



Cloud-Based Applications for Manufacturing SMEs: A Model to Analyse Critical Cloud Adoption Barriers

Tariq Alsafi

Email: t.alsafi@cranfield.ac.uk

1- Background

Policy makers and literature recognise the central role that Small and Medium-sized Enterprises play in contributing towards the functioning of the wider economy. Cloud computing has become one area for SMEs, given its growth in multinational and globally acting corporations

2- Aim

To design and develop a model for cloud computing adoption that can support SMEs to selective cloud offerings to match their business needs to improve their performance and competitiveness

3- Objectives

- 1) To review the barriers faced by SMEs when adopting cloud computing
- 2) To map SME business IT applications into levels of complexity and match to cloud application offerings
- 3) To design a model for cloud-based applications layered by complexity & implementation difficulties
- 4) To propose and test a relationship model of cloud applications complexity to Saudi SME adoption

4- Research Methodology



5- Findings

Business Needs

A preliminary field study was conducted to gain an initial appreciation of Saudi business IT attitude towards cloud computing

Findings	
SMEs view technology uptake process as more challenging given the lack of resources.	
A lack of uptake of innovations such as cloud are likely to affect SMEs, which fight to stay competitive.	
Discussions with industry players in Saudi Arabia suggest that infrastructure and the lack of cloud providers are amongst the foremost barriers.	
Head of IT at company confirming lack of knowledge was an obstacle to adopt cloud technology.	

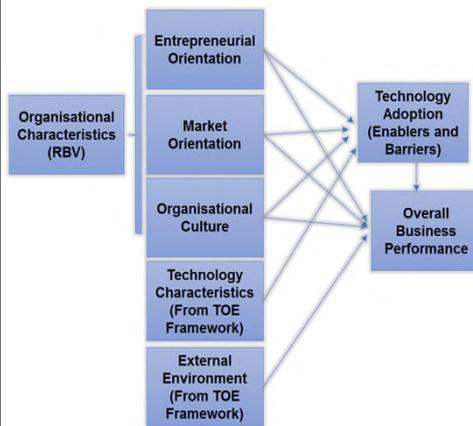
Current Research

Most identified barriers from Saudi studies	
Security	
Privacy	
Lack of cloud knowledge	
Lack of government support	
Lack of top management support	
Provider lock-in	
Service cost	
Data control	
Sufficient bandwidth	

The research narrowed these barriers into context specific (Saudi Arabia)

Theoretical Framework

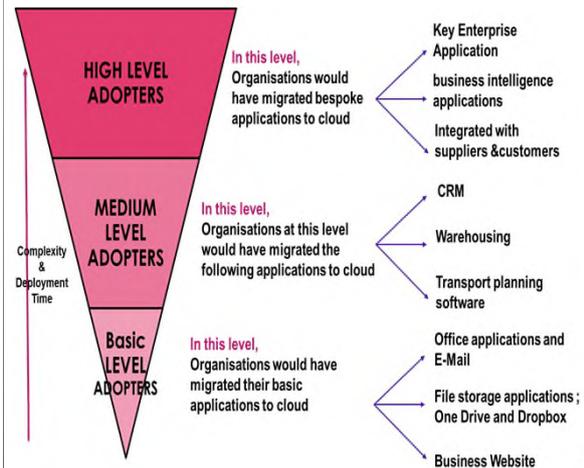
Technology-Organisation-Environment theory (TOE) combined with resource-based view approach (RBV)



A framework to study the barriers when adopting cloud technologies

The Concept

The initial model to analyse critical cloud adoption barriers for manufacturing SMEs



6- Research Outcome



This research will move existing knowledge forward by recognising the heterogeneous nature of cloud applications and classifies barriers based on complexity of the applications and contribute to the Saudi Vision 2030

Supervisors: Dr Ip-Shing Fan,

Email: I.S.Fan@cranfield.ac.uk

Dr Patrick McLaughlin,

Email: p.mclaughlin@cranfield.ac.uk