Economic model for migrating IT systems in the cloud

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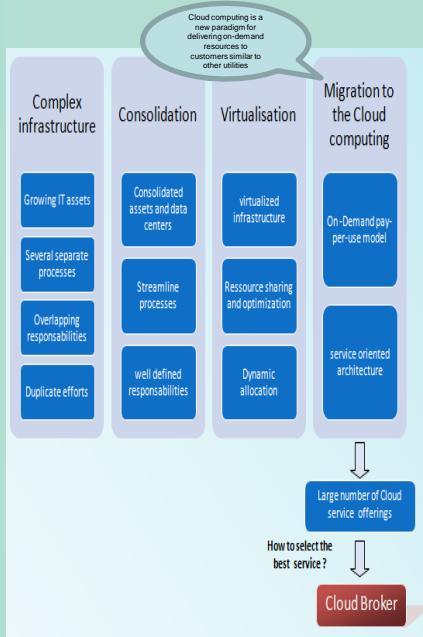
Issue

Figure1. The necessity to migrate to cloud and the proposed solution
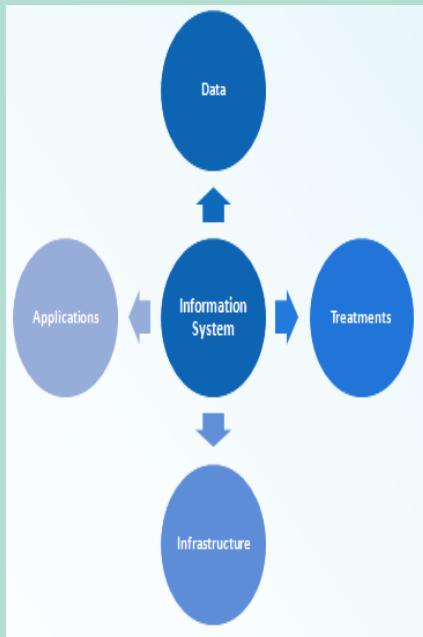
Proposed IS migration methodology

Figure2. Information System

▪Migrate your business from its current information system to a new is a complex task.

▪This process can be fairly time-consuming and may consider several risks.

▪ It is important to follow a data migration model to ensure that the process is error free and robust.
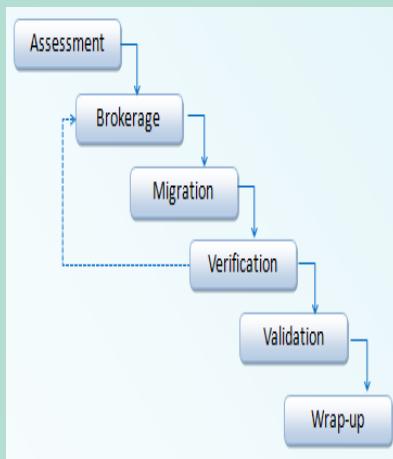

Figure3. A proposed process model for data migration

▪The verification phase requires several iterations in order to make sure that the migration process responses to all the user requirements.

▪The phases of the proposed process are:
Assessment: the issues relating to migration are evaluated.
•Brokerage: help user to select the suitable cloud provider.
•Migration: does not just mean the phases of export and import. A transformation of the data can be performed also.
• Verification: make sure that the migration process responses to all the requirements. This phase requires several iterations.
•Validation: To validate the correctness, and consistency of the migration processes.
•Wrap-up: include training customers of cloud to use the new system.

Economic model in cloud migration

Criteria / Economic Model	Help to find the suitable service	Help users identify their concerns and select the appropriate tools	Data management	Reduce cost of resource provisioning	Reduce the storage cost	Optimize the transition cost of reconfiguring an application's current capacity	Reduce the total cost
Repository framework based on hybrid cloud			x		x		x
OCRP algorithm				x			x
Method to evaluate Cloud services using MACBETH	x						x
Cloud Adoption Toolkit		x					x
SMICloud Framework	x						x
Analytic Hierarchy Process (AHP)	x						x
CloudCmp	x						x
Kingfisher approach				x		x	x
Decision support system	x						x
Cloudrank framework	x						x

Table1. Comparison between the different business models

•Different economic models of cloud are presented in table1.
•A cloud broker model is an important economic model.
•It plays a significant role in the success of cloud migration process.
•we focus on broker on this work.

Cloud brokerage scenario

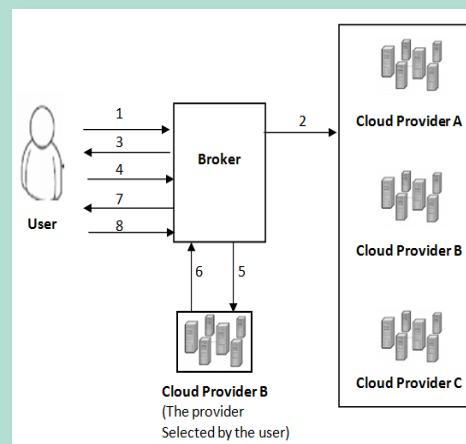

Figure4. A user-Broker-Providers Communication

•The steps of this scenario are presented as follows:

1: User sends to cloud broker a request for migration process including data and computing about desired services.
2: Broker receives the user request and performs a search to find cloud providers that can address the needs of the user. Then, it collects information about these provider, and various characteristics of their proposed services such as prices, efficiency, performance, security, and envisaged risks.
3: Broker sends a request to the user which contains the information collected in the previous step.
4: User sends a response to the broker to inform him of his primary choice and tell him if he wants to negotiate with the cloud provider about some points such as minimizing cost, improvement of the security level, and so on.
5: The Broker sends a request to the cloud provider selected in the previous step to ask for his opinion about the user .
6: The selected cloud provider responds to the broker.
7: The broker sends a response to the user which contains the response of the provider.
8: The user sends a request to the broker in order to inform him of his final choice.

Next Steps

•How to improve the migration process in organizations ?
•How the cloud brokerage model can be included in the migration process ?
•What are the improvements made by cloud brokerage model compared to other economic models ?

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