Construction of a Software Value Determination Tool

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***Abstract*—This thesis focuses on developing a tool to determine the value of software, based on Vietnamese government guidelines and UML, .NET, and Visual Basic .NET documentation. The tool aims to facilitate and speed up the process of software valuation, particularly for software developed, upgraded, or modified using government funds for public sector IT applications. The methodology involves the use of UML diagrams and .NET framework principles, implemented using Visual Basic .NET. The tool calculates the value of software by integrating various factors such as use-case points, complexity factors, and labor costs. The results demonstrate a clear and systematic approach to software valuation, as per the government guidelines. However, the tool's effectiveness is limited by the absence of empirical evaluation and the need for further research to explore more advanced valuation methods.**

***Index Terms*—software valuation, UML, .NET, Visual Basic .NET, use-case points, complexity factors**

I. Introduction

The thesis addresses the need for a systematic approach to software valuation, particularly for software developed, upgraded, or modified using government funds for public sector IT applications. It outlines the methodology and implementation of a software value determination tool, drawing on relevant government directives and technical documentation. The tool is designed to support the efficient application of IT in public sector operations, ensuring that software projects are evaluated in a structured and standardized manner. The tool's development is based on the Vietnamese government's guidelines for software valuation, which emphasize the importance of using UML diagrams, .NET framework principles, and Visual Basic .NET for implementation. [1]

II. Methods

The methods section describes the development of a software tool that calculates the value of software based on use-case points, complexity factors, and labor costs. The tool incorporates UML diagrams and .NET framework principles, and is implemented using Visual Basic .NET. The tool's functionality includes the calculation of use-case points, complexity factors, and labor costs, which are then integrated to determine the overall value of the software. The tool's interface includes various input fields and output tables, allowing users to input data and view the calculated values. The implementation process involves the use of UML diagrams to model the software's use cases and the application of .NET framework principles to ensure the tool's robustness and efficiency. [1]

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III. Results

The tool successfully calculates the value of software by integrating various factors such as use-case points, complexity factors, and labor costs. The results demonstrate a clear and systematic approach to software valuation, as per the government guidelines. The tool's implementation includes the use of UML diagrams to model the software's use cases and the application of .NET framework principles to ensure the tool's robustness and efficiency. However, the tool's effectiveness is limited by the absence of empirical evaluation, and further research is needed to explore more advanced valuation methods, such as those used in international software valuation practices. [1]

IV. Discussion

The tool provides a practical solution for software valuation, aligning with government guidelines. However, further research is needed to explore more advanced valuation methods, such as those used in international software valuation practices. The tool's implementation is based on the Vietnamese government's guidelines, which emphasize the importance of using UML diagrams, .NET framework principles, and Visual Basic .NET for implementation. The tool's effectiveness is limited by the absence of empirical evaluation, and the need for further research to refine the tool and explore additional valuation methods. [1]

V. Conclusion

The thesis concludes that the developed tool effectively supports the valuation process for software projects, contributing to the efficient application of IT in public sector operations. Future work could focus on refining the tool and exploring additional valuation methods. The tool's implementation is based on the Vietnamese government's guidelines, which emphasize the importance of using UML diagrams, .NET framework principles, and Visual Basic .NET for implementation. The tool's effectiveness is limited by the absence of empirical evaluation, and the need for further research to refine the tool and explore additional valuation methods. [1]

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