THE IMPACT OF COMPUTERIZATION ON THE HUMAN RESOURCE – CASE
STUDY OF UNILEVER TEA KENYA LTD, KERICHO, KENYA.

BY

WILUNDA STANLEY MURANGALE (B.A HONS)
REG. NO. D53/OL/3709/04

A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENT OF THE AWARD OF MASTER OF BUSINESS
ADMINISTRATION – (HUMAN RESOURCE MANAGEMENT)

SCHOOL OF BUSINESS STUDIES
KENYATTA UNIVERSITY

Murangale Wilunda
The impact of
computerization on

MAY 2007
DECLARATION

This study is my original work and has not been submitted to any other institution of higher learning for award of a degree. All references from various sources of literature have been acknowledged as required.

Signature: .................................. Date: 26.05.2007

NAME: WILUNDA STANLEY MURANGALE (B.A HONS)

REG: NO. D53/OL/3709/04

This project paper has been presented for examination with my approval as the university supervisor.

Signature: .................................. Date: 18/6/07

WILSON A. P. OTENGA (PH.D)

DEPARTMENT OF BUSINESS ADMINISTRATION

KENYATTA UNIVERSITY

Signature: .................................. Date: 24/10/07

DOMINIC. K. NGABA(MBA)

CHAIRPERSON, DEPARTMENT OF BUSINESS ADMINISTRATION, KENYATTA UNIVERSITY
DEDICATION

This work is dedicated to my beloved wife Adelaide C. Ouko who encouraged and
prayed for me in the course of the study and my children Allan W. Wilunda and Faith A.
Wilunda who were happy to let me carry on with the work at a tender age.
ACKNOWLEDGEMENT

I pass a vote of thanks to my supervisor, W. P. Otengah for his constructive criticism, immense contribution and the keen approach to all matters relating to the study. His commitment and guidance enabled me to complete the study despite the time constraint.

My sincere appreciation goes to the management and all respondents at Unilever Tea Kenya Ltd in Kericho district. Their cooperation and contribution led to successful completion of this study. I express my indebtedness to the organization.

Special thanks go to my wife and children. My wife was very supportive from the beginning to the end of the study and exhibited unmatched understanding at all stages of the study. Thanks to my young children who were quite understanding whenever I was committed to the study activities.

The contribution of Rev. William Omollo, Wasike W. Wandili and Maurice O. Odiemba in terms of constructive criticism during the study is highly appreciated.

I give thanks to God for giving me the strength, wisdom and patience required to successfully complete the study.
ABSTRACT
Computerization of work processes has been regarded as one of the methods of improving performance in organizations. Despite the role it plays in improving performance, computerization has the potential to affect the human resource both positively and negatively depending on factors that dictate how the business process is managed (Kraut, Dumais, & Koch, 1989). Since every business process is made unique by the factors that dictate how it runs, it is necessary to study specific work processes when trying to accurately predict the impact of computerization on the human resource. The study therefore researched on ‘The Impact Of Computerization On The Human Resource – Case Study Of Unilever Tea Kenya Ltd, Kericho, Kenya’. If mitigating measures are not taken to address negative effects, employees can persistently resist the change, customers get affected by the impact of upset employees and valued staff may leave the business (Susanto, 2003). The main objective of the study was therefore to establish the impact of computerization on the human resource of the organization. The study sought to answer questions on how computerization has affected skill requirements, the organization structure, job performance and if the organization has programmes that mitigate on the negative effects on employees. The study found out that computerization affected employee skills depending on ones job and skills, facilitated the creation of a flatter organization structure and helped to improve employee performance. The organization has training interventions that help employees to cope with the demands of computerization though they have not met the needs of all employees. The study will help the organization while formulating policies in human resource management, provide knowledge to similar industries on how to deal with computerization without adverse effects on the human resource and bring new insights to the body of knowledge. The study was conducted in Kericho district and covered the regional office and all the operations of Unilever Tea Kenya Limited within the district. The research was conducted under a descriptive study design and used stratified random sampling and purposive sampling to select respondents. The sample size was 100 respondents from a total population of 173 employees. The study used interviews and questionnaires to collect data. Data was analyzed using descriptive statistics and presented using graphs. Statistical Package for Social Sciences (SPSS) was used as an aid to analyze data.
OPERATIONAL DEFINITION OF TERMS

Computerization: The control of operations by use of a computer system.

Computer system: The hardware and software used for information processing.

Information Technology: A set of technologies which include the computer system and other equipment and programs that enable processing and transmission of information.

Human resource: The employees of an organization.

Organization structure: It is the arrangement of the human resource into various cadre and departments within an organization.

Personal Computer: A type of computer which can be used by one person at a time in the process of keying in data.

Virtual Organization: A set of workgroups put together disregarding location of their work workstations, with the purpose of completing a particular project within set guidelines, each group playing a specific role.

Impact: Impact in this study refers to the positive and negative effects excluding health effects.

Work Organization: This refers to the way activities are arranged in a pattern that fits the work process.
### ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT</td>
<td>Information Technology</td>
</tr>
<tr>
<td>PC</td>
<td>Personal Computer</td>
</tr>
<tr>
<td>ICT</td>
<td>Information and Communication Technology</td>
</tr>
<tr>
<td>KM²</td>
<td>Square Kilometres</td>
</tr>
<tr>
<td>HRM</td>
<td>Human Resources Manager</td>
</tr>
<tr>
<td>ITM</td>
<td>Information Technology Manager</td>
</tr>
<tr>
<td>SPSS</td>
<td>Statistical Package for Social Sciences</td>
</tr>
<tr>
<td>ADL</td>
<td>Automatic Data Logging System Device</td>
</tr>
</tbody>
</table>
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Declaration</td>
<td>ii</td>
</tr>
<tr>
<td>Dedication</td>
<td>iii</td>
</tr>
<tr>
<td>Acknowledgement</td>
<td>iv</td>
</tr>
<tr>
<td>Abstract</td>
<td>v</td>
</tr>
<tr>
<td>Operational definition of terms</td>
<td>vi</td>
</tr>
<tr>
<td>Abbreviations</td>
<td>vii</td>
</tr>
</tbody>
</table>

## CHAPTER ONE: INTRODUCTION

1.1 Background to the Study ......................................................... 1

1.2 Problem Statement ................................................................. 5

1.3 Objectives of the study ............................................................ 8

1.4 Research Questions ................................................................. 8

1.5 Rationale for the Study ............................................................. 9

1.6 Significance of the study ......................................................... 9

1.7 Scope and Limitations of the Study .............................................. 9

1.8 Assumptions of the Study ............................................................ 10

## CHAPTER TWO: LITERATURE REVIEW

2.0 Introduction .................................................................. 11

2.1 Computerization and Employee skills ......................................... 11

2.2 Computerization and Organization Structure ................................... 13

2.3 Computerization and Employee Performance .................................... 17

2.4 Computerization and Human Resource Programmes ............................. 19

2.5 Critical Review ................................................................ 23
# Summary and Gaps filled by the Study

2.6 Summary and Gaps filled by the Study ........................................ 23

# Theoretical Framework

2.7 Theoretical Framework ......................................................... 24

# Conceptual Framework

2.8 Conceptual Framework ......................................................... 25

## CHAPTER THREE: METHODOLOGY

3.0 Introduction ............................................................................. 27

3.1 Study Area .............................................................................. 27

3.2 Study design ........................................................................... 29

3.3 Study Population ................................................................. 29

3.4 Study Sample ......................................................................... 30

3.5 Sampling Procedures ............................................................ 32

3.6 Data Collection Procedures ................................................... 33

3.7 Data Analysis ......................................................................... 34

3.8 Expected Output ..................................................................... 34

## CHAPTER FOUR: DATA PRESENTATION AND ANALYSIS

4.0 Introduction ............................................................................. 36

4(a).1 Managers’ and Supervisors’ Socio Demographic Information .......... 38

4(a).2 Computerization and Skill requirements ....................................... 40

4(a).3 Computerization and the Organization Structure ............................. 42

4(a).4 Computerization and Job performance ........................................ 45

4(a).5 Computerization and human resource programmes ......................... 46

4(b).0 Responses from support staff .................................................. 47

4(b).1 Professional Training ............................................................ 48
LIST OF TABLES

Table 3.4.1: The study population and sample ............................................ 31
Table 4(a) 1.1: Previous positions held by managers and supervisors before their current positions ................................................................. 39
Table 4(a) 3.1: Support staff’s views on their supervisors’ area of control .......... 44
Table 4(a) 4.1: Changes in levels of output in the sections ................................ 46
Table 4(b) 2.1: Support staff’s response on the number of new and scrapped off positions in the units ................................................................. 50
Table 4(b) 2.2: Adjustments made on the support staff’s role in decision making ...... 51
Table 4(b) 3.1.1: Speed of decision making by support staff after computerization .... 53
LIST OF FIGURES

Figure 2.8.1: The conceptual framework .................................................. 26
Figure 3.1.1: Location of Kericho District in Kenya .................................. 28
Figure 4.0.1: Computerized weighing of tea leaves ................................... 37
Figure 4(a).1.1: Managers and Supervisors who held other positions before
the current positions .................................................................................. 38
Figure 4(a).2.1: Skill requirements after computerization ........................... 40
Figure 4(a).2.2: Introduced and scrapped positions in the units ................. 41
Figure 4(a).3.1: Changes made on job grades after computerization ........... 43
Figure 4(a).4.1: Speed of completion of tasks after introduction of computers... 45
Figure 4(a).5.1: Computerization versus human resource programmes .......... 47
Figure 4(b).2.1: Transfer of Tea-Pickers’ data to the computer system .......... 49
Figure 4(b).2.2: Introduction of new positions in the units ......................... 50
Figure 4(b).3.1: A computerized weighbridge .......................................... 52
CHAPTER ONE: INTRODUCTION

1.1 BACKGROUND TO THE STUDY

Computerization is defined as the control of processes by use of a computer (The American Heritage Dictionary of the English Language, 2003). It involves entering, processing and storing of information in a computer or system of computers to be used in the control process.

The origin of computerization has been traced through various developments in history. Babylonians in the Middle East are thought to have invented the first calculating mechanism (the abacus) between 1,000 BC and 500 BC while the Egyptians in Africa are thought to have started using the prime numbers in a period dating back to around 8500 BC (Maxfield and Brown, 1997). Ryan Singer therefore notes that “the origin of computers was in mathematics, but what’s less commonly known is that the computer was invented to shed light on a philosophical crisis in the foundations of pure mathematics” (Singer, 2004).

The first use of computers in the business area came from a British food manufacturing and catering company, J, Lyons and Co, and dates back to 1949. With the help of Cambridge University, “they built and applied to their business one of the earliest stored-programme computers, the LEO I” (Land, 1998).

Computerization has accelerated in the last 25 years due to advances in electronic technologies, the advent of the microprocessor and the tremendous development of the software industry (Lavoie and Therrien, 1999). Lavoie and Therrien note that the process of codification of knowledge has intensified and routine tasks have tended to
disappear, changing the architecture of jobs and therefore, the structure of employment. An increasing number of occupations have become associated with the computer, and these jobs require highly skilled workers.

Computers have evolved from a specialized and limited role in information processing and communication processes of modern organizations to become a general-purpose tool that can be found in use everywhere, though the extent of use varies (David, 2000). As pointed out by David, computing equipment is today found on the desktops and work areas of secretaries, factory workers and shipping clerks often side by side with the telecommunication equipment linking organizations to their suppliers and customers and have therefore become an essential tool supporting control and decision-making at both middle and top management levels.

According to Poulymenakou Angeliki, today’s organizations, both private and public are using sophisticated communication and collaboration technologies in order to provide networking co-operation environments for their employees, partners and customers. Information technology is the enabling means that supports and enable inter-organizational coordination activities. By using sophisticated IT applications (e.g. web-based technologies), co-ordination, collaboration and the accomplishment of the work itself may become independent of time and space and can be carried out by distributed groups and organizational settings (Poulymenakou, 2006)

The survival and growth of organizations in an increasingly turbulent environment would depend upon effective utilization of information technology for aligning the organizational structure with the environmental preferences and for creating symbiotic inter-organizational structures (Kenaroglu, 2003). Kenaroglu points out that IT has released a wave of technological innovation in the processing and
presentation of information which has transformed the information technology sector into a dynamic and expanding field and thus creating new markets, generating new investment, income, and jobs. It has also provided other sectors with more rapid and efficient mechanisms for responding to shifts in demand patterns and changes in international comparative advantages, through more efficient production processes, new and improved products and services.

According to Kraemer and Dedrick, human resources have been identified as a key environmental factor associated with payoffs from IT use. Countries which have skilled, experienced professional, technical and managerial personnel achieve greater productivity and economic growth from their IT investments than those that do not (Kraemer & Dedrick 1994). Kenaroglu concurs with them by asserting that information technology opens up greater opportunities for exploitation of economies of scale and scope, allows the more flexible production and use of labour and equipment, promotes the internationalization of production and markets, offers greater mobility and flexibility in capital and financial flows and services, and is quite often the precondition for creation of innovative financial instruments.

According to Kraemer and Dedrick, investment in IT is expected to increase economic growth through productivity growth, which should push wages upward, increasing workers’ income and personal consumption. They note that IT use might also have a negative effect on economic growth if it leads to or is linked with elimination of jobs in the redesign of business processes. Their study shows that developed countries are the heaviest users of information technology, followed by the newly industrializing countries and lastly the developing countries. In Asia; Thailand, Korea, India and Taiwan have shown the fastest growth in IT investment and have
ranked among the leaders in productivity growth in the world (Kraemer and Dedrick, 2001).

Computer technology has penetrated all sectors of economies in Africa although the level of usage varies from country to country with Kenya, Nigeria, Ivory Coast and Zimbabwe making some progress in Sub-Sahara Africa, but Uganda and Tanzania still lag behind (Odedra-Straub, 1995).

In Kenya, the use of ICT in Government and private sector has increased significantly. People in these sectors now appreciate the usefulness of computers in terms of data warehousing, information processing and dissemination. This has improved service delivery and productivity. The government also intends to develop and implement appropriate terms and conditions of work for ICT personnel (National Information and Communication Technology, August 2003). The government and the private sector also established the Kenya ICT Trust Fund in 2004 to promote the use of ICTs in education. In conjunction with the civil society groups, it is equipping public secondary schools with computers across the country. Of the 4,000 institutions in question, 400 have already benefited (Mulama, 2006)

Lavoie and Therrien’s findings reveal that differences across industrial sectors in the level of computer intensity and skill composition lead to differences in cross-sectoral impacts of computerization on different occupational categories. The effect of the computer was strongest in the service industries followed by medium-tech manufacturing industries (Lavoie and Therrien, 1999)
A study conducted by Lavoie and Roy discovered a rapid and widespread trend across industrial sectors toward employment favouring high-skilled workers (Lavoie and Roy, 1998).

Berman, Bound and Griliches argue that the role of the computer in changing the structure of employment should not be exaggerated. Though the computer has acted as a catalyst for change in the employment structure due to its pervasiveness and its capacity to merge with other technologies, it is certainly not the only factor affecting the employment structure (Berman, Bound and Griliches, 1993).

Previous studies have found that computerization can have both positive and negative effects on the same job (Kraut, Dumais, & Koch, 1989). Other studies have shown that computerization alters the content, quality, and the organization of work in different ways and to different degrees depending on factors that dictate how the organization is run (Kling and Zmuidzinas, 2002). It is therefore necessary to study specific work processes to determine the impact of computerization on the human resource in a particular sector.

This study focused on the impact of computerization on the human resource in the tea-manufacturing industry.

1.2 PROBLEM STATEMENT

Though computerization of work processes is regarded as a means of improving performance in organizations, previous studies have shown that it may affect the employees negatively if mitigating measures are not taken. Computerization can lead to exploitation of labour for profit purposes and reduce the role played by employees in an organization (Zuboff, 1988). Aronowitz and DiFazio concluded in their study...
that computer technology is now so sophisticated that an increasing number of white-collar jobs are at risk. Each generation of technological change makes some work more complex and interesting and raises the level of training or qualification required by a diminishing fraction of intellectual and manual labour, the process simplifies tasks or eliminates them, and thus eliminates the worker (Aronowitz and DiFazio, 1994). According to Harry Braverman, employers are always tempted to simplify work tasks utilizing a variety of systems analysis techniques and once this process is complete, the management would rob the workers of their skills and replace skilled workers with less expensive workforce. The workers become deskill and the quality of work is degraded. Braverman suggested that capitalist managers exploit new technologies to help them tighten control over workers through processes like deskill and job fragmentation. He argued that the logic of capitalism requires owners and managers to relentlessly try to enhance their control over workers to reduce labour costs (Braverman, 1974). Judith Perrole also noted that professional, technical and managerial employees who do the kind of thinking that machines do or those who do what inexpensive labour does with machines will see a relative reduction in their wages and salaries unless they can acquire new tasks to protect their existing areas of expertise from automation (Perrolle 1991). Computerization according to a number of writers readily degrades work and regiments professional work like many clerical jobs. They view the implementation of desktop computing as another method used by the management to gain more control over work processes and extract more work from the workers (Mowshowitz, 1986; Perrolle, 1991). If mitigating measures are not taken to address negative effects, employees can persistently resist the change, customers get affected by the impact of upset employees and valued staff may leave the business (Susanto, 2003).
Critics of Braverman fault him for treating workers as purely passive agents and point out that his theory ignores the variety of managerial approaches for improving productivity, such as those which increase responsibility, pay and morale, rather than tightening control and deskilling (Attewell & Rule, 1984).

There is need to study the impact of computerization on the human resource in specific industrial processes if adequate mitigating measures are to be taken. Studies on specific industrial processes are necessary since the impact of computerization varies from one type of work organization to another (Kling and Zmuidzinas, 2002). Kling and Zmuidzinas note that there is significant controversy and uncertainty about the nature of specific improvements or diminutions in the quality of work and the conditions under which computerization leads to improved or degraded work. They assert that, taken together, the body of empirical studies shows that computerization alters the content, quality, and the organization of work in different ways and to different degrees.

Reviews which examined multiple studies found evidence for both the degradation and upskilling lines of analysis (Attewell & Rule, 1984; Kraemer & Danziger, 1990). Moreover, other studies (Kraut, Dumais, & Koch, 1989) found that computerization can have both positive and negative effects on the same job.

Some scholars have identified the possibility of different kinds of computerization strategies shaping work in different ways (Orlikowski, 1991; Zuboff, 1988).

According to Stan Hannah and Michael Harris, although introduction of information technology changes the nature and type of skill used at the workplace, one cannot say whether computerization deskills the workforce or not unless the skill in question is
defined operationally (Hannah and Harris, 1995). The operational definition of a skill will obviously vary from one work process to another.

This study therefore sought to find out the impact of computerization on the human resource in the Tea industry.

1.3 OBJECTIVES OF THE STUDY

Main objective:
To establish the impact of computerization on the human resource of the organization.

Specific Objectives:

1. To find out how computerization has affected skill requirements for the job positions in the organization.
2. To establish the effects of computerization on the organization structure.
3. To find out the effect of computerization on job performance.
4. To find out the organization’s programs that help employees cope with the demands of computerization.

1.4 RESEARCH QUESTIONS

1. How has computerization affected skill requirements for the job positions in the organization?
2. How has computerization affected the organization structure?
3. How has computerization affected employees’ job performance in the organization?
4. Are there programs that help employees cope with the demands of computerization?
1.5 RATIONALE FOR THE STUDY

Related studies done by other researchers have suggested that impacts resulting from computerization are diverse and vary depending on various factors and the nature of the work process (Kling & Zmuidzinas, 2002). It was therefore necessary to carry out the study on a tea-manufacturing company to help those in the sector understand its impact on employees in similar companies.

1.6 SIGNIFICANCE OF THE STUDY

The study provides knowledge required to understand the impact of computerization on employees of the organization and how far it has gone in addressing negative effects. The study may form the basis upon which the management will plan and implement human resource programs that help to eliminate negative effects or strengthen positive effects. The study equips organizations intending to computerize their operations in the sector with information required to implement the projects without negative effects on the human resource. This study brings new insights to the body of knowledge on the impact of computerization on the human resource in the tea-manufacturing sector.

1.7 SCOPE AND LIMITATIONS OF THE STUDY

The study covered the regional office of Unilever Tea Kenya Ltd based in Kericho town and all its operations in Kericho district within Kenya. The company is a pioneer in computerization of business processes in the tea industry in Kenya and therefore presented a good case study. This study may be directly applicable to similar tea-manufacturing companies only. The focus of the study was on the effects of computerization on skill requirements, organization structure, employee
performance and programs used to deal with the demands of computerization on employees.

The study was carried out to fulfil the requirements of the degree of Master in Business Administration. It was therefore conducted within a time constraint of eleven months only.

1.8 ASSUMPTIONS OF THE STUDY

The study assumed that all areas under study have the same work organization and the degree of integration of computerization into the work of the user and the workgroup is the same across the organization.
CHAPTER TWO: LITERATURE REVIEW

2.0 INTRODUCTION

Literature on computerization is diverse and covers many aspects of work-life (Kling and Zmuidzinas, 2002). Rob Kling and Mary Zmuidzinas noted that each of the approaches to the subject attempts to put the effects of computerization under one dominant trend – whether it is degradation, upgrading work or new forms of organization. They attempt to put technological impacts under one dominant logic – it may be managerial control, easy to use technologies that promote autonomy or technological abilities to relax ties. Other studies have however found that computerization can have both positive and negative effects on the same job (Kraut et al, 1989).

The review for this study is based on areas touching on computerization and its effect on skill requirements, computerization and its effect on the organization structure, computerization and its effect on performance and the programs used in helping employees deal with effects of computerization.

2.1 COMPUTERIZATION AND EMPLOYEE SKILLS.

Some studies have shown that technology-based systems offer organizations the opportunity of functional integration and multi-skilled staff (Piore and Sabel, 1984). Other studies have noted that the emergence of information technology resulted into deskilling of the workforce and reduction of their quality of work and the same fate would face professionals (Braverman, 1974). Harry Braverman viewed the
emergence of information technology as part of the struggle between labour and capital (Webster and Robbins, 1996). Braverman provided an analysis of how the social relations of exploitative technological societies produce the science and technology which are applied to the work process and increasingly subdivide, de-skill, routinise, brutalise and reify it until there is no craft or meaning (Young, 2002).

Lawrence Katz also notes that computer business systems often involve the routinization of many white-collar tasks whereby simpler and more repetitive tasks have proved to be more prone to computerization than more complex and mental tasks. On the other hand, he notes that computers, the internet and electronic commerce raise the returns of marketing and problem solving skills to match customers' preferences to existing products and service (Katz, 1999). Bresnahan also agrees with the same position that there exists organizational complementarity between computers and workers who possess both greater cognitive skills and greater people skills (Bresnahan, 1997).

Kodama asserts that computers and computerized equipment have eliminated occupations requiring physical effort and replaced them with occupations depending more on mental ability (Kodama, 1991).

Lavoie and Therrien's study found out that there was a significant complementarity between knowledge workers and the computer for all industrial sectors from 1980 onwards though the magnitude differed slightly from one sector to another but increased over time (Lavoie and Therrien, 1999). They found complementary association between science workers in the primary sector but a substitutive association with workers in high-tech manufacturing. There was also a complementary association between engineers and the computer though the expert
system software had led to substitution of engineers for goods (manual) workers. While their study established that there was complementarity between computers and workers in the field of computer science and data workers, it found out that there was a substitution effect for the goods workers. They attributed this to the routinized nature of core tasks accomplished by goods workers (Lavoie & Therrien, 1999). According to Berman, Bound and Griliches, computer aided technologies could reasonably be expected to be production labour-saving rather than production labour-using (Berman, Bound and Griliches, 1993). Lavoie & Therrien have concluded that “the computer has been very successful in replacing codifiable knowledge but quite inadequate in replacing tacit knowledge. The new generations of technology, created through the fusion of electronics, biology and other technologies, will quite probably directly target the replacement of tacit knowledge which, up to now, has been fundamentally a human preserve”. (Lavoie & Therrien, 1999)

According to Stan Hannah and Michael Harris, although introduction of information technology changes the nature and type of skill used at the workplace, one cannot say whether computerization deskills the workforce or not unless the skill in question is defined operationally (Hannah and Harris, 1995).

2.2 COMPUTERIZATION AND ORGANIZATION STRUCTURE

The advance of telecommunications and computerization has recently enabled large companies to transmit information among numerous computer systems at different geographical locations, subjecting widely dispersed industrial plants to direct managerial control from a central location; this affects the international division of labour and production (Kenaroglu, 2003)
Information technology-based systems offer organizations the opportunity of functional integration, multi-skilled staff, rapid and flexible decision-making structures with greater delegation of responsibilities and greater autonomy of operating units (Piore and Sabel, 1984). Information Technology (IT) is actually affecting workers at all levels of organizations (Daft, 1992), from the executives to assembly hands and clerks.

Daniel Bell argues that the post-industrial era may have a decisive impact on “the character of the occupations and work in which men engage” (Bell, 1980). Bell also points out that new modes of employee participation will arise and work hierarchies would be questioned which may cause changes in structures of organizations (Bell, 1973). Stan Hannah and Michael Harris have criticized Bell by asserting that “he offers little serious analysis of how he feels the technology will impact on the workplace” (Hannah and Harries, 1995).

Shoshana Zuboff attempted to resolve the contradictions between Daniel Bell and Harry Braverman in regard to the emergence of information technology and wanted to understand the way in which worker’s lives would be transformed in the post industrial era. She acknowledged the validity of Braverman’s insistence that managers attempt to generate profit by exploiting labour. She also asserts that Daniel Bell is correct in arguing that the new computer-mediated workplace demands a new approach to organizational structure (Zuboff, 1988).

According to Kakihara and others, the increase of ICT mediated work has had an impact on the flexibility and control of the professionals’ tasks and roles. ICT facilitates establishment of flexible working practices through the use of a range of
interaction technologies by balancing the professionals’ own desires and the need for interaction with those of the surroundings (Kakihara et al, 2002).

It is easily understood from an intellectual point of view that emphasis on authority and control works against the effort to build the kind of organization that can thrive in today’s environment, yet most organizations continue to retain their hierarchical and bureaucratic structures. This is because those groups whose power base is threatened have a vested interest in maintaining the status quo and the authority that goes with it (Scarbrough and Corbett, 1992).

Computer-based technologies can play key roles in restructuring major social relationships - interpersonal, inter-group, and institutional. Computerized and communication technologies enable organizations to create different architectures for processing and accessing information. They can support different forms of work organization. Computerized systems enable the restructuring of social relationships by altering the kinds of information readily available, reorganizing patterns of access to information, altering the cost and work for organizing information, and shifting patterns of social dependencies for key resources, such as computing and skilled computing staff. Despite many potentialities supported by computerization, organizations selectively adopt and integrate them into work processes (Orlikowski, 1991).

Kling and Zmuidzina’s study found out that computerization is often shaped by managers’ espoused goals for computerization projects (e.g. standardize procedures or increase workers' responsibility). Computerization is often, only one of the means by
which managers alter work and the performance of their work groups. They often cite other choices (e.g. downsizing, restructuring of division of labour, commitment-building, etc.) available that will also accomplish their goals. To understand the interplay of computerization and work, we must examine the bundle of organizational interventions in a work group, rather than focusing exclusively on the computerization process (Kling and Zmuidzinas, 2002).

With the exception of standardization of skills, information technologies enable each of the different forms of work coordination. For example, the use of electronic mail facilitates informal communication, particularly for communications that were once bounded by time and location restrictions. Electronic monitoring enables extending direct supervision (Clement & Gotlieb, 1987). Standardization of work processes is also possible (Orlikowski, 1991). Finally, expert systems enable standardization of outputs. Thus, the technological choices available enhance most and rarely limit the type of coordination and division of labour which managers prefer.

Adler, argues that working with computing technologies requires different skills than working with old technologies. In particular, the new skills require the attitude of taking on responsibility for process integrity and results, identifying and solving problems, working with others (team work and interdependence across functions and levels) and continual and frequent retraining (Adler, 1986).

Huber argues that the availability of technology will lead to its use, this use will increase information accessibility, and increased information accessibility will lead to changes in organizational design (Huber, 1990). Kling and Zmuidzinas however
propose a model that incorporates individual and group abilities to restructure pre-existing structures. This model holds that workplace visions (or the bundle of ideologies or values that participants draw upon when organizing technologies and reorganizing work) shape the selection of when technologies will be used, which of the various available technologies will be used, how they will be used, and who will have access to the information these technologies generate. These choices determine how work is transformed (Kling and Zmuidzinas, 2002).

2.3 COMPUTERIZATION AND EMPLOYEE PERFORMANCE

Computers are useful in management of information for planning and control purposes and thus improve the performance of employees at the workplace. Kasvi and others have argued that “even the most experienced employees cannot be supposed to manage with their memory and professional expertise alone. Without new tools to manage all the information, we risk harmful mental workload and related organizational and personal problems” (Kasvi et al, 1998).

Keneth Kraemer and Jason Dedrick noted that Information Technology (IT) improves labour productivity by providing workers with timely information and tools for planning and carrying out their work (Kraemer and Dedrick, 2001). They note that IT improves labour productivity by substituting for labour or improving productivity of workers when computers are installed to perform routine data processing functions and replace workers carrying out those functions.

Guy Boy asserted that computers can be qualified for bringing artificially extended intelligence by enabling people to efficiently and purposefully achieve important tasks and also support and improve life. It enables enhanced performance, quality of results
and appropriate interaction (*Boy, 2002*). Hubert Dreyfus, a famous critic of artificial intelligence, brings out the limitation of computers’ artificial intelligence by noting that expert system technology would never be able to reproduce human expertise. He argued that expertise is developed over time to produce skills that cannot be represented by “IF-THEN” production rules. The skills are not ordinary skills but skilful means. Dreyfus claimed that situational knowledge cannot be captured and thus cannot be modelled and simulated using artificial intelligence. This is due to the fact that artificial intelligence systems and principles are based on analytical knowledge representations yet situational knowledge is incrementally learned from experience (*Dreyfus, 1979*).

Katz also points out that computer-based technologies may increase returns by facilitating creative use of available information to make new products, customer tailored products and services and thus meeting customers’ needs (*Katz, 1999*).

Paul David summarized changes attributed to this technology as new patterns of work organization and worker productivity, profit and loss of companies and ultimately prospects for economic growth (*David, 2000*). He cautions that the development and exploitation of digital information entails a complicated techno-economic regime transition whose success depends on the coordination and completion of complementary changes in methods of production, work modes, business organization and supporting institutional structures. He noted that such transformations involve obsolescence of skills, capital assets and business models yet they also lead to accelerated rate of appearance of new goods and products.

Developed countries are the heaviest users of information technology, followed by the newly industrializing countries and lastly the developing countries. In Asia; Thailand,
Korea, India and Taiwan have shown the fastest growth in IT investment and have ranked among the leaders in productivity growth in the world (*Kraemer and Dedrick, 2001*).

Computer technology has penetrated all sectors of economies in Africa although the level of usage varies from country to country with Kenya, Nigeria, Ivory Coast and Zimbabwe making some progress in Sub-Sahara Africa, but Uganda and Tanzania still lag behind (*Odedra-Straub, 1995*).

According to the Kenyan National Information and Communication Technology policy paper, the use of ICT in Government and private sector has increased significantly. People in these sectors now appreciate the usefulness of computers in terms of data warehousing, information processing and dissemination. This has improved service delivery and productivity. For instance, the banking sector has embraced the use of ICT in its operations such as the use of Automated Teller Machines, Internet Banking and Electronic Funds Transfer (*National Information and Communication Technology, August 2003*).

2.4 COMPUTERIZATION AND HUMAN RESOURCE PROGRAMMES

Employees are normally motivated in varying ways at their places of work. Workers in social service professions for instance obtain satisfaction in helping others. For this particular group, recognition, support from peers, superiors and values shared with others are more important to them than some other forms of compensation. (*Bowe et al., 2001*).

Schein defined eight "prototypical career anchors" namely; Security/stability, autonomy/independence, life style, technical-functional competence, general
managerial competence, entrepreneurial creativity, service or dedication to a cause and pure challenge. Schein’s theory is applicable to decisions and actions that workers undertake in the face of substantial organizational changes. A career anchor and the set of decisions and actions that spring from it may serve as a major source of resistance to new technology (Schein, 1996).

Information Technology is affecting workers at all levels of organizations, from the executives to assembly hands and clerks (Daft, 1992). According to the findings of Autor and others, increased computer intensity was associated with increased employment shares of managers, professionals and other highly educated workers, and with decreased employment shares of clericals, production workers, and less educated workers (Autor et al, 1998). A survey by Bresnahan and others in United States also found out that larger investments in information technology by firms led to changes in organizational practices that decentralized decision making, increased worker autonomy, employment of more-educated workers, greater investments in training, broader job responsibilities for line workers and increased the need for highly educated workers (Bresnahan et al, 1998).

According to Poulymenakou, collaboration technologies are also forming virtual workspaces, enabling geographically distributed employees and work units to coexist synergistically by facilitating physical and social proximity and creating an organizational knowledge storage media. Within such knowledge rich environments, people cope with complex tasks and seek new innovative ways of practicing, while people with same interests working in same processes are creating communities of practice. The introduction of these alternative virtual 'realities' have also introduced new challenges for human resource management and new communication and
collaboration practices supported by new forms of socialization and knowledge distribution. "The emerging self-organized communities are characterized as the cornerstone of the learning organization while their members are participating and exchanging experiences online, regardless their overlapping and sometimes conflicting cultures" (Poulymenakou, 2006).

Poulymenakou notes that many advanced technological solutions focus primarily on training and development interventions, which are also challenging human resource management regarding the use of e-learning and knowledge management technologies. Many training interventions fail due to inadequate or inaccurate identification of training needs.

Guy boy asserts that information technology brings new ways of motivating learners. It helps to make learning, reading and discovering scientific matters easy and interesting (Boy, 2002).

According to Kraemer & Dedrick, studies show that investment in education and training is far more important to increasing the efficiency and effectiveness of individuals and work groups than investment in upgrading equipment or software. Experienced and sophisticated users stimulate producers to innovate with information services by providing test beds for new services and also help producers to identify requirements for them. Kraemer & Dedrick note that managers of user organizations need to understand how technology applies to their industry and how to make good decisions about technology investments for their firm. They need to understand the uses and business value of IT so that they can make good decisions about the
technology investment and deployment, and can pave the way for its implementation in their organizations (Kraemer & Dedrick, 1994).

Paul Osterman concluded that high technology strategies, in the absence of significant changes in human resource practices produce no significant productivity or quality improvements. The organizations that will truly excel in the future will be those that discover how to tap people's commitment and capacity to learn at all levels in an organization (Osterman 1991).

In Africa, firms are more prepared to recruit already trained staff than the less qualified persons who need training, possibly due to inadequate funds or lack of awareness on the strategic importance of well-trained manpower (Waema, 2002). To deal with this problem, the Kenyan government is already integrating ICT subjects in the teaching curriculum at all levels of education, establishing e-educational networks for sharing educational resources and promoting e-learning at all levels. The government also intends to develop and implement appropriate terms and conditions of work for ICT personnel in the National ICT policy (National Information and Communication Technology, August 2003).

The Kenyan government and the private sector also established the Kenya ICT Trust Fund in 2004 to promote the use of ICTs in education and is trying to power rural schools with solar energy. In conjunction with the civil society groups, it is making effort to equip public secondary schools with computers across the country. Of the 4,000 institutions in question, 400 have already benefited (Mulama, 2006).

The government has set an objective to allow banks and other Financial Institutions to float special bonds for raising capital for investment in IT education, train and make
available the capital raised to IT human resource development companies and institutions on low interest rates (National Information and Communication Technology, August 2003). Wananchi Online for instance was allowed to auction its shares to finance growth and product development through a private placement offer in March 2006 (The Financial Standard, 9th May 2006).

2.5 CRITICAL REVIEW

Studies conducted so far offer a good general guide on the possible impact of computerization on the human resource and are applicable to specific work processes studied. Results of such findings cannot however be blindly applied on other business process which have not been studied. This is due to the fact that businesses have different strategies for implementing technological change, occupational power of the worker, work organization among other factors. All factors determining how a specific business is run must be taken into account before attempting to predict the impact of computerization on the human resource. This calls for studies to be conducted on specific business processes before attempting to predict the impact of computerization on the human resource.

2.6 SUMMARY AND GAPS FILLED BY THE STUDY

It is clear from the literature review that computerization has the potential to affect the human resource positively and negatively depending on factors that dictate how the business process is managed. Business driving factors make work processes of different enterprises unique from one another and thus cause variations in how computerization would affect the human resource of the enterprises. This implies that findings of a study on one business process can only be directly applied to another
enterprise if the two have the same factors determining how the businesses are run.

Every business process that has not been studied in the past therefore presents a knowledge gap that has to be filled. This applies to the tea-manufacturing process where the impact of computerization on the human resource has not been studied.

2.7 THEORETICAL FRAMEWORK

There are two main economic theories that predict the overall effects and consequences of computerization of the workplace. The theories are the Capital-Labour Complementarity Theory and The Production Theory.

The Capital-Labour Complementarity theory argues that neither capital nor labour is the essential ingredient to production process. This theory argues that labour and capital are both complements and increasing input in one while maintaining the level of the other will increase the combined profits and benefit of the two. Likewise, decreasing the input of one will decrease the total profits and benefit. In other words, by replacing a large number of human workers with a single machine, the company is actually reducing the total benefit that it could be achieving.

The production theory places pure emphasis on capital as the key ingredient to the success of a company. This theory is based on the neoclassical theory of production. This theory is based on the idea that capital and labour are substitutes. If the chance of reducing costs, thereby increasing profits as well as production exists, any excess of labour can be compromised or eliminated. Since computerization of the workplace eliminates labour while increasing profits and production, then it creates an efficient allocation of resources.
This study intends to pursue The Capital-Labour Complementarity Theory because the theory advocates for computerization without causing adverse effects on employees.

2.8 CONCEPTUAL FRAMEWORK

The principle behind the conceptual framework for the study is that, in the workplace, trained workers are extremely essential because they add a human element unmatched and unparalleled by computer technology. There are many problems that only human beings can solve as well as many situations where workers are capable of doing the job better than computers. Computers are not capable of performing tasks that require high-level intelligence found in employees. They cannot solve problems independent of human beings; they are only as capable as their programming is concerned. If computerization is implemented while maintaining or increasing the level of the workforce to match the change in capital investment, then the organization will benefit from increased ability to solve problems. This is due to the fact that computers help employees to process and analyze information in a faster and better way. The organization will therefore have better problem solving systems and thus realize higher productivity and profits. This may lead to increased investment in the business which would result in employment of more labour and computers.
Figure 2.8.1: The Conceptual Framework

1. Investment in Labour kept at same level or increased.
2. Investment in Computers increased to computerize processes.

1. Increased capacity to solve problems.
2. Faster and better mechanisms of solving problems.

1. High productivity
2. Increased profitability

Employment of more workers and further computerization

Further investment and expansion of business.
CHAPTER THREE:

METHODOLOGY

3.0 INTRODUCTION

In this chapter, the researcher identified the study area, the study design, the study population, the study sample, sampling procedures, data collection procedures, data analysis and the expected output.

3.1 STUDY AREA

The study area is within Kericho district in the Rift Valley province of Kenya. The district has a total area of 2110.6 KM\(^2\). The district has many investors in the production sector who have started using IT (Kericho District Development Plan, 2002-2008). Some of the major investors in tea manufacturing in the area include Unilever Tea Kenya Limited, James Finlay (K) Limited, Williamson Tea Company Ltd and factories managed by the Kenya Tea Development Authority. The district’s main economic activities are agricultural in nature and include Tea, Flower, Dairy, Sheep, Coffee, Wheat, Barley, Pyrethrum, Sugarcane and Maize farming. These activities are carried out both on large scale and small scale. The main cash crop of the area is Tea.

The area falls in the most important agricultural zone in the country and is ecologically the most important zone in Kenya. The district is typical of migration for agricultural wage employment (Ominde, 1988). It is a suitable study area since it has a number of multinational companies employing large numbers of employees and using IT in their business processes.
Figure 3.1.1 Location of Kericho District in Kenya

The above maps have been extracted from Kericho District Development Plan 2002-2008
3.2 STUDY DESIGN

The research was conducted under a descriptive study design. The design helps in getting an accurate profile of events and situation on the ground (Robson, 2002). To achieve this, the study selected a sample from the population. The aim was to have a sample with characteristics that are an exact representation of the population characteristics. Interviews and questionnaires were used to collect data from the sample. Face to face interviews were used to collect in-depth information from key informants. Self-administered questionnaires were used to collect data from categories with a large number of respondents since the geographical area covered was large. All participants are literate and were able to fill the questionnaires too. After data collection, it was processed, analyzed and the results compiled as given in this report.

3.3 STUDY POPULATION

The study population consisted of employees of the company based in Kericho who use computers. These included the entire management, supervisors and support staff who use computers. The population consisted of 6 key informants (included 4 executives, the Human Resources Manager (HRM) and the Information Technology Manager (ITM)), 86 managers, 43 supervisors and 38 support staff. The total population was 173 employees. Similar methods of categorization have been used in other related studies (Lavoie, & Therrien, 1999).
3.4 STUDY SAMPLE

The study sample consisted of 3 informants (included one executive, the HRM and the ITM). The Managers were 50, Supervisors were 25 and the support staff respondents were 22. The executive gave information on when and why the organization computerized its operations and the impact it has had on the company in general perspective. The HRM and ITM enabled the study to acquire information from their departments which were the main focus of the study.

The category of managers gave information from their units on the impact of computerization on their jobs and employees working under them. The supervisors and support staff gave information on how computerization has affected them and their work place.

The study was carried out with the aim of having a 95% level of confidence in the estimates which corresponds to a Z score of 1.96. The margin of error (e %) was thus 5%. From preliminary discussions carried out with some members of the organization, the response rate (re%) was estimated to be about 73% and a very small percentage (5%) of the population represented by (q%) was the proportion whose jobs were considered unaffected by computerization given that they may have been dealing with computers directly as technical staff in the computer section before or during implementation of the computerization project. The proportion of the population thought to be affected by computerization (p %) was estimated to be 95%.

The minimum sample size required (n) was calculated using the following formula (Saunders M. et al, 2003):

\[ n = p\% \times q\% \times \left(\frac{Z^2}{e^2}\right) \]
The actual sample size used for the study was calculated using the formula below:


\[ n^a = \frac{n \times 100}{re\%} \]

Where \( n^a \) is the actual sample size required, \( n \) is the minimum sample size and \( re\% \) is the estimated response rate expressed as a percentage. The sample sizes for the managers, supervisors and support staff were worked out as follows;

Sample for a category = \( \frac{\text{total population in that category}}{\text{total population for all categories}} \times n^a \)

### Table 3.4.1: The Study Population and Sample

<table>
<thead>
<tr>
<th>Category</th>
<th>Population</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Key Informants</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Managers</td>
<td>86</td>
<td>50</td>
</tr>
<tr>
<td>Supervisors</td>
<td>43</td>
<td>25</td>
</tr>
<tr>
<td>Support Staff</td>
<td>38</td>
<td>22</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>173</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

*Table 3.4.1 above shows the categories of respondents, the population of employees in each category and the number of employees selected as a sample representing each category.*
3.4.1 INCLUSION AND EXCLUSION CRITERIA

The sample included respondents who were employed by the organization before computerization of their sections. Those who were employed after computerization of their sections were excluded.

3.5 SAMPLING PROCEDURES

The study used stratified random sampling and purposive sampling. The total population consisted of four main strata of employees from five factories, twelve tea estates, Supplies department, Technical and Development department, Human Resource department, Accounts department, Audit department, Business Systems department and Medical department. These included the Key informants, Managers, Supervisors and Support Staff. One executive, the HRM and the ITM were picked purposively in the category of Key informants as the first step in the sampling process. Each employee stratum except that of the key informants, were sub-divided further into smaller groups whose members had similar characteristics. The stratum for supervisors for instance were sub-divided further into sub categories of accounts supervisors, Stores supervisors and so on. Once the whole population was subdivided into the sub-strata, the proportion or percentage of the sub-category population to the total population was worked out. The same percentage was used to determine the sample size for the sub-category. Once a sub-category sample size was determined, simple random sampling was used to select respondents from the sub-category population who would be part of the sample. Numbers were assigned to all employees who belong to the sub-group. All the numbers in a sub-group were then placed in a container and any number was picked at random one at a time. Once the number (sample size) of respondents required for that sub-group was attained, the
employees corresponding to the numbers picked were included in the sample for that sub-group (Mugenda and Mugenda, 1999). The process was repeated for all the sub-groups in the population. After picking the employees to be included in the sample, their duty station was identified and noted for contact during data collection. The stratified random sampling procedure took care of the geographical spread of the company in Kericho and also ensured that each category of respondents was represented in the sample.

3.6 DATA COLLECTION PROCEDURES

Primary data was collected from the ground through interviews and questionnaires. Personnel records were used to save time and cost of collecting such data from the field.

Face to face interviews were conducted on key informants using questionnaires. Unstructured and semi-structured questions were asked during the interviews to allow respondents to express themselves openly and give as much information as they could. This enabled the study to acquire information that may not have been collected from the self-administered questionnaires. The response of key informants has been used to check if information from other respondents is consistent with the organization’s position. Interview method of data collection has been used successfully in other studies to acquire empirical data (Hedstrom, 2002).

The study used self-administered questionnaires for the strata that had large numbers of participants. These included all respondents except the key informants. Due to the large geographical coverage of the study area, it was suitable to use the self-
administered questionnaires to save on time and cost of administering the questionnaires. Questionnaires were delivered by hand to managers who in turn issued them to respondents working in their duty stations. Self-administered questionnaires were labelled clearly indicating which group of respondents would receive them.

3.7 DATA ANALYSIS

The study has used descriptive statistics to analyze data. Measures of central tendency have been used to give expected summary statistics of variables being studied. Frequency distribution tables and percentages have been used for data analysis. Graphs have been used for data presentation. The computer software package, the Statistical Package for Social Sciences (SPSS) was used as an aid in data analysis. The software package provided faster and easier ways of computing and presenting data.

3.8 EXPECTED OUTPUT

The study was expected to come up with statistics of jobs whose skill requirements have changed or remained the same after computerization. It was to show jobs that need more skills and those that need fewer skills to deliver the expected results after computerization. It was also supposed to bring out any jobs whose skills have not changed after computerization. The study was to reveal how the organization structure has changed after computerization, the changes in reporting relationships, job grades and levels of hierarchy. Changes realized in the performance of employees after computerization were to be brought out too.
The study was expected to bring out programmes which the company has in place for equipping employees with skills to cope with computerization. It was also supposed to come up with recommendations to mitigate on negative effects of computerization on employees.
CHAPTER FOUR:

DATA PRESENTATION AND ANALYSIS

4.0 INTRODUCTION

This study was carried out to establish the impact of computerization on the human resource of an organization. Unilever Tea Kenya Limited in Kericho district – Kenya was used as a case study. This objective was achieved by establishing how computerization has affected skill requirements for the job positions in the organization, change in the organization structure and job performance. Programs that help employees cope with the demands of computerization were identified. A total sample of 100 respondents (3 key informants, 75 managers and supervisors and 22 support staff) was used.

In this chapter, quantitative data analysis was done using a computer package, SPSS (Statistical Package for Social Science, version 11.5) to find out the frequency and the percentages of the responses received. Respondents’ demographic data and the relationship of the data with the various impacts resulting from computerization were correlated. The results have been presented in form of graphs and charts.

The company has computerized various activities that used to be carried out manually. One of the computerized activities is the capturing of data for tea plucked by tea pickers in the fields as shown in figure 4.0.1 on the next page.
Figure 4.0.1 above shows the researcher (on the right) at one of the tea weighing points in the field. The figure shows the use of the automatic data logging system device (ADL) for weighing tea in the field. The accessory captures weight of tea leaves against the payroll number of the employee who plucked the tea. The data is then fed into a computer for further processing and use in other areas of the business. The ADL is the one hung on a wooden pole with a tea sack suspended from it.
Adult respondents in the age of 24 years and above were sampled; 37% in between 24 – 35 years, 35.6% between 34 – 45 years and 27.4% above 45 years.

All respondents were from fifteen estates and factories under Unilever Tea Kenya Ltd, with 80.8% of the respondents being male while 19.2% were female. They were employed between 1970 and 2004. Majority of the respondents, 22.6%, were employed in 1997/98.

Managers and supervisors who had held other positions in the company before they were appointed to their current positions were 76.4%.

**Figure 4(a)1.1: Managers and supervisors who held other positions before the current positions.**

In this study, it was established that managers and supervisors mainly join the company as technical/field assistants and clerical officers respectively.
Table 4(a).1.1: Previous positions held by managers and supervisors before their current positions.

<table>
<thead>
<tr>
<th>Previous position held</th>
<th>Number of managers/supervisors</th>
<th>Percentages</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.T/computer expert</td>
<td>1</td>
<td>2.0%</td>
</tr>
<tr>
<td>Secretary</td>
<td>1</td>
<td>2.0%</td>
</tr>
<tr>
<td>Clerk</td>
<td>13</td>
<td>25.5%</td>
</tr>
<tr>
<td>Laboratory Assistant</td>
<td>1</td>
<td>2.0%</td>
</tr>
<tr>
<td>Assistant accountant</td>
<td>3</td>
<td>5.9%</td>
</tr>
<tr>
<td>Plant breeder</td>
<td>1</td>
<td>2.0%</td>
</tr>
<tr>
<td>Supervisor</td>
<td>4</td>
<td>7.8%</td>
</tr>
<tr>
<td>Assistant estates manager</td>
<td>4</td>
<td>7.8%</td>
</tr>
<tr>
<td>Assistant Engineer</td>
<td>3</td>
<td>5.9%</td>
</tr>
<tr>
<td>Research and development assistant</td>
<td>1</td>
<td>2.0%</td>
</tr>
<tr>
<td>Management trainee</td>
<td>5</td>
<td>9.8%</td>
</tr>
<tr>
<td>Shift in charge</td>
<td>2</td>
<td>3.9%</td>
</tr>
<tr>
<td>Medical officer</td>
<td>2</td>
<td>3.9%</td>
</tr>
<tr>
<td>Technical/field assistant</td>
<td>10</td>
<td>19.6%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>51 respondents</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Out of the total respondents of managers and supervisors, 77.8% were professionally trained in a specific field and only 22.2% had not trained in any field. The major fields include;

- Information Technology/ computer skills
- Secretarial studies
- Human Resource Management
- Business Management
- Accounting
4(a).2 COMPUTERIZATION AND SKILL REQUIREMENTS

To find out how computerization has affected skill requirements for the job positions in the organization, the study realized that 71.2% of the managers and supervisors need more skills to do their jobs.

Figure 4(a). 2.1: Skill requirements after computerization.

Since the units were computerized, there have been 1 or 2 new positions introduced and more positions scrapped off. Results indicate that 63.0% of the managers and supervisors noted that some positions in their units were scrapped off whereas 54.8% realized that new positions had been introduced.
4(a). 2.1 ADJUSTMENTS MADE AFTER COMPUTERIZATION

After computerization, tasks performed by 35.6% of the managers and supervisors slightly increased, 34.2% experienced a reduction while 30.1% did not see any change in tasks performed. Those who experienced a reduction in tasks performed on their jobs listed the following as the causes;

- Work is done much faster and easily with the introduction of computers as opposed to manual performance.
- It is easier to process more data with a computer.
- Duplication of duties has stopped.
- Data transfer is much faster since it is electronic.
- Processing of wages is faster due to the use of computers.
- Computer software can handle and store more data compared to a manual system.
- There are fewer individuals and thus easier to monitor their work effectively.

Managers and supervisors who noted an increase in their tasks listed the following as the causes;

- Reduction of the number of employees has resulted into more work.
- Everything is done on-line and there is need to fill in forms and do internet-search. The work of filling forms is thus shifted to the managers' docket.
- Work which was earlier done by many people is now done by one person.
- The requirement to check data generated by use of computers has resulted into more work.

The introduction of computers has not caused any change in tasks performed in certain job categories such as field work.

The role played by managers and supervisors in decision-making has generally increased with 50.7% of the managers having more room to make decisions without referring to their immediate superiors. Computerization has however not affected the role played by 38.4% of this category in decision making. The positions not affected are mostly supervisors and Chief clerks.

4(a). 3 COMPUTERIZATION AND THE ORGANIZATION STRUCTURE

To establish the effect of computerization on the organization structure, the study sought to find out if there were changes on job grades. It was realized that there have been changes on job grades in the organization. Managers and supervisors who noted a reduction in the number of job grades after computerization were 61.6%.
Figure 4(a). 3.1: Changes made on job grades after computerization

The support staff who indicated a reduction in the number of job grades were 68.0%, 16.0% realized an increase in grades while 16.0% saw no change in grades after introduction of computers.

The structure of reporting relationship has generally changed since operations were computerized with 46.6% of the managers and supervisors noting a reduction in the number of staff reporting directly to them while 12.3% noted an increase. On the other hand, 41.1% of the managers and supervisors have not noticed any changes in the number of staff reporting to them. The reduction in the number of staff reporting to managers and supervisors was a result of the reduction in the total number of staff during computerization.

The response of support staff on the number of staff reporting to their supervisors after introduction of computers was similar; 20.0% of them saw no change, 16.0% saw an increase while 64.0% of them saw a reduction.
On the span of control, 54.8% of the managers and supervisors control a wider area after computerization. This was mainly because;

- Clerks in the offices have been reduced.
- It is easier to control a wider area with computers when one has a database to manage the area of jurisdiction.
- Information or data is easier to retrieve using a computer.
- Work is done faster and more accurate when using a computer.

Contrary to the managers' and supervisors' observation, 56.0% of the support staff saw the area of control for their supervisors having reduced after computerization.

**Table 4(a). 3.1: Support staffs' views on their supervisors' area of control.**

<table>
<thead>
<tr>
<th>Support staffs' views</th>
<th>Number of support staff</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area of control has increased</td>
<td>7</td>
<td>28%</td>
</tr>
<tr>
<td>Area of control has reduced</td>
<td>14</td>
<td>56%</td>
</tr>
<tr>
<td>Area of control has not changed</td>
<td>4</td>
<td>16%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>25</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

The levels of hierarchy have reduced in 49.3% and increased in 5.5% of the units. In 45.2% of the units, there has been no change in hierarchy levels.

The reduction has been caused by the following;

- Reduction in the number of people required for approval of a document generated through a computer.
- Decisions are made adequately at lower levels.
- One person is able to control the operating system and no need for extra personnel.
- Grades 3 and 2 supervisors were phased out and only one supervisor was left.
- All clerks report to the chief clerk directly.

**4(a). 4 COMPUTERIZATION AND JOB PERFORMANCE**

With the introduction of computers, 91.8% of the managers and supervisors realize that their planning tasks have been made much easier and are performed in a better way. Control of the processes has been made much easier and better to 90.4% of them. The speed of completion of tasks has also increased with 93.2% of the managers and supervisors finishing their tasks much faster.

**Figure 4(a).4.1: Speed of completion of tasks after introduction of computers.**

In regard to decision-making, 83.6% make decisions much faster, while 16.4% of the managers see no change in decision-making with the introduction of computers.

The level of output has increased in 90.4% and not changed in 9.6% of the sections.
Table 4(a). 4.1: Changes in levels of output in the sections

<table>
<thead>
<tr>
<th>Levels of Output in sections</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased output</td>
<td>66</td>
<td>90.4%</td>
</tr>
<tr>
<td>No change output</td>
<td>7</td>
<td>9.6%</td>
</tr>
<tr>
<td><strong>Total sections</strong></td>
<td><strong>73</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

4(a). 5 COMPUTERIZATION AND HUMAN RESOURCE PROGRAMMES

This part of the study was to establish the existing programmes at the organization that cushion employees against any negative effects arising from implementation of computerization projects. The organization has programmes in place that identify employees who need further training in the computer field as reported by 74.0% of the managers and supervisors. The existing programmes are;

- Internal staff training, particularly when a new computer program is bought.
- Off the job training at Unilever International Training Centre.
- Newly employed staff undergo computer in-service training.
- There is provision for regular consultancy with the Information Technology department.

The study found out that 86.3% of the managers/supervisors and 72.0% of the support staff noted that the company transfers employees across departments/sections. To equip the transferred employees with new computer skills, the company upgrades employees’ skills through on-job-training.
Since the operations were computerized, 90.3% of the managers/supervisors and 96.0% support staff realized that the company makes changes to the computer technology.

**Figure 4(a).5.1: Computerization versus human resource programmes.**

4 (b). 0 **RESPONSES FROM SUPPORT STAFF**

During this study, 25 support staff from Unilever Tea Kenya Ltd. were chosen to participate, 92.0% of these staff were clerks, 1 (4.0%) was a secretary and 1(4.0%) was a factory assistant. This category of support staff consisted of 16 (65.2%) male respondents and 9(34.8%) were female staff. The age bracket of 24 – 35 years had 68% of the respondents, 20.0% were in the bracket of 35 – 45 years while 12.0% were above 45 years of age. The support staff were employed in the years between 1981 and 1998. The secretary was employed in 1994 and the factory assistant in 1988. Before being appointed to current positions, 60.0% held other positions in the company. These positions were;
- Check role clerk,
- Leaf clerk
- Store clerk
- Barman
- General worker
- General clerk

4(b).1 PROFESSIONAL TRAINING

Respondents in the category of the support staff who are professionally trained were 68.0%. The female staff had undergone training mainly in secretarial and computer studies. Male staff had trained in computer operations, business management and accounting.

4(b).2 COMPUTERIZATION AND SKILL REQUIREMENTS

Computers are now being used to perform tasks that were manually done by the support staff with the aim of reducing clerical errors and increasing the speed of carrying out the tasks. Data collected in the field by use of the Automatic Data Logging System device (ADL) is fed into the computer system for further processing and use in various areas of the business (see figure 4(b).2.1 pp 49). This has given rise to the need for employees to be computer literate in order to perform tasks that require computers.
Figure 4(b).2.1: Transfer of Tea Pickers' data to the computer system

Figure 4(b).2.1 above shows the ADL in the computer room where data in the device is transferred to the computer system. The ADL is the device held by the researcher in the picture.

Although all respondents from the support staff category had taken some training after computerization, 72% of them still needed more skills to do their jobs. Due to computerization, new positions have been introduced in 48% of the units while 52%
of them never had new positions introduced. Majority of the respondents, 83% indicated that one position was introduced in their units.

Figure 4(b).2.2: Introduction of new positions in the units.

Due to computerization, 60.0% of the staff noted that there were positions scrapped-off from their units, 40% indicated one position and 26.7% noticed two that were scrapped-off.

Table 4(b).2.1: Support staff's response on the number of new and scrapped of positions in the units.

<table>
<thead>
<tr>
<th>Number of positions</th>
<th>New positions in the units</th>
<th>Positions scrapped from the units</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of support staffs</td>
<td>Percentage</td>
</tr>
<tr>
<td>1</td>
<td>10</td>
<td>83.3%</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>8.3%</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>8.3%</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
<td>8.3%</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Computerization has led to adjustments in tasks performed by the support staff; 60.0% experienced reduction in their tasks, 28.0% realized an increase in tasks and 12.0% did not experience any change. Respondents' reasons for the reduction in tasks performed were as follows:

- Reduction in manual work as a result of computerization.
- Data processing has been made much easier with the use of computers.
- A lot of paper work has been reduced.

Reasons for increase in tasks of some support staff were given as below:

- Reduced number of staff.
- The ease with which tasks are performed when using computers has resulted into more tasks being given to an individual.

The study results show that 52.0% of these staff now have more room to make decisions without referring to their immediate superiors.

<table>
<thead>
<tr>
<th>Decision making</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>More room to make decision</td>
<td>13</td>
<td>52%</td>
</tr>
<tr>
<td>No effect on decision making</td>
<td>6</td>
<td>24%</td>
</tr>
<tr>
<td>Less room to make decision</td>
<td>6</td>
<td>24%</td>
</tr>
<tr>
<td>Total respondents</td>
<td>25</td>
<td>100%</td>
</tr>
</tbody>
</table>

4(b). 3 EFFECTS OF COMPUTERIZATION ON JOB PERFORMANCE BY THE SUPPORT STAFF

Support staff performance was established by looking at the effect of computerization on planning, control of work, speed of completion of tasks and decision making for the positions. To reduce the chance of dishonesty while reporting the weight of tea
leaves from the fields, computerized weighbridges have been installed to compare the weight of tea loaded onto tractors in the field and the weight delivered to the factory (see figure 4(b).3.1 below).

Figure 4(b).3.1: A computerized Weighbridge

Figure 4(b).3.1 above shows a computerized weighbridge used to record the weight of tea delivered to the factory for processing.
4(b). 3.1 CONTROL OF JOB ACTIVITIES BY SUPERVISORS

After computerization, 88.0% of the support staff noticed that their supervisors control their job activities in a better way. This was mainly because accurate data on an individual can be retrieved easily and read on the computer screen.

The study results also show that 80.0% of the support staff realized that the way their supervisors planned for their jobs after computerization was much easier and better.

Computers changed the speed of completion of tasks of the support staff and made them finish their tasks much faster. In regard to decision-making, 88.0% are able to make decisions much faster, 8.0% have experienced no change and 4.0% take long to decide. The payroll clerk who realized a reduction in decision-making noted that with computerization, the manager has to be notified of the intention to make changes before any data is changed on the computer.

Table 4(b).3.1.1: Speed of decision making by the support staff after computerization.

<table>
<thead>
<tr>
<th>Decision making</th>
<th>Number of respondents</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Made faster</td>
<td>22</td>
<td>88.0%</td>
</tr>
<tr>
<td>Take longer time</td>
<td>1</td>
<td>4.0%</td>
</tr>
<tr>
<td>Has not changed</td>
<td>2</td>
<td>8.0%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>25</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

The level of production/output of the support staff since the operations were computerized had improved as shown by 88.0% of the staff.
<table>
<thead>
<tr>
<th>Level of output</th>
<th>%age respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rate of production/output has increased</td>
<td>88.0%</td>
</tr>
<tr>
<td>Rate has not changed</td>
<td>4.0%</td>
</tr>
<tr>
<td>Rate of production has reduced</td>
<td>8.0%</td>
</tr>
</tbody>
</table>

4.(c).0 **KEY INFORMANTS' RESPONSES**

Two key informants' responses were collected to establish any variation on the information given by the support staff, the managers and supervisors. Views of the two key informants; the IT Manager and General Manager, on the impact of computerization on human resources concurred with the other staff.

4.(c).1 **KEY INFORMANT'S VIEWS ON COMPUTERIZATION AND SKILL REQUIREMENTS**

All the key informants personally use computers while carrying out their duties. They have noted positive adjustments to Executive, Managerial, supervisory and other support staff positions resulting from IT training given to the staff. On the other hand, reduction of staff due to computerization has had a negative impact on the human resource.

The company made changes on job positions by introducing the posts of IT assistant and introducing IT literacy classes to the staff.

Positive changes made on executives' tasks were as follows;

- Faster communication through e-mails.
- Less work after delegation of duties.
- Able to access all files.
The negative change on the executive tasks caused by computerization was mentioned as follows;

- Face to face contact has been reduced since most of the communication is through the internet.
CHAPTER FIVE:

DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.0 INTRODUCTION

The study focused on the impact of computerization on the human resource of an organization, case study of Unilever Tea Kenya Limited. Respondents in the study were those who use computers at the workplace and included both male and female. The study covered all age categories.

5.1 DISCUSSION

Out of the total number of respondents in the category of managers and supervisors that participated in the study, 80.8% were male and 19.2% were female while 65.2% of the support staff were male and 34.8% were female. The proportion of female participants in the study is therefore far less than that of the male counterparts. This is in agreement with the findings of Odedra-Straub M. concerning women and information technology (Odedra-Straub, 1995). She notes that demands on working women and their burdens at home have increased and it should not be surprising if women were not taking up employment although IT may offer opportunities for skilled women due to the scarcity of skilled computer personnel in Africa.

In the category of Managers and Supervisors, respondents in the youngest age group have a higher percentage compared to the other age groups. In this category, 37% of them were between 24 – 35 years, 35.6% between 34 – 45 years and 27.4% above 45 years. In the category of support staff, 68.0% were in the ages between 24 – 35 years, 20.0% in between 34 – 45 years while 12.0% were above 45 years of age. The
percentage of participants in the study therefore reduced with age. This finding tends to support ‘discourses positioning older people as declining in the ability to learn skills such as computing’ (Richardson et al, 2005).

It is also evident that most of the respondents are those who have shown potential for growth in the organization and have personal capabilities to better themselves in their jobs. This is shown by the fact that a bigger percentage, 76.4% of the managers and supervisors had held other positions in the company before they were appointed to their current positions (see figure 4(a).1.1 pp 38 and table 4(a).1.1 pp 39)). Those with greater potential for improvement have therefore been given opportunity or positions that require computer usage.

There is also a close relationship between professional skills and the use of computers in the study. Out of the total respondents of managers and supervisors, 77.8% were professionally trained in a specific field and only 22.2% had not trained in any field. 68.0% of the support staff involved in this study had professional training. Those trained in other professional fields therefore tend to be offered opportunities to use computers on their jobs than those that do not have other professional training. This position agrees with the study conducted by Autor and others, who found out that increased computer intensity was associated with increased employment shares of managers, professionals and other highly educated workers, and with decreased employment shares of clericals, production workers, and less educated workers (Autor et al, 1998).

Although a section of the staff experienced deskilling and even loss of jobs, not all employees have been deskilled. Some job categories have realized an increase in
skills and tasks. The effect of computerization on skills varied depending on the type and nature of job. One or two new positions have been introduced and a bigger number of positions scrapped off (see table 4(b).2.1 pp 50, figures 4(a).2.2 pp 41 and 4(b).2.2 pp 50). The tasks performed by 35.6% of the managers and the supervisors slightly increased, 34.2% experienced a reduction while 30.1% did not get any change in tasks performed. While 60.0% of the support staff experienced a reduction in tasks, 28% realized an increase in tasks and 12.0% did not experience any change after computerization of their sections. Some categories of jobs related to fieldwork, have not realized any change in tasks involved after introduction of computers. The study also revealed that 71.2% of the managers and supervisors need more skills to do their jobs (see figure 4(a).2.1 pp 40), while 72% of the support staff still needed more skills to do their jobs. However, 38.4% of the managers and supervisors have their roles not affected by computerization. Positions not affected are supervisory and clerical in most cases. The study therefore concurs with the findings of Stan Hannah and Michael Harris which confirmed that the effect of computerization on various types of jobs varied (Hannah and Harris, 1995). It however partly agrees with and partly disagrees with Braverman’s predictions that computerization would lead to deskilling of workers (Braverman, 1974). The study reveals an increase in skills in some job categories while other workers have been deskill ed.

The study also reveals that the role played by employees in decision making has generally increased with 50.7% of the managers and supervisors realizing more room to make decisions while 52.0% of the support staff have more room to make decisions without referring to their immediate superiors (see table 4(b).2.2 pp 51). This concurs with the work done by Piore and Sable who assert that Information
Technology-based systems offer organizations the opportunity for rapid and flexible decision-making structures with greater delegation of responsibilities and greater autonomy of operating units (Piore and Sabel, 1984). A survey by Bresnahan and others in United States also found out that large investments in information technology by firms led to changes in organizational practices that decentralized decision making (Bresnahan et al, 1998).

One of the variables that show the effect of computerization on the organization structure in this study is the change noted on job grades. As shown in (figure 4(a).3.1 pp 43)), 61.6% of the managers and supervisors noted a reduction in the number of job grades after computerization. The support staff noted varying changes on job grading with 68.0% of them indicating a reduction in the number of job grades, 16.0% realized an increase in grades while 16.0% saw no change in grades after introduction of computers.

The reporting relationship, as a variable that affects the nature of organization structure has also changed after computerization. Managers and Supervisors who noted a reduction in the number of staff reporting directly to them were 46.6% while 12.3% noted an increase. On the other hand, 41.1% had not realized any change in the number of staff reporting to them. The reduction in the number of employees reporting to managers and supervisors was a result of the reduction in the total number of staff after computerization.

The response of support staff on this variable was also similar. A bigger percentage; 64% noted a reduction in the number of staff reporting to their supervisors, 16%
noted an increase while 20% saw no change after computerization. The other variable that was studied to evaluate the structure of the organization after computerization was the span of control. Managers and supervisors who now control a wider area after computerization were 54.8%. On the contrary, 56% of the support staff (see table 4(a).3.1 pp 44)) saw the span of control for their supervisors having reduced.

This study concurs with the works of Shoshana Zuboff (Zuboff, 1988) and Daniel Bell (Bell, 1980) who argue that the new computer-mediated workplace demands a new approach to organizational structure. Computerization generally facilitates a flatter organization structure.

There were changes noted in the levels of hierarchy. Support staff noted that the levels of hierarchy reduced in 49.3% of the units, increased in 5.5% of the units while 45.2% of the units realized no change. Some of the reasons given for the change in the levels of hierarchy were; the reduction of people required to approve documents generated by computers, the ability to make adequate decisions at lower levels, the possibility of one person being able to control the operating system, the phasing out of grades 3 and 2 supervisors leaving only one supervisor with all clerks reporting to the chief clerk directly. These findings on the reporting relationship and the levels of hierarchy concur with Orlikowski’s work. He concludes that computerized systems enable the restructuring of social relationships by reorganizing patterns of access to information, altering the cost and work for organizing information, and shifting patterns of social dependencies for key resources, such as computing and skilled computing staff (Orlikowski, 1991). The findings also agree with Huber’s work. Huber, like Zuboff and Bell, argues that the use of technology will increase
information accessibility, and increased information accessibility will lead to changes in organizational design (Huber, 1990).

The effect of computerization on job performance was studied in regard to planning, control, speed of completion of tasks, speed of decision-making and the level of output. With the introduction of computers, 91.8% of the managers and supervisors noted that planning tasks had been made easy and done in a better way while 80.0% of the support staff realized that the way their supervisors planned for them after computerization was better and easier. Managers and supervisors who noted that the control of processes had been made easier and better were 90.4% while 88.0% of the support staff noticed that their supervisors control their job activities in a better way. The main reason given for the above observations was because accurate data on an individual’s job can be retrieved easily and read on the computer screen. The managers and supervisors also noted (see figure 4(a).4.1 pp 45) that the speed of completion of tasks had increased with 93.2% of them finishing their tasks much faster. Decisions are also made faster with the introduction of computerization; 83.6% of the managers make decisions much faster while only 16.4% realized no change in decision-making. Computerization also changed the speed of completion of tasks for majority of the support staff and made them finish their tasks much faster. In regard to decision making, 88.0% of the support staff are now able to make decisions much faster, 8.0% have experienced no change and 4.0% take long to decide (see table 4(b).3.1.1 pp53). One payroll clerk noted that there was a reduction in decision making because the manager has to be notified about the intention to change data before altering data on the computer. These findings tend to agree with Guy Boy who asserted that computers enable people to efficiently and purposefully
achieve important tasks, enables enhanced performance, quality of results and appropriate interaction (Boy, 2002).

This study shows that the level of output increased in 90.4% of the sections studied while only 9.6% realized no change in the level of output (see table 4(a).4.1 pp 46). Majority of the support staff, 88%, noted an increase in the rate of production while 4% realized no change and 8% observed a reduction in the rate of production. The results of the study in regard to the levels of output generally tend to agree with the position of Keneth Kraemer and Jason Dedrick who noted that Information Technology (IT) improves labour productivity by providing workers with timely information and tools for planning and carrying out their work (Kraemer and Dedrick, 2001) They note that IT improves labour productivity by substituting for labour or improving productivity of workers when computers are installed to perform routine data processing functions. However a small percentage of the respondents seem to disagree with this position having either seen no change in the rate of output (4% of the support staff) or have seen a reduction in the rate of output (8% of the support staff).

The study sought to find out if the organization has programmes that help employees cope with the demands of computerization. Responses were sought on whether the company has programmes that identify and equip employees who need further skills in computerization, programmes that ensure that employees transferred to other sections /departments are trained and if training is carried out on introduction of new technology in the organization.
Some managers and more so those who are advanced in age are not keen to embrace computerization fully. According to one of the key informants, some managers have delegated tasks supposed to be performed solely by them, due to the fact that the tasks involve the use of computers. This has lessened their level of involvement in executing tasks that would meet intended objectives and thus affected performance in those particular areas. The company therefore has not made much progress in tapping the commitment and capacity to learn computer skills for all levels of employees in the organization. This position confirms the conclusion of Paul Osterman who asserted that organizations that will truly excel in future will be those that discover how to tap people’s commitment and capacity to learn at all levels in an organization (Osterman 1991).

The study revealed that the organization has programmes in place that identify employees who need further training in the computer field as reported by 74.0% of the managers and supervisors. The respondents noted that the organization conducts internal training particularly whenever a new computer program is acquired. The other areas noted include off-the-job training normally conducted at the company’s training centre, in-service training on computers for newly employed staff and IT support by the IT department for employees who use computers.

The results of the study indicate that the company transfers employees across departments/sections; 86.3% of the managers/supervisors and 72.0% (see figure 4(a).5.1 pp 47)) of the support staff confirmed this position. To equip the transferred employees with new computer skills, the company conducts on-the-job training on skills required for operating programmes in the new section. Since the operations
were computerized, 90.3% of the managers/supervisors and 96.0% support staff realized the company makes changes to computer technology.

The fact that some employees have not been able to cope with the demands of computerization calls for evaluation of the methods of analysis used to identify training needs of employees. This concern is echoed in the sentiments of Poulmenakou who noted that many advanced technological solutions focus primarily on training and development interventions, which are challenging human resource management. According to him, many training interventions fail due to inadequate or inaccurate identification of training needs (Poulmenakou, 2006.)

5.2 CONCLUSIONS

- There are more male than female employees who hold computer-related jobs in the organization.
- The percentage of employees who use computers in the organization reduces with increase in age.
- Employees who use computers are those who have shown potential for growth in their careers.
- The percentage of employees who use computers is bigger for those with better education and training in professional skills than those who are less educated and have no professional training.
- Some employees have been deskilled; others have realized an increase in skills while other jobs have remained the same. The effect of computerization on employee skills therefore depended on ones nature of job and skill in question.
• Majority of the employees play a bigger role in decision-making due to computerization and thus have more autonomy at work while a minority have realized lesser autonomy in decision-making.

• There has been a general reduction in the number of job grades facilitated by computerization.

• Majority of the respondents noted a general reduction in the number of staff reporting to managers and supervisors caused by a reduction in the total number of staff after computerization.

• Majority of the managers and supervisors control wider areas after computerization.

• On the overall, there was a reduction in the levels of hierarchy resulting into a flatter organizational structure after computerization.

• Planning, Control, and the speed of completion of tasks improved on the overall after computerization.

• Computerization increased efficiency, accuracy and the rate of output on the overall in the organization.

• Although the organization has training interventions aimed at helping employees cope with the demands of computerization, these interventions have not met the training needs of all categories of employees; more so the older employees.

However, as Kling and Zmuidzina’s study found out, computerization is often shaped by managers' espoused goals for computerization projects (e.g. standardize procedures or increase workers' responsibility). Computerization is often, only one of the means by which managers alter work and the performance of their work groups. They often cite other choices (e.g. downsizing, restructuring of division of labour, commitment-
building, etc.) available that will also accomplish their goals. To understand the interplay of computerization and work, we must examine the bundle of organizational interventions in a work group, rather than focusing exclusively on the computerization process (Kling and Zmuidzinas, 2002).

5.3 RECOMMENDATIONS

- Although there are efforts in the company to have equal employment between men and women, more action is needed in implementing the affirmative action. The traditional belief that some jobs are better done by men than women is currently loosing ground and women are ready to take on jobs previously reserved for men. The organization can fill computer-related vacancies with capable women by carrying out a continuous search for those who have abilities to do the jobs. Manpower plans such as recruitment and career development plans should aim at balancing out the ratio of male to female employees. More capable women should be recruited to take up computer-related jobs with the aim of eventually balancing the ratio of male to female employees in the organization.

- Though the organization has training programmes aimed at helping employees cope with the challenges of computerization, the organization has not managed to tap the older employees' commitment and capacity to learn and adapt to new technology. The organization should come up with continuous learning programmes that include techniques which cater for adult learning. This will help the organization to tap the commitment of the older employees to changes that take place.
• The training interventions used by the organization are either inadequate or inaccurate in identifying training needs of those negatively affected. The training and development programmes in place need to be evaluated to find out why they have not adequately addressed training needs of all categories of employees and more so the older ones. Training and development programmes should be designed to instil the right attitude to change and cultivate the culture of continuous learning in all employees of the organization. Other human resource development programmes should be designed to equip employees with the attitude to learn more skills and fit in a quickly changing environment. The organization's human resource programmes such as performance management, training and development should be geared towards building the right attitude, commitment and the culture to try out new things. Such programs, if well designed with these goals in mind, will produce a workforce that is ready to adapt to and quickly adjust to any change in technology.

• The workforce can also be motivated by varying the tasks performed in their jobs through the process of job rotation, job enlargement and job redesign. These methods will allow employees to acquire more skills and thus make them relevant to constantly changing skill requirements. This would reduce the need to make their jobs redundant or deskill them whenever there is a change in the business process such as computerization.

• There is need to plan for computerization hand in hand with expansion plans to avoid job redundancies. Majority of the respondents noted a general reduction in the number of employees. Instead of reducing the number of staff, trained staff who have been equipped with wider range of skills would
be utilized in expansion programmes. Such strategy coupled with natural attrition would lessen the pressure to reduce the workforce following improved ways of doing business. Computerization could therefore be implemented hand in hand with business expansion plans to reduce the need for job redundancies.

5.4 SUGGESTIONS FOR FURTHER STUDY

- An area that needs further study is the impact of the various computerization strategies on the human resource. Various strategies of implementing computerization normally give rise to differences in the impact of computerization on the human resource across organizations. It is necessary to study how each of these strategies contribute to the effects of computerization on employees.

- Other business processes need to be studied with the aim of establishing the impact of computerization on various types of specific processes.
REFERENCES


Kenaroglu B. (2003). *Implications of Information Technology in Developing Countries and Its Impact in Organizational Change*. Ankara Turkey, Middle East Technical University, STPS – WP - 0302


Singer R. (2004). *The computer's hidden history*, 37 Signals LLC, Chicago IL 60622 USA.


**JOURNALS**


UNPUBLISHED PAPERS


## 6.0 TIME FRAME

The time frame for completion of the study was 11 months.

<table>
<thead>
<tr>
<th>Month</th>
<th>Jul-06</th>
<th>Aug-06</th>
<th>Sep-06</th>
<th>Oct-06</th>
<th>Nov-06</th>
<th>Dec-06</th>
<th>Jan-07</th>
<th>Feb-07</th>
<th>Mar-07</th>
<th>Apr-07</th>
<th>May-07</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week Number</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Read Literature</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Defined the research problem, set research objectives and delimited the scope of the study</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Drafted the research methodology</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Drafted the research proposal and submitted</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Developed questionnaires</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Pilot tested and revised questionnaires</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Collected primary data.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Entered the data into the computer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Analysed data.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>Drafted the thesis and consulted with the supervisor.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>Revision and Final Writing of the thesis.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>Printing and submission of the thesis.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>Await for Graduation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 7.0 BUDGET FOR THE STUDY

<table>
<thead>
<tr>
<th>Item</th>
<th>Number of Units</th>
<th>Cost per unit in KShs</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Travelling expenses for reading literature and obtaining of the letter of access to the study area.</td>
<td>8 trips</td>
<td>2000</td>
<td>16000</td>
</tr>
<tr>
<td>Field travelling expenses for the principal researcher (Cost of transport and meals)</td>
<td>30 trips to the field</td>
<td>700</td>
<td>21000</td>
</tr>
<tr>
<td>Travelling expenses for four field assistants</td>
<td>48 combined trips to the field (12 trips per assistant)</td>
<td>500</td>
<td>24000</td>
</tr>
<tr>
<td>Purchase of printing paper.</td>
<td>3 reams</td>
<td>380</td>
<td>1140</td>
</tr>
<tr>
<td>Binding of the research proposal</td>
<td>8 copies</td>
<td>90</td>
<td>720</td>
</tr>
<tr>
<td>Purchase of toner for my printer.</td>
<td>2 pieces</td>
<td>7000</td>
<td>14000</td>
</tr>
<tr>
<td>Photocopying of questionnaires</td>
<td>105</td>
<td>8</td>
<td>840</td>
</tr>
<tr>
<td>Binding of the final thesis</td>
<td>8 copies</td>
<td>90</td>
<td>720</td>
</tr>
<tr>
<td>Contingencies</td>
<td>25% of the total cost of the items listed above</td>
<td></td>
<td>19605</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>98025</strong></td>
</tr>
</tbody>
</table>
KENYATTA UNIVERSITY
Institute of Open Learning
Kisumu Regional Centre
P.O. Box 809
KISUMU
Tel: 2020695/0725 840483
Email: Open_learning@ku.ac.ke
Website: http://www.ku.ac.ke

30th September 2006

Our Ref: D53/OL/3709/04

TO WHOM IT MAY CONCERN

This is to confirm that Stanley Murangale Wilunda Registration number D53/OL/3709/04 is pursuing a Master of Business Administration degree specializing in Human Resource Management in this institution. He would like to undertake research in your institution.

Any assistance accorded him will be highly appreciated.

[Signature]

JOSHUA P. NAHAIMBO
Regional Coordinator
APPENDICES: ANNEX 1

QUESTIONNAIRE FOR KEY INFORMANTS

THE IMPACT OF COMPUTERIZATION ON THE HUMAN RESOURCE – CASE STUDY OF UNILEVER TEA KENYA LTD, KERICHO, KENYA.

The principle researcher (Mr. Stanley M. Wilunda) would like to inform you that you have been selected through purposive sampling procedure to participate as a respondent in this study. Thank you for sparing your precious time and your kindness in helping the study to achieve its objectives. Information gathered in this questionnaire will be used to fill knowledge gaps. We will ensure that the participant’s right to privacy is also upheld.

PART 1: SOCIO DEMOGRAPHIC AND GENERAL DATA

1 Duty station of the respondent .................................................................
2. Your current position/Job title in the organization ......................................
3. When were you first employed by the company ...........................................
4. Put a check mark in the box against the range where your age (in years) falls □
   above 24 but below 35 □ above 34 but below 45 □ above 44
5. Gender □ Male □ Female
6. Have you held other positions in the company before you were appointed to the current position? Yes □ No □
   List them below if the response is yes
   i)                                                                                   
   ii)                                                                                   
   Other positions ...........................................................................................................
7. Are you trained in any professional fields? Yes □ No □
   List them below if the answer above is yes. ............................................................
   1.                                                                                   
   2.                                                                                   
   3.                                                                                   
8. How was the process of computerization carried out ........................................
   .................................................................................................................................
9. Which year was the computer system fully implemented in the company ............... 
   .................................................................................................................................
10. What were the reasons behind computerization at Unilever Tea Kenya Ltd?
    i)                                                                                   
    ii)                                                                                   
    iii)                                                                                   
    iv)                                                                                   
   .................................................................................................................................
PART 2: COMPUTERIZATION AND SKILL REQUIREMENTS

1. Do you personally use a computer while carrying out your duties?
   - Yes ☐  No ☐
   Explain the reason behind the choice above.

2. What adjustments have been made on skills required to perform duties in the following job categories after computerization of the work processes.

<table>
<thead>
<tr>
<th>Job Category</th>
<th>Positive adjustments</th>
<th>Negative adjustments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executives</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Others</td>
<td>Others</td>
</tr>
<tr>
<td>Managers</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Others</td>
<td>Others</td>
</tr>
<tr>
<td>Supervisors</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Others</td>
<td>Others</td>
</tr>
<tr>
<td>Support Staff</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Others</td>
<td>Others</td>
</tr>
</tbody>
</table>

3. Did the company make any changes on job positions after computerization of work processes?
   - Yes ☐  No ☐
   a) What did the company do to ensure that the above choice is realized?

........................................................................................................................................
........................................................................................................................................
........................................................................................................................................
b) What reasons made the company to go by this choice.
   i) 
   ii) 
   iii) 
   iv) 
   Others .................................................................

4. What changes have been made on tasks performed in the job categories below after computerization?

<table>
<thead>
<tr>
<th>Job Category</th>
<th>Positive changes</th>
<th>Negative changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executives</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Others</td>
<td>.................................</td>
<td>Others ..................................</td>
</tr>
</tbody>
</table>

| Managers     |                  |                  |
| 1            | 1                | 1                |
| 2            | 2                | 2                |
| 3            | 3                | 3                |
| 4            | 4                | 4                |
| 5            | 5                | 5                |
| Others       | ................................. | Others .................................. |

| Supervisors  |                  |                  |
| 1            | 1                | 1                |
| 2            | 2                | 2                |
| 3            | 3                | 3                |
| 4            | 4                | 4                |
| 5            | 5                | 5                |
| Others       | ................................. | Others .................................. |

| Support Staff |                  |                  |
| 1             | 1                | 1                |
| 2             | 2                | 2                |
| 3             | 3                | 3                |
| 4             | 4                | 4                |
| 5             | 5                | 5                |
| Others        | ................................. | Others .................................. |

PART 3: COMPUTERIZATION AND THE ORGANIZATION STRUCTURE.

1. Are there changes that have been effected in job grading since the operations were computerized?
   Yes □   No □

   What reasons caused the company to prefer the above position?
   .............................................................................................................................
2. Have there been any changes on the structure of reporting relationships since operations were computerized?
   Yes ☐  No ☐
   Why did the company prefer the above position...

3. Outline changes effected on the span of control for the following categories of employees after computerization, if any.
   a) Executive Positions
      i)... ii)... iii)... iv)
   b) Managerial Positions
      i)... ii)... iii)... iv)
   c) Supervisory Positions
      i)... ii)... iii)... iv)
   Explain why the company made the changes listed above if there are any.

4. What would you comment on the speed of decision making in the organization since the operations were computerized.

PART 4: COMPUTERIZATION AND JOB PERFORMANCE.

1. Has the organization realized any changes in the quality of planning for the various levels of management employees after computerization?
   Yes ☐  No ☐
   Give details on your answer above

2. Has the organization realized any changes in the level of control for the various levels of management after computerization?
   Yes ☐  No ☐
   Give details on your answer above
3. Has the organization realized any changes in the speed of response to business situations after computerization?

   Yes □  No □

   Give details for your answer above


4. What changes have been realized on the performance of the various levels of employees in the organization


PART 5: COMPUTERIZATION AND HUMAN RESOURCE PROGRAMS

1. Does the company have any programs in place that identify employees who need further training in the computer field?

   Yes □  No □

   List the programs below if the answer above is Yes or explain why the company does not have any if the answer is No.


2. Does the company transfer employees across sections/departments?

   Yes □  No □

   List any programs that the company uses to equip transferred employees with new computer skills in their new sections/ departments if the answer is yes.

   i). ...........................................  ii). ...........................................

   iii). ...........................................  iv). ...........................................

3. Does the company make changes to the computer technology since the operations were computerized?

   Yes □  No □

   List the programs used by the company to prepare employees for the changes in computer technology if the answer above is yes or give reasons why the company does not change computer technology if the answer is No.


Contacts: Mr. Stanley M. Wilunda
C/O Unwin & Sons Ltd
Opposite the Chief’s office
Kapsuser. (On Kericho-Sotik road)
Tel. 052-30162 or 0734 941355
APPENDIX: ANEX 2

QUESTIONNAIRE FOR MANAGERS AND SUPERVISORS

TOPIC: THE IMPACT OF COMPUTERIZATION ON THE HUMAN RESOURCE – CASE STUDY OF UNILEVER TEA KENYA LTD, KERICHO, KENYA.

The principle researcher (Mr. Stanley M. Wilunda) would like to inform you that you have been selected through stratified random sampling procedure to participate as a respondent in this study. Thank you for sparing your precious time and your kindness in helping the study to achieve its objectives. Information gathered in this questionnaire will be used to fill knowledge gaps. We will ensure that the participant's right to privacy is also upheld.

PART 1: SOCIO DEMOGRAPHIC DATA

Put a tick (✓) in the box against your choice and fill in the space provided

1. Duty station of the respondent .................................................................
2. Your current position/Job title in the organization......................................
3. When were you first employed by the company ........................................
4. Put a check mark in the box against the range where your age (in years) falls
   □ above 24 but below 35 □ above 34 but below 45 □ above 44
5. Gender □ Male □ Female
6. Have you held other positions in the company before you were appointed to the
   current position? Yes □ No □
   List them below if the response is yes
   i) Other positions ......................................................................................
7. Are you trained in any professional fields? Yes □ No □
   List them below if the answer above is yes ...................................................

PART 2: COMPUTERIZATION AND SKILL REQUIREMENTS

Put a tick (✓) in the box against your choice and fill in the space provided

1. Which of the following statements do you agree with concerning skills required
   for your position after computerization?
   □ i) I need more skills to do my job after computerization.
   □ ii) There has been no change in skill requirements for my position after
         computerization.
   □ iii) I need less skills to do my job after computerization.
   Give an explanation for your choice above ..................................................
2. Are there any new positions introduced in your unit due to computerization of work processes? Yes □ No □

   Indicate the number here if the answer is yes ............

3. Are there positions in your unit which have been scrapped-off due to computerization of work processes yes □ No □

   Indicate the number here if the answer is yes ............

4. What adjustments have been made to tasks performed in your position after computerization?
   □ i) There is an increase in tasks for the position □ ii) Tasks for the position have reduced □ iii) No change in the number of tasks performed.

   Give an explanation for your choice above ..................................................

   ..........................................................................................................................

   ..........................................................................................................................

   ..........................................................................................................................

5. What adjustments have been made to the role played by your position in decision making after computerization of work processes?
   □ i) I have more room to make decisions without referring to my immediate superior.
       □ ii) My decision making power has not been affected by computerization.
       □ iii) I have less room to make decisions concerning my unit and most of it has been transferred to my superiors.

   Give an explanation for your choice above ..................................................

   ..........................................................................................................................

   ..........................................................................................................................

   ..........................................................................................................................

   ..........................................................................................................................

   ..........................................................................................................................

PART 3: COMPUTERIZATION AND THE ORGANIZATION STRUCTURE.

Put a tick (✓) in the box against your choice and fill in the space provided

1. Which of the following statements do you agree with concerning changes made on job grades after computerization?
   □ i) The number of job grades has increased after computerization
       □ ii) The number of job grades has reduced after computerization
       □ iii) The number of job grades has not changed after computerization

   Give an explanation for your choice above ..................................................

   ..........................................................................................................................

   ..........................................................................................................................

   ..........................................................................................................................

   ..........................................................................................................................
2. Which of the following statements do you agree with on the structure of reporting relationships since operations were computerized?
   □ i) The number of staff reporting directly to me has increased.
   □ ii) The number of staff reporting directly to me has reduced.
   □ iii) The number of staff reporting directly to me has not changed.
   Give an explanation for your choice above
   ..............................................................................................................................
   ..............................................................................................................................

3. What changes have been made on the span of control for your position after computerization?
   □ i) I control a wider area.
   □ ii) I control a smaller area.
   □ iii) The span of control has not changed.
   Give an explanation for your choice above
   ..............................................................................................................................
   ..............................................................................................................................

4. How have the levels of hierarchy changed in your unit after computerization?
   □ i) There are more levels of hierarchy
   □ ii) The levels of hierarchy have not changed.
   □ iii) The levels of hierarchy have reduced
   Give an explanation for your choice above
   ..............................................................................................................................
   ..............................................................................................................................

PART 4: COMPUTERIZATION AND JOB PERFORMANCE.

Put a tick (✓) in the box against your choice and fill in the space provided

1. Which of the following statements do you agree with concerning changes realized on planning tasks for your job after computerization?
   □ i) Computerization has made planning much easier and better.
   □ ii) Computerization has made planning much more difficult.
   □ iii) Computerization has not had any effect on the planning tasks.
   Give an explanation for your choice above
   ..............................................................................................................................
2. Which of the choices below describes changes realized on control tasks for your job after computerization.
   [ ] i) Computerization has made control of the processes much easier and better
   [ ] ii) Computerization has made control of the processes much more difficult.
   [ ] iii) Computerization has not had any effect on the control tasks in my unit.
   Give an explanation for your choice above
   .....................................................................................................................
   .....................................................................................................................

3. How has computerization changed the speed of completion of tasks in your position?
   [ ] i) I finish my tasks much faster.
   [ ] ii) I take longer time to complete my tasks.
   [ ] iii) Computerization has not had any effect on the speed of working.
   Give an explanation for your choice above
   .....................................................................................................................
   .....................................................................................................................

4. How would you describe the speed of decision making for your position since the operations were computerized?
   [ ] i) I make my decisions much faster.
   [ ] ii) It takes longer to make decisions.
   [ ] iii) The speed of decision-making has not changed.
   Give an explanation for your choice above
   .....................................................................................................................
   .....................................................................................................................

5. What changes have been realized on the level of output in your section since the operations were computerized?
   [ ] i) Rate of production/output has increased.
   [ ] ii) Rate of production/output has not changed.
   [ ] iii) Rate of production/output has reduced.
   Give an explanation for your choice above plus the percentage change if there has been a change.
   .....................................................................................................................
   .....................................................................................................................
PART 4: PROGRAMS THAT HELP EMPLOYEES COPE WITH THE DEMANDS OF COMPUTERIZATION

Put a tick (✓) in the box against your choice and fill in the space provided

1. Does the company have any programmes in place that identify employees who need further training in the computer field?
   Yes ☐ No ☐
   List the programs below if the answer above is Yes or give reasons why the company does not have any if the answer is No.
   i) ...........................................................................................................................
   ii) ...........................................................................................................................
   iii) ...........................................................................................................................

2. Does the company transfer employees across sections/departments?
   Yes ☐ No ☐
   List any programs that the company uses to equip transferred employees with new computer skills in their new sections/ departments if the answer is yes.
   i) ...........................................................................................................................
   ii) ...........................................................................................................................
   iii) ...........................................................................................................................

3. Does the company make changes to the computer technology since the operations were computerized?
   Yes ☐ No ☐
   List the programs used by the company to equip employees with skills required as a result of changes in computer technology if the answer above is yes. Explain why the company does not change computer technology if the answer is No.
   ...........................................................................................................................
   ...........................................................................................................................
   ...........................................................................................................................
   ...........................................................................................................................

Contacts: Mr. Stanley M. Wilunda
C/O Unwin & Sons Ltd
Opposite the Chief's office at Kapsuser (on Kericho-Sotik road)
Tel. 052-30162 or 0734 941355
APPENDIX: ANEX 3

QUESTIONNAIRE FOR SUPPORT STAFF

TOPIC: THE IMPACT OF COMPUTERIZATION ON THE HUMAN RESOURCE – CASE STUDY OF UNILEVER TEA KENYA LTD, KERICHO, KENYA.

The principle researcher (Mr. Stanley M. Wilunda) would like to inform you that you have been selected through stratified random sampling procedure to participate as a respondent in this study. Thank you for sparing your precious time and your kindness in helping the study to achieve its objectives. Information gathered in this questionnaire will be used to fill knowledge gaps. We will ensure that the participant's right to privacy is also upheld.

PART 1: SOCIO DEMOGRAPHIC DATA

Put a tick (✓) in the box against your choice and fill in the space provided

1. Duty station of the respondent .............................................................
2. Your current position/Job title in the organization..................................
3. When were you first employed by the company.....................................
4. Put a check mark in the box against the range where your age (in years) falls
   □ above 24 but below 35 □ above 34 but below 45 □ above 44
5. Gender □ Male □ Female
6. Have you held other positions in the company before you were appointed to the current position? Yes □ No □
   List them below if the response is yes
   i) Other positions..................................................................................
7. Are you trained in any professional fields? Yes □ No □
   List them below if the answer above is yes.............................................

PART 2: COMPUTERIZATION AND SKILL REQUIREMENTS

Put a tick (✓) in the box against your choice and fill in the space provided

1. Which of the following statements do you agree with concerning skills required for your position after computerization?
   □ i) I need more skills to do my job after computerization
   □ ii) There has been no change in skill requirements for my position after computerization.
   □ iii) I need fewer skills to do my job after computerization.
   Give an explanation for your choice above.............................................
2. Are there any new positions introduced in your unit due to computerization of work processes? Yes ☐ No ☐
   Indicate the number here if the answer is yes ..............

3. Are there positions in your unit which have been scrapped-off due to computerization of work processes? Yes ☐ No ☐
   Indicate the number here if the answer is yes ..............

4. What adjustments have been made to tasks performed in your position after computerization?
   ☐ i) There is an increase in tasks for the position  ☐ ii) Tasks for the position have reduced  ☐ iii) No change in the number of tasks performed.

   Give an explanation for your choice above ..........................................
   ...............................................................................................................
   ...............................................................................................................
   .............................................................................................................

5. What adjustments have been made to the role played by your position in decision making after computerization of work processes?
   ☐ i) I have more room to make decisions without referring to my immediate superior.
   ☐ ii) My decision making power has not been affected by computerization.
   ☐ iii) I have less room to make decisions concerning my unit and most of it has been transferred to my superiors.

   Give an explanation for your choice above ..........................................
   ...............................................................................................................
   ...............................................................................................................
   .............................................................................................................

PART 3: EFFECT OF COMPUTERIZATION ON THE ORGANIZATION STRUCTURE.

*Put a tick (✓) in the box against your choice and fill in the space provided*

1. Which of the following statements do you agree with concerning changes made on job grades after computerization?
   ☐ i) The number of job grades has increased after computerization
   ☐ ii) The number of job grades has reduced after computerization
   ☐ iii) The number of job grades has not changed after computerization

   Give an explanation for your choice above ..........................................
   ...............................................................................................................
   ...............................................................................................................
   .............................................................................................................
2. Which of the following statements do you agree with on the structure of reporting relationships since operations were computerized?
   - [ ] i) The number of staff reporting directly to my supervisor has increased.
   - [ ] ii) The number of staff reporting directly to my supervisor has reduced.
   - [ ] iii) The number of staff reporting directly to my supervisor has not changed.
Give an explanation for your choice above.

3. What changes have been made on the span of control for your supervisor after computerization?
   - [ ] i) The area of control for my supervisor has increased after computerization.
   - [ ] ii) The area of control for my supervisor has reduced after computerization.
   - [ ] iii) The area of control for my supervisor has not changed after computerization.
Give an explanation for your choice above.

4. How have the levels of hierarchy changed in your unit after computerization?
   - [ ] i) There are more levels of hierarchy.
   - [ ] ii) The levels of hierarchy have not changed.
   - [ ] iii) The levels of hierarchy have reduced.
Give an explanation for your choice above.

PART 4: EFFECT OF COMPUTERIZATION ON JOB PERFORMANCE.

Put a tick (✓) in the box against your choice and fill in the space provided.

1. What is your comment on the way your work is planned for you by your immediate superior after computerization?
   - [ ] i) My supervisor is able to plan for my job easily and in a better way.
   - [ ] ii) Computerization has made planning for my job much more difficult.
   - [ ] iii) Computerization has not had any effect on the planning for my job.
Give an explanation for your choice above.
2. What is your observation on the way your job is controlled by your supervisor after computerization?
   □ i) My supervisor is able to control my job activities in a better way.
   □ ii) It is more difficult for my supervisor to control my job activities after computerization
   □ iii) Computerization has not had any effect on the control of my job activities.
   Give an explanation for your choice above

3. How has computerization changed the speed of completion of tasks in your position?
   □ i) I finish my tasks much faster.
   □ ii) I take longer time to complete my tasks.
   □ iii) Computerization has not had any effect on the speed of working.
   Give an explanation for your choice above

4. How would you describe the speed of decision making for your position since the operations were computerized?
   □ a) Decisions are made much faster.
   □ b) It takes long before decisions are made.
   □ c) The speed of decision-making has not changed.
   Give an explanation for your choice above

5. What changes have been realized on the level of output in your position since the operations were computerized?
   □ i) Rate of production/output has increased.
   □ ii) Rate of production/output has not changed.
   □ iii) Rate of production/output has reduced.
   Give an explanation for your choice above plus the percentage change if there has been a change.
PART 5: PROGRAMS THAT HELP EMPLOYEES COPE WITH THE DEMANDS OF COMPUTERIZATION

Put a tick (✓) in the box against your choice and fill in the space provided

1. Does the company have any programs in place that identify employees who need further training in the computer field?
   Yes ☐ No ☐
   List the programs below if the answer above is Yes or give reasons why the company does not have any if the answer is No.
   i) ..............................................................
   ii) ...................................................................
   iii) ..................................................................
   iv) ..................................................................

2. Does the company transfer employees across sections/departments?
   Yes ☐ No ☐
   List any programs that the company uses to equip transferred employees with new computer skills in their new sections/departments if the answer is yes.
   i) ..................................................................
   ii) ..................................................................
   iii) ..................................................................

3. Does the company make changes to the computer technology since the operations were computerized?
   Yes ☐ No ☐
   List the programs used by the company to equip employees with skills required as a result of changes in computer technology if the answer above is yes. Explain why the company does not change computer technology if the answer is No.
   ........................................................................
   ........................................................................
   ........................................................................

Contacts:  Mr. Stanley M. Wilunda
            C/O Unwin & Sons Ltd
            Opposite the Chief’s office at Kapsuser (on Kericho-Sotik road)
            Tel. 052-30162 or 0734 941355