Software Management System for Payment of Telecommunication Services Fees

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***Abstract*—The thesis describes a C# and SQL Server application for managing payment of telecommunication service charges in Thai Nguyen. The author's conclusion reports support for customer debts, payment status, centralized records, several payment forms, reconciliation, search, and reporting by different criteria. It also describes access control for collection staff. The source presents the software as meeting the basic requirements of the case study and as potentially usable through the organization's existing network. It does not establish deployment across multiple centers. The author identifies a remaining gap: revenue from equipment sales, installation, and maintenance is outside the implemented system.**

***Index Terms*—telecommunication, payment management, C#, SQL Server, reporting, system design**

I. Introduction

The thesis highlights the importance of applying information technology in the business sector to improve efficiency and reduce costs. It describes the development of a software system to manage the payment of telecommunication services fees, aiming to support the management of revenue from various services in a more accurate and efficient manner. The project was undertaken by a Vietnamese undergraduate student as part of their final thesis, focusing on the specific needs of the telecommunications industry in Thai Nguyen province. The system was designed to address the challenges of managing debts and payment statuses for customers using telecommunication services [1].

II. Methods

The project begins with a survey of the telecommunication service-fee workflow, followed by requirements analysis, use-case modelling, database design, and implementation in C# with SQL Server. The application organizes customer debts, payment updates, staff access, and reporting for the provincial service context described in the source. The available thesis provides a functional account of the software and its forms and reports. It does not document a controlled comparison, interviews with named personnel, or a multi-center deployment test, so those activities are not treated as research methods here [1].

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III. Results

According to the author's conclusion, the application meets the basic requirements for tracking customer debt and payment status for telecommunication services. It supports different payment forms, reconciliation of updated records, centralized analysis, searches, reports, access restrictions for collection staff, and payment ledgers. These are reported software functions rather than independently measured gains in efficiency. The source says the system could be used by centers through the existing local network; it does not say it was already installed at several centers. Revenue from equipment sales and installation or maintenance contracts remains outside scope [1].

IV. Discussion

The software addresses the collection and reconciliation workflow for telecommunication charges, but its reported coverage is limited to those services. The thesis specifically notes that the company also earns revenue from equipment, installation, and maintenance, none of which can yet be managed in the application. The author's proposal is to add modules for those business activities and then consider practical use. The source offers no measured before-and-after results, so the discussion treats quicker searches and centralized records as intended or reported functions, not verified organizational impact [1].

V. Conclusion

The thesis reports a C# and SQL Server application for telecommunication service-fee management. Its documented functions cover customer debt, payment records, several payment forms, search, reporting, and restricted updates by collection staff. The author considers the basic case-study requirements met and describes possible use through the organization's existing network. Further development is needed to handle revenue from equipment sales, installation, and maintenance before the system could cover the whole business. The available document does not establish adoption across the province or quantify improvements in accounting performance [1].

References

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