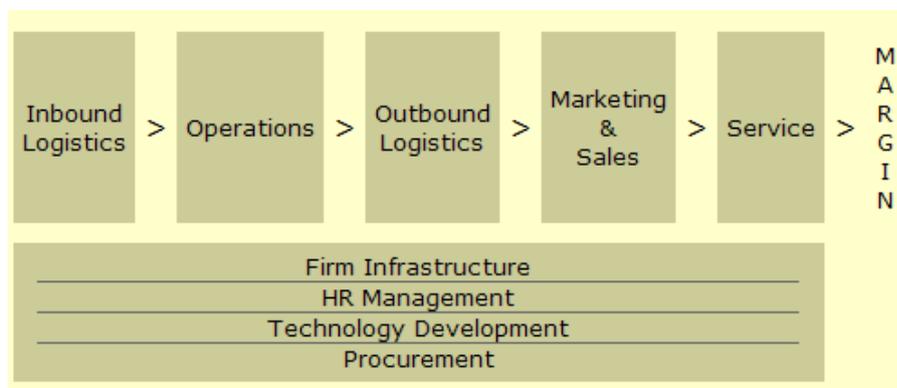
Source: Porter (1995)

2.3 Supply Chain Operational Council's Supply-Chain Operations Reference Model (SCOR)

A business process refers to a structured and measured set of activities with specified business outcomes for customers (Davenport and Beers 1995). Zairi (1997) further defined business process management as: "a structured approach to analyse and continually improve fundamental activities such as manufacturing, marketing, communications and other major elements of a company's operation."
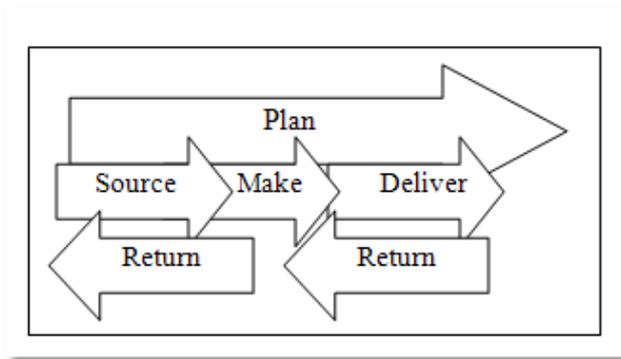
The Supply-Chain Council's Supply- Chain Operations Reference Model (SCOR)

The process approach toward supply chain integration is also manifested in the Supply Chain Council's Supply Chain Operations Reference-model (SCOR) *which* suggests that business should be managed based on key *processes - plan,* source, make, deliver, and return (Stewart 1997).

According to the Supply-Chain Operations Reference-model SCOR enables users to address, improve, and communicate supply chain management practices within and between all interested parties in the Extended Enterprise. Again, it is stated that SCOR is a management tool, spanning from the supplier's supplier to the customer's customer. The model has *been* developed *by* the business activities associated with all phases of satisfying a customer's demand...

The model is based on *3* major "pillars":

-Process *Modeling*

-Performance Measurements

-Best Practices

The Process *Modeling* Pillar

SCOR is based on five distinct management processes: Plan, Source, Make, Deliver, and Return.

-Plan - Processes that balance aggregate demand and supply to develop a course of action which best meets sourcing, production, and delivery requirements.

-Source - Processes that procure goods and services to meet planned or actual demand.

-Make - Processes that transform product to a finished state to meet planned or actual demand.

-Deliver - Processes that provide finished goods and services to meet planned or actual demand, typically including order management, transportation management, and distribution management.

-Return - Processes associated with returning or receiving returned products for any reason. These processes extend into post-delivery customer support.

The model focuses on the following:

-All customer interactions, from order entry through paid invoice.

-All product (physical material and service) transactions, from your *supplier* supplier to your *customer* customer, including equipment, supplies, spare parts, bulk product, software, etc.

-All market interactions, from the understanding of aggregate demand to the *fulfillment* of each order.

SCOR provides three-levels of process detail. Each level of detail assists a company in defining scope (Level 1), configuration or type of supply chain (Level 2), process element details, including performance attributes (Level 3). Below level 3, companies decompose process elements and start implementing specific supply chain management practices. It is at this stage that companies define practices to achieve a competitive advantage, and adapt to changing business conditions.

SCOR is a process reference model designed for effective communication among supply chain partners. As an industry standard it also facilitates inter and intra supply chain collaboration, horizontal process integration, by explaining the relationships between processes (i.e., Plan-Source, Plan-Make, etc.). It also can be used as a data input to completing an analysis of configuration alternatives (e.g., Level 2) such as: Make-to-Stock or Make-to-Order. SCOR is used to describe, measure, and evaluate supply chains in support of strategic planning and continuous improvement.

Figure 6: SCOR Framework Levels
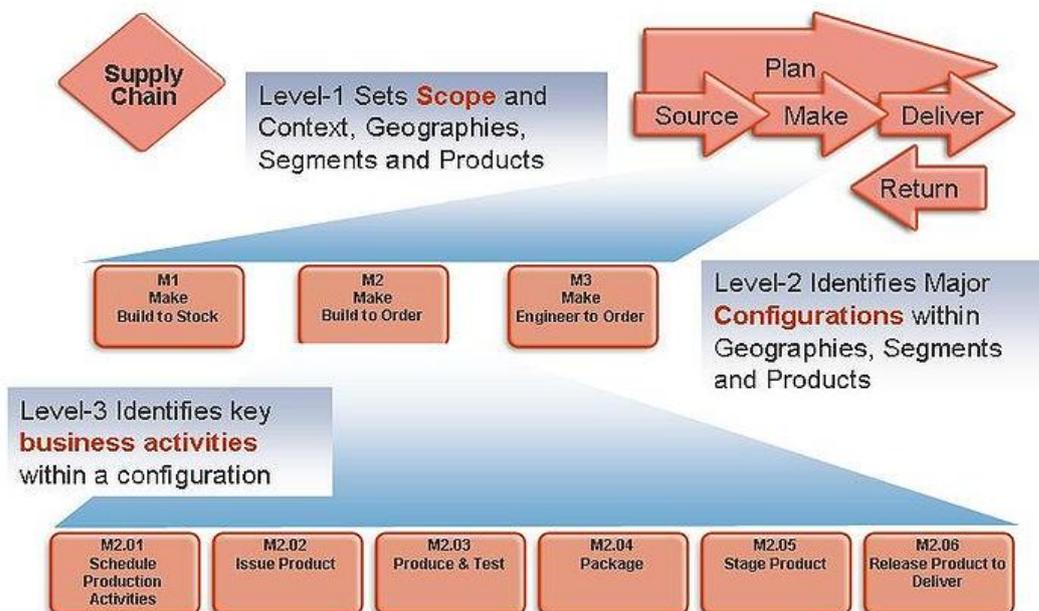
SCOR Process Framework

In the example provided by the picture the Level 1 relates to the Make process. This means that the focus of the analysis will be concentrated on those processes that relate to the added-value activities that the model categorizes as Make processes.

Level 2 includes 3 sub-processes that are "children" of the Make "parent". These children have a special tag - a letter (M) and a number (1, 2, or 3). This is the syntax of the SCOR model. The letter represents the initial of the process. The numbers identify the "scenario", or "configuration".

M1 equals a "Make build to stock" scenario. Products or services are produced against a forecast. M2 equals a "Make build to order" configuration. Products or services are produced against a real customer order in a just-in-time fashion. M3 stands for "Make engineer to order" configuration. In this case a blueprint of the final product is needed before any make activity can be performed.

Level 3 processes, also referred to as the business activities within a configuration; represent the best practice detailed processes that belong to each of the Level 2 "parents".

The example shows the breakdown of the Level 2 process "Make build to order" into its Level 3 components identified from M2.01 to M2.06. Once again this is the SCOR syntax: letter-number-dot-serial number.

The model suggests that to perform a "Make build to order" process, there are 6 more detailed tasks that are usually performed. The model is not prescriptive, in the sense that it is not mandatory that all 6 processes are to be executed. It only represents what usually happens in the majority of organizations that compose the membership base of the Supply Chain Council.

The Level 3 processes reach a level of detail that cannot exceed the boundaries determined by the industry- agnostic and industry-standard nature of the SCOR model. Therefore all the set of activities and processes that build - for instance - the M2.03 "Produce & test" process will be company-specific, and therefore fall outside the model's scope.

The Performance Measurements Pillar

As with the process *modeling* system, SCOR metrics are organized in a hierarchical structure. Level 1 metrics are at the most aggregated level, and are typically used by top decision makers to measure the performance of the company's overall supply chain. Level 1 Metrics are primary, high level measures that may cross multiple SCOR processes. Level 1 Metrics do not necessarily relate to a SCOR Level 1 process (PLAN, SOURCE, MAKE, DELIVER *and* RETURN).

The metrics are used in conjunction with performance attributes. The Performance Attributes are characteristics of the supply chain that permit it to be analyzed and evaluated against other supply chains with competing strategies. Just as you would describe a physical object

like a piece of lumber using standard characteristics (e.g., height, width, depth), a supply chain requires standard characteristics to be described. Without these characteristics it is extremely difficult to compare an organization that chooses to be the low-cost provider against an organization that chooses to compete on reliability and performance.

Associated with the Performance Attributes are the Level 1 Metrics. These Level 1 Metrics are the calculations by which an implementing organization can measure how successful they are in achieving their desired positioning within the competitive market space.

The metrics in the Model are hierarchical, just as the process elements are hierarchical. Level 1 Metrics are created from lower level calculations. (Level 1 Metrics are primary, high level measures that may cross multiple SCOR processes. Level 1 Metrics do not necessarily relate to a SCOR Level 1 process (PLAN, SOURCE, MAKE, DELIVER *and* RETURN). Lower level calculations (Level 2 metrics) are generally associated with a narrower subset of processes. For example, Delivery Performance is calculated as the total number of products delivered on time and in full based on a commit date.

Figure 7 SCOR Metrics *1.jpg*

Performance Attribute	Performance Attribute Definition	Level 1 Metric
Supply Chain Reliability	The performance of the supply chain in delivering: the correct product, to the correct place, at the correct time, in the correct condition and packaging, in the correct quantity, with the correct documentation, to the correct customer.	Perfect Order Fulfillment
Supply Chain Responsiveness	The speed at which a supply chain provides products to the customer.	Order Fulfillment Cycle Time
Supply Chain Flexibility	The agility of a supply chain in responding to marketplace changes to gain or maintain competitive advantage.	Upside Supply Chain Flexibility
		Upside Supply Chain Adaptability
		Downside Supply Chain Adaptability
Supply Chain Costs	The costs associated with operating the supply chain.	Supply Chain Management Cost
		Cost of Goods Sold
Supply Chain Asset Management	The effectiveness of an organization in managing assets to support demand satisfaction. This includes the management of all assets: fixed and working capital.	Cash-to-Cash Cycle Time
		Return on Supply Chain Fixed Assets
		Return on Working Capital

SCOR Performance Attributes and Level 1 Metrics

2.3.2 The Best Practices Pillar

Once the performance of the supply chain operations has been measured and performance gaps identified, it becomes important to identify what activities should be performed to close those gaps.

The SCOR model defines a best practice as a current, structured, proven and repeatable method for making a positive impact on desired operational results.

Current - Must not be emerging (bleeding edge) and must not be antiquated

Structured - Has clearly stated Goal, Scope, Process, and Procedure

Proven - Success has been demonstrated in a working environment.

Repeatable - The practice has been proven in multiple environments.

Method- Used in a very broad sense to indicate: business process, practice, organizational strategy, enabling technology, business relationship, business model, as well as information or knowledge management.

Positive impact on desired operational results- The practice shows operational improvement related to the stated goal and could be linked to Key Metric(s). The impact should show either as gain (increase in speed, revenues, quality) or reduction (resource utilizations, costs, loss, returns, etc.).

2.4 A Process road map for strategic SCM

A systematic approach to SC analysis can help companies develop an SC-enabled business model and execute a winning SC strategy. Leading SC companies use an iterative four-step process that emphasizes assessment, planning, execution, and learning. Managers at these companies constantly ask and answer the following four questions that define the road map to SC success.

Who Are We?

Every company has its own unique culture and a set of core values that influence decision making. This cultural foundation establishes the beliefs and principles that guide conduct and determine how the organization operates. This identity drives the development of the organization's vision and mission as well as its distinctive competencies. Answering the question "Who are we?" defines why a company exists as well as what it does better than anyone else. The SC executive uses this question to focus the entire organization on meeting downstream customer needs. This unifying focus regarding why the company exists helps promote the systems thinking needed to bridge functions and create winning product development and order fulfilment processes.

How Do We Fit? How Should We Fit?

To design a world-class supply chain, managers need to understand how the chains in which their company participates really operate. Many issues must be evaluated to fully understand the dynamics of the chain. Some of the many questions that must be answered include

What are the competitive rules?

Who are our customers – both immediate and farther downstream?

What are their real needs?

How can these needs be met efficiently and better than by competing chains?

What competencies, processes, and technologies are needed to meet these needs and who has them?

Where are the costs in the chain?

Who possesses the power in the chain and what is the source of this power?

Where are the opportunities to optimize the chain's operations and relationship?

Developing an "as-is" SC map can help managers evaluate the strengths, weaknesses, opportunities, and threats (SWOT) of their company's current position. The "as-is" map helps managers see and grasp the nuances that define how the chain works. They then comprehend

what must be done for the company and the chain to compete and win. They also understand better who should be on the SC team.

Once managers understand how the chain works, they are ready to begin their SC redesign. The goal is to use their new found understanding to create the capabilities to (1) assure that the chain meets customers' real needs better than rival chains and (2) securely position the company as an indispensable member of the chain.

A "to-be" SC map guides this process by creating visibility regarding the right organizational structure and systems. The "to-be" map guides critical decisions involving process design, technology development, outsourcing, alliance development, and supply-base rationalization.

How Do We Get There?

Managers must articulate a compelling migration plan to move the company to its desired position. Creating and communicating a common SC vision is the first step. The second step is identifying the internal and external barriers to greater collaboration. Specific programmes or initiatives can then be prioritized. Four decision areas that can be used to promote better collaboration are (1) relationship management, (2) information sharing, (3) performance measurement, and (4) people empowerment. Finally, periodic environmental, technological, and industry scans coupled with best-in-class benchmarking promote continuous learning and improvement.

The supply chain road map emphasizes SC-level planning and scanning. Planning creates understanding and directs resource utilization in a way that mitigates threats and capitalizes on opportunities. Scanning helps managers understand evolving competitive, industry, and market environments. Together, scanning and planning help identify opportunities for improved collaboration. Companies must plan and scan in order to select and build the right capabilities and establish creative and productive SC relationships: "If there is a better way, find it." (Fawcett Stanley E. et al, 2007).

2.5 Process Integration

According to Haozhe C. et al (2009), Process integration refers to the management of various sets of activities that aims at seamlessly linking relevant business processes within and across

firms and eliminating duplicate or unnecessary parts of the processes for the purpose of building a better-functioning supply chain.

Hammer (2001) pointed out that it is in the integration of business processes across firms in the supply chain where the real "gold" can be found. Better managing business processes through process integration within and across members of the supply chain can make transactions and relationship structures more efficient and effective, (Lambert, 2004).

Stock (2002) suggested a similar view: integration of processes within and between firms in the supply chain is the key to SCM success.

Before an applicant can acquire a government of Ghana passport, a number of processes need to be undertaken. For example, an applicant should present a birth certificate, obtainable from the Births and Deaths Registry which is generated through a manual process, purchase passport application form from designated Post Offices or other specified financial institutions, completion of the application form are just but examples of specific processes involved in government of Ghana passport acquisition. When the entire processes are professionally integrated both within and across the two entities- the Births and Deaths Registry and the Ghana Immigration Service, real value can be created by eliminating conflicting and duplicating processes to streamline their respective operational processes.

 However, according to Fawcett Stanley E. et al (2007), companies have always been members of a chain (or more accurately said, network) of organizations; however, most companies still view themselves as separate, distinct entities. They do not effectively work together to reduce inventory levels and costs up and down their respective chains, nor do they coordinate decisions to improve customer service. And why should they? Few companies see their share price increase based on the performance of their suppliers or customers. Rewards systems keep managers focused on their own operations and their immediate customers. Managers are too busy trying to cope with the challenges of a tough business world to worry about touchy-feely collaboration. Although the idea of cooperation is intuitively appealing, most managers find it difficult to collaborate meaningfully. This is true within the company and across the chain. Effective collaboration is rare and most often occurs with a company's most important first-tier customers and suppliers. Fawcett Stanley E. et al (2007) added that over 95 per cent of collaborative efforts target the first tier, based on available research findings.

Figure 2.1 shows the various degrees of supply chain integration:

Internal process integration. The goal is to increase collaboration among the company's functional groups.

Backward process integration with valued first-tier suppliers. Leading companies are extending the form of integration to second-tier suppliers (their suppliers' suppliers).

Forward process integration with valued first-tier customers. To date, few companies have targeted integration with their customers' customers.

Complete forward and backward integration from the "suppliers' supplier to the customers' customer". This is the theoretical ideal.

Figure 8: Degrees of Supply Chain Integration
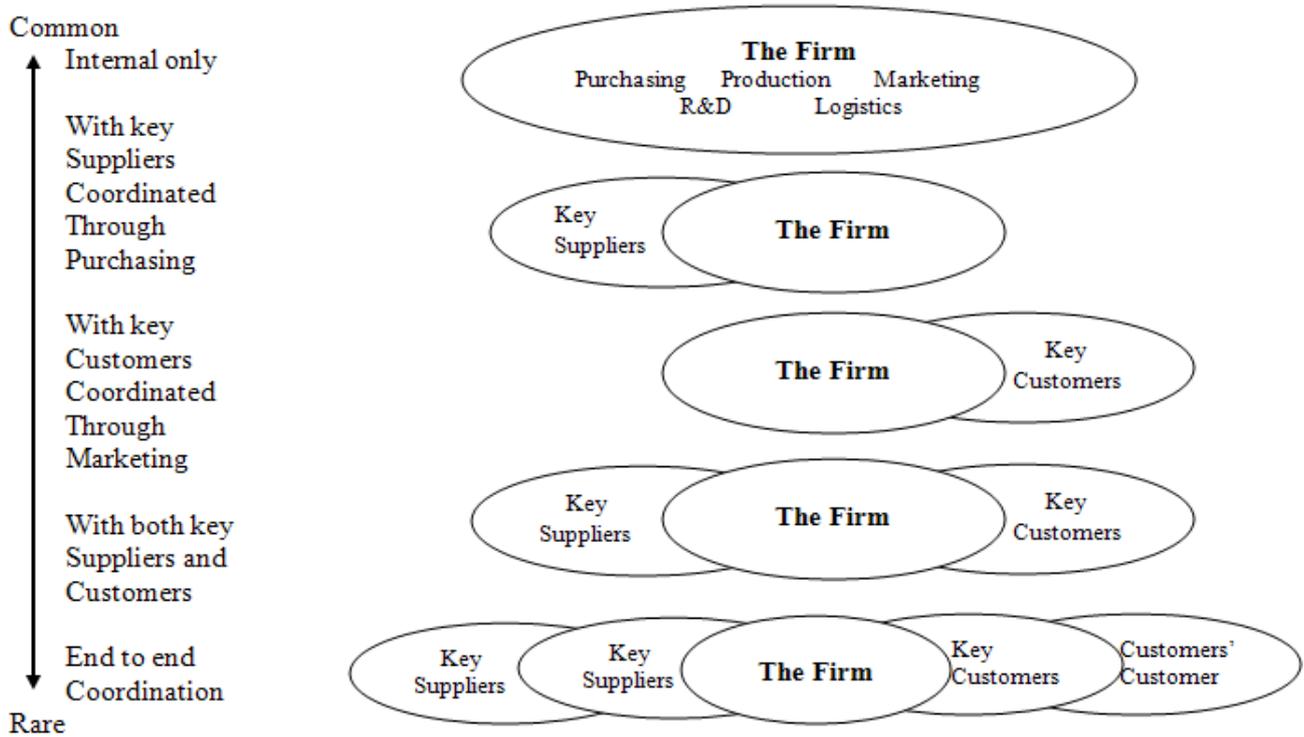
Source: Fawcett Stanley E. et al 2007

2.5 Integration

Integration is viewed as involving cross-functional or cross-departmental interactions. Those interactions are described variously as links or linking, involvement, and working together. Ideally the interactions result in strong relationships internal to the company and externally with other organizations. The interactions frequently are characterized by coordination, cooperation, *and /or* collaboration as a way through which the different groups can focus efforts to jointly achieve objectives. The integrative interactions are also commonly supported by information sharing and open communication.

Integration is such a broad term that it can be used to describe a wide variety of structural linkages between departments and firms. For example, internally or externally, firms can integrate different elements of their operations. These elements may be tangible (such as product flows and measurement) or intangible (such as relationships and information). The wide variety of integration applications *have* introduced a great deal of complexity into the operations of firms.

Managers may question what type of integration should be focused on, what actions should be taken, and what procedures should be followed. Therefore, a simple but meaningful definition of integration is needed for more effective research and management efforts. Ideally, this definition could serve as an overarching guide for all integration activities and be applied to different settings. (Chen H. et al, 2009)

Within a supply chain setting, integration extends beyond the firm to encompass channel participants such as distributors and agents. For this reason, firms must express the willingness to work together across firm specific boundaries, though this requirement might not be necessarily enough to ensure full scale integration. Investments in relationship orientation and management among actors involved in the setting and or available resource sharing may be necessary required as well. It has been suggested in literature that effective integration involves mutual understanding among actors involved, a common vision, shared resources, and achievement of collective goals, (Stank Theodore P. et al., 2001).

Integration has been recognized as vital to SCM. Many important studies have contributed to better understanding of this phenomenon. For example, Bowersox, Closs, and Stank (1999) proposed a comprehensive framework and categorized supply chain integration into six

types: customer integration, internal integration, material service supplier integration, technology and planning integration, measurement integration, and relationship integration.

• **Customer Integration:** This type of integration focuses on building lasting distinctiveness with customers of *collaboration*. Customer integration is the competence firms use to create lasting distinctiveness with customers of choice. Since few firms can satisfy every customer or customer segment, management must decide whether to pursue business based on the fit between firm strengths and customer needs. Customer integration, therefore, begins with a full assessment of a firm's strengths and weaknesses relative to the service requirements of its top class or key customers. Successful integration depends upon not only thorough knowledge of the firm and its supply chain partners' capabilities but also customer requirements and expectations placed upon the firm. This enables management to focus efforts primarily on customers for whom they can provide unique and profitable product and *profitable* offerings and flexibly deploy resources toward customer-valued activities that competitors cannot effectively match.

• **Internal Integration:** This aspect of integration discusses the competency required in order to link internally performed work into a seamless process to support customer requirements. Internal integration is the core competence derived from linking internal activities to best support customer requirements at the lowest total system cost. The total cost concept requires the components of logistics (e.g., order processing, transportation, warehousing, etc.) to be managed holistically as parts of an interconnected system. To achieve the lowest total system cost, expenditures in one or more functional areas may be increased (Bowersox and Closs, 1996). *For* the *higher* of a firm toward generating unique and profitable *product/service* offerings for customers of choice, however, requires a commitment to process excellence throughout an enterprise in a coordinated effort to achieve synergies that lead to better performance in meeting customer requirements. Process excellence is achieved by seamlessly linking and synchronizing operational flow. The fundamental challenge of internal integration is process coordination across marketing and sales, procurement, manufacturing and assembly, and finished goods distribution. The need to reduce redundancies in supply chain logistics operations is not limited to internal activities.

• **Material and or Service Supplier Integration:** This section of integration talks about the competency required to link externally performed work into a seamless identity with internal *activities.* Linking internal work processes with those of external material and service

providers is the focus of supplier integration. Historically this has been difficult to achieve since external supply chain organizations often have differing goals that preclude such integration. As a result, firms have attempted to vertically absorb consecutive levels in the business process. Vertical integration, however, requires the commitment of immense capital investments. Economies of scale necessary to support such decisions are seldom available. If they are, the complex organizational structures required to manage such an enterprise are unwieldy, inefficient, and often ineffective. Alternatively, firms may collaborate with external supply chain partners to access their expertise and the synergies gained from combined operations. Collaboration is a relatively low-cost way to reduce operational waste and redundancies while improving service quality and relevancy. Supplier integration *synchronises* the core competencies and capabilities of all supply chain participants to jointly achieve improved service capabilities at lower total supply chain cost, the goal of which is to outsource specialized activities that previously were developed and performed internally to other supply chain entities in order to reap the benefits connected with other firm's or entity's core competences. The management of external suppliers is not focused on short-term, buy-sell transactions but includes joint operational planning, shared assets and technology, and, most importantly, a willingness to share information and risk. The aggregate result is resource efficiency as operational redundancies are avoided and greater economies of scale are achieved.

• **Technology and Planning Integration:** Technology and planning integration focuses on the development of information systems capable of supporting the wide variety of operational configurations needed to create supply chain solutions for specific customers. Traditionally, the increased speed of information technology was used to gain and maintain a cost advantage by processing transactions faster. The growing challenge is to integrate information *exchange* technology with advanced planning and scheduling (APS) systems to enable coordination of global flows of product, cash, and operating information that focus on *customer- oriented* activities such as managing customer inventory balances and providing inventory visibility as goods move through the pipeline. Managers with fingertip access to coordinated data coupled with the software needed to process it are better positioned to gain rapid insight into demand patterns and trends. Such information and technology accessibility provides time bound inputs and plans *that* translate strategic goals and *objects* into action and work to guide each operating area.

• **Measurement Integration:** *Integrated* performance measurements are mechanisms needed to provide the basis for *calibrating* the many parts of the supply chain engine. *Good* metrics and strong measurement systems serve to provide timely feedback that enables management to take corrective action and drive superior results. These systems must track performance across the borders of internal functional areas and external supply chain partners, measuring the operations of the overall supply chain as well as the financial performance of individual firms. Accomplishing the task of integrated measurement is difficult and continues to challenge firms as they struggle to manage the innovative structures they create to ensure end customer success. Specific functions must significantly contribute to the overall process rather than simply support traditional stand-alone activities.

• **Relationship Integration:** This type of integration focuses on the competency to develop and maintain a shared *mental* framework with customers and suppliers regarding *inter-enterprise* dependency and principles that will underpin collaborative manoeuvres. Relationship integration requires willingness on the part of supply chain partners to create structures, *frameworks,* and *metrics* that encourage cross-organizational behavior. This includes sharing proprietary planning and operational information as well as creating financial linkages that make firms dependent upon mutual performance. Suppliers, manufacturers, third-party providers, and customers are encouraged to identify and partner with firms that share a common vision and are pursuing parallel objectives pertaining to partnership interdependence and principles of collaboration. This collaborative perspective is key to developing effective supply chain structures that align the functional operations of multiple firms into an integrated system.

Complexities of Integration: Integration is such a broad term that it can be used to describe a wide variety of structural linkages between departments and firms. For example, internally or externally, firms can integrate different elements of their operations (Chen H. et al 2009). Many authors (Cai 2005; Fu and Piplani 2004; Manthou, Vlachopoulou, and Folinas 2004) have broadly investigated several collaboration aspects behind supply chains. Supply chain integration has been defined as the process by which suppliers, partners and customers – within a shared market space – collaboratively plan, implement and manage the flow of information, services and products along the supply chain in a way that improves business operations in terms of speed, agility, real time control and customer response (Manthou, Vlachopoulou, and Folinas 2004).

2.6. Internal and External Perspectives of Integration

Stank, Keller, and Closs (2001) defined internal integration *as* the competency of linking internally performed work into a seamless process to support customer requirements *and* supplier integration *as* the competency *of* linking externally performed work into a seamless congruency with internal work processes. While Rodrigues, Stank, and Lynch (2004) view internal integration as linking operations into a seamless, synchronized operational flow, Germain, *Droge,* and Daugherty (1994) consider integration as lateral links between subunits.

A prerequisite for the professional functioning of internal and external integration is the identification of the boundaries of integration. Boundaries in this context refer to the ownership of business processes and activities. Different ownerships of business processes and activities require different approaches to integration implementation. Without clearly defining the boundaries, it is difficult to understand and address the issues involved in internal and external integration. Internal integration occurs within a firm. Lawrence and Lorsch (1967) defined integration as "the quality of the state of collaboration that exists among departments that are required to achieve unity of effort by the demands of the environment." Researchers have examined integration between various areas such as research and development and marketing (Ayers, Dahlstrom, and Skinner 1997), manufacturing and purchasing (Narasimhan and Das 2001), marketing with *R&D* and Manufacturing (Kahn and Mentzer 1998), marketing and *manufacturing* (O'Leary-Kelly and *Lei* Verma et al. 2001), and human resource management and manufacturing (Pagell, Handfield, and Barber 2000). In general terms, Research on inter-functional integration has focused on interaction and collaboration between different departments (Ellinger, Daugherty, and Keller 2000; Kahn and Mentzer 1998).

On the contrast, External integration occurs between a firm and its external partners, which highlights the importance of buyer and seller cooperation (Larson 1994). Barratt and Oliveira (2001) *proposed* that integration occurs when two or more companies share the responsibility of exchanging common planning, management, execution, and performance measurement information. Backward and forward integration (Fawcett and Magnan 2002) and customer and supplier integration (Stank, Keller, and Closs 2001) all fall into this category. Since interactions and collaboration occur both within and across firms, it is worth the effort to examine internal and external integration at the same time (Rodrigues, Stank, and Lynch 2004). *Because* of the boundary-spanning nature of SCM, both internal and external

integration are important ingredients that shape the quality of any relationship (Bowersox, Close, and Stank 1999).

The rationale behind the distinction between internal and external integration is two-fold. In the first instance, owing to the significant differences among exchange partners in many respects (such as organizational ownership, structure, policies, and value), the participants, activities, mechanisms, and scope involved in internal and external integration differ considerably. In this respect, the internal-external perspectives of integration have important implications. For example, information exchange and flow, a critical facilitator of integration, can vary significantly within a firm or across firm specific boundaries. Even with close partners, most firms take steps to protect proprietary information that might be deemed crucial existence and manoeuvres of the firm.

Secondly, although both internal and external integration are important to a firm's success, internal and external integration may not be even-out in content and context, i.e., a firm may place more emphasis or achieve greater success on one type of integration over the other. Stevens (1989) suggested that internal integration comes first and is the foundation of external integration. Conversely, many managers report that it is easier for buyers to integrate with their suppliers and for logistics managers to integrate with their customers than it is for either group to integrate within the firm across various functional areas.

2.7 A Process View of Supply Chain Integration

SCM is the integration of key business processes from end users through original suppliers that provide products, services, and information that add value for customers and other stakeholders (Lambert 2004). Thus, a process view of supply chain integration is fundamental. A business process refers to a structured and measured set of activities with specified business outcomes for customers (Davenport and Beers 1995). Zairi (1997), further defined business process management as "a structured approach to analyze and continually improve fundamental activities such as manufacturing, marketing, communications and other major elements of a company's operation."

The process paradigm implies looking at organizations based on the processes they perform rather than on the functional units, divisions, or departments they are divided into. The focus of the traditionally functional approach was often associated with a myopic view of an

activity's influence upon other activities within or between firms. The process approach broadens the focus of the organization. The interaction across functions can create value in meeting customers' needs.

However, the complexity of business processes must be acknowledged. Business processes can vary significantly in terms of level (strategic or operational process) and scope (activities involved in a process). SCM itself, in fact, can be considered a business process. For example, some writers viewed supply chain process as the actual physical business functions, institutions, and operations that characterize the way a particular supply chain moves goods and services to market through the supply chain pipeline. Alternately, a small set of activities employed to handle a customer's defective product complaint is also a business process. Unless all major business processes and relevant sub-processes *can* be identified and understood explicitly process management can be difficult to implement (Lambert 2004). Similarly, the Global Supply Chain Forum also proposed that it is necessary to identify the relevant business processes and manage them effectively (Croxton et al. 2001; Lambert, 2004). Without considering all business processes, integration can lose focus. Combining the discussions on the internal-external perspective and the process view of supply chain integration, it is worth the effort to focus research on integration based on internal and external perspectives of integration and the process view of integration.

2.8 Key Components of Integration – Connectivity and Simplification

Connectivity and simplification have been identified as the two basic and crucial elements of integration. Connectivity and simplification have both featured prominently in discussions on integration and existing literature is rich in ideas and views on the subject matter. (Chen H. et al, 2009).

Existing literature acknowledges the importance of seamlessly connecting related business processes to meeting the overall organizational objectives (Porter 1980, 1985). Lambert, García-Dastugue, and Croxton (2005) explicitly pointed out that connectedness (i.e. connectivity) is key to integrating processes both in an intra-firm specific scenario and an inter-firm context. Connectivity is viewed as crucial regardless of whether the focus is on transactional efficiency or relationship management.

For transaction oriented business processes, connectivity is needed to ensure that transactions flow seamlessly through functional areas; and in the case of business processes, the focus is

on structuring relationships.

Connectivity is required to establish relationships between firms at multiple levels and hierarchies within and across each organization. Not surprisingly, the linkages among relevant functional scopes and areas of business operations and processes have appeared as key concept in many integration-related studies.

For example, Closs, Swink, and Nair's (2005) conceptualization of information connectivity emphasized the linkages between suppliers and customers. In specific terms, the notion is strongly held that information sharing through systems support can *help* companies obtain information directly from customers, reduce reliance on forecasting, and facilitate supply chain collaboration.

In addition to connectivity, simplifying business processes by removing duplicating and conflicting processes is equally important. Connecting relevant business processes is not enough; efforts should also be taken to identify and eliminate excessive elements within the processes. In other words, the processes need to be re-engineered to improve efficiency and effectiveness. Simplification includes designing effective and efficient routines by establishing and adhering to common operational policies and (Stank 1999) which is also referred as inter-functional unification and process standardization (Bowersox, and Kettinger). Supply chain simplification also manifests in other formats such as joint planning and decision-making (Barratt and *Xie* 2000).

Focusing on connectivity and simplification in the conceptualization of integration does not conflict with the existing literature. Instead, it provides a better way to understand the essence of integration and identifies objectives on which managers should focus. For example, the concept of information integration is about increasing visibility along the supply chain and enables connectivity between processes (Lee 2000); the concept of measurement integration refers to the development and maintenance of common measurement systems to simplify the processes across functional areas and organizations (*Mollenkopf* and Closs 2000).

Figure 9: Process Integration Model
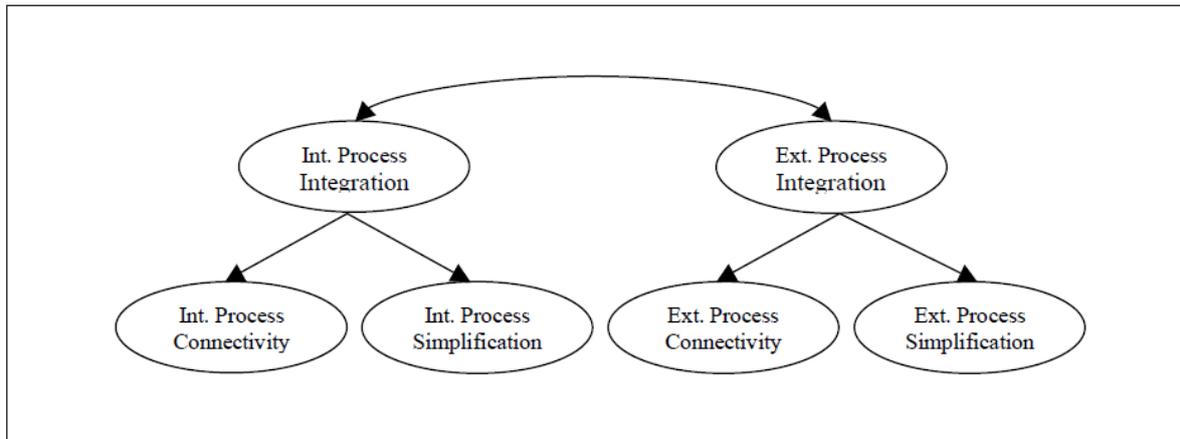
Source: Chen H. et al 2009

2.9 Why Process Management?

For years, managers have recognised the need to find better ways to organize work. Management is on the verge of a major breakthrough in understanding how industrial company success depends on the interactions between the flows of information, materials, money, manpower, and capital equipment. The way these five flow systems interlock to amplify one another and to cause change and fluctuation to form the basis for anticipating the effects of decisions, policies, organizational forms and investment choices. Process thinking is a shift from competing on what we make to how we make it (David Robison, 1999).

2.10 Functional Thinking and Process Thinking

Functional organisation impedes process thinking. Functional organization is the grouping of resources into specific departments, such as research and development, purchasing, production, logistics, and marketing (Fawcett Stanley E et al, 2007).Traditional organization structures drive functional thinking; managers begin to see the world from a narrow, functional perspective, acting as if their function were the company. This means that managers view their decisions from their own function's perspective, thereby ignoring competing viewpoints emanating from the other departments. Decisions are made to achieve the local or functional optimum results realization regardless of how they affect the other areas of the firm.

Figure 10: Diagrammatic representation of functional and process thinking

Purchasing	Production	Logistics	Marketing
Goal: • Minimize Purchase Price	**Goal:** Minimize Costs	**Goal:** Minimize Costs	**Goal:** Sales/Market Share
Decisions: • Lowest Purchase Price • Stable Requirements • Multiple Sourcing • Frequent Bidding	**Decisions** • Long Runs • Stable Schedules • Product Standardization • SKU Minimization	**Decisions** • Quick Replenishment • Minimal Inventory • Centralized Inventory • Long Lead Times	**Decisions** • High Service Levels • High Inventory • Dispersed Inventory • Short Delivery Times • Quick Responses
Measures: • Cost Oriented • Year to Year Purchase Price	**Measures:** • Cost Oriented • Per-Unit Cost	**Measures:** • Cost Oriented • Inventory Cost • Transportation Cost	**Measures:** • Market Oriented • Sales/Share Growth

Source-Fawcett Stanley E. et al, 2009

Aligning decisions with corporate strategy and co-ordinating activities across functions can reduce the inefficiencies of functional organization and unleash great competitive potential. (Fawcett Stanley E. et al, 2009). However, high levels of process thinking do not exist in most companies, largely because managers do not understand the basic nature of a process.

2.11 The Integrated Nature of Supply Chain Management

Empirical evidence exists in support of the recognition of borrowing and applying theories from other disciplines in supply chain management theory and practices (Frankel et al. 2008; Stock *1997*, 2002).

The complexity of today's supply chain systems means that it is almost impossible to thoroughly explain a supply chain phenomenon with a single theory. Thus, to provide a more thorough understanding of the emerging theoretical framework, a wide range of related literatures were consulted: strategic management, marketing, and the social sciences. In particular, four prominent theoretical theories-strategy-structure-performance framework, the resource based view of the firm, transaction cost economics, and social network analysis—

are considered to be particularly relevant given the themes that run through this study. In the process of developing a comprehensive framework, a two-step approach was taken. First, a basic framework utilizing SSP and RBV is proposed. Next, explicit concepts derived from the qualitative *research* are incorporated, and specific propositions are offered.

2.12 The Basic and Detailed Frameworks of Integration

The SSP framework has been widely used in the strategic management field. Its basic tenet is that a firm's strategy drives the development of organizational structure and process. The fit between strategy and structure of a firm leads to better performance because the structure provides the necessary systems and processes essential for successful strategy implementation. The success of supply chain process integration is dependent on whether it can offer a strategy-structure fit.

The resource based view (RBV) of the firm considers firms as bundles of distinct resources and suggests that firms are able to accrue competitive advantage to themselves by developing unique firm resources and capabilities. The relevance of RBV to logistics and SCM has long been established. As a set of critical processes and activities encompassing many functional areas, logistics is critical to a firm's resource allocation and utilization. Furthermore, firms may gain a competitive market position through developing unique logistics capabilities. While traditional RBV literature centred on the firm's internal resources, recent empirical evidence have emphasized the importance of external resources available to the firm through its networks (Hunt and Zaheer*2000*). Therefore, the relevancy of RBV to supply chain process integration becomes evident because of the engagement of both internal and external resources. Thus, the combination of SSP and RBV provides a powerful analysis tool. The alignment of strategy and structure is only a baseline requirement for organizational performance. It is only when necessary capabilities are developed as a result of the strategy and structure fit, *do* firms achieve competitive advantage. Hence, the strategy-structure-capabilities-performance linkage is well-articulated using the basic *tenets* of SSP and RBV. Since resources are the key input factor in the RBV framework; acquiring a unique bundle of resources is critical to a firm's success. Structure can be viewed as the configuration of a firm's resources.

(Chen H et al. 2009) developed two models of supply chain process integration, namely the basic model and the detailed model. Strategy is a major organizational plan of action to reach

a major organizational objective. Strategy can be inferred through examination of a firm's strategic priorities. Strategic priority develops from an awareness of opportunities and needs that create new *administrative* challenges, which may necessitate refashioned structures to operate the firm efficiently.

Cost orientation and customer orientation appear to be the most critical strategic priorities that impact supply chain process integration. Cost orientation is a type of corporate culture that focuses on seeking and exploiting all sources of cost advantage (Porter 1985). Cost orientation *as* a significant driver of supply chain process integration. Firms pursuing a low cost strategy may see integration as a valuable means to achieve cost reduction through business process streamlining and the elimination of redundancies. Transaction Cost Economics (TCE) provides strong support for process integration's impact on supply chain process integration.

Customer orientation has been defined as a set of beliefs that puts the customer's interest first and a sufficient understanding of one's target buyers to be able to create superior value for them continuously. When customer orientation is a strategic priority, all functional activities and organizational processes need to be organized synergistically and focused toward anticipating and responding to changing market and customer requirements ahead of competitors.

With a strong customer orientation, a firm is more likely to develop customer closeness as a distinctive capability. While providing a high customer service level is desirable, the cost can be formidable. Thus, a strong cost orientation can help firms keep their supply chain activities within a feasible range.

Collaborative Planning, Forecasting and Replenishment (CPFR) is an excellent example of combining both cost and customer orientation. By integrating sales forecasting and replenishment processes between trading partners, CPFR enables participants to share improvements in both inventory costs and customer service.

Supply chain capabilities fall into two categories: efficiency-related capabilities and effectiveness-related capabilities. Efficiency-related capabilities refer to a firm's ability to utilize resources (i.e., minimize costs), while effectiveness-related capabilities are a firm's

ability to *fulfill* customer requirements, (*i.e.,* enhance customer service).

Capabilities *are* "complex bundles of skills and collective learning, exercised through organizational processes that ensure superior coordination of functional activities". Integration can help firms develop efficiency-related capabilities.

Process integration can contribute to cost reduction by waste reduction and more effective management of the processes. This helps firms to develop efficiency capabilities. Through both internal and external process integration, firms are able to quickly draw inputs and skill sets from various functional areas.

Innovation has been defined as the generation, acceptance, and implementation of new ideas, processes, products, or services (Amabile et al. 1996). Supply chain innovative capability *which* is defined as a firm's ability to develop and offer new services or processes to create superior value for supply chain members. Performance in general is the extent to which a firm's goals are achieved.

A firm's overall performance in terms of market performance and financial performance indicate the firm's success level. A firm's market performance includes both market share and customer satisfaction. While market share is a good indicator of the firm's competitiveness in the marketplace, customer satisfaction reflects customers' value perception. A firm's success in the marketplace rests on the firm's ability to attract, satisfy, and retain customers by creating customer value (Johnson 1998).

Figure 11: Basic supply Chain Process Integration Model
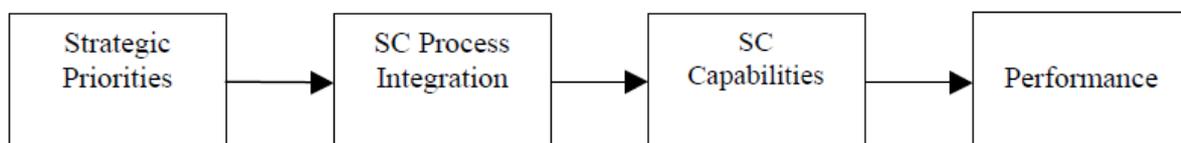
Basic Supply Chain Process Integration Model

Figure 12: Detailed Supply Chain Process Integration Model
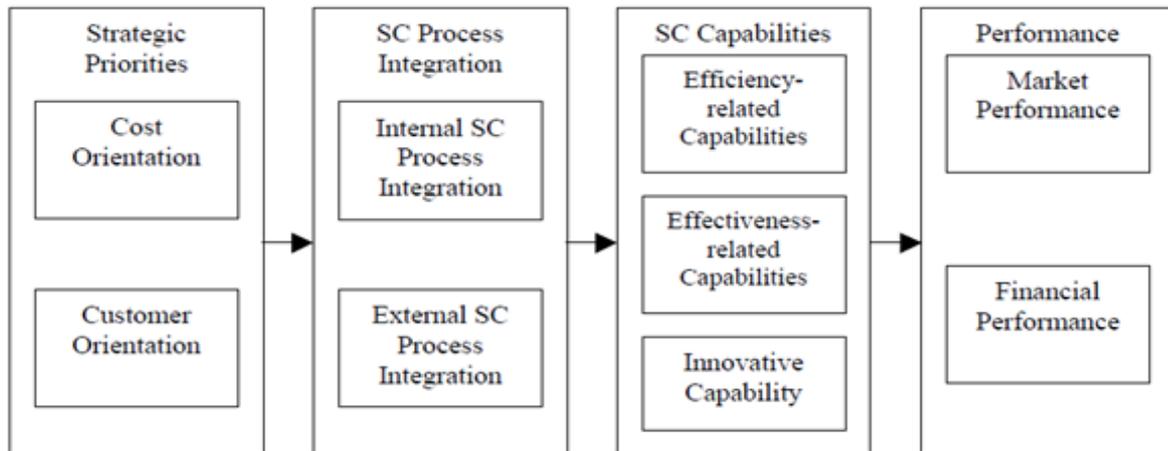
Chen H et el (2009)

2.13 The Place of Collaboration in Supply Chain

Collaboration is a process of decision making among interdependent parties. It involves joint ownership of decisions and collective responsibility for outcomes. The need for collaboration heightens where two or more departments work together, have mutual understanding, have a common vision, share resources, and achieve collective goals. Key dimensions of collaboration are a cross-department or organization scope, a commitment to working together, and some common bond or goal. Consequently, collaboration emerges as one of the core resources of supply chain management because its output has to be quantifiably beneficial to each stakeholder involved.

Managers who adopt a collaborative perspective work to build an esprit de corps, which implies fostering team work between and across departments or organizations in order to unite efforts and achieve collective goals through synergy.

Although individuals (*or* organizations) need to necessarily relinquish some control, complete control over an ineffective process is not nearly as exciting as shared control over a dynamic and value-added process. The success of collaboration depends upon the ability and willingness of managers to build meaningful relationships and create trust.

At an operating level, collaboration requires significant change from standard business practice, particularly in the area of information exchange. It entails sharing of data, operating plans, and even some financial *information.*

"24 A hybrid form of collaborative initiative *called* collaborative planning, forecasting, and

replenishment (CPFR) is an excellent illustration of the scope of collaboration in many of today's best practice firms. This practice enjoins trading partners for example to jointly develop long-term demand projections rather than rely upon separate, independently generated forecasts. The principle of collaborative planning, forecasting, and replenishment is not exclusively applicable to trading partners. Public and private sector entities whose operational processes have related elements often rely on each other through collaborative planning, forecasting, and replenishment. The estimates are constantly updated, based upon actual demand and market changes. The result is a better match between supply and demand through the use of realistic, informed, and *Conceptual* Managers confront many and varied obstacles to a seamless flow of products, services, and information from sourcing, to manufacturing, to distribution to end-customer. Most managers strive to integrate these processes in order to increase value by reducing waste, excessive work delays, and redundancy. The objective is the lowest total landed cost without sacrificing superior service. Data collected by the Supply Chain Council indicates that excellent supply chain performance can lower cost by up to 7% and enhance cash flow by more than *30%." 27* Collaboration, as a critical element of integration, contributes to these performance Improvements." Cost effectiveness is highly desirable and is a building block in gaining competitive advantage. Collaboration helps firms tailor service offerings to the specific requirements of customers of choice by identifying their long-term requirements, expectations, and preferences.

2.13.1 Benefits of Collaboration

Benefits accrue to the partners involved in collaboration when *partners* are: 1) willing to work together, 2) understand other viewpoints, 3) share information and resources, and 4) achieve collective goals. The benefits are reduced resource duplication, greater relevance to customer needs, and flexibility in responding to unique customer requests and accommodating change. Collaborating and information sharing focuses more resources (human and financial) on business operations, which allows more informed decisions and reduces risks. The result is a win-win situation that should improve service delivery and performance.

2.13.2 Internal and External Collaboration

The relationship between external and internal collaboration may be the key in facilitating *behavioral* change, that is, the shifting from traditional arms-length or even adversarial

attitudes to a partnership perspective that fosters cooperation and a freer exchange of information. Collaboration is needed both within and beyond the firm's boundaries. Viewed from another perspective, lack of a direct relationship between external collaboration and performance may stem from a breakdown in internal collaboration. In other words, external collaboration is a necessary but not sufficient condition for performance improvement. A positive relationship between external and internal collaboration fosters better performance.

Personnel engaged in boundary-spanning operational schedules are required to collect the necessary intelligence, such as information on order patterns, planned product promotions, and valuable service feedback. They also provide the contact that enables coordination of operations across business entities. To accomplish these tasks, they must be informed and educated; they need to know what questions to ask and what information to provide.

It is critical that the information they pass on reach the right people within the organizations *and* mere delivery may not be adequate; they may have to "sell" the ideas internally in order to convince the appropriate people to follow through. It *helps* if boundary spanners are politically empowered, so that managers from different organizations will be motivated to act on their information. Empowerment is often derived from metrics that encourage all managers to focus on total system performance rather than narrower results. A company that seeks to attain a competitive edge through external collaboration also must become more focused internally, so that it may better respond to customer expectations and accommodate customer needs.

Internal collaboration is essential as well. It facilitates the close interactions that bring greater expertise to day-to-day operations, focusing efforts and targeting resources as needed. Often task forces or cross-functional teams are involved. Their cooperative decisions on the use of internal resources are supplemented with information from external collaboration, which ensures that internal processes are customer focused. If the pattern is reversed, and internal collaboration drives external relationships, then performance improvements may not be achieved. (Journal of Business Logistics; volume 22, no. 1, 2001)

Figure 13: A Conceptual Model of Internal and External Collaboration
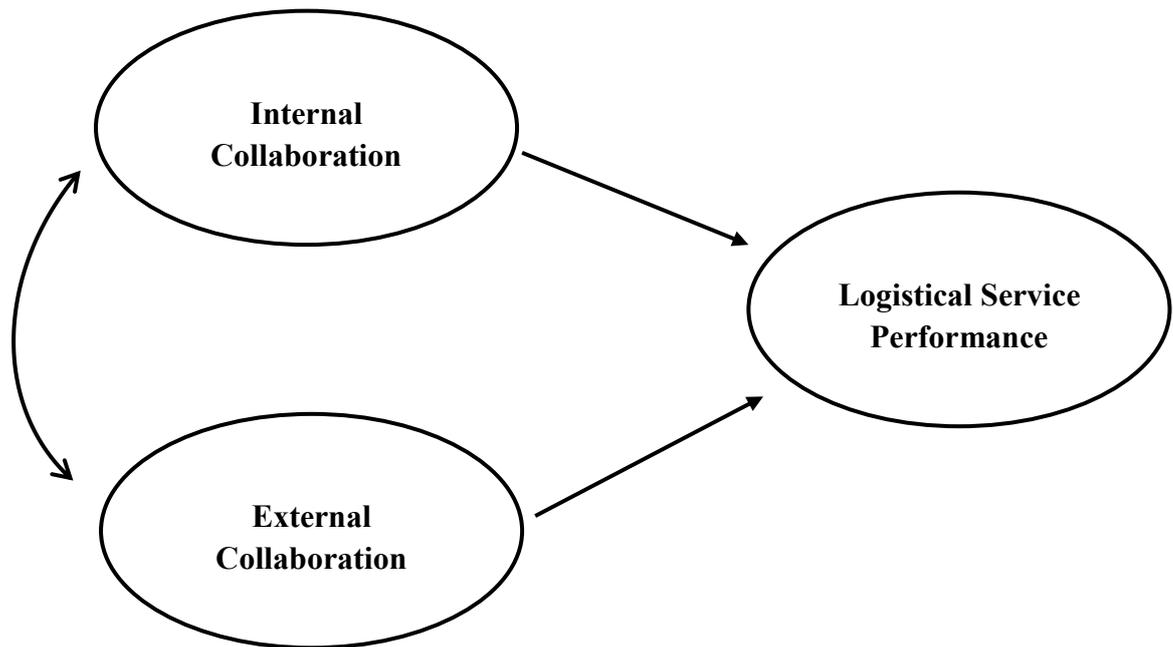
2.14 Impacts of Collaboration on E-Market Place Structure

Literature exists that explores e-marketplace classification. A first possibility is to organise e-marketplaces into private (one-to-many) and public (many-to-many) e-platforms. According to Whitaker et al. (2001), the first ones improve buying, selling and collaboration within a single enterprise's value chain and are intended to optimise a company's own supply chain process with key trading partners (Neill and Purchase 2004). This category can be identified by three main features: 1) greater privacy and security; 2) superior collaborative capabilities; and 3) the opportunity to extend or establish a competitive advantage.

In this way, private e-marketplaces can be seen as those e-platforms usually developed by large firms, with a high number of customers and suppliers, to provide functionality that is complementary to enterprise systems. Through specific tools, companies are able privately to manage complex processes among registered partners.

Conversely, public e-hubs are generally addressed as virtual platforms that automate business processes within a horizontal industry (Whitaker et al. 2001). According to Neill and Purchase (2004), public e-hubs are independently owned and developed online marketplaces. In effect, a parallel process among several stakeholders acting in unison is achieved through the application of public e-hub solutions. The value for registered participants in the e-marketplace increases with the addition of each new partner or business service. In this case, collaboration also acts as an instrument of cohesion among companies that are asked to trust

in partners and co-operate efficiently to create value for both the companies themselves and customers.

In the first place, neutral or public e-marketplaces according to Neill and Purchase (2004) can be divided into vertical and horizontal hubs on the basis of the matching services provided. More specifically, vertical e-marketplaces are intended to be a buyer–seller virtual place of aggregation within a specific industry.

Secondly, horizontal e-marketplaces are 'third-party intermediaries' that exploit the internet to match stakeholders within a specific business function (Ordanini, Micelli, and Di Maria 2004).

A third category of public e-marketplaces; Consortia e-marketplaces (few-to-many) – developed and owned by partnerships of two or more large industry players or, alternatively, by a grouping of major buyers – act to streamline supply chain processes mainly through demand forecasting and inventory planning (Neill and Purchase 2004).

The point need to be emphasized that in all manner of public e-marketplaces platforms, different levels of participation and integration are required by participating firms. For example, in the case of B2B e-marketplaces functionality is based on the strategic willingness to put more and more investment into the portal management. The presence "or absence" of such a strategic intention, and the lack of highly skilled ICT personnel and affordable legacy systems are some of the most relevant features that contribute to the declaration of success or failure of B2B e-marketplaces (Buhalis 2004; Kirby 2003).

2.15 Managerial Efficiency and Effectiveness

According to Laurie J. Mullins (2007), operational efficiency can be distinguished from operational effectiveness. Efficiency is concerned with doing things right and relates to inputs and what is done with it. Effectiveness is concerned with doing the right things and relates to outputs of the job and what is actually achieved.

To be efficient, an organization must attend to the input requirements of the job, to clarification of objectives, planning, organization, direction, and control. But in order to be effective, one must give attention to inputs of the job; to performance in terms of such factors as obtaining best possible results in the important areas of the organization, optimizing use of resources, increasing profitability, and attainment of the aims and objectives of the organization.

Effectiveness must be related to the achievement of some purpose, objective or task and to the performance of the process of management and the execution of work.

Criteria for assessing the effectiveness of a manager should be considered in terms of measuring the results that the manager is intended to achieve. But what is also important is the manner in which the manager achieves results and the effects on other people. This may well influence effectiveness in the longer term. Managerial effectiveness results from a combination of personal attributes of the manager's job in meeting the demands of the situation, and satisfying the requirements of the organization.

It is suggested that effectiveness is more important than efficiency. Managers who want to improve should review both their effectiveness and their efficiency. Effectiveness is doing the right things, such as accomplishing the objectives of the organization. Efficiency is making the most economic use of the resources placed at the disposal of the organization. Effectiveness is more important than efficiency because one must be doing the right kind of work, only then does it matter whether the work is done efficiently.

2.16 Conceptual Framework

According to Miles and Huberman (1994), a conceptual framework explains, either graphically or in a narrative form, the main things to be studied. Creating a conceptual framework is done after a number of research questions have been raised. The conceptualization can be presented according to each research question. The theories in the literature review should be conceptualized into the main factors and variable of the research questions that will be studied. In the view of Saunders et.al. (2000), research is theory dependent and for this reason, a conceptual framework necessary to guide and shape this study become imperative.

In Porter M (1985)'s value chain model made mention of primary activities and support activities, the goal of which is to offer the customer a level of value that exceeds the cost of activities.

The supply chain council's Supply Chain Operations Reference Model (SCOR) suggests that business should be managed on key processes, such as planning, sourcing, manufacturing, delivering etc. This model is useful for our study except that it is in-warding-looking in that it does not attempt to integrate and collaborate processes across different firms.

Fawcett et al (2009)'s model shows a process road map for strategic supply chain management. This is a systematic approach to supply chain enabled business model and

execute a winning strategy. It emphasizes an iterative 4-step process; assessment, planning, execution and learning. Four key questions define the road map to supply chain success. These are; Who are we? How do we fit? How should we fit? and How do we get there?

According to Chen H. et.al. (2009) basic and detailed frame work of integration which is based on the premise that a firm's strategy drives the developments of organizational structure and process. The fit between *the* strategy and structure of a firm leads to better performance because the structure provides the necessary systems and processes essential for successful strategy implementation. It considers the Resource Based view of the firm as bundles of distinct resources from which firms are capable of accruing competitive advantages to themselves. Cost and customer orientations according to the detailed model of Chen H. et. al. (2009) detailed supply chain process integration, are the most critical strategic priorities that impact supply chain process integration. Cost orientation seeks to exploit all sources of cost advantage while as customer orientation investigates target buyers in a bid to creating superior value for them. These two components of the model are vital literature for our work. However, they are not sufficient as a result of the peculiar nature of the entities under study i.e. they do not face any formally recognised competition in their respective areas of operation.

For our purpose, Chen H et. al. (2009) model on process integration and Stank T.P. et. al. (2001) model on external – internal collaboration have been identified as relevant pieces of framework that touch on the pertinent issues being studied, that is integrating the operational processes of two separate entities and identifying and navigating the territories where the two entities can collaborate to achieve enhanced entity performance.

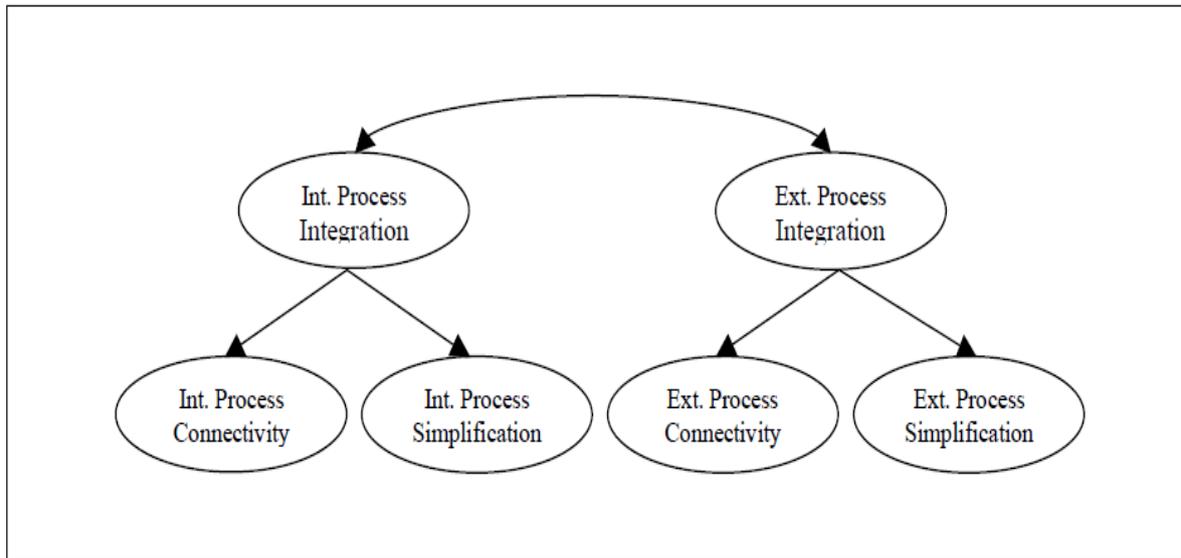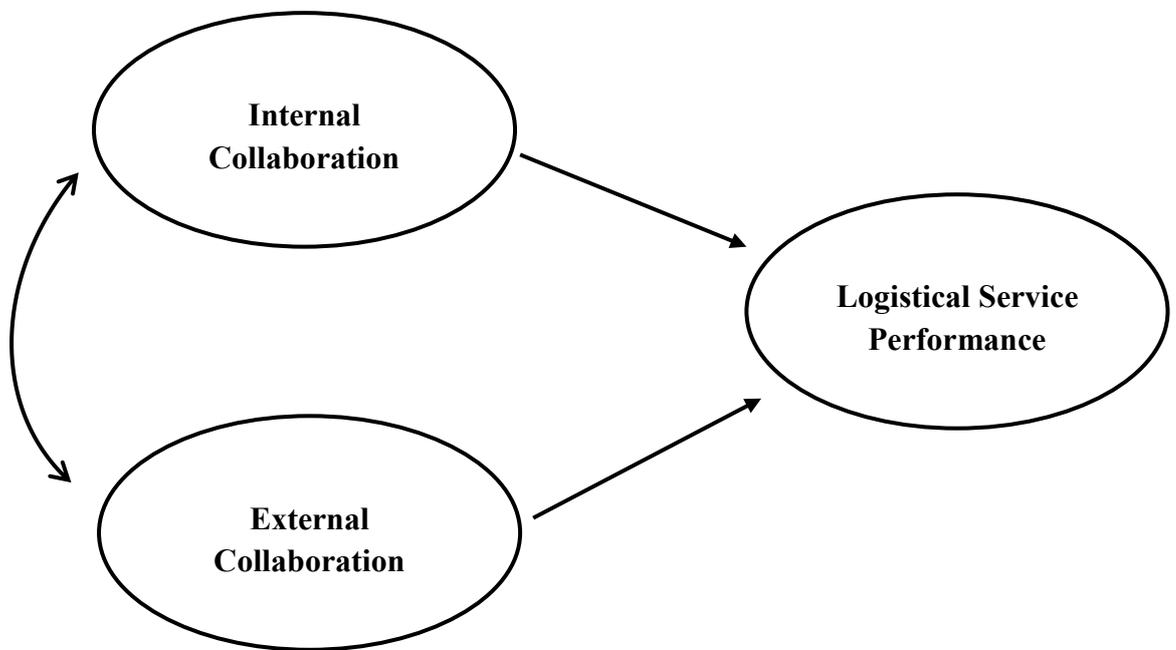**Figure 14: Process Integration Model**

Figure 15: External - Internal Collaboration Model

Main research question one

1. What internal and external processes of the entities (Births and Deaths Registry and Ghana Immigration Service) can be integrated to facilitate the acquisition of Government of Ghana Passport?

Connecting and Simplifying Operational Processes

Connecting and simplifying operational processes are two basic and crucial elements of integration. The main research question number one sought to investigate internal and external processes integration through connectivity and simplification techniques and principles as argued by Chen H. et. al. (2009) in his process integration model, (Figure 2.7) The importance of seamlessly linking related but separate entities and their business processes to meet their respective overall objectives need not be overemphasized. Connecting and simplifying operational processes can be carried out either within firm specific boundaries (intra-firm) or across and or between two or more firms (inter-firm) dimensions. Wherever two or more distinct firms share some element of common interest and identity in their operational processes by way of input dependency and or requirements; operational or transformational processes embark upon; and or output (service) utilization and or purpose, connectivity and simplification of processes are seen as crucial foundations for enhanced performance. Simplification of internal and external operational processes features prominently in the literature review. This is mainly accomplished through designing and redesigning existing operational processes in addition to the establishment and implementation of common operational policies and procedures in the form of inter-functional unification and process standardization. Connectivity and simplification are bedrocks that have the potential to promote efficiency and effectiveness in operations where properly adopted and implemented within organizational setting.

Main research question two

2. How can the two entities (Births and Deaths Registry and the Ghana Immigration Service) collaborate to enhance their respective operational processes?

External and Internal Collaboration

Stank T.P. et. al. (2001) model on external – internal collaboration has been identified as relevant piece of framework that touches on identifying and navigating the territories two entities can collaborate to achieve enhanced entity performance. In using this model to answer the main research question two, the researchers utilized understanding gained from

processes integration and in addition explored and investigated potential areas where the two entities could collaborate to enhance their respective operational processes. The need for a shift from traditional arms-length competitive relationship to one of partnering and or networking within and across firm specific boundaries for the purpose of information flow is well underscored by Stank T.P. et. al. (2001) model.

Subordinate research questions

1. How can the processes identified be integrated effectively and efficiently?

2. Would integration of processes and collaboration between the entities necessarily lead to improvement in service delivery?

3. What are the likely implications (in terms of policy, regulatory and practices directions) of the processes integration and collaboration between the Births and Deaths Registry and the Ghana Immigration Service?

Subordinate research question one

Subordinate research question one sought to investigate how efficiency and effectiveness would accrue to the entities as a result of integrating (both intra-entity specific and inter-entity operational processes). Efficiency is concerned with doing things right and relates to inputs and what is done with it. To be efficient, an organization must attend to the input requirements of the job. In answering this sub-question, the researchers identified the inputs necessary for the respective tasks of issuance of Government of Ghana Passport and Birth Certificates and Death Certificates. The respective information flow and exchange necessary for tasks accomplishment through process redesign to reduce lead time were investigated.

Subordinate research question two

Subordinate research question two on the other hand elicited answers to improvement in service delivery as a result of integrating operational processes and forging collaboration between the entities.

Subordinate research question three

Subordinate research question three investigated the likely implications as a result of integration of operational processes and collaboration between the entities. The two entities (Ghana Immigration Service and Births and Deaths Registry) were established and regulated by separate Acts of Parliament (Immigration Act, 2000, Act 573 and Registration of Births and Deaths Act, 1965, Act 301) respectively and are also governed by separate boards of

governors. Integration of operational processes and collaborative undertakings by the two entities were investigated in terms of their respective existing policy guidelines, regulatory frameworks and operational practices.

Figure 16: Integration Model
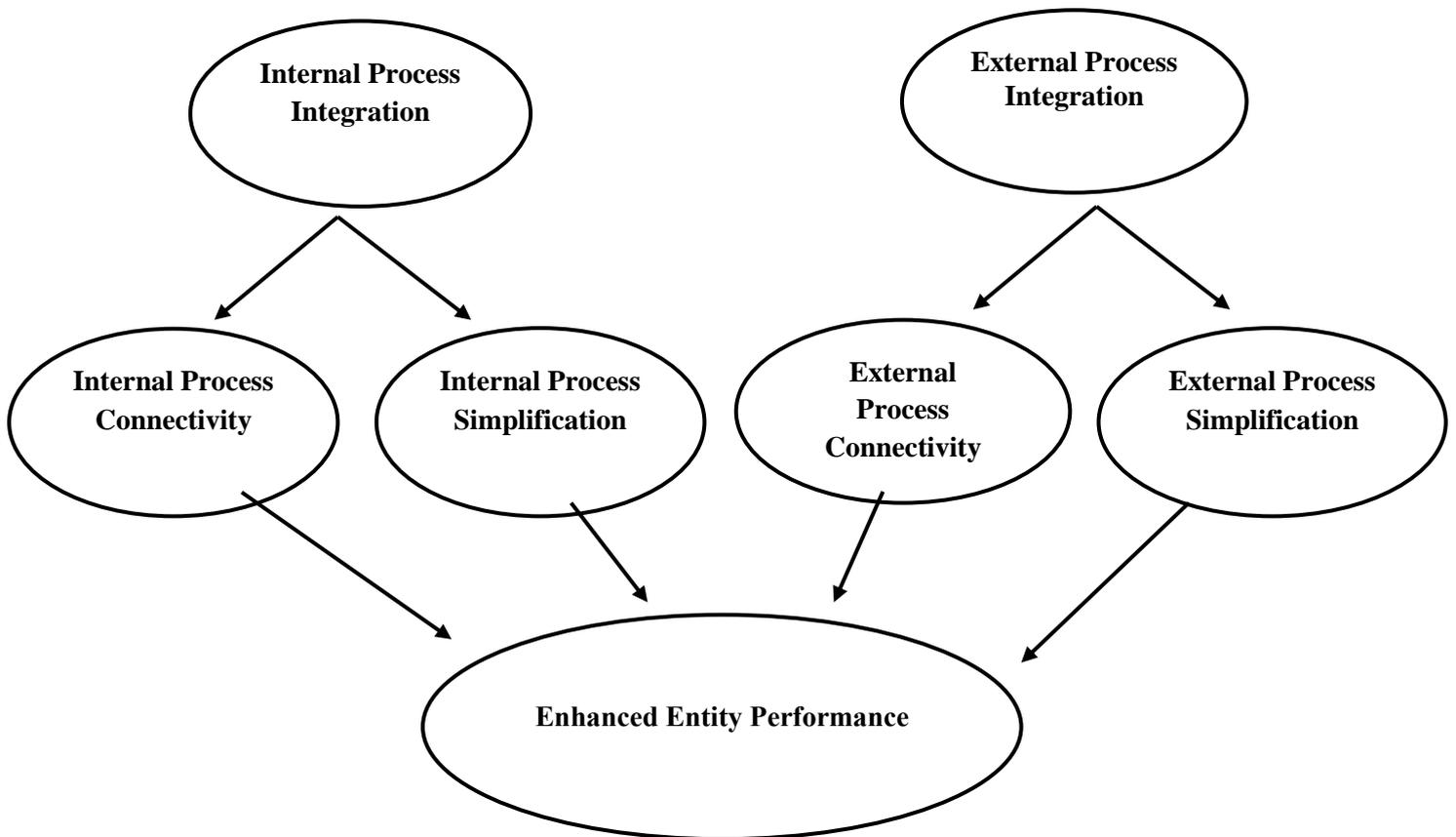
Source: Adopted and modified from Chen H. et. al. (2009)

Figure 17: Collaboration Model
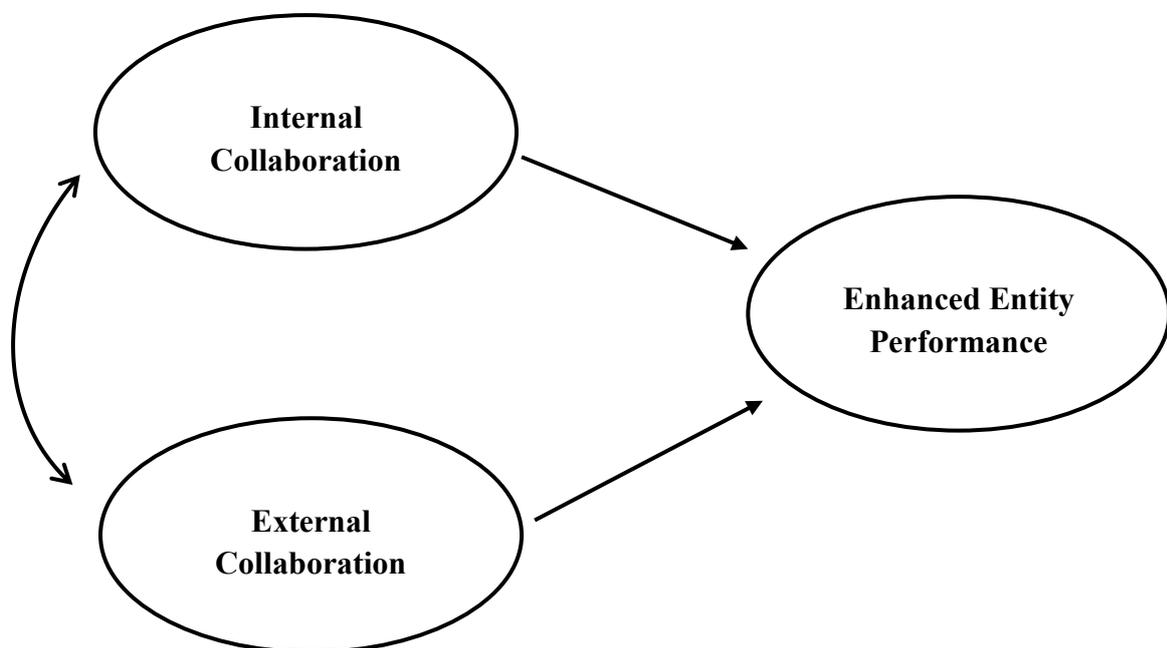
Source: Adopted and modified from Stank T.P. et. al. (2001)

CHAPTER THREE

METHODOLOGY

In this chapter the methodological approaches used in order to reach to the purpose and answer the research questions are described. The steps are explained one by one to give the reader an overview of how the data have been obtained and treated.

3.1 Research purpose: Exploratory/Descriptive/Explanatory

Scientific research can be classified in terms of their purpose. There are three different types of research accordingly. These are exploratory research, descriptive research and explanatory research (Saunders et al. 2000:97).

3.1.1 Exploratory Studies

Exploratory studies are valuable means of finding out "what is happening; to seek new insights; to ask questions and to assess phenomena in a new light". (Robson, 1993) as cited by Saunders et al. 2000:97). It is particularly useful approach if one wants to clarify his understanding of a problem. Its major strength is that it is flexible and adaptable to change. Flexibility inherent in exploratory research *those* not mean absence of direction to the enquiry. (Adams and Schvaneveldt 1991) as cited by Saunders et al., 2000.

3.1.2 Descriptive research

The objective of this kind of research is to provide a description of various phenomena connected to individuals, situations, or events that occur. The descriptive research may also be used when developing empirical generalizations. Once such generalizations begin to appear, they are worth explaining, which leads to theory development. (Saunders et.al.2000:97).

3.1.3 Explanatory research

Explanatory research seeks to find causes and effects relationships between given variables. (Jonsson & Sanders, 2000). Bernard (1998) cited by Miles and Huberman (1994), explanation means "making complicated things understandable by showing how their component parts fit together according to some rules, that is, theory." The purpose of explanatory research is connected to both descriptive and explanatory purposes. In the first place, it is descriptive since the researcher knows what he wants to investigate but is not aware of the answers. This approach is appropriate as our problem is clearly structured and we know what sort of data to look for and for what purpose.

This research aims to find out how passport acquisition in Ghana can be improved by integrating the processes involved and getting the two entities – Ghana Immigration Service and the Births and Deaths Registry to collaborate. In view of this, the research purpose for this study is explanatory.

3.2 Research Strategy

According to Saunders M. et al (2000:92), research strategy is a general plan of how the research question(s) set will be answered.

Some of the strategies are experiment, survey, case study, grounded theory, ethnography, action research, and cross-sectional and longitudinal studies. The strategy employ should be appropriate for the research question(s) and objectives. However these strategies should not be thought of as being mutually exclusive.

3.2.1 Experiment

Experiment is a classical form of research that owes much to the natural sciences, although it features strongly in *many* social science *researches*, psychology. *It* the definition of a theoretical hypothesis, *sample* selection, allocation of samples of individuals from known populations, *allocation* of samples to different experimental conditions, introduction of planned change on one or more of the variables, measurement on a small number of variables, and control of other variables.

3.2.2 Survey

The survey method is usually associated with the deductive approach. It is a popular and common strategy in business and management research. One advantage is that it allows large amount of data from a sizeable population in a highly economical way. Survey method is mostly based on questionnaire. Structured observation, of the type most frequently associated with organization and methods (O&M) research, and structured interviews, where standardized questions are asked to all interviewees are other data collection devices that can also be used in the survey method. Some of the disadvantages with this method are that, first the data collected by survey method may not be as wide *ranging* as those collected by *the* qualitative methods. There is a limit to the number of questions *that* any questionnaire can contain *if* the respondents may answer the questions poorly and lastly it is time consuming even with the use of technology. (Saunders et al 2000:94).

3.2.2 Case study

According to Robson (1993:40) as cited by Saunders et al. 2000:94, case study is the development of detailed, intensive knowledge about a single "case", or a small number of related "cases". The case study approach *also* has considerable ability to generate answers to the question "why" as well as the "what?" and "*how*?" questions. Though "what?"and "how?" questions tend to be more the concern of survey method. The data collection methods employed may be various. These may comprise questionnaires, interviews, observation, and documentary analysis.

3.2.3 Grounded theory

According to Saunders et al. (2000:94-95), grounded theory is a "theory building" through a combination of induction and deduction. In *grounded,* data collection starts without the formation of an initial framework. Theory is developed from data generated by series of observations. These data lead to the generation of predictions that are then tested in further observations which may confirm, or *refute*, the predictions. This research is primarily aimed

at investigating research questions and for that matter no attempt was made at testing any established theory.

3.2.4 Cross sectional study

It is the study of a particular phenomenon at a particular time (Saunders et al. 2000:96). Cross sectional study often employs the survey strategy. It may aim at describing the incidence of a phenomenon or to compare factors in different organizations.

In this research, survey method was employed to search for process integration and entity collaboration for the two entities involved in the study- Ghana Immigration Service and Births and Deaths Registry. In order to find answers to "What internal and external processes of the entities (Births and Deaths Registry and Ghana Immigration Service) can be integrated to facilitate the acquisition of Government of Ghana Passport?" and "How can the two entities collaborate to enhance their respective operational processes?"

3.3 Selection of sample

As in this study, there are many constraints in budget and time for surveying the entire population. Again, it is impracticable to survey the entire population. Sampling provides a valid alternative to a census (Saunders et al 2000).

3.4 Sampling type

In this study, cluster sampling was used. The motivation behind the choice of cluster sampling emanates from the need to categorize employees of the two entities into regional bloc and official rank bloc bases so that all categories of employees will be covered in the study.

3.5 Sample size

The larger your sample size, the lower the likely error in generalizing to the population. For many research questions and objectives, the need to undertake particular statistical analysis will determine the threshold sample size for individual category.

In total the views of sixty respondents will be sought under this study. The breakdown of the number is as follows;

Two respondents; officials from each entity and from each of the ten regional capital offices of the Ghana Immigration Service and the Births and Deaths Registry will be interviewed. Total number of respondents to be interviewed is forty.

In addition, two beneficiaries of the services provided by the two entities from each of the ten regional capitals will be selected and questionnaire administered on them. Total number of respondents for questionnaire administration is twenty.

3.6 Sampling Technique

According to Saunders M. et al (2000), sampling techniques can be divided into two types:

Probability or representative sampling: the chance, or probability, of each case being selected from the population is known and is usually for all cases. It is most commonly associated with survey-based research where you need to make inferences from your sample about a population to answer your research questions or to meet your objectives.

Non-probability or judgmental sampling: the probability of each *case* being selected from the population is known and is impossible to answer research questions or to address objectives that require making statistical inferences about the characteristics of the population.

Essentially, in this research we selected a probability sample and used a multi-stage cluster sampling technique. This technique is normally used to overcome problems associated with a geographically dispersed population when face- to- face contact is needed or where it is expensive and time consuming to construct a sampling frame for large geographical area (Saunders M. et al 2000).

Figure 18: Sampling Technique
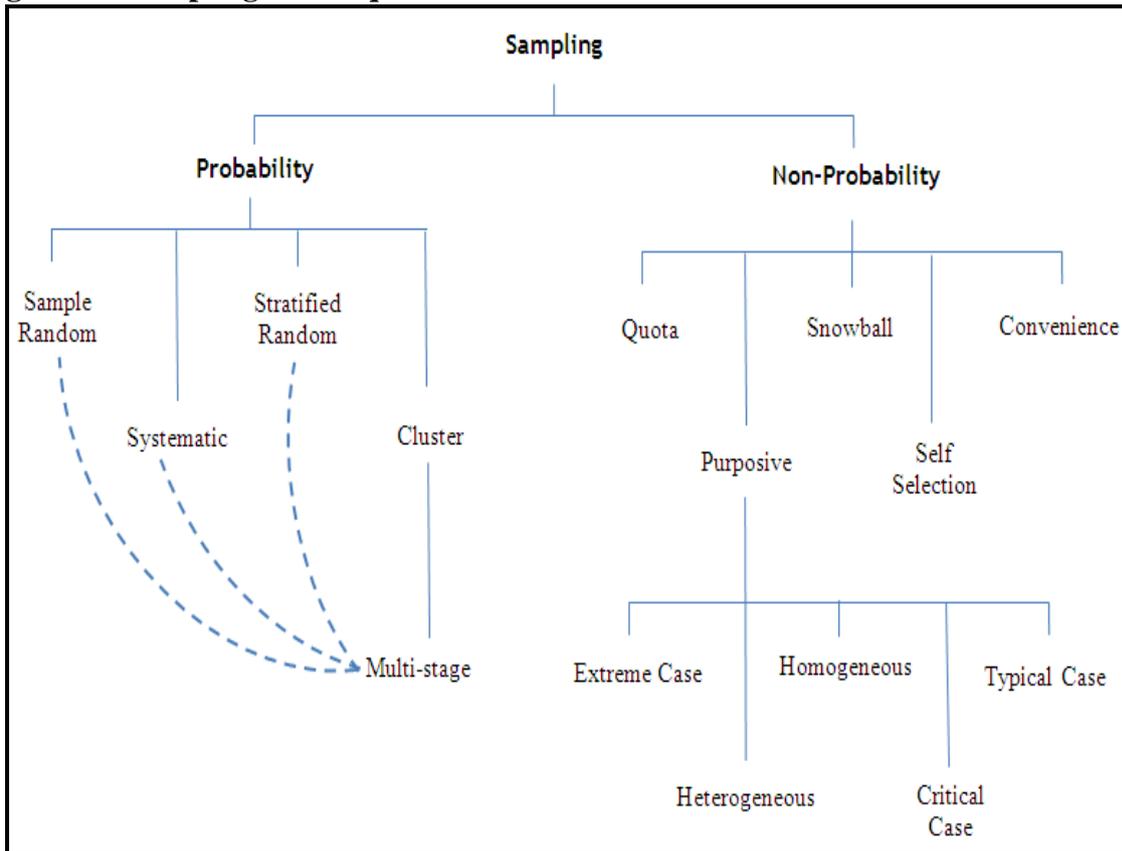
3.7 Data Collection

We adopted primary and secondary sources to gather data for this research. The research covered two broad groups of respondents namely Service providers; officials of the Ghana Immigration Service and Births and Deaths Registry and service beneficiaries or patrons.

3.8 Primary data

There are various means of gathering primary data these include observation, interview, and questionnaire.

In this particular research, we adopted interview and questionnaire to collect the data

Questionnaire as a general term includes all techniques of data collection in which each person is asked to respond to the same set of questions in a predetermined order. (deVaus, 1996) as cited by Saunders et el 2000.

A set of twenty questionnaires were administered on the service beneficiaries - individuals and or patrons of the services provided by the Ghana Immigration Service and the Births and Deaths Registry.

According to Kahn and Cannell, (1957) an interview is a purposeful discussion between two or more people. As cited by Saunders et al 2000. The use of interviews can help you gather valid and reliable data that are relevant to your research questions and objectives (Saunders et al 2000)

Interviews may be highly formalized and structured, using standardized questions for each respondent or they may be informal and unstructured conversations. In between there are intermediate positions (Saunders et al 2000). In view of this, interviews may be categorized as one of the following:

3.7.1 Structured

Structured interviews use questionnaires based on a predetermined and standardized or identical set of questions. The questions *will* read and *then* the responses *will* record on a standardized schedule usually with *pre-coded* answers.

3.7.2 Semi-structured

In Semi-structured interviews a list of teams and questions to be covered are prepared although, these may vary from interview to interview. This means that some questions may be omitted in particular interviews, *given* the specific organizational context which is encountered in relation to the research topic. The order of questions may also be varied depending on the flow of conversation.

3.7.3 Unstructured

Unstructured interviews are used to explore in depth a general area in which one is interested in. There is no predetermined list of questions to work through in this situation, although one needs to have a clear idea about the aspect he wants to explore.

In this particular research we employed structured and unstructured interview techniques. Two officials of Ghana Immigration Service and Births and Deaths Registry from each of the ten administrative regions were interviewed. The mix interview strategy was motivated by

the belief that some probing questions might become necessary as the interview progresses, though an initial structured interview guide was be prepared.

3.8 Secondary data Collection

Secondary data can provide a useful source from which to answer or begin to answer research questions, this includes raw data and published summaries.

In this research we used textbooks, articles, the web, and newspapers publications as our source of secondary data. These data sources were analyzed on individual cases, re-analyzes and crossed analyzed in order to meet *their* objectives. Few researchers consider the possibility of re-analyzing data that have already been collected for some other purpose. (Hakim, 1982) as cited by Saunders et al, 2000.

3.8.1 Pilot testing

The purpose of the pilot testing phase was to refine and the questionnaire items in order that respondents will have no difficulties understanding and answering the questions and in that light enhance the credibility of the data recording component. In addition, it enables one to obtain some assessment of the questions validity and the likely reliability of the data that will be collected. (Saunders et al, 2000).

3.9 The Credibility of Research Findings

According to(Saunders et al,2000) reducing the possibility of getting the answer wrong means that attention has to be paid to two particular emphasis of research design: Reliability and Validity

3.9.1 Reliability

This is about the result of the investigation, which has to be reliable. If nothing changes in a population between two investigations in the same purpose it is reliable. From a deductive point of view, if the measure yields the same result on different occasions, or an inductive point of view, if similar observations are made in different researches on different occasions.

(Robson1993) asserts that there may be four threats to reliability:

Subject error: has to do with when the interview is carried out, it is of great importance to select neutral time and date.

Subject bias: it is a great problem in organizations where the management is of authoritarian character where the interviewees might say what the manager wants them to say not what they feel.

Observer error: it can be lessened with a high degree of structure to the interview schedule.

Observer bias: this is a question about how the interviewer interprets the data received.

As we dispense the questionnaire, during the exhibition we really did not face the subject error. For reducing the subject bias we tried to make respondents certain that their answers were considered confidential. Since the questionnaire was designed as a survey, we did not face the observer error or observer bias.

3.9.2 Validity

Validity is concerns whether the findings are really about what they appear to be (Saunders et al, 2000).

There are three steps of validity:

Construct validity: establishing correct operational measures for the concepts being studied.

Internal validity: (for explanatory and causal studies only, not for descriptive or exploratory study) establishing a causal relationship whereby certain conditions are shown to lead to other conditions.

External validity: establishing the domain for which a study's findings can be generalized.

In order to avoid low validity, meetings were arranged in semi-interview environment and the questions were given to the respondents face to face so that if they face any difficulty, while filing them out, the ambiguity could be explained.

CHAPTER FOUR

PRESENTATION OF FINDINGS AND ANALYSIS

This chapter deals with the analysis of data obtained from the field as per the research questions and objectives. The goal was to search for opportunities for process integration and collaboration within the existing systems and processes of the Births and Deaths Registry and the Ghana Immigration Service, examine existing processes involved in the operations of the Birth and Deaths Registry and the Ghana Immigration Service, search for common and potential dual beneficial processes that can be integrated to lead to the realization of operational synergies as well as suggest and develop process redesign initiatives and principles that will quicken operational processes and lead to the realization of operational synergies. The chapter is divided into five sections based on the background characteristics and the objectives of the study. The first section presents analyses of the background information of the officials of Birth and Death Registry and Ghana Immigration Office sampled for this study. The next section looks at internal process integration, Section three talks about external process integration, and the fourth section examines external collaboration whilst the last section deals with internal collaboration.

4.1 Background Information of Respondents

The background information sought to give the ages, the roles, and the level of experience as well as the gender of the respondents. This was to ensure that the responses were not skewed and biased and that the views cut across all spectrum of operation. It was also aimed at offering an insight into how various roles impact on the delivery of results as far as issuance of Ghanaian passport was concerned.

The Births and Deaths Registry was established by an Act of Parliament of the Republic of Ghana, 301 of 1965, within the Ministry of Local Government and Rural Development, to handle and develop the births and deaths registration system in Ghana. Its core business is to "provide accurate and reliable information on all births and deaths occurring within Ghana for socio-economic development of the country through their registration and certification." (www.bdrghana.gov.gh)

A total of twenty officials were captured in the study at the Births and Deaths Registry. This number comprised ten Assistant Registration Officers, five Registration Officers, three Chief

Registration Officers and two Statisticians. Assistant Registration Officers manned the various registration outlets in the Hospitals "Weighing Centres". They have been entrusted with the duty of collecting and collating information from informants. There are fifty five thousand such centres in the country. Registration officers on the other hand have been deployed as heads of districts. The registration Officer also collates and vets data that are submitted by the Registration Assistants for onward submission to the regional office. This happens every week. Similarly, the Chief Registration Officers are based in the Regional offices. The mandate of these officers is to collate and vet the data submitted by the Registration Officers from the districts for onward submission to the national head office in Accra. The statistician is also entrusted with the responsibility of compiling the data from the districts, analyze the data and draw inference from the data. The statistician is required to report periodically to the national head office. Similarly, five officials are females while fifteen are males out of the total number of 20 officials interviewed. To ensure that we get views that cut across all age groups, further analysis was done on the age distribution of the officials interviewed. Table 1 illustrates the age distribution in the Births and Deaths Registry.

Table 1: Age Distribution at Births and Deaths Registry

AGE	FREQUENCY	PERCENTAGE (%)
18 – 25	2	10
26 – 35	4	20
36 – 45	6	30
46 – 55	6	30
56 – 60	2	10
TOTAL	**20**	**100**

Source: Field data

From the table, 2 officers representing 10% fall in 18 – 25 age brackets, 4 officials representing 20% are between the ages of 26 and 35, 6 representing 30% fall between ages 36 and 45 years, another 6 representing 30% of the total officials are between the ages of 46 and

55, and 2 representing 10% fall in the 56 – 60 age brackets. Similarly, the duration or experience of the officials interviewed was looked at, as the level of experience gained might have an impact on the quality and insight of responses gathered.

Table 2: Current Experience of Officials at Births and Deaths Registry

YEARS IN EMPLOYMENT	FREQUENCY	PERCENTAGE (%)
1	3	15
2	2	10
3	3	15
4	4	20
5	1	5
6	5	25
7	2	10
8	2	10
TOTAL	**20**	**100**

Source: Field data

The age grouping was varied so we can get response and opinion that are not skewed. With respect to the duration in employment, out of the total of twenty (20) officials interviewed at Births and Deaths Registry, three (3) have been in employment for one year, two (2) for two years, (3) three for three years, another two (2) for four years, (1) one for five years, five (5) for six years, two (2) for seven years and finally two (2) for eight years. In terms of their roles in the organization, four (4) are statisticians, eight (8) are Assistant Registration Officers, five (5) are Registration Officers while three (3) are Chief Registration Officers. Again three officials have been performing this current role for a year; ten have been performing the role for two years, one for three years, another one for four years, and another one for five years. Also, one official has been performing his current for six years, another for seven years and finally two for eight years.

Established under PNDC Law 226 in 1989, the Ghana Immigration Service remains the sole institution with the statutory mandate to regulate and monitor the entry, residence, employment and the exit of foreigners in Ghana. The passage of the Immigration Act of 2000, Act 573 expanded the functions and roles of the GIS. (www.ghanaimmigration.org).

Eight officials are females while twelve are males out of a total number of twenty officials (respondents) interviewed at the Ghana Immigration Service.

Table 3: Age Distribution at Ghana Immigration Service

AGE	FREQUENCY	PERCENTAGE (%)
18 – 25	4	20
26 – 35	4	20
36 – 45	6	30
46 – 55	4	20
56 – 60	2	10
TOTAL	**20**	**100**

Source; Field data

From the table, 4 officials representing 20% fall in 18 – 25 age brackets, 4 officials representing 20% are between the ages of 26 and 35, 6 representing 30% fall between ages 36 and 45 years, another 4 officials representing 20% of the total officials are between the ages of 46 and 55, and 2 representing 10% fall in the 56 – 60 age brackets. Similarly, the duration or experience of the officials interviewed was looked at, as the level of experience gained might have an impact on the quality and insight of responses gathered.

Table 4: Current Experience of Officials at Ghana Immigration Service

YEARS IN EMPLOYMENT	FREQUENCY	PERCENTAGE (%)
1	3	15
2	2	10
3	3	15
4	4	20
5	1	5
6	5	25
7	2	10
8	2	10
TOTAL	**20**	**100**

Source: Field data

Out of the total officials interviewed at Ghana Immigration Service, three said they have been in employment for a year, two for two years, three for three years, and four for four years. Also, one official has been in employment for five years, five for six years, two for seven years and another two for eight years. On the basis of their roles, five are liaison officers, five are in the passport processing section, six process residence permits, and the four are training officers. A liaison officer is entrusted with the responsibility of ensuring that application forms are sent to the passport office and all passports issued get the regional and districts offices for collection by the owners. As the name suggests, a training officer is responsible for the training of officers. Some of the training programmes undertaken by the training manager include induction training. Out of the total officials interviewed three have been in this current role for a year, two for two years, three officials have been on the current role for three years, four for four years, and one for five years. Similarly, five have been roles their roles for six years, two for seven years and finally two have been in employment eight years.

To integrate means to "to form, coordinate, or blend into a functioning or unified whole," and integration is "the act or process or an instance of integrating."

Integration can help firms develop efficiency-related capabilities. More specifically, process integration can contribute to cost reduction by waste reduction and more effective management of the processes. Maloni and Benton (2000) found that buyer-seller integration can help firms achieve cost savings from the following areas: economies of scale (in ordering, production, and transportation), decreased administration costs, decreased switching costs, and improved asset utilization. Process integration also ensures that operational interfaces within and between firms are synchronized to reduce duplication, redundancy, and dwell time (Rodrigues, Stank, and Lynch 2004), thus helping firms develop efficiency capabilities.

Stevens (1989) emphasized that true supply chain integration includes both upstream and downstream players, while internal integration provides the foundation for both. Both internal and external integration can contribute to achieving reductions in costs, stock-outs, and lead-time, and can lead to competitive advantage (Gimenez and Ventura 2003). Therefore, a firm is likely to obtain superior performance when achieving high levels of integration both internally and externally.

4.2 Internal Process Integration

Internal process integration discusses the competency required in order to link internally performed work into a seamless process to support customer requirements. Internal process integration is the core competence derived from linking internal activities to best support customer requirements at the lowest total system cost.

This section therefore presents a detailed discussion of the internal processes used by the two institutions, their respective strengths and weaknesses as well as the challenges associated as per literature and experience. Internal process integration can be broken down into internal process connectivity and internal process simplification.

4.2.1 Internal Process Connectivity

Connectivity is seamlessly connecting related business processes to meeting the overall organizational objectives (Porter 1980, 1985). Connectivity is required to establish relationships between firms at multiple organizational levels and hierarchies within and across each organization. Connectivity is therefore key to integrating processes both in an intra-firm specific scenario and an inter-firm context.

 In order to do this evaluation, questions posed included;

What are the specific goals you seek to achieve in the organization?

How do the organizations ensure appropriate alignment in order to accomplish sub-process goals and entire process goals? Sub-process goals are the objectives of the individual organizations while the entire process goals refer to the ultimate goal of all the efforts of all the individual organizations put together.

Does the organization have internal operational instructional manual and whether employees are aware of their existence and are thoroughly schooled on their application and relevance?

With regard to the specific goals the organization seek to achieve and why those goals, the study indicated that their objectives are to assist the government of Ghana to acquire data to help it to plan the social and economic development agenda of the country. The data generated goes a long way to help the government in its projections and forecast into the future. This is achieved by registering every birth and death that occurred in the country.

In the case of Ghana Immigration Service (GIS), their objectives are to regulate and monitor the entry, residence, employment and the exit of foreigners in Ghana. The passage of the Immigration Act of 2000, (Act 573) expanded the functions and roles of the GIS. Prominent among these are the Indefinite Residence and Right of Abode facilities.

Based on the second question, 'How do the organizations ensure appropriate alignment in order to accomplish sub-process goals and entire process goals?'

Results from the study indicated that permanent staff from Births and Deaths Registry have been placed at the passport office to check the authenticity of birth certificates. Also, three organizations namely, the Births and Deaths Registry, the Ghana Immigration Service, and the Passport Office have put a team together that examines the security features that have

been embedded in the birth certificates and passport to ensure that they conform to the established security standards. Similarly, in cases where there is suspicion of multiple registrations, the applicants are invited either through the births and deaths registry or the Ghana Immigration Service to ascertain the genuineness of their applications.

The study showed that the Ghana Immigration Service had established offices in the districts in order to get closer to the people it is mandated to serve. This will facilitate and speed up the process of passport acquisition for applicants. Similarly, the Ghana Immigration Service liaise with the local offices of the Births and Deaths Registry in ensuring fictitious birth certificates are prevented from being used to process passports. These aims are sometimes stampeded by middlemen who want to take advantage of the situation.

On whether the organizations have internal operational instructional manual and whether employees are schooled on it, the following are the feedback we gathered;

The study showed that the Births and Deaths Registry has an internal operational instructional manual. The Internal Operational Instructional Manual is designed to assist practitioners, orient new employees, codify establish practices and traditions, protect and maintain the collegial decision-making process and make the process more comprehensible to the general public. (http//www.floridasupremecourt.org/pub_info/documents/IOPs.pdf). According to respondents, employees are regularly and frequently schooled on the operational instructional manuals through courses and seminars with assistance from partners such as PLAN GHANA, UNICEF etc. These courses are usually organized to train officers about changes that are emerging and how to deal with it. They are also meant to inform them about peculiar problems that are likely to occur and also train them on customer relations. In January 2009, a national workshop was organized at Bunso in the Eastern region to train officials on how to complete the new scanable passport forms. In April 2009, a regional workshop was organized at Okubi Hotel to update officials on how to prepare returns on the new scanable passport forms. These forms were to replace the old application forms to improve the security of birth certificates. Indeed, these workshops and seminars which are usually supposed to take seven days really last for three days due to resource constraints. The impact of these workshops is not far-fetched as it has improved tremendously their response to customers' complaints and customer service in general.

While senior officials interviewed at the Ghana Immigration Service attested to the fact that an internal operational instructional manual existed and that they are schooled on it

frequently to get them abreast with time as far as security issues are concerned, junior officers responded that no such manual existed. The implication of this is that junior officers are left detached and handicapped as far as the implementation of their operations are concerned. This will in turn affect effective implementation of their roles as blunders and errors will abound. It is therefore not surprising that the public is complaining.

4.2.2 Internal Process Simplification

Simplification in this particular instance refers to identifying and eliminating excessive elements within the processes. Simplification includes designing effective and efficient routines by establishing and adhering to common operational policies and procedures which is also referred to as inter-functional unification and process standardization (Rodriguez, Stank, and Lynch 2004).

In evaluating internal process simplification, the following questions were asked

How would you describe your organization's internal operational process with respect to government of Ghana passport application process and Births and Deaths Registry certificate application process?

Which aspects of the processes are unnecessary and can be eliminated in order to speed up the application processing cycle.

Which aspects of the processes are unnecessary and can be eliminated in order simplify the application processing cycle.

Which aspects of the processes are unnecessary and can be eliminated in order streamline the application cycle.

There are two main types of registration according to officials at the Births and Deaths Registry. These are infant registration and the normal or adult registration. Infant registration covers children from birth to one year. This registration attracts no fee because it is to encourage parents to register their babies so the government can have the information it requires to help them plan. This can be done by either of the parent be it the mother or the father. This takes on the average thirty minutes to complete. The normal registration on the other hand covers applicants above one year up to sixty years. Here the applicant is required to swear an affidavit before filling and the actual process begins. This takes on the average two weeks to complete.

The Births and Deaths Registry is also entrusted with the responsibility of issuing death certificates and burial permits besides the issuance of birth certificates. Before a death certificate is issued to an applicant, the cause of death would have to be ascertained. This is done by medical officer in charge of the hospital where the deceased passed away. This process is supposed to be done within a month after the death of the deceased. If this is not done in a month, then the family of the deceased will have to go to the national head office in Accra for authority note before a burial permit will be granted and subsequently the death certificate. Here, the head of the deceased family, two members of the family and the next of kin are required to swear an affidavit before the process for the death certificate can commence.

About 40% of the respondents opined that the process was complex. According to them, respondents (staff) have to travel to the districts and regional offices to process data of applicants before application forms were dispatched to Accra for further processing. Registration officers therefore spend time shuttling between the District and Regional offices instead of using such time productively. This also increases the lead time as a process which should have normally taken a maximum of one week takes two weeks and beyond. Lead time is the length of time used to process one case. The resultant effect was that applicants or informants are left frustrated and angry and this breeds tension resulting in quarrels and exchange of words. The remaining 60% of the respondents described the process as simple in nature. Their position stems from the fact that all the processes involved were necessary to prevent fraud thereby enhancing the integrity of the process.

There is a process an applicant goes through before he or she is granted a Ghanaian Passport. First of all, the applicant is required to purchase passport application form from any of the post offices or any of the banks. He completes the form by indicating his name, sex, date and place of birth as well as his profession. However, applicants in occupations such as trading are not required to show proof of occupation. The completed forms together with the applicant's birth certificate are then sent to the Ghana immigration office where an officer crosschecks the details to ensure that the information given on the form is correct. If the information provided is correct, the officer then begins the processing of the passport. However, if mistakes are detected, the applicant is made to go and purchase another form and starts the process again. This usually brings agitation and creates tension between officers and applicants. When the officer is satisfied with the information provided on the form, the applicant is then given a "retention form". A retention form is a slip which the applicant

would bring to the immigration office for collection of passport when it is ready. The completed forms and other details are then sent to the passport office in Accra. At the passport office, a number of checks are done to ensure the authenticity of the information provided on the form. These includes; checking of the birth certificate to ensure it is not fake, checking of other details such as the profession, sex, dates, and guarantors. If the director of passports doubts any of the information provided, he would invite the applicant through the Ghana immigration Service for interview or produce proof of the information provided. If he is satisfied, the vetted forms are then sent to the embossment or issue room for the passport to be issued. These passports are then sent to the regional offices of the Ghana Immigration for onward distribution to the applicants. The names of these applicants are then posted on the notice boards inviting the applicants for collection.

About 70% of the respondents interviewed thought of the process as a complex one. Besides, some required information is not clearly stated. For instance, there is a requirement for a guarantor but the form does not state clearly the calibre of persons can offer themselves as guarantors. This leads to a situation where some applicants uses their parents or siblings only to be told that relatives cannot be used when they come to submit their forms. This leads to agitations and tension between these applicants and officers as to who pays for the new forms. The remaining 30% of the respondents however reckon that the process is simple because all the stages in the process are critical and must be adhered to protect the security of the passports that are issued out. For them, the process becomes complex because some applicants use shortcut thereby unduly denying or delaying those who use the right process. They use middlemen popularly called "Goro Boys" who interfere with system.   There are however speculations that these Goro Boys are fronting for the officers themselves.

The study again sought to find out which aspects of the processes are unnecessary and could be eliminated in order to speed up the application process.

At Ghana Immigration Service, feedback from officers indicates that the process is complex because it involves officers travelling to Accra on regular basis to submit passport applications. According to them, apart from it being stressful, it also exposes them to risk. Again, the officers opined that some of the information on the passport applications is not clearly stated to the understanding of the applicants. For instance, there is a portion on the form which requires an applicant to indicate two guarantors. Now these guarantors must not be or cannot be the applicant's parent but this is not stated clearly to the understanding of the

applicant. This leads to a situation where applicants are asked to go back to purchase new application forms to restart the process. This usually creates agitation leading to tension between officers and applicants because applicants believe that that cost could have been avoided if requirements are clearly stated and explained on the forms. According to one officer, this gives room to middlemen popularly known as the "Goro Boys" to operate. These "Goro Boys" take moneys from unsuspecting applicants through the back door and frustrate the applicants who follow the laid down process.

Some respondents (officers) however believe that the processes are necessary and must be maintained. According to these officers, due to the detailed nature of the processes, fraudulent applications are easily detected and eliminated. For instance, double applications are easily detected.

The feedback from the respondents indicates that all the processes are necessary. According to them the processes help them to detect false claims. For instance, some Ghanaians abroad travel back home to make false claim of a death of a relative. They then use these certificates to claim the benefits of this supposedly dead relative. Due to the stringent processes in place, these false claims are usually exposed. Again, people who want to adopt but do not want to go through the adoptions procedures are identified. However, other respondents think that even though the processes are okay, there are some challenges which need to be address. For example, an officer travelling every week to submit applications to passport office. According to them, apart from the current process being stressful, it is also waste of time and resources. They believe that it will help eliminate travelling time and other resources if some of the processes are eliminated. For instance, Ghana Immigration Service and Birth and Death Registry could be networked so that information from both sides could be accessed from either institution easily. This will save the time spent in cross-checking information from both institutions.

Similarly, Ghana Immigration Service also cross-check the authenticity of applicant's birth certificates from Births and Deaths Registry before the passports processing commence. Furthermore, systematic roles are assigned to each employee to enhance their own operational process integration.

The study also sought to look at aspects of the processes that could be eliminated in order to simplify the application processing cycle.

The findings at the birth and Death Registry showed that all officers are in favour of the current process. According to the respondents, the simplest the process can be is what they have now. They believe they would be compromising on the security of the Birth and Death Certificates if some steps are taken out to make it simpler. This will give way to fraudsters and other saboteurs to counterfeit the certificates. This is in sharp contrast with the position of customers who view the current process as unduly long and time wasting.

Respondents at the Ghana Immigration Service shares similar sentiments with that of Officers of Birth and Death Registry. According to the respondents, for security reasons certain steps cannot be eliminated to make the process simpler. For instance, the person applying for the passport must come in person to their office to append his or her signature and thumbprint. This is meant to eliminate impersonation. Again, the format and the background of pictures must adhere to the standard put in place to ensure the security of the passport that is issued. All these steps are meant to prevent counterfeiting and to protect the integrity of the Ghanaian passport.

4.3 External Process Integration

Under external process integration, we have external process connectivity and external process simplification.

4.3.1 External Process Connectivity

Attempts were made to find out how the Births and Deaths Registry and Ghana Immigration Service integrate their operations to achieve a common goal.

How do the organizations assess and contribute inputs or output to and fro other organizations that are either directly or indirectly connected to the organization's core operational process.

How does your organization ensure operational process compatibility with its own operational process and those of partner organizations identified?

On how the organization ensures operational process integration and those of partner organization, these are the feedbacks:

The study shows that babies are registered at weighing centres and information provided by applicants' or Informants is cross checked at the district and regional offices. During maternal child health week, the Birth and Death Registry and nurses and other staff from hospitals go round to register babies and also offer education to nursing mothers on how to take good care of their babies during the maternal health week. These practices enable Birth and Death register capture all those who would have hitherto not been registered according to the respondents. According to registration officers at the Birth and Death Registry, to ensure effective and efficient passport processing, their organization liaise with Ghana Immigration Service by regularly providing information regarding the authenticity or otherwise of birth certificates of applicants.

Besides, a committee comprising members from Birth and Death Registry, Ghana Immigration Service and Ministry of Foreign Affairs and based at the passport office in Accra. This committee according to respondents is mandated to review the processes of passport acquisition. These reviews are to ensure that our passports do not become outmoded but meets international standards.

In the case of how the organizations access and contribute input and or output to and fro other organizations that are either directly or indirectly connected to the organizations' core operational process. The study reveals that for instance, when somebody passes on, the Births and Deaths Registry depends on the medical reports from the hospital to prepare the burial permit and again the death certificate for the bereaved family. Again, in processing passports for applicants, Ghana Immigration office service cross-check the validity of every birth certificate from Births and Deaths Registry so as to prevent fake birth certificates being used. The security features on the birth certificates are done by a team comprising personnel from Births and Deaths Registry, Ghana Immigration Service, and Passport Office.

Response received also indicated that the system has been computerized in some selected regions namely: Ashanti, Greater Accra, Eastern, and Western regions. There are plans in place to further computerize the rest of the regions to facilitates and simplify the process. According to the study, data of babies registered at weighing centres are immediately sent to the regional office to input into the system. This has made the process simple and more accessible.

The study also sought to find out how the organizations ensure operational compatibility with respect to its own operational processes and those of partner organizations.

The findings indicated that Birth and Death Registry in collaboration with other partner organizations such as the American Embassy organized seminars for officers of the institution to help improve the smooth running of its processes. For instance, the American Embassy through its LENS program assisted the registry to computerize their systems in some selected regions to enhance effective operations of the organization. Compatibility with other partner organizations, however, remains a challenge as revealed by the findings. For instance, their processes are not made to suit a major partner like immigration and vice versa to facilitate the effective operations. The two organizations operate independently without recourse to the other even though they have a common objective. This situation contributes to the delay in passport issuance.

The findings from the study show that the organization's operational processes are not compatible. Each department does its own thing. This situation is further aggravated by non-computerization of their processes. Almost every activity is manually operated. This does not help faster processing of cases resulting in customers being frustrated and angry. The situation is even worse when it comes to being compatible with its partners. As stated earlier their processes are operated without considering whether it fits and matches their partner organizations. This affects their output and their effectiveness.

4.3.2 External Process Simplification

In order to do this effectively questions were asked about how the organizations ensure operational process simplification with respect to its own operational process and those of partner organizations

4.4 Collaboration

Collaboration is a process of decision making among interdependent parties. It involves joint ownership of decisions and collective responsibility for outcomes. The need for collaboration heightens where two or more departments work together, have mutual understanding, have a common vision, share resources, and achieve collective goals (Journal of Business Logistics; volume 22, no. 1, 2001). The key dimensions of collaboration are a cross-department or organization scope, a commitment to working together, and some common bond or goal.

The relationship between external and internal collaboration may be the key in facilitating behavioural change, that is, the shifting from traditional arms-length or even adversarial

attitudes to a partnership perspective that fosters cooperation and a freer exchange of information.

Collaboration is needed both within and beyond the organization's boundaries. In view of this the study looked at both internal collaboration and external collaboration.

4.4.1 Internal Collaboration

Internal collaboration facilitates the close interactions that bring greater expertise to day-to-day operations, focusing efforts and targeting resources as needed.

This section evaluates the internal collaboration of births and deaths registry and Ghana immigration service. To ensure proper evaluation questions were asked on the following indicators:

How does the organization ensure operational process integration with respect to its own operational processes and those of partner organizations?

How does the organization ensure operational processes compatibility with respect to its own operational processes and those of partner organizations?

According to the study, officers from birth and death registry visit weighing centers and register babies. Similarly, when a person dies in the hospital, the medical officer in-charge prepares the medical report establishing the cause of death and other relevant information to enable birth and death prepare the burial permit as well as the death certificate for the bereaved family. In a case where the death occurred far away from any medical facility, Birth and Death registry have planted some of their staff in these areas to get this information to be able to authorize burial of the deceased and also update their records as well as the records of ministry of health. Besides, Ghana immigration Service cross check the authenticity of birth certificate from Birth and death registry in processing passports.

With respect to how the organization ensure operational processes compatibility with respect to its operational processes and those of partner organization, the respondents indicated that officials of Births and Deaths Registry go out with Maternal and Child Health team during Child Promotion Week to educate and also solicit for information from mothers on child health. This information gathered is then made available to health institutions. This is a

collaborative effort between Births and Deaths Registry and the Maternal and Child Health team according to the respondents. Besides, to ensure that applicants do not use fake certificates for passport processing, these certificates are cross-checked from BDR by Ghana Immigration Service to ensure their genuineness and also if they meet the security standard.

4.4.2 External Collaboration

This section examines the external collaboration between Birth and Death Registry and Ghana Immigration service. To facilitate effective evaluation, the following questions were asked:

What potential benefits do you envisage would accrue to your organization when it decides to integrate and collaborate its internal operational processes with Birth and Death Registry and Ghana Immigration Service?

What potential challenges do you envisage would confront your organization when it decides to integrate and collaborate its internal operational processes with Birth and Death Registry and Ghana Immigration Service?

As indicated earlier, a positive relationship between external and internal collaboration fosters better performance.

According to respondents, they foresee a great deal of benefits accruing to the Birth and Death. The data collected indicates that organizations such Plan Ghana assist Births and Deaths Registry financially in their operations and also to educate the public on their operations. Furthermore, training colleges and health institutions also partner Births Deaths Registry to ensure smooth admission of students. Similarly, Ghana Immigration Service partner Births and Deaths Registry to promote effective passport processing and administration.

According to respondents, they foresee prevention of multiple registrations which has become a major issue as far as Ghanaian passport acquisition is concerned. In other words, it would help eliminate fraud in passport acquisition. For instance, it will help prevent a situation where foreigners fraudulently acquire Ghanaian passport and use it to engage in sorts of nefarious activities. Similarly, it would enhance easy and effective dissemination of information between the two organizations. This would increase their capacity to identify and

track down any fraudulent activities in the chain immediately. Public confidence in the process would increase because they would see the process as being transparent and more credible.

In the case of the potential challenges the following feedback was gathered:

Officials at the Birth and Death Registry think this arrangement would lead to interference in each other's work. They cite a situation where immigration officers might try bringing friends and people they know for birth certificate by" jumping the queue". This will lead to agitations from other informants which will not augur well for the image of the registry. This will in effect fuel the perception held by most informants about the lack of transparency in the process.

In the view of respondents, they foresee interference in each other's work as a major challenge. Again collaboration would be challenging because the organizations are under different ministries, namely ministry of interior and ministry of local government. This might result in competition and power struggle as each organization might want to take the leadership role in the arrangement. Besides, Immigration being a Para-military organization would not be comfortable sharing classified and sensitive information with their civilian colleagues in Birth and Death. This will in tend help them liaise well thereby affecting their effectiveness. This confirms what

Bowersox, Closs, and Stank 1999 said that information exchange and flow, a critical facilitator of integration, can vary significantly within a firm or across firm boundaries. Even with close partners, most firms take steps to protect proprietary information that might be deemed crucial existence and manoeuvres of the firm.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

INTRODUCTION

This chapter is devoted primarily to the summary of findings, conclusions drawn from the findings and suggestions or recommendations that will help find answers to how the processes of these two entities (Birth and Death Registry and Ghana Immigration Service) can be integrated and streamlined to enhance faster acquisition of Government of Ghana Passport.

5.1 Summary of the Findings

The study dealt into the acquisition of passport in Ghana.

The findings were strictly based on the objectives of the study, which include: Search for opportunities for processes integration and collaboration within the existing systems and processes of the Births and Deaths Registry and the Ghana Immigration Service, Examine the existing processes involved in the operations of the Births and Deaths Registry and the Ghana Immigration Service, Search for common and potential dual beneficial processes that can be integrated to lead to the realization of operational synergies, Suggest and develop process redesign initiatives and principles that will quicken operational processes and lead to the realization of operational synergies.

The study showed that there is some amount of collaboration going on between the two entities. The study revealed that a team of permanent staff from Birth and Death Registry and Ghana Immigration Service have been placed at the Passport Office to check the authenticity of Birth Certificates and also examine the security features that have been embedded in both the Birth Certificates and Passports to ensure they conform to the security standards established. In cases where multiple registry is suspected the applicant is invited by the team for an interview to ascertain the genuineness of his or her application. Again, the local offices of the Ghana Immigration Service liaise with their counterparts from the Birth and Death Registry in ensuring that fake Birth Certificates are not used to process passports. These efforts are however stampeded by middlemen popularly known as "Goro Boys" who with the connivance of some officials are able to take advantage of innocent and unsuspecting applicants.

It was also observed that while officers at the Birth and Death Registry are fully aware of the Internal Operational Instructional Manual and are schooled on frequently to get them abreast with time, only the senior officers from the Ghana Immigration Service are aware of the existence of such important document. This tends to affect implementation of policies and operations as junior officers who are the implementers are left detached and handicapped.

The study further indicated that about forty percent of the respondents from the Birth and Death Registry believes that the current process is complex. Their concerns were that they spend so much time in shuttling between the registry centres and the District and Regional offices to get an application processed. This increases the lead time thereby leading to frustration, anger and tension between applicants and officers. This development results in customer dissatisfaction. Sixty percent of the respondents however disagree with this view. They believe that the current processes help them to detect fraudulent applications. Eliminating and simplifying the processes had the potential to expose the processes to increased fraud and abuse. It was established that some Ghanaians living abroad have used Death Certificates to make false claims of a dead relative's property in the past. In order to arrest this development, some respondents suggested the implementation of elaborate steps to prevent any future occurrence.

The study also showed that about seventy percent of the respondents (staff) from the Ghana Immigration Service were of the view that the process was complex. The study indicated that there were no provisions made on the passport application forms for correction. Once an applicant makes a mistake in the course of completing the application forms, he or she will have to acquire a fresh passport application form in order to re-start the process. Again, some required data are not clearly stated or explained to the understanding of applicants. For instance, there is a requirement for guarantors as part of the passport acquisition process but the application form does not state clearly the calibre of people who could serve as guarantors. The study showed that this ambiguity leads to situations where some applicants used the particulars of their siblings or parents only to be told that close relatives do not qualify to be used as guarantors on submission of the application form. This leads to tension and agitation between those applicants and the immigration officers as to who should bear the cost of the new application forms.

Having regard to the data obtained and the analyses undertaken, it was realized that there were middlemen popularly called "Goro Boys" who take money and use unconventional

means to acquire the passport for their clients. The presence of the "Goro Boys" further compounds the process thereby delaying and frustrating the legitimate process. Thirty per cent of the respondents (staff) however were of the view that the process was simple since all the stages involved in the process were critical and for that matter should be adhered to for the sake of the security of passports that are to be issued. The respondents were of the view that the process has become complex because some applicants use unconventional means of acquisition thereby unduly delaying those who used the legitimate process. It was further overwhelmingly (100%) established among respondents from the Ghana Immigration Service that as much as they agree that the passport acquisition process was complex, they still believe that certain stages involved in the process should not be eliminated for security reasons. For instance, the requirement that the passport applicant should be present in person to append his signature to the application in order to prevent impersonation should be maintained.

With regard to how the organizations assess and contribute inputs and outputs to and from other organizations that are directly or indirectly connected to the organization's core operational process, it was established that staff of Birth and Death Registry and Ghana Health Services team up and go for outreach programmes during maternal health week and educate nursing mothers on how to give good care to their babies. This affords the Birth and Death Registry the opportunity to capture all babies who would have hitherto not been registered. Besides, the findings indicated that Birth and Death Registry liaise with the Ghana Immigration Service by regularly providing information regarding the authenticity or otherwise of birth certificates of applicants.

The study also showed that Births and Deaths Registry collaborates with other partner organizations such as the American Embassy to organize seminars for the staff of the Births and Deaths Registry in order to facilitate the smooth running of the their processes.

The study further showed that, the processes of the two institutions namely, Births and Deaths Registry and the Ghana Immigration Service are disjointed and not compatible. Most of their activities are manually operated. Furthermore their processes are operated without considering whether it fits and matches their partner organizations.

Again, the two institutions see themselves as independent and besides are under different Ministerial jurisdictions. Whilst Births and Deaths Registry falls under the Ministry of Local

Government and Rural Development, the Ghana Immigration Service is under the Ministry of Interior and therefore any attempt to align their operations is seen as interference.

5.2 Conclusions

The study indicated that Births and Deaths Registry aims at registering all births and deaths in the Ghana in order to assist the government to acquire data to plan its social and economic development agendas, whereas the objectives of the Ghana Immigration Service are to regulate and monitor the entry, residence, employment and the eventual exit of foreigners in Ghana.

These two organizations have different objectives that they work to accomplish. This reality may make it difficult to work towards a common goal.

Results from the study indicated that some staff from Births and Deaths Registry have been placed at duty post at the Passport Office to check the authenticity of Birth Certificates tendered for passport processing purposes. Further, a team made up of representatives of three organizations namely, Births and Deaths Registry, Ghana Immigration Service, and Passport Office has been put together to examine the security features that have been embedded in the Birth Certificate and Passport to ensure that they conform to the established security standards. Based on the findings of this study, the researchers realized that the entities and their respective processes involved at the centre of this study do collaborate to a large extent in executing their respective operational mandates. For example, in instances, where multiple registrations of applicants' particulars are suspected, the respective applicants are invited either through Births and Deaths Registry or Ghana Immigration Service (two separate entities) and interviewed to ascertain the genuineness of their respective applications. Another instance of collaboration among the entities is found in the existing practice whereby the Ghana Immigration Service liaises with the Births and Deaths Registry to check the authenticity of birth certificates tendered in as input in the passport acquisition process.

The findings also indicated that most of the respondents of the Births and Deaths Registry think the processes are simple because all the processes are necessary to prevent fraud and enhance the integrity of the process and the passports that are issued. However, those respondents who said the process is complex are directly involved in processing of the

passport by travelling every week to submit the data of the applicants from districts to regional and national offices. Some however see the process as complex which makes them frustrated.

The findings established that most of the respondents (staff) of the Ghana Immigration Service think the process is complex as some of the information provided on the application forms is explicitly clear. Applicants interviewed shared similar concern as that expressed by staff of the Ghana Immigration Service. On the contrary, few respondents (staff) of both organizations thought the processes were simple and that it was the undue interference of the system that causes the delay of the processes.

The studies revealed that babies are registered at weighing centres and information provided is crossed checked at the district and regional offices. Births and Deaths Registry liaise with officials of the Ghana Immigration Service by regularly providing information regarding the authenticity or otherwise of Birth Certificates of passport applicants. There is also a team comprising representatives of Births and Deaths Registry, Ghana Immigration Service, and Ministry of Foreign Affairs placed at the Passport Office to review the processes of passport acquisition. This is done to ensure that Ghana's passports do not become outmoded but rather meet the required international standards. Again, when someone dies, the Births and Deaths Registry relies on the medical report from the hospital to prepare Death Certificate for the deceased's family. Though, there is evidence of some level of collaboration, what is lacking is a complete collaboration between the entities as the existence of complete collaboration would have resulted in the cancellation of passport held in the name of the deceased.

The study also indicated that although Births and Deaths Registry and Ghana Immigration Service depend on each other to undertake their respective mandates due to the inherent and unavoidable linkages across their operational processes, our studies did not uncover any clear cut case of or evidence of integration in the technical sense of the word just in the same way as there is no legislative requirements that pushes these entities to integrate their activities. This development leads to the conclusion that the two entities were and are still independent functional organizations with different mandates to accomplish, though the findings point to the realization that collaboration between these organizations will yield synergies thereby enhancing their respective operational efficiencies.
Integration of operational activities would further lead to increased public confidence in the passport acquisition process; making the process transparent and credible in the eye of the

public. However, respondents anticipated some challenges in forging collaboration between the two organizations. Any attempt at instituting formal collaboration between the two entities would trigger competition and power struggle as each organization might want to take the leadership role in the arrangement. Again, Ghana Immigration Service being a Para-Military organization would not be comfortable sharing classified and sensitive information with their civilian colleagues in the Births and Deaths Registry.

5.3 Recommendations

Based on the above summaries and conclusions, it is recommended that;

The Government of Ghana acting through the requisite statutory body or bodies ensures that the systems of the institutions involved in the passport acquisition process are technically aligned and professionally integrated to eliminate all unconventional manoeuvres from the process.

The required information for passport processing and acquisition should be spelt out clearly on the passport application form so applicants can complete the forms without any shred of ambiguity.

The two institutions namely; Births and Deaths Registry and the Ghana Immigration Service should be brought under a single Ministry of State in order that staffs of these institutions recognize each other as one team working towards a common goal.

All regional and district offices of the Births and Deaths Registry and the Ghana Immigration Service should be networked through information and communication technology to facilitate exchange of vital information thereby reducing lead time.

Passport applicants should be able to track developments as far as the processing of their applications are concerned through technology driven remote applications such as the internet technology. This move would enhance the image of the two institutions and also reduce the kind of frustration customers go through in line with the efforts necessary to acquire a passport.

The government should as is the practice in most developed economies, put in a scheme that automatically requires the Births and Deaths Registry to initiates and completes passport acquisition in collaboration with the Ghana Immigration Service for every citizen at the point

of birth. In like fashion, the Births and Deaths Registry should initiate the processing of death certificate and cause the Ghana Immigration Service to cancel out the passport of the deceased citizen.

5.4 Limitations

It was very difficult to get top officials of Ghana Immigration Service. We had to go through real frustration before getting access to them. This delayed our interview schedule.

Some of the customers we administered the questionnaire to answered them based on frustrations they were experiencing at the Births and Deaths Registry.

REFERENCES

Bowersox, J.D. et al. (2007). *Supply chain logistics management.* New York: McGraw-Hill.

Chen H., Daugherty P.J, and Landry, T.D. (2009). Supply Chain Process Integration: Theoritical Framework. *Journal of Business Logistics, 30 (2)*, pp 28 - 35.

Chen, H. Daugherty, P. J, Roath, A.S,. (2009). Defining and operationalizing Supply Chain Process Integration. *Journal of Business Logistics, 30*, pp 64 - 72.

Death, B. a. (2007). *Birth and Death Registration Procedure Page*. Retrieved December 4, 2010, from Birth and Death Registry: www.bdrghana.gov.gh

Fawcett, E., Ellram, L.M, Ogden, A.J. (2007). *Supply chain Management from vision to implementation.* New Jersey: Pearson Prentice Hall.

Ghana Immigration Service. (2007). Retrieved from www.ghanaimmigration.org

Hoyt, J. Huo,F. (2000). Evolutionary process in the Supply Chain: from Arm's Length to Collaboratio. *Academy of management of proceedings*, pp 2 - 4.

Moini

Joseph H. et al. (2007). *Research Methods for Business.* West Sussex: John Wiley & Sons.

Marquez, A.C, Branchi, C. Jatinder, G.N.D. (2003). Operational and financial effectiveness of the e-collaboration tools in supply chain integration. *European Journal of Operational Research*, pp 349.

Mullins, L. (2007). *Management and Organizational Behaviour* (8 ed.). England: Prentice Hall.

Nucciavelli, A., Gastaldi, M. (March 2008). Information Technology and Collaboration tools within the e-supply chain management of the aviation industry. *Technology Analysis & Strategic Management, 20(3)*, pp 176.

Porter, Michael E.(1985). *Competitive advantage: Creating and sustaining superior performance.* New York: The Free Press.

Saunders, M., Lewis, P., Thornhill, A. (2000). *Research Methods for Business Students.* Tottenham: Ashford Colour Press.

Simchi-Levy, D., Kaminsky, P. (2008). *Designing and Managing the supply chain concepts, strategies and case studies* (3 ed.). New York: McGraw-Hill/Irwin.

Stank, P. T, Keller, S.B, Closs, J. D. (2001 - 2002). Performance benefits of supply chain: Logistical Integration. *Transportation Journal*, pp 33.

Stank,P.T, Keller, B. S, Daugherty, J.P. (2001). Supply Chain Collaboration and Logistical Service Performance. *Journal of Business Logistics, 22 (1)*, 33.

Wikipedia. (2008). *Supply Chain operations reference* . Retrieved from Wikipedia: www.enwikipedia.org

 http://en.wikipedia.org/wiki/supply-chain Operations Reference

http://www.allbusiness.com/company-activities-management/operations-supply/12354358-1-html

http://www.scribd.com/doc/44507112/Pilla-R-112810

http://www.allbusiness.com/company-activities-management/operations-supply/13301524-1.html

http://www.entrepreneur.com/tradejournals/article/91140455.html

http://www.allbusiness.com/transportation-warehousing/1062185-1.html

http://www.highbeam.com/doc/1G1-91140455.html