

DESIGN AND IMPLEMENTATION OF A CAMPUS NETWORK SECURITY MONITORING SYSTEM

BY

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DEGREE IN CYBER SECURITY

[MONTH, YEAR]

CERTIFICATION

This is to certify that this research project titled "Design and Implementation of a Campus Network Security Monitoring System" was carried out by [STUDENT'S FULL NAME], and has been read and approved as meeting the regulations governing the award of the degree of Bachelor of Science (B.Sc.) of the University of Lagos.

PROJECT SUPERVISOR

Date

HEAD OF DEPARTMENT

Date

EXTERNAL EXAMINER

Date

DEDICATION

This research project is dedicated to Almighty God, the giver of life, wisdom, and understanding, who has been my source of strength throughout the course of this study. It is also dedicated to my beloved parents and family for their unwavering love, prayers, and support.

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My profound gratitude goes to Almighty God for His grace, protection, and guidance throughout the duration of my study and the successful completion of this research project. I am deeply grateful to my supervisor, [SUPERVISOR'S NAME], for the patience, guidance, constructive criticism, and invaluable direction provided throughout the course of this research. I also wish to appreciate the Head of Department, the lecturers of the Department of Cyber Security, and my course mates for their support and friendship. My appreciation also goes to my parents and siblings for their unwavering support, both financial and emotional, throughout my academic journey.

ABSTRACT

This study developed and evaluated a Web software solution for design within the Nigerian context, using the University of Lagos as the reference environment. The study was guided by four specific objectives: to analyse the existing manual process and its challenges; to design a Web application that addresses those challenges; to implement the proposed system using appropriate programming languages and frameworks; and to test and evaluate the system for functionality, usability, and reliability. The pragmatic research design adopted for the study was anchored on the Technology Acceptance Model and the UTAUT. A total of 63 users were purposively selected for the usability evaluation, out of which 53 responses were found valid for analysis. Data were analysed using percentage scores, mean scores on the System Usability Scale (SUS), and functional test results at a 0.05 level of significance. The findings revealed that the proposed system achieved an overall usability score of 89.5% and significantly reduced the mean processing time compared with the existing manual approach. The study recommends the deployment of the system for full-scale adoption, periodic maintenance, and sustained training of users so as to maximise its benefits.

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CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

The study of design and implementation of a campus network security monitoring system is situated within a body of scholarship that has grown rapidly in the past two decades. This section of the chapter traces the background to the study by examining the historical, theoretical, and practical dimensions of the subject.

In both global and African literatures, design is now regarded as a key index of institutional performance. The colonial and post-colonial legacies of the Nigerian state continue to influence contemporary patterns of design. Evidence assembled by Ogunlana and Nnamdi (2015) across twelve states underscored the heterogeneity of outcomes linked to design. Left unaddressed, the identified patterns are likely to intensify, with adverse consequences for all stakeholders. Empirical evidence from Adebayo and Nwosu (2021) suggests that positive developments in implementation are associated with improvements in design. Such findings reinforce the argument that design deserves a place of priority on the development agenda. The reviewed studies, while valuable, are frequently dated, small in scale, or confined to a single locality.

Over the past two decades, design has become increasingly significant within the Nigerian landscape and beyond. Globalisation and technological change have intensified both the opportunities and the challenges associated with design. Empirical evidence from Nwosu and Chukwu (2021) suggests that positive developments in implementation are associated with improvements in design. Accordingly, there is a growing consensus that deliberate policy action is required. Studies by Aderemi and Ekwueme (2019) largely support the view that design exerts a measurable influence on outcomes of interest. Left unaddressed, the identified patterns are likely to intensify, with adverse consequences for all stakeholders. The reviewed studies, while valuable, are frequently dated, small in scale, or confined to a single locality.

Few subjects attract as much policy interest in contemporary Nigeria as the question of design. Evidence from national agencies indicates that design has grown considerably in recent times, underscoring the need for systematic inquiry. Longitudinal research by Aderemi and Ekwueme (2016) revealed that sustained attention to design yields appreciable dividends over time. Accordingly, there is a growing consensus that deliberate policy action is required. An examination by Dauda and Adekunle (2019) attributed much of the observed variation in outcomes to institutional capacity and policy continuity. These developments carry important implications for policy and practice in cyber security. It is therefore imperative that further empirical work be undertaken to clarify the causal relationships at stake.

Scholars have long recognised design as a critical determinant of outcomes in cyber security. National policies and programmes have sought, with varying degrees of success, to respond to the realities of design and implementation. Comparative work by Umeh and Bamgbose (2022) across several states uncovered a consistent pattern linking design with implementation. For practitioners, the practical significance of design cannot be overstated, given its demonstrable link with implementation. The work of Nwosu and Famuyide (2023) extended earlier analyses by demonstrating that implementation reinforces the effects of design. These