

# **Czech University of Life Sciences Prague**

**Faculty of Economics and Management**

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**Extended Abstract of Master Thesis**

**Trade-off Analysis in ITS Project Management:**

**Virtual Infrastructure Projects in DHL with a Specific Focus  
on Time Management**

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## **Abstract**

In spite of almost seventy years of efforts to advance the management of Information Technology (IT) projects, project managers can still face difficulties. Historical data shows that there is no single factor that can be addressed by a project manager to guarantee success or avoid failure under certain constraints. There can be various factors affecting the nature and the performance of the projects. The main aim of this research is to investigate this phenomenon through a case study by using the available data sample extracted from one hundred remotely managed projects, DHL Supply Chain and DHL Express Server Migrations, which were performed for thirty countries' infrastructural development in one and a half years. In order to address and build the case study, and to understand how and why, if any, project overruns or tradeoffs occurred in the schedule performance; the relevant literature, project performance analyses and other empirical studies are examined with a specific focus on schedule and time distribution as well as scope verification from a phase-to-phase perspective. The empirical findings and statistical results of the analysis is expected to be beneficial for future studies on Remote Infrastructure Management (RIM) time performance analysis and process improvement.

**Key words:** IT Project Management, Remote Infrastructure Management, Project Time-Performance Analysis, Time Management.

## **Abstrakt**

Navzdory téměř sedmdesáti letům snah o řízení projektů informačních technologií (IT), mohou projektoví manažeři stále čelit potížím. Historická data ukazují, že neexistuje žádný faktor, který by mohl projektový manažer řešit, aby za určitých podmínek zaručil úspěch nebo se vyhnul selhání. Povahu a výkonnost projektů mohou ovlivnit různé faktory. Hlavním cílem tohoto výzkumu je prozkoumat tento fenomén prostřednictvím případové studie s využitím dostupného vzorku dat získaných ze stovky vzdáleně řízených projektů DHL Supply Chain a DHL Express Server Migrations, které byly provedeny pro rozvoj infrastruktury ve třiceti zemích v rozmezí jednoho a půl roku. Aby bylo možné adresovat a sestavit případovou studii a pochopit, jak a proč, pokud vůbec, došlo k překročení projektu nebo kompromisům v plnění plánu; zkoumá se příslušná

literatura, analýzy výkonnosti projektů a další empirické studie se zvláštním zaměřením na rozložení harmonogramu a času a také ověření rozsahu z hlediska “phase-to-phase” perspektivy. Očekává se, že empirická zjištění a statistické výsledky analýzy budou přínosem pro budoucí studie analýzy vzdálené správy infrastruktury (RIM), časových výkonů a zlepšování procesů.

**Klíčová slova:** IT projektový management, vzdálená správa infrastruktury (RIM), analýza časových výkonů projektů, time management.

## Objectives

The main aim of this research is to investigate this phenomenon through a case study by using the available data sample extracted from one hundred remotely managed projects, DHL Supply Chain and DHL Express Server Migrations, which were performed for thirty countries’ infrastructural development in one and a half years. In order to address and build the case study , and to understand how and why, if any, project overruns or tradeoffs occurred in the schedule performance; the relevant literature, project performance analyses and other empirical studies are examined with a specific focus on schedule and time distribution as well as scope verification from a phase-to-phase perspective.

The research questions addressed in this study are:

Q1: What kind of, if any, overruns and underruns exist in the schedule performance of one hundred selected server build (RIM) projects, in DHL IT Services, Prague?

Q2: How, and why, if any, those overruns and underruns occurred in the schedule performance of one hundred selected server build (RIM) projects, in DHL IT Services, Prague?

## Methodology

In the literature review, historical data showed that there is no single component that can be addressed by a project manager to guarantee success or avoid failure. Both in classical and IT project management practices, project managers are facing difficulties. This is an interconnected problem with multiple causes based on the unique nature of each project and their objectives. Based on different types, approaches and circumstances; project performance and the behavior of the project managers may show variety in terms of design, execution, monitoring, and evaluation process of the projects.

In the first step of the analysis, the percentage project time overruns and underruns are presented with a country-wise comparison. After that, total amount of time spent on each for phase for each country was counted and visualized. Based on the high numbers of the delayed projects, the investigation followed with determining the dispersion of each country's time overrun data around total time variance mean of the particular project type. Hence, countries with higher values than the average delays are selected and narrowed down to a list of thirty- five delayed projects of 16 countries.

To understand the time-effort tradeoffs between project phases throughout their processes, the actual and weighted- averages of time distribution of each project is compared, the projects which experienced proportional increase in their phase durations were estimated. It was found that majority of the delayed projects experienced time overruns in different phases during the process flow. One project in the first phase, ten projects from eight countries in the second phase, eighteen projects from eight countries in the third phase, and fifteen projects from nine countries in the fourth phase had bigger proportional values than the distributed weighted-averages. When each project was observed with regard to their sequence of events in the process flow, there was no evidence that associates the delays in the first phase with delays of the total project. For seven projects, the proportional overrun in the second phase was the only reason for total project delays; for twelve projects, the proportional overrun in the third phase was the only reason for total project delays; for five projects, the proportional overrun in the fourth phase were the main reason for total project delays; for the remaining eleven projects, proportional overruns were found in multiple phases.

The results showed that there is a strong correlation between both measures of project total duration and time effort distribution among single phases. Besides, it was found that larger variances of delay in the Risk and Impact & Approval in Principle, Build & Test and Approval for Implementation of the projects were the main reasons of total time delay in sixteen countries. The proportional tradeoffs between project phase durations are analyzed, and it was found that majority of the projects experienced significant time- effort tradeoffs throughout their processes in order to meet the deadlines. According to the findings and personal interviews, the recommendations such as using a baseline for total time distribution, avoiding unrealistic schedule- planning, providing additional and/or more detailed trainings, and keeping the communication open and inclusive are proposed.

The empirical findings and statistical results of the analysis is expected to be beneficial for future studies on Remote Infrastructure Management (RIM) time performance analysis and process improvement studies.

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