



Pole for Doctoral Studies  
Center for Doctoral Studies Sciences and Techniques and Medical Sciences

## ANNOUNCEMENT OF DOCTORAL THESIS DEFENSE



**Ms. L'YARFI Hanane**

**Will present their research work with the aim of earning a  
Doctorate**

**Doctoral program: Sciences and Techniques of Engineering  
Discipline: Industrial Engineering  
Specialty: Information Systems and Industrial Engineering**

**On 27/06/2026 at 15H00 at the Conference Hall Pr. Othman EL  
FILALI EI MEKNASSU, National School of Applied Sciences of  
Tangier, UAE  
Under the Theme**

**A Decision Support Framework for ERP Implementation:  
Analysis and Modeling of Total Cost of Ownership**

**Front of the jury composed of :**

| First Name & Last Name   | Establishment        | Designation   |
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| Pr. MOTAKI Noureddine    | ENSA of Tangier, UAE | Co-Supervisor |
| Pr. DERRHI Mostafa       | ENSA of Tangier, UAE | Supervisor    |

*Host Research Structure: Laboratory of Innovative Technologies*

## Abstract



Digital transformation has become a strategic imperative for businesses across industries in today's rapidly evolving technological landscape. Enterprise Resource Planning (ERP) is a complete software solution that brings together different parts of a business to make operations more efficient, use resources better, and make better decisions. The ERP systems are complex, costly, and highly risky, as they significantly impact finances and resources throughout their entire life cycle. Additionally, various phases of ERP implementation necessitate the making of numerous critical decisions (CDs).

The first purpose of this study is to present the different fixed costs in ERP projects and develop a framework that includes the different dynamic cost elements and critical decisions during the whole ERP project lifecycle. By thoroughly understanding the costs and key considerations for adoption, organizations can make informed decisions that lead to successful ERP implementations. We conducted this work by analyzing existing literature reviews. The qualitative approach was chosen using focus group discussions followed by the Delphi method to conduct semi-structured interviews among eight industry experts to verify and validate the results. Based on this framework, the decision-makers can have a global picture of the different ERP project lifecycle phases, activities, and critical decisions that must be taken by the company and their options, as well as their related costs and key criteria to consider.

The second purpose of this study is to investigate the critical decisions (CDs) made during the ERP project lifecycle and their impact on TCO in the context of Morocco. Research findings show that critical decisions undertaken by enterprises are not solely technical; they also significantly influence the total cost of ownership of the system. Moreover, some options are more economical than others, such as cloud, BPR, and big bank strategy. This research's findings were substantial since it also provides quantitative data relevant to the Moroccan industrial sector and outlines the impact of CDs on Total Cost of Ownership (TCO).

The findings of this study will aid organizations that implement ERP systems in gaining a better understanding of the costs and key considerations and in helping managers evaluate the various feasible and optimal ERP implementation options.

**Keywords:** Enterprise Resource Planning, Total Cost of Ownership, Critical Decisions, framework