NATIONAL TECHNICAL UNIVERSITY OF ATHENS
PROFESSIONAL INTERDISCIPLINARY POSTGRADUATE PROGRAMME OF SPECIALIZED STUDIES
«Infrastructure and Construction Project Management»

Postgraduate Diploma Thesis

Development of a Decision Support Tool for Optimizing the Smart Readiness Indicator (SRI) Based on Desired Target and Upgrade Costs

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Date: ***February 2025***

Abstract

The project that will be summarized, will focus on the Smart Readiness Indicator (SRI) exploring how it can assist users in improving their building's smart readiness. The project will aim to connect the suggestions for improving the score with their financial cost. For the calculation of this indicator, a tool has been developed through which the customer can input their building's data and automatically calculate it. Extensions that have already been implemented include a recommendation system to improve the score by enhancing specific functionalities within the building. The aim of the current thesis is to match these recommendations with actual products that can be purchased and integrated into the building, considering their cost as well as the cost-benefit analysis relative to the improvement they provide.

To present the results, the existing tool is extended to display information about technologies for building upgrades in a simple manner, along with photos and their costs. Additionally, it showcases the total cost and the cost efficiency of different upgrade scenarios. These scenarios are ranked both in terms of the index improvement they achieve and the upgrade cost, as well as the cost-to-benefit ratio, providing the user with a comprehensive view of potential upgrades.

The project will be developed using Python and integrated into an existing web platform through Django, a modern and flexible web application development framework. Django's strengths are the organized structure it provides with separation into models (databases), views (logic), and templates (presentation) and the built-in functionality for secure and efficient application development.

This diploma aims to offer users a comprehensive experience for improving the SRI of their building, combining improvement proposals with cost estimates. By implementing through Django, a friendly environment will be created that will promote efficient energy management and sustainable development.

WITH SUPPORT AND EXCLUSIVE FUNDING OF ΓΕΚ ΤΕΡΝΑ ΟΜΙΛΟΣ ΕΤΑΙΡΕΙΩΝ