

A STRATEGY ON CLOUD TRANSFORMATION STRATEGY

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Abstract

Cloud computing is an emerging technology that is changing the way that public sector organisations consume Information and Communication Technology (ICT) in different countries. The adoption rate of cloud computing services is still very low to none in many countries. The integration and exploitation of new digital technologies is one of the biggest challenges that companies currently face. No sector or organization is immune to the effects of digital transformation. The market-changing potential of digital technologies is often wider than products, business processes, sales channels or supply chains—entire business models are being reshaped and frequently overturned. First, cloud-based digital transformation can positively impact the realisation of strategic objectives in terms of deliberate strategies such as agility and competitive positioning. Second, we present a process model which delineates how ICT service providers' strategy formulation was observed to be an emergent process, encompassing recursive cycles of business model experimentation and iteration, organisational learning and organisational adaptation, primarily as a result of the profound disruptive and innovative impact of cloud-based digital transformation.

Keywords: cloud computing, Information and communication technology, digital technology, strategy

Introduction

Now most of the IT industry is now emerged with on-demand computing with new technology called Cloud Computing. The approach which facilitates number of resources what we called data centers as services over internet. Moreover, the services to be of nature scalable and ready serve at any time and in any ware on cost basis relevant to usage. Now most of the cloud providers ready to share such services to customers on their specific requirements (i.e., Availability, Scalability, On-demand, Return Value and etc.) shown in Fig. provided the complete services offered by cloud.

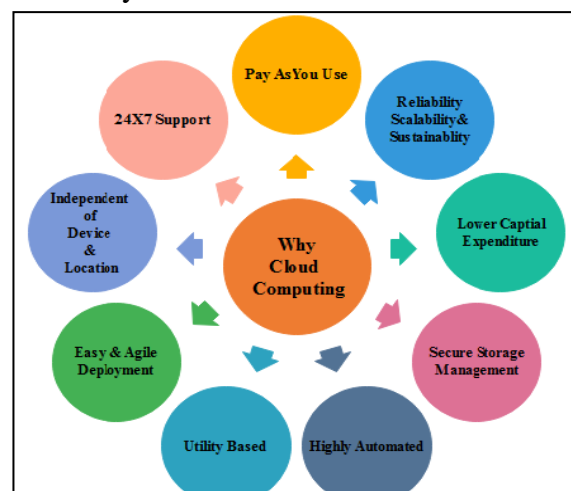


Fig. Cloud Computing Popularity

The concept of resource provision in cloud technology which is to be either static or dynamic. Also mentioned dynamic provisioning is more attractive in which

providers grant resources to the customers as per their customized needs includes memory usage, multi-core, network, servers and applications.

Cloud Transformation

The process of cloud transformation involves the entire process of transitioning business data, applications, infrastructure and other dependent hardware & software's to the cloud. When an organization begins its cloud transformation journey, the context, iterations, and development of a cloud engine will vary over time.

While a single-service business will focus on developing a business domain adoption loop and building foundational capabilities, it would be different for large institutions. In this case, the foundational services will serve as the basis for building workloads in the cloud environment. Only when these work in tandem, successful cloud transformation can take place. With richer external capabilities, companies need to evolve their adoption approach, strategy, and foundational capabilities.

Cloud transformation involves aligning business goals, having established metrics for monitoring and optimization, and tapping on data governance solutions to drive decision-making.

Cloud transformation strategy

A cloud transformation strategy is a framework that encompasses a complete cycle of digital innovation. It should prioritize migration, data and analytics, management and optimization, and cloud security to gain a flexible, competitive edge. Cloud transformation is a major component of the digital transformation umbrella and has helped to revolutionize the online space. Encouraged by digital-first initiatives, cloud transformation strategies use benchmarking techniques to

measure performance against competitors and identify problem areas relative to a maturity curve.

Cloud Provision Service

The application worked with high dimensional data composed and to process and manage demands with complex tasks. One of the most important challenges in such applications is made process with complete data. But majority of cases complete data is often missed with different patterns. To resolve incompleteness in such applications, need drawing of proper imputation values to substitute missing data. The standard techniques, limits to the issues of scalability, ease of access, high computations. Cloud computing has proven an excellent alternative for handling large data / workflow because the cloud itself out certain characteristics that help in the analysis and access to such data appropriately. With cloud computing, you do not need to make large initial investments in hardware and spend much time in the heavy-duty hardware management. Instead, providers of cloud computing, Amazon Web Services as owning and maintaining hardware connected to the network, and can supply exactly the type and size of computer resources you need right. These resources include computer networks, servers, storage and applications. Generally, to accommodate any application that can be done with resource provisioning mechanism providing services, topologies, general metrics and requirements.

The complete taxonomy of provision service in cloud shown in Fig visioning resources is an aggregation of both resource allocation and Scheduling. The tasks provisioning must qualify requirement of Service Level Agreement

(SLA) based on availability, capacity, performance and cost of resources. Generally provisioning service could be static and static dynamic. In, it offers services at peak time and IT resources misuse and not recommended. The Amazon EC2, allowed Deterministic Resource Planning Rental used for provision. However, limits is not suitable for emerging point instance. irtual Server provisioning algorithm to minimize the cost of provisioning EC2. Various provisioning techniques including Amazon (i.e., No Check pointing, Optimal Check pointing, and Adaptive Check pointing) will provide low cost resources as per specific needs. An advanced technique called spot instances offered by Amazon EC2 had an advantage of economic benefit and is attracted by cloud users.

managers address this challenge more systematically, we describe how three German media companies successfully approached digital transformation. Based on their experiences, we provide a list of strategic questions, and possible answers, managers can use as guidelines when formulating a digital transformation strategy

Golightly L [2022]

Over the years, there has been a heavy reliance on cloud computing as IT has innovated through time. In recent times cloud computing has grown monumentally. Many organizations rely on this technology to perform their business as usual and use it as a backbone of their companies' IT infrastructure. This paper investigates the organizational adaptation for cloud computing technology - reviewing case studies from various institutions and companies worldwide to provide a detailed analysis of innovative techniques with cloud computing. We investigate the features and delivery approaches cloud computing offers and the potential challenges and constraints we face when adopting cloud computing into the business setting. We also explore the cybersecurity elements associated with cloud computing, focusing on intrusion detection and prevention and understanding how that can be applied in the cloud. Finally, we investigate the future research directions for cloud computing and expand this paper into further articles with experiments and results.

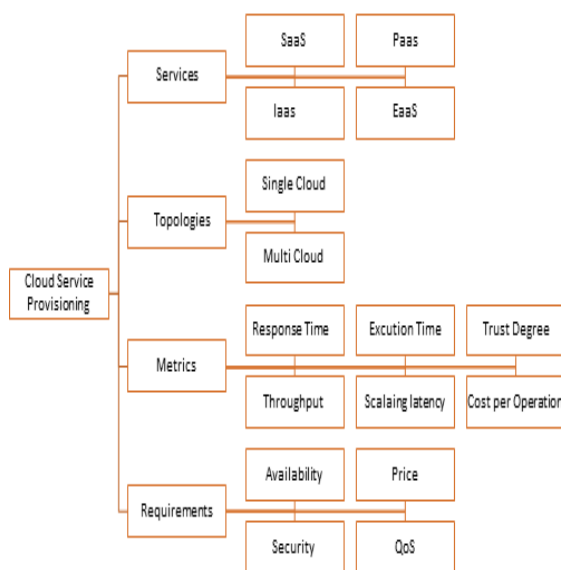


Figure. Taxonomy of Cloud Service Provision

Literature Review

Thomas Hess [2016] CIOs and other senior executives face the challenge of how to handle the opportunities and risks of digital transformation. To help

Methodology

Study also concerned real high dimensional data which includes n= 1460 samples and p=79 predictors obtained through rigorous survey analysis. The outcome variable of interest, y, and

predictors of interest, $(x_1, x_2, \dots, x_{80})$.

Study focusses on performing analysis with linear regression and to be specified with outcome variable y and set of predictors mentioned as:

$$y \sim x_1, x_2, \dots, x_n = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \dots + \beta_n x_n$$

. Here applied proposed regularized mechanisms to perform imputation as a result select only few with $w=25$ and rest of the variable represented with another set $w=55$ is denoted by $(x_{25}, z_6, \dots, x_{80})$. The methods, which is completely focus on data with missing observations than complete data. It is notice that, imputed data is significantly derived from the original data with the usage of proposed methods. However, it is produced good inference to results compare to basic method.

Real Data Analysis and Results: House Price Data

Table: Proposed Algorithms (ALMMI & ALBMI) Analysis on House Price Data

Observation	Estimate	SE	T_value	Pr > t	F_value	Pr (> F)
LotFrontAge	910.33	77.34	11.77	1.4e-30	261.92	<2e-16
GarageType	2565.31	1120.77	-2.29	2e-02	176.28	<2e-16
GarageYrBlt	1016.93	84.53	12.03	7.5e-32	331.10	<2e-16
GarageFinish	26701.42	2648.54	-10.08	3.8E-23	102.80	<2e-16
GarageCond	6872.77	3810.52	1.80	7.2E-02	3.25	0.072
GarageQual	10424.18	3305.77	-3.16	1.6E-03	6.85	0.009

The Table, shows analysis result with estimates for the intercept, LotFrontAge, GarageType, GarageFinish and GarageYrBlt are suitable predictors and produced the standard errors much better compared to case analysis. This results also estimate **GarageCond** to be still non-significant Mean imputation does not preserve the relationships among variables LotFrontAge, GarageType, GarageFinish and GarageYrBlt and not bias parameter estimate. Finally proposed algorithms,

applied in cloud environment is the configuration and runtime took less, high speed compared to the standard version and is shown in Table.

Table. Performance Analysis of MI Algorithms on Cloud: Gene Data

	Physical Environment Execution Time (in sec)	Cloud Environment Execution Time (In sec)	Performance Speed
Case 1/Observation1	15.76	4.62	3.41
Case 2/Observation2	39.82	8.53	4.67
Case 3/Observation3	86.42	12.78	6.76

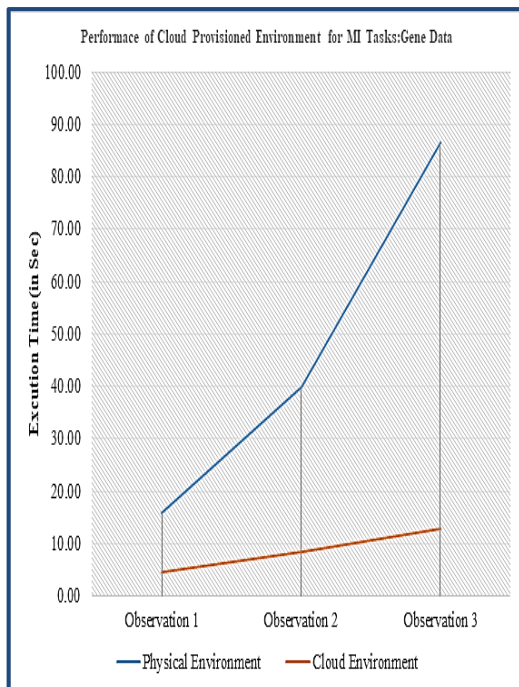


Fig. Performance Analysis of MI Algorithm Execution in Azure Cloud
 The Fig 3.4 and Table 3.5 shows the Analysis of Proposed Algorithm Execution in platform offered by Microsoft Azure

Cloud with VM Type (i.e, XLarge) having good configuration. The onspot resource provisioning policy is applied and produced better results compared to standard execution. However, the speed increased linearly over all observations which shows accuracy of distributed environment provisioned by cloud.

Conclusion

Cloud transformation is one of the most critical endeavors organizations will undertake. New growth opportunities will be unlocked with cloud services, and you will be able to scale more efficiently to match customer demand. However, every technological upgrade comes with security threats and new opportunities. Security analytics, vulnerability scanning, and log collection will help you protect your systems from threats and also improve your security and compliance. Cloud transformation allows businesses to future-proof internal processes whilst enhancing efficiency, scalability, and profitability. It's an essential component of digital transformation and works hand in hand with strategies designed to modernize business practices. Multiple Imputation (MI) with the inference of regularized regression is a known solution to the missing problem in high-dimensional data. But the problem with the standard approach is not fit well when the case of large predictors involved in the study. To work on such issue proposed algorithms derived regularized MI work with additive function and finally concluded results with several advantages

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