

# Cloud Computing Services for Improving Efficiency in Omani Small and Medium Enterprises Sector

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Small and medium sized enterprises (SMEs) assure economic growth in Oman. Generally, many SMEs are struggling to survive in an ongoing global recession and are often reluctant to use research results and new technologies for business and learning. Cloud Computing offers many opportunities and could help companies to improve their business and use technology more efficiently. Small and medium sized enterprises (SMEs) assure economic growth in Oman, but the last financial crisis and the economic recession have hit SMEs hard in Omani SMEs and some of them have difficulties to survive and less resource to invest in new technologies. Cloud Computing offers many opportunities and can help companies to improve their business and use technology more efficiently. Some features i.e. on-demand services, broad network access, resource pooling, rapid elasticity and measured service distinguish Cloud from other computer networking models. According to the analyst firm IDC in 2012 more than 1.7 million cloud computing jobs have remained unoccupied and the trend should lead to more than seven million cloud-related vacancies worldwide. In this research, cloud computing advantages and disadvantages of cloud technology are reflected in the context of Omani SME sector. The project IN-Cloud is analyzed considering Omani SME project to understand the effectiveness of efforts in this direction. The general objective of the project IN-CLOUD are to study the framework of use of cloud computing in SME sector. Survey results of Cloud Computing and advantages for SMEs are presented in paper within the context of Omani SME sector. The results show that 70% of SMEs have adopted or used some of features of Cloud services but they indicated the need n for awareness, safety and training, qualified professional staff in this field.

**Keywords:** Omani SME; Cloud Computing; Cloud Computing Strategy; ICT.

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## Introduction

SMEs encountered overall growth of economy of Oman but faced crisis in the latest recession and could not invest much on latest tech. In such a scenario Cloud Computing is one of the best option for them to grow their business and efficiently use the latest tech. For example, services on demand, accessing the larger network, sharing of resources etc. This can lead entrepreneurial spirit all around. Omani SMEs are unable to utilize cloud services in cost efficient manner. It needs to provide services without huge capital investment in resources and hence entry in the primary stage of the market would become easy and can pull more customers and market shares. Research that is going on at academic level on cloud services could also count the growth and its benefits as its capacity of data storage and viable economic factor encouraging to use it in R & D overall. It can bridge the gap between academics and corporate by providing optimum solution in which latest tech. is being use.

As part of the effort to diversify Oman's economy, the authorities are keen to boost growth in the small and medium-sized enterprise (SME) segment, which is comparatively underdeveloped. The segment is thought to contribute 16-20% of national GDP, which the Central Bank of Oman (CBO) in a 2014 report described as "indicative of a sector with limited contribution to the overall economy". With respect to Oman, the development of the SME sector is also of critical importance and requires some expediency, in particular

as the country faces challenges in the forms of limited employment opportunities for citizens in the private sector and an economy that continues to rely mostly on the hydrocarbon sector. Available data suggests that the SME sector in Oman is indeed at its infancy and its potential for growth is impeded by many factors among which are bureaucracy, scarce financing and other critical supports that otherwise have allowed this sector to prosper in other countries. The current definition of SMEs should also be strengthened with additional clarity in determining the criteria. In an effort to diversify the Sultanate's economy and address some of the challenges cited above, the government has recently introduced a number of initiatives aimed at promoting the SME sector in the country.

Though cloud services become interesting for corporate but very few experts are there at work. According to a study, in 2012, almost bigger than 170000 positions were vacant for the post above. Oman government started taking action and followed the important things like by providing partnership for cloud services so that at minimum cost firms could use it and that becomes the growth factor after using innovative tech. with minimum cost. Under this report, first a little explanation has been given about what the cloud Computing is and what are its benefits for small businesses and then Objectives of the IN-CLOUD project of Europe and its progress is given. The objectives of it include bridging the gap between academic and corporate by doing researches, providing training to human assets to make the use of cloud

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services successfully, especially in SMEs. The contributors of the project belong to different background, knowledge, skill, culture and place. They have started using the result of the research in public administration. Under this report research methodology used and conclusion part of the project is given.

### Cloud computing in SMEs

Use of Cloud computing services small and medium businesses grab the chance to face competitive environment in this high-tech era and providing a platform to go ahead and get success in business. According to Cai, et al. (2009), the most important barrier of cloud computing observed by the SMEs of Jamaica. It was seen that the third party information is more risky as compared to the in-house information. The experts of cloud computing suggest that in-house security is good for the clients. The author supports that in Jamaica, the level of IT infrastructure is low compared to other countries and is the main barrier for improving the technology. Following are benefits encountered by experts of using cloud services:-

- Ready to use and cost effective solutions by software.
- Limit less storage capacity of data.
- Round the clock accessibility from any place.
- Tight securities for protection of data and business transactions.
- Improvement in the performance of the business.
- Simplification of managing the data.

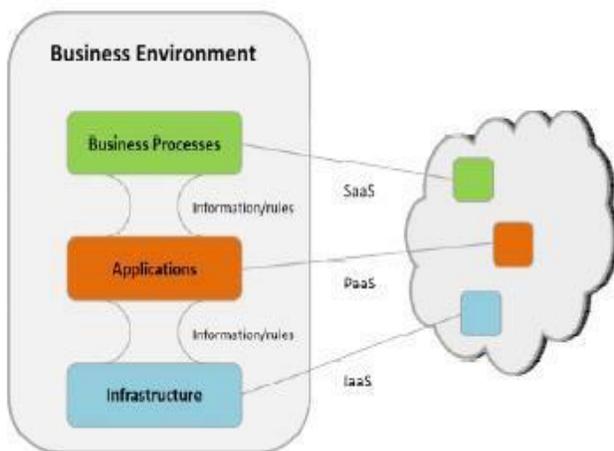


Figure 1. Benefits of Cloud Computing

Numerous services that are based on cloud offered like services related to business, Application and software based services, services of infra-development etc (Figure 1). Also, there are limiting factors with cloud based services. The important one is how much it is reliable and secured and the ownership claim of the data and its continuous access even the service provider not available. So many organizations facing the problem of losing control and failure impact of this system. And these impacts keeping SMEs away from utilizing these

services. Some other factors are also considerable which are mentioned as below: -

- Company people not having proper information about its structure, costing and sufficiency of the requirement under diversified environment of the business.
- Required skills not available with users.
- Shortage of Time to test this service.

It needed skilled human assets for developing the dedicated part of the project i.e. :

- Business Management and Financial Management skills.
- Required tech. skill which depends on the volume of the cloud that needs to build and manage.
- Knowledge of business language and IT.
- Skills to manage projects.
- Integration of data and skills of analyzing.
- Develop mobile application and its managing.

Apart from the business advantage, cloud services can also be use in Academics. E-Learning concept is originated from it. Employees of SMEs have access remotely of cloud based resources and can solve the time and cost issues of SMEs. Also, the guidance material very easily can be update at all point of time; Facilitator can incorporate Multi-Media features in it for better communicating the ideas and for better understanding of the group who is taking guidance. But till now, this concept been not used in SMEs. We can have combined the E-learning system with cloud computing services and can get better results. If we do so, it will be more cost and learning effective.

Here, in the study, the implementation plan of E-learning based on cloud computing discussed. On demand services and transparency these could be the important things to develop the cloud based environment in E-learning portal. If we provide data as per the demand of the users and keep transparency in it, it could be a great advantageous.

### Research Methods

In this project, as per the objectives, strategies of introducing the cloud based service in Oman and push up the association of academics and corporates four academic institutions. ITA has been taken for the purpose to make qualified experts which in turn would be able to create competitive and growth environment the cloud based services. Use cloud computing for small and medium-sized enterprises requires a strong Internet connection and high speed. Although, there are many drawbacks of using this new technology regarding to IDC study but it not considered as main issues (IDC, 2010). Cloud computing will contribute to increased investment and reduce the challenges SMEs (Barnett, 2010). This gives the below benefits: -

- The corporate's requirements and required qualification could be match at the inception.

- While the project going on the testing could be done for special dedicated units and the platform which has been developed for the particular purposes.

Below mentioned methods has been used to attain the objectives of the study.

- Analyzing method has been used to analyze the situational need and direness of nearby countries SMEs.
- Analyzing method for job market and its matching with the required skills for cloud environment.
- By providing training the development of required skills for cloud services.

### Research Design

The objective of this research is to study deeper and discover how cloud services can enhance efficiency of SMEs in Oman. Unearthing this will help enterprise owners - be they current customers of cloud computing services or future potential customers - take the right decision for the adoption of cloud computing services. They can then rightfully take advantage of it for improving innovation, profitability, competitiveness and productivity (Aljabre, 2014).

### Data Analysis

In this analytical study description analytical procedure and methodology been followed. It provided tabular form of statistics and analysis of surveyed questionnaire and researcher observation as well. It been used for interpreting the result and discussion. In this regard, there were 62 female respondents and 38 male respondents. Most of the SMEs were from Oman and from different regions of Oman. Mainly the following three reasons were found for the adoption of the cloud computing services-scalability and flexibility of the resources of IT-40%, to enhance the capacity of computing and the Information Security-25%, to optimize the infrastructure of IT-20% and rest of the reasons account for 15%. Most of the respondents were in favor of public clouds and hybrid cloud. Following were the responses for concerns of cloud computing. It can be seen from the below table that all the features are very important for the adoption of cloud computing services.

### Findings and Recommendation

Listed below are findings from the research which will ultimately help achieve the research objectives. From below, it can be noted that the project discusses and covers both goals and policies of Cloud Computing used by Omani SMEs. The points from the results of the questionnaire are listed below:

- Cloud Computing takes up 30%-60% of Information Technology (IT) deployed by the small and medium-sized sector.

- Small and medium-sized enterprises tend to use cloud computing applications through open software
- Oman has a lot of SMEs that are ready to deploy IT for the purpose of adopting cloud computing service in an effective and efficient manner
- Cloud computing helps in collaboration among the staff and helps increase productivity by providing them automatic access from any device
- Cloud computing needs in small and medium-sized enterprises should be studied further and more experiments conducted if required.
- The service should be initiated directly with SMEs being provided a private cloud. Here, cloud service provider will bear responsibility of updating business owners and performs upgrades at no cost to the user.
- Cloud computer can take on a bigger role in SMEs by completing transactions for them; Experience exchange among institutions and linking with government agencies will also help improve quality of work and speed it up.

### Conclusion

Though the SMEs are taking faster growth in Oman region but they need strong back up, full supportive environment with research based results from academics with regards to this. It is must for their survival. In this global Era, when world is becoming a global village, SMEs are also standing to compete with large corporations and in some countries up to 90 % of GDP contributed by the SMEs only and hence we need to ensure its growth by implementing cloud based services effectively in it. Large companies having more access towards the required skills and infrastructures and hence we need to give full support to SMEs also. The best possible way to do it the successful implementation of cloud based services with the integration of E-learning system via Academic-Corporate partnership. This study testing the qualification units and also the E-learning portal. We are determined that this study and project development surely going to help SMEs to adapt cloud based innovative environment for their own benefits in this throw cut competitive Era. Survey results of Cloud Computing and advantages for SMEs are presented in paper within the context of Omani SME sector. The results show that 70% of SMEs have adopted or used some of features of Cloud services but they indicated the need n for awareness, safety and training, qualified professional staff in this field.

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