Czech University of Life Sciences in Prague

Faculty of Economics and Management

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Diploma Thesis

Design of IS for Travel Expense Management Automation

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Abstract

Today's challenging corporate environment often requires that professionals travel more often and more widely to expand and enhance business operations. Organizations' push for efficiency necessitates that these traveling professionals be more cost-productive without sacrificing accuracy, compliance, or results. Financial process automation is becoming essential for efficient corporate travel, as is the ability to access that automation on the go, making mobile functionality a requirement for maintaining competitive advantage. This need is especially visible in the area of expense reporting, when corporate travelers must organize and record receipts for all their business spend. Automation of Travel and Expense Management (TEMA), with its mobile integration and intelligent features, allows traveling employees to trade the inefficiencies of outdated expense spreadsheets and receipt handling for speed, productivity, and compliance. This thesis discusses designing and implementation of TEMA in the mid and small size companies. Project contains 5 parts: Literature Review which contains discussion of Designing Information Systems, Object-Oriented Development Methodology, Travel Expense Management Automation, Software Development and Implementation, Conclusion.

In project realization, one of the high level programming languages C# was used based on Object Oriented Methodology. Within C#, classes of .NET Framework (which was created and supported by Microsoft) were utilized. The reason that C# and .NET was chosen is that this technologies are increasing in usage day by day surpassing other object oriented programming languages. C# is becoming most popular programming language in System Development.

Keywords: Information Systems, Information System Design, Travel Expense, Management Automation, OOP, UML, Expense Reporting.

Abstrakt

Dnešní náročné korporátní prostředí často od odborniků vyžaduje, aby vzhledem k zkvalitňování a rozšiřování podnikání čím dál, tím víc cestovali. Organizace zvyšují požadavky na efektivnost, produktivitu a snižování nákladú, při zachování stejné kvality. Tato potřeba je obzvlášť patrná v oblasti vykazování výdajů, kdy zaměstnanci na služebních cestách musí pečlivě uchovávat a zaznamenávat účetní doklady pro všechny výdaje. Automatizace řízení cestovních nákladů (TEMA), s mobilní integrací inteligentních funkcí umožňuje cestujícím zaměstnancům nahradit neefektivní zastaralý systém výkazů cestovních nákladů a účtenek za rychlí a efektivní systém. Tato práce popisuje vývoj a implementaci TEMA ve středních a malých podnicích. Projekt obsahuje 5 částí: přehled literatury, uvod do automatizace řízení cestovních nákladů, funkční požadavky a metodiku, vývoj a implementace softwaru, závěr.

Klíčová slova: Cestovní Výdaje, Automatizace řízení, OOP, UML, Vykazování nákladů, Navrh informacniho systemu.

Design of IS for Travel Expense Management Automation

Corporate business travel has been long-term necessity in the greater scheme of organizational growth. Business travel is linked to effective customer development, supplier relationships and maintaining a corporate presence on the global and local stage. In fact, expenses related to travel accounts for 7-13% of the average company's total budget (according to Aberdeen Group reports 2014), forcing enterprises across the world to manage these expenses in the way that is consistent with bottom line growth. Companies continue their strategic approach towards expense management as we move into new decade, the challenges and opportunities for organizations of all sizes have changed dramatically over the past few years. Today many organizations are focused on finding practical ways to improve their bottom lines, and as the second-largest operating expense in most organizations, travel expense (T&E) is a focal point. As a result, financial executives are looking for more cost-effective and efficient approaches to managing travel expenses.

The Goal of this thesis is to study and analyze the theory of designing information systems and to discuss current state of Travel Expense Automation and to develop information system for travel expense management and to provide mid and small size companies with simple affordable solution to make them work more efficiently and cut their costs which are related to their business trips.

In this thesis Travel Expense Management application has been designed using one of the high level Object-Oriented language - C# with .NET framework tools such as ASP.NET, Entity Framework alongside with Relational Database - MSSQL. Above-mentioned Back-End technologies demonstrated with modern Client-Side technologies such as HTML5, CSS3 and jQuery framework. I want to implement his simple TEMA solution for mid and small size companies to make this solution affordable for them, to make their business activities more efficient and to cut their operational costs.

Methodology of this thesis is based on analysis of information that was collected from available sources and knowledge to study and analyze Designing of Information Systems and to find out current state of Travel Expense Management Automation in different types of companies. Practical part aims to develop web-based application (prototype) using OOP language (C# and .NET Framework) with relational database (MSSQL).

While developing the TEMALite using C# and .NET technologies, I realized that the Object –oriented methodology increases creativity of developer considerably. I also found out that C# language is very powerful which is rich in built in classes that don't leave a developer a lot of work. In traditional programming languages like PHP, you have to write long lines of codes to create simple method, but in C# it's either a single function or class which solves a lot of problem.

Best advantage of TEMALite that I think is that it's available, affordable. It can be accessed from different devices and anywhere where there is connection with internet. It doesn't require special installments and security checks.

It is suggested that TEMALite should be more widely used among the companies who want to manage their Travel and Expenses in better way.

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