Dissertation
Masters Of Business administration- Cloud computing Stream

Why Is the Middle East cloud cautious?
(Study on the Kuwaiti Market)

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Declaration

I Aws Al-haj declare that this thesis is a presentation of my original research work unless the words have been referenced with the original source. Wherever contributions of others are involved, every effort is made to indicate this clearly, with due reference to the literature, and acknowledgement of collaborative research and discussions.

The work was done under the guidance of Professor Brid Lane at Dublin Business School.

No part of this work has been previously submitted for assessment, in any form.

________________________________________
19\textsuperscript{th} of May 2016
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I also would like to thank everyone who accepted to participate in my research and took time out of their busy schedules to help me find the answers to my research question, it is only with their help and commitment this research is made possible.

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Abstract:

Cloud computing is the new big trend in the IT industry, providing companies with the latest cutting edge technology and infinite computing resources at the press of a button in a new efficient pay per use cost effective model, reducing the upfront costs requirements out of the way of businesses and entrepreneurs.

Research suggests that despite all the progress and growth cloud computing have made over the years, specially in the SMEs market, The region of Middle East is still among the lowest globally in terms of cloud adoption rates and technology maturity.

Kuwait is a country with high GDP, and the third largest computer market in the region, moreover, the country has average peak Internet speed of 36.4 Mbps, Kuwait is among the top 20 worldwide. The recent shake in the oil and gas prices have lead local SMEs to search for new ways to help them optimize the costs and expand there market reach to ensure business continuity.

The purposed of this dissertation is to identify the reasons behind having the Middle East region lagging behind the global market in terms of cloud adoption. This research is aimed for setting a foundation for further academic work, that could be extended to cover the region as a whole, and clear some ambiguity around the market, moreover, the research is aimed for companies and more specifically SMEs to help them overcome the fear of the cloud by clarifying the adoption obstacles and how they could be addressed from different perspectives and experiences, by finding the factors that influence the adoption and the reasons why the Middle East is still cautious about the usage of the cloud yet in 2016.

Key words: Cloud computing, emerging markets, adoption, SME, adoption, MENA, Middle East, Kuwait, ISP
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Chapter 1 – Introduction
1.1 The rise of cloud computing technology:

Cloud computing is the new big trend in the IT industry and business world, Gartner suggests that the global public cloud market is expected to grow (16%) and reach 204 Billion USD by the end of 2016 in all its Sectors (PAAS, SAAS, IAAS, BPaaS, cloud management and security service, and cloud advertising), going up from 175 Billion USD in 2015 (Gartner, 2016). In 2015 technology giant and cloud computing market leader Amazon revealed 6Bn USD of revenue generated only by the cloud service division (Forbes, 2015), Microsoft, who some would argue came late to the game, announced last quarter a revenue of 1.7 billion USD from the office 365 cloud division (Microsoft, 2016).

The synergy research group argues that Amazon is leading the global market with (31%) market share, followed by Microsoft (10%), IBM (7%), Google and SalesForce at (4%), with Microsoft holding the fastest annual growth rate of (124%) over the same period last year (Synergy Research Group, 2016). According to the IDC cloud computing spending grew (26.4%) in 2015, while the traditional IT spending remained flat over the same period (IDC Worldwide Cloud tracker 2015), By the end of 2016 IDC and Gartner argues that cloud spending will reach and all time high of 54.6 million (IDC, 2015).
The research held by IDC suggests that by the end of 2016 cloud computing will generate more than 13 million jobs globally across various business sectors and not only the IT field (IDC, 2012), a recent study held by Cisco argues that by 2019 about (90%) of all mobile data traffic will be generated from cloud based applications (video streaming, Audio Streaming, Online Games, Social Networking, Web browsing, and online storage) refer to figure 2 below for details (Cisco VNI Mobile, 2016).

![Figure 2 Cloud mobile usage](Cisco VNI mobile, 2016)

In 2015 Right scale published a global survey conducted on 930 IT professionals about their adoption of cloud infrastructure and cloud based technologies, the survey subjects ranged from executives to managers to practitioners and organizations of different sizes and industries with error margin of (3.2%) (Right Scale, 2015), the report argues that (93%) of respondents are using cloud-based services, (82%) are using hybrid cloud as part of their strategy, going up from (74%) in 2014 (Right Scale, 2015), (13%) of enterprises run more than 1000 virtual machines in public cloud, while 22%
runs on private, Amazon Web Services (AWS) adoption dominates with (57%) and Microsoft Azure comes in 2nd place with (12%) coming up from (6%) in 2014.

The Global cloud computing market is growing by the day, and expected to grow at a rate of (30%) CAGR over the period from 2015 to 2020 reaching 270 billion US Dollars (Market Research Media, 2015), in October 2015 Cisco released an update to the Global Cloud Index report suggesting that by 2019 the global data center traffic will triple in volume reaching 10.4 Zettabytes per year with 83% of the global traffic coming from cloud-based services, and 4 out of every 5 data center work load will be processed in the cloud (Cisco, 2015).
1.2 Geographical adoption by region

Despite the promising statistics and figures on the technology growth and cloud-based services adoption rates and profitability, the figures still vary from one part of the world to the other, with clear significant gaps across geographical regions. Technology giant Cisco argues that from a regional perspective, as cloud computing technology adoption levels are reaching maturity stages in the US, Western Europe and parts of Asia, the Global Cloud Index suggests that by 2019 the Middle East and Africa regions are expected to have the highest cloud traffic growth rates with (41% CAGR), followed by Central and Eastern Europe (38 percent CAGR) and North America (33 percent CAGR) (Cisco, 2014).

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Asia Pacific</td>
<td>588</td>
<td>810</td>
<td>1,092</td>
<td>1,440</td>
<td>1,848</td>
<td>2,335</td>
<td>32%</td>
</tr>
<tr>
<td>Central and Eastern Europe</td>
<td>90</td>
<td>125</td>
<td>171</td>
<td>239</td>
<td>326</td>
<td>447</td>
<td>38%</td>
</tr>
<tr>
<td>Latin America</td>
<td>103</td>
<td>141</td>
<td>187</td>
<td>244</td>
<td>312</td>
<td>399</td>
<td>31%</td>
</tr>
<tr>
<td>Middle East and Africa</td>
<td>50</td>
<td>73</td>
<td>105</td>
<td>149</td>
<td>208</td>
<td>280</td>
<td>41%</td>
</tr>
<tr>
<td>North America</td>
<td>888</td>
<td>1,273</td>
<td>1,749</td>
<td>2,321</td>
<td>2,960</td>
<td>3,648</td>
<td>33%</td>
</tr>
<tr>
<td>Western Europe</td>
<td>390</td>
<td>533</td>
<td>713</td>
<td>936</td>
<td>1,200</td>
<td>1,512</td>
<td>31%</td>
</tr>
</tbody>
</table>

Source: Cisco Global Cloud Index, 2014–2019

Table 1 Global cloud CAGR predictions (Cisco, 2014)

1.3 SMEs and the cloud

SMEs are known for being the backbone of the economy and it one of the main indicators of measuring the health and performance of any economy (European Commission, 2015), although there is no one clear definition of SMEs as different countries set different upper limit threshold for what accounts as SME, the OECD
defines SMEs as “non-subsidiary, independent business organizations which has less than 250 in the European context, however in the united states market the numbers go as high as 500 employees, and could be as low as 200 in other parts of the world” (OECD, 2005).

In the context of the European Union, SMEs are defined as companies with annual turnover up to 50 Million Euros or a balance sheet with less than 43 millions (European Commission, 2015), the European Commission argues that SMEs make (90%) of the overall businesses operating in the region and would count for 49.8% of the global economy (European Commission, 2015). It could be argued that the utilization of the new technology of cloud computing has provided SMEs with better chances of competing in the market by leveling the play field between the big and small companies by reducing the overhead costs and time to market (Bloomberg Business, 2009).

For a long time now SMEs where thriving to find new ways to help them reduce costs and streamline their internal business processes to cope with the demands of a very competitive and ever changing market, making the cloud a very appealing option for reducing the overhead costs and time to market and help shift the focus towards the core business operations (SMB Group, 2015).

**1.3.1 SMEs and the Middle East**

Last year Cisco predicted in the Global Cloud Index that the Middle East data center traffic will nearly triple in volume with cloud service representing 83% of that volume (Cisco, 2014), moreover, the Compound Annual Growth Rate (CAGR) of the Internet speed in the region is 29% giving the Middle East all the right conditions for the cloud usage, implementation, and utilization (Cisco VNI Mobile, 2016). On the other hand, the study argues statistically that only 16% of the Internet users in the Middle East and Africa region use the cloud services (Cisco, 2014). This is a very low percentage in comparison to other regions in the world like (Asia, Europe, Latin
America, North America), hence, making the Middle East region the lowest globally in the percentage of users, giving this research a bigger value to be extended for future academic work refer to Figure 6 for details.

<table>
<thead>
<tr>
<th>Region</th>
<th>Consumer Internet Users in Millions (% of Population)</th>
<th>Average Number of Devices per Consumer Internet User</th>
<th>Consumer Cloud Storage Users Millions (% of Internet Users)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asia Pacific</td>
<td>2,022 (46%)</td>
<td>4.1</td>
<td>1,176 (58%)</td>
</tr>
<tr>
<td>Central and Eastern Europe</td>
<td>321 (66%)</td>
<td>5.0</td>
<td>134 (42%)</td>
</tr>
<tr>
<td>Latin America</td>
<td>355 (54%)</td>
<td>4.4</td>
<td>141 (40%)</td>
</tr>
<tr>
<td><strong>Middle East and Africa</strong></td>
<td>401 (25%)</td>
<td>4.6</td>
<td>65 (16%)</td>
</tr>
<tr>
<td>North America</td>
<td>311 (83%)</td>
<td>10.1</td>
<td>257 (83%)</td>
</tr>
<tr>
<td>Western Europe</td>
<td>341 (80%)</td>
<td>7.8</td>
<td>272 (80%)</td>
</tr>
</tbody>
</table>

Source: Cisco Global Cloud Index, 2014–2019

**Table 2 Global Cloud users percentage (Cisco, 2014)**

A recent research carried out by Deloitte in 2014 argues that the IT expenditure of SMEs in the Middle East is between 5-10 % presenting a significant gap with the global ICT market spending (Deloitte, 2014). Furthermore, the study argues that cloud service adoption by SME’s in the region is very limited, despite the fact that most of SMEs are aware of the benefits and use of the technology. Only one percent of the SME’s surveyed in Qatar "part of GCC" have used cloud services in their business interactions, however, 42 % of the surveyed subjects were showing interest in the usage of cloud (Deloitte, 2014).
1.3.2 Kuwait context:

Kuwait is an extremely wealthy country with a high GDP per capita of 43,593.7 USD (World Bank Group, 2015), it teeters on the emerging market status despite the fact that it is an oil producing country with High income (Julian Marr, 2010), furthermore, Internet penetration is high and the county is technology oriented, as the average user has more than one device connected to the internet (Julian Marr, 2010).

Cloud usage and utilization is highly dependent on the quality of the Internet connection, with an average peak Internet speed of 36.4 Mbps, Kuwait is among the top 20 worldwide, the broadband connection was double the global average (Milian, 2014), hence, providing a suitable environment for the cloud. On the other hand Kuwait and other GCC countries are among nations, which doesn’t collect VAT (Value Added Tax) and only collects CIT (Corporate Income Taxes), having a high GDP, good wealth, reliable Internet connectivity, low electricity cost and tax rates as the tax on corporates is 15% flat rate (PWC Middle East, 2015), making it a rather appealing option for investment in comparison to other parts of the world (IMF, 2015).
1.4 Research question:

**Why is the Middle East cloud cautious? – Study on the Kuwaiti SME Market**

1.5 Question Rationale and research motivation:

The purpose of this research is to understand the reasons behind having SMEs in the Middle East and in this context Kuwait still lag behind the global market in terms of cloud computing technology adoption, by addressing the special characteristics of the SMEs in the region and how the adoption of a cloud-based model can help them optimize their internal processes and achieve a new levels of business agility and governance. Moreover the research is aimed for helping the SMEs to define and implement the best roadmap for adoption to help the companies overcome the fears of the cloud and focus on their core business competencies.

The main reason behind choosing the Middle East for this research is due to the fact that there is not much research done on the region, despite all the promising global growth indicators, choosing Kuwait as a reference market came as a result of the type of information that is needed for this research is very specific and require significant knowledge of mark details and characteristics. The author has already worked in the ICT field of the country for the past 7 years giving his research the edge needed for gathering the details from subject matter experts and market practitioners. On the other hand the reason behind choosing SMEs (small medium enterprises) in the Kuwaiti market is that SMEs are one of the main indicators of the health of the economy and they among the early adopters of new technologies due to their unique characteristics and business models (European Commission, 2015).

The recent shake in the global oil and gas prices exposed Kuwait’s economy to many risks, and jeopardized the country’s economic growth, financial health and national income
(WSJ, 2016), as oil production solely accounts for (60%) of the gross domestic product and (95%) of the export revenue (OPEC, 2016). Furthermore, most research on cloud computing targets the technical and financial aspects of using the cloud services, however recently, a significant amount of research targeted the adoption models, yet, very little was done on the Middle East and even less about the GCC area and Kuwait. Most of the data out there are company reports like the Cisco global index, Deloitte’s technology predictions.

This research aimed for setting a foundation for further academic work, it could be extended to cover the region of the Middle East as a whole, and to help clear some ambiguity around the market, moreover, the research is aimed for companies and more specifically SMEs to help them overcome the fear of the cloud by clarifying the adoption obstacles and how they could be addressed from different SMEs perspectives and experiences (West, 2014), by finding the factors that influence the adoption (Pauliesther, 2015), and the reasons why the Middle East is still cautious about the usage of the cloud yet in 2016.

The motivation for this research is to identify the reasons the middle east region lags behind the global market in terms of cloud adoption, given the fact that not much research was done around this area and most of the research out there refers to the middle east and Africa and one geographical area (MENA), despite the fact that there is a huge difference between the two areas from economic, social and cultural point of view (OECD, 2014).

As mentioned earlier, the area of interest is relatively new and the literature on the topic is limited, as there is not enough secondary data and supporting materials for both the region of country of choice, hence, providing this research a bigger value, as it could set a base for further research and scholarly work. The research will focus on the adoption barriers for small and medium enterprises SME in the region, however, given the nature of this dissertation, it will not be possible to cover the whole area of interest as the Middle East is a large geographical area with many different characteristics in each part, as a result of that the Author will limit the research to Kuwait market as part of the GCC geographical region.
Chapter 2 Literature Review
2.1 Literature Introduction

In this section the Author will discuss the relevant literature supporting the selected topic of research through using a reversed pyramid like approach building from the broad context towards the small details (Garrison, 2012), starting with the concept of cloud computing as a whole and its different characteristics, services and deployment models, then will be extended towards the definition of adoption to clear the ambiguity around the term. The next section will talk about the definition of emerging markets and highlighting Kuwait as a unique country in terms of emerging market definitions, the used literature in this section will be used as the foundation for the data collection process and findings analysis.

2.2 Cloud computing

In this section the Author will provide an introductory background on the history of cloud computing, along with the needed definitions about what cloud is, and what it is not (Alexander Alexandrov, 2013). Providing an explanation of the various models and offerings (Software as a service SAAS, Platform as a service PAAS, Infrastructure as a service IAAS) (NIST, 2011), refer to the figure 8 below for details of various cloud models as stated by NIST and IBM (West, 2014).

![Figure 6 Cloud computing models definition (NIST, 2011)]
The National Institute of Standards and Technology in 2011 published the 16th and final definition of cloud computing (NIST, 2011): "cloud computing is a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction." (NIST, 2011). NIST argues in their special Publication (800-14) that the characteristics of cloud consists of five elements:

1- On-demand self service
2- Broad network access
3- Resource pooling
4- Rapid elasticity and expansion
5- Measured and controlled service

2.2.1 The Cloud computing Stack:

The cloud computing service models are described as a stack, in reference to the fact that it is a broad range of services build and stacked on top of one another (Rackspace, 2013), it could be argued that the there is no one cloud service model that suits all business, the value varies depending on the organization type, the business needs and the level of control required (Microsoft, 2015).

- Infrastructure as a service (Iaas)
- Platform as a service (Paas):
- Software as a service (Saas)
2.2.2 Cloud deployment models

For a long time now, industry analysts and experts were debating the various cloud deployment models. Many businesses are having hard time deciding between the different models (Public, Private, Hybrid, Community), IBM argues that the decision making process is always influenced by the surroundings of the business itself like (compliance, customization, utilization and privacy requirements) (IBM, 2015).

While each model has its advantages (refer to Figure 8), the IDC recently made an industry projection that over the next five years public and private clouds will grow at the exact same compound annual growth rate, the IDC argues that the question is not a matter of choosing one over another, as the answer will always be both depending on the business requirements. (IDC, 2015).
2.3 small and medium businesses (SMEs)

In this section author will discuss the concept of SME and what they mean by definition, characteristics and why are they relevant to this research (Alijani, 2014).

The term SME is a globally well-known abbreviation used by the European union, World Bank, The United Nation and others (European Commission, 2015), the European Commission defines SMEs as companies having less than 250 employees and annual turnover up to 50 Million Euros or a balance sheet with less than 43 millions (European Commission, 2015).
SMEs are the backbone of the economy and an extremely important indicator for health of a country’s financial state and positioning, from a European context SMEs play a significant role across various industry sectors (chart 1), the European SMEs market represents 90 percent of all the business (European Commission, 2015), however, in the context of emerging markets in the middle east such data is not available to be used, however, by applying the same concepts this data can be produced to set the foundation for further research for the region (Eurostat, 2012).

![Figure 9 SMEs roles across industries (Eurostat, 2012)](image)

2.4 Emerging markets

The term emerging market was first introduced to the global world of economics at the international financial corporation back in 1981 when discussing the creation of a mutual fund to invest in developing countries (Forbes, 2010). Countries like China, Brazil, Russia
and India (BRIC) come in the top of the list of emerging markets, due to their fast economic growth and potential, these markets are classified into groups that reflect the market size and growth numbers (World bank, 2010).

Emerging markets are the home for more than four billion people, presenting about two-third of the global population, and provide more than 40% of the world’s gross domestic products, and one-third of the world total exports (Zhang, 2014).

The world’s views and definitions of emerging markets have changed over the years, however, the characteristics remained the same, they grow fast and have high potential for further growth (Sako, 2015), the main reason of the fast growth comes from the fact that emerging markets provide a significantly lower cost business operations and services.

Everyone in technology world knows Foxconn in China, the company where Apple products and many others are born (Foxconn, 2015), such companies provide revolutionary products in lower costs generating a huge stream of jobs and wealth closing the gap exponentially with developed economies (Sako, 2015), a research back on 2010 on the US fortune 500 companies argues that they had 98 research and development facilities in China and another 63 in India, to help them reduce the overhead costs and optimize their processes (Philip Cooke, 2013).

It could be argued that the world’s view of emerging markets have changed a lot since the 80’s and what was believed to be a liberal market economy has changed to become the upper hand in the product and services industries as a result of the” lower cost frugal innovative practices and leaner governmental policies” (Sako, 2015).

2.4.1 SMEs in emerging markets

From historical point of view, most the business conducted in the world was done by large multinational enterprises (MNEs) that are based in the developed and
advanced economies (Zhang, 2014). However, in the recent years a huge number of companies based in emerging markets became a big part of the international business world (Zhang, 2014), in essence SMEs have a simple organizational structure and that provides a fixable business environment.

By nature the growth in emerging markets is more constrained than it is in the developed countries, as mentioned earlier SME’s create 90% of the EU business making it a key player and contributor to sustainable economic growth, employment rates, productivity, and prosperity (GPFI, 2016). The same concept also applies to emerging markets a 2011 report by the Global Partnership for Financial Inclusion argues that SME’s holds 45% of the overall employment rate, generating the majority of new jobs and producing 33 percent of the GDP (GPFI, 2011). Moreover the report argues that these numbers are even higher when taking into account the estimated numbers of SMEs operating in the informal sectors (GPFI, 2011).

In the context of this research the area of focus will be SMEs in the emerging market of Kuwait, the literature is fairly limited about the country as most of the data out there refer to the middle east and Africa as one area MENA region, some background data on Kuwait will be used from the World bank, like the GDP, classification of the country and the annual growth rates (World bank, 2015), as well as the industry leaders produced reports like Deloitte’s market predictions and the Cisco Global Index as mentioned earlier.

2.5 Adoption model

This section is about the literature on the adoption of products and service and their influencing factors, adoption is defined in business as the acceptance and continues usage of a product or a service by making it your own (Crane, 2010). The business dictionary defines adoption as the five-stage process (awareness, interest, evaluation, trial, decision) that companies go through to determine the value of a
product or a service for their business then deciding to become a loyal customer of rejecting it (Business dictionary, 2015).

2.5.1 Technology adoption lifecycle

Technology adoption is defined as the “the stage where a decision is made about adopting particular hardware/software technology” (Thong, 1999), the business world is an ever changing environment. For a long time companies of all sizes and types across the globe were thriving to find ways to reach business agility and optimize their internal resources and business processes, this has created a huge pressure on companies to come up with innovative ways to sustain and compete against rivalry (Thong, 1999). People perceive and define technology adoption in various ways and methods, for the context of this research the author will be referring the five-stage adoption process when referring to technology adoption (awareness, interest, evaluation, trial, decision) (Straub, 2009). The technology adoption lifecycle (TALC) describes how the market reacts and changes to a new product or service offering, back in 1991 Geoffrey Moore introduced the world to “chasm” (refer to the chart below for details) to help assist entrepreneurs in reach their business goals (Moore, 2014)

Figure 10 Technology adoption lifecycle (Moore, 2014)
In his book “Crossing the Chasm” Moore argues that new technologies go through a number of phases before it reaches maturity level (Chasm Institute, 2015):

1- Early Market: the initial phase when technology visionaries and innovators believe in a new updated product/service, and therefore immediately implement the service and adopt it.

2- The Chasm: is the period of “pause” in the growth of a market when usual user still lacks trust of the early visionaries experience and results

3- Pragmatists: this phase consists of two parts:
   - Part1 where the adoption is moving in slow steps in niche market by businesses that are open for new ways of doing things, this is usually referred to as the “bowling ally era”.
   - Part2 where the rest of market starts catching up outside the niche circle and lead to technology experiencing a phase of rapid growth, this is usually known as the “Tornado era”.

4- The mainstream and conservatives: this is what is called the period of markets maturity, during this stage the market starts to experience a decline in growth rates, it is at this period where the service providers start encountering price wars due to the competition, during this time mainstream markets start adopting to avoid competitive disadvantage

5- Skeptics: the near end of a phase, at this point the “Skeptics” have their turn to embrace the product, however, this is the time where new technology starts coming up and leading to the process being repeated all over again.

2.5.2 SMEs and technology adoption

It could be argued that SMEs are among the early adaptors of technologies (Nguyen, 2009), factors like (resources poverty, high competition, financial constraints, lack of professional experience and manpower), have lead SMEs to keep exploring for new methods to achieve business maturity and business processes optimization, hence
having SMEs outsource more of their business units in comparison to large organizations. This has helped SMEs create better focus on the core business competences and explore new opportunities (van deVrande, 2009).

The overall adoption process is surrounded by a set of factors that help influence the decision making process, in the next section the author will be discussion these factors (Irwan Dahnil, 2014),

Internal Influencing factors

- **End users/ Employees**: The literature argues that of the biggest influencing factors of technology adoption is the end user value, it could be argued that a training system inside the SME companies will allow for a knowledge transfer process and leads to business optimization through utilizing new advanced tools and allow for a change in the workers attitude towards technological change providing higher competitive advantage (Khosrow-Pour, 2013). The lack of technical expertise along with being overloaded with the daily routine and workloads might be an obstacle for implementing a new technology internally however, the by applying the right methods and creating awareness among staff (Irwan Dahnil, 2014).

- **Organizational**: The organizational factors are always on the main influencers in any big decision making process to help an organization achieve competitive advantage. Internal strategies are always among the drivers for change, followed by the company culture, maturity level, the size of business and reaction to change (Oluwasola, 2014).

- **Top Management**: Top management are as important as any in this context, where all the decision making processes happen from daily functions and routines to future investments and business streams (Nguyen, 2009), it’s a leadership role to encourage the innovation in a business organization and embrace the change (Irwan Dahnil, 2014).
- **Resources:** SMEs generally have a shortage of manpower and internal financial resources, hence the successful implementation of any product or service would require a proper capacity planning, and ROI calculations along with securing the financial stream of investment, this may also require a special talent acquisition or intensive training process (Nguyen, 2009).

- **Technological maturity:** Change continuous in any business environment and SMEs specifically can never ensure sustainability without technological innovation and maturity to ensure optimized business processes, there is no one system that fits all there is a lot of different products in the market for various needs (Grant, 2009).

**External influencing factors**

- **Increasing competition:** By nature SME market is highly competitive and ever changing business environment, adding so much pressure and burden on companies to come up with an innovative solution to ensure creating a sustainable business environment, and forcing SMEs on more technology adoption practices (Khosrow-Pour, 2013). The adoption of new technologies can lead creating power shift in the market of competition by coming up with new ways to enhance the business processes and outperform the industry competition. It could be argued that SME’s have higher innovation rates due to fact that they perceive new technologies as drivers for strategic change (Grant, 2009)

- **Nature of the industry:** Due to the fact that SMEs compete in a highly innovative market with special characteristics, and the lack of internal expertise. SMEs usually tend to outsource most of their operations and use external consultants to help streamline their processes and technology implementations, which reduce the overhead costs (Grant, 2009). On the other hand, most technology service providers focus on large enterprises trying to create a general solution that caters to the need of all companies and not understanding the uniqueness of the SMEs nature (Nguyen, 2009), this adds more pressure on
SME’s to hire external talents who could tailor a solution for the company strategy and vision (Grant, 2009)

- **Governmental factors:** SMEs reliance on external sources extends to governmental factors too. Governmental laws play a role on the development of technology adoption in both direct and indirect ways, data exchange laws, tax policies, international trade laws are all influencers of companies to adapt new technologies to ensure the time to market and maintaining highest standard of product or service (Grant, 2009).

However, the early adoption is not an easy method to implement and always comes with obstacles and risk associated with it. It is essential for companies to understand the pros and cons of every need that influenced the adoption decision and the risk that comes with it to the core business competencies (Liang Kuo, 2014).

### 2.5.3 Cloud computing and SMEs roundup

As discussed in the previous section SMEs unique characteristics and business model has put lots of pressure on the companies to come up with an innovative method for creating a competitive advantage and sustainability (Khosrow-Pour, 2013), hence having SMEs rush to find new technologies implementation and exploration to cope with competitive market needs. This section focuses on the literature about cloud technology adoption by SME’s, definitions, drivers for usage by SMEs, and the influencing factors for adoption of cloud based models (Odeh, 2015).

Adoption of cloud computing can be summarized as “helping SMEs to stay business-focused while IT organizations provision IT services on-demand without taking money away in the form of huge upfront investments for building IT capabilities, but also become IT service brokers that serve SMEs adequately” (The Open Group, 2013). The recent global slowdown in the economic growth has directly impacted emerging markets performance (GPFI, 2016), creating a burden on SMEs to find new methods of growth
and business optimization to create more efficient business units with lower costs (GPFI, 2016).

Market experts for years now argue the value of the cloud for SMEs and how it can be a game changer if implemented correctly, the goal is to simplify the processes and only pay for what you use when you need it (The Open Group, 2013). As mentioned in the technology adoption section previously, cloud computing has various inflecting factors and barriers that could be an opportunity or an obstacle for the organization, these factors can be internal like (Management, budgets, resources and organizational factors) or external like (competitors pressure, governments, supply and demand) (KPMG, 2012), these factors has to be considered carefully by companies deciding to move into the cloud or invest in infrastructure internally (Neumann, 2015). Technology advisory firm giant Gartner proposed cloud adoption framework back in 2013 arguing the best practice to be applied when deciding to start on the cloud-based model implementation to ease in the transition and reduce the risks (Gartner, 2013).

Figure 11 Cloud decision framework (Gartner, 2013)
SMEs are usually interested in outsourcing their internal process to help create better focus on the core business competencies and reduce upfront costs, creating a more flexible business model and helping them achieve business agility (Global, PWC, 2014). Cloud computing can help businesses achieve those levels through on-demand computing resources and pay per use method without being concerned with the details of how the technology works and what is being implemented in the background. Market experts suggest that using cloud technologies introduces out of the box capabilities to help companies cut costs, enhances development and deployment time, and reduces resources overhead, helping companies achieve flexibility and economies of scale and resources management (IBM journal, 2015).

However, in the context of this dissertation the Author will argue the reasons behind the Middle East being cloud cautious and lagging behind the global market (Marković, 2014), by analyzing the characteristics of adoption by the SMEs in Middle East through using Kuwait as a reference market.

2.6 Geographical Cloud adoption

In this section the author will highlight the development of cloud computing technology adoption and growth rates.

2.6.1 Global context

Today we generate more data than any other point of time the human history. Everyday we create 2.5 quintillion bytes of data from various sources, 90% of the data we have in the world today is generated in the past two years (IBM, 2015), creating a global need of finding more innovative ways to process, analyze and maintain this huge amount of information. As mentioned in the introductory section of this paper the global Cloud computing adoption levels are expected to grow steadily over the next five years (Cisco, 2015), and the biggest growth expectations are in the Middle East and Africa regions with CAGR of 41% as the expectation for the data centers traffic to triple in volume in the MENA region (Cisco, 2014). The research argues various drivers have
led to that prediction and shaping the cloud based service industry over the next five years:

- By 2019 the number of internet connected devices globally will reach 24.4 billion, with the average user having 3 internet connected devices
- The internet speed and reliability is maturing across many parts of the world
- By 2019 the global data center workload is expected to double in volume and the cloud usage workload will triple.
- By 2019 55% of the global internet users will be using cloud based services
- Information generated Big data analytics and IOT are expected to grow 49X higher by 2019
- By 2019 cloud based application will make 90% of the global mobile data traffic

![Global Data Center and Cloud Drivers](image)

Figure 12 data center and cloud drivers (Cisco, 2014)

The global cloud workload is expected to surpass the traditional IT over the same period with 27% CAGR with North America having the largest portion and the Middle East and Africa having the highest CAGR, hence, leading the cloud based services quadruple in volume and make 86% of the global data center workload by 2019 (Cisco, 2014).
The IDC argues that the global cloud market will reach 53.1 Billion USD over the next five years, accounting for 46% of the total spending on enterprise IT infrastructure. Cloud service providers are expected to spend 33.6 Billion as a public cloud infrastructure expenditure and 19.4 Billion for private, (IDC, 2015), moreover, the IDC argues a rising interest among cloud enterprise customers for cloud deployment across multiple domains to help business achieve agility, avoid single point of failure and enhanced cloud economics (IDC, 2015).

A recent global survey in 2015 by Oracle about cloud adoption across various industries argues that 92% of all surveyed subjects says that the cloud adoption helps their business innovate faster and 76% suggested that by using the cloud it helps them retain customers buy focusing on the core business competences (Oracle, 2015).
2.6.2 Middle East cloud Market:

As mentioned in various parts of this dissertation the industry expectation for the market of the Middle East are huge, despite all the political troubles and recent economic crisis and shakes (IFC Advisory, 2013). Unfortunately, most of the data out there refers to the Middle East and Africa as one region in terms of business encounters and market research, hence influencing the area of research for further detailed exploration.

Statically speaking, the numbers appear promising for the region as a whole specially since the Internet reliability increased over the past few years, the number of Internet connected devices is growing steadily and expected to keep growing at a rate of 52% over the next five years (Cisco VNI Mobile, 2016), mobile data traffic grew at a rate of 117% in 2015 and by the year 2020 the traffic is expected to grow at the rate of 71% GAGR with the region having the biggest rate of global growth percentage (Cisco VNI Mobile, 2016).

![Figure 14 Global mobile data traffic growth (Cisco VNI, 2016)](image)
Cisco predicts in the Global Cloud Index that the Middle East data center traffic will nearly triple in volume with cloud service representing 83% of that volume (Cisco, 2014). Moreover, the Compound Annual Growth Rate (CAGR) of the Internet speed in the region is 29% giving the Middle East all the right conditions for the cloud usage, implementation, and utilization (Cisco VNI Mobile, 2016). On the other hand the study argues statistically that only 16% of the Internet users in the Middle East and Africa region use the cloud services (Cisco, 2014).

In January 2016 Oracle announced doubling the work force investment in the Middle East due to the increasing demand on cloud services division, around 250 additional resources will be hired in the cloud service division sales department in the UAE (Forbes, 2016), moreover, the company announced that they are planning to build a new cloud data center in the UAE to meet the potential market growth and maintain the data governance requirements by providing a local support for the reluctant customers who prefer having their data stored close to their geographical proximity (Forbes, 2016).

A global survey by oracle suggests that 89% of the surveyed subjects in the Middle East think that the private cloud adoption will help them through business innovation, 70% thinks it also helps increase the customer base and 53% says it helps them maintain their customers by creating a customer centric business environment (Oracle, 2015). On the other hand, the percentage of adoption and usage of cloud based services among users and enterprises is still small when compared with other parts of the world like (Asia, Europe, Latin America, North America), hence, making the MENA region the lowest globally in the percentage of users, raising so many questions about the readiness of the region and the reasons behind the slow adoption rates.
2.6.3 Kuwait:

The state of Kuwait is a sovereign Arab nation in Western Asia, the country has boarders with Saudi Arabia from the south and the republic of Iraq from the north side (IORMA, 2013), Kuwait is geographically small country, but with a huge wealth and open economy, as they hold a reserve of crude oil of 104 billion barrels (IORMA, 2013).

Since 1930 when the oil was first discovered, the country has proven to have around 20% of the global oil resources and has been the world’s second largest oil exporter since 1946 (KUNA, 2016). The country holds the position of GCC’s third largest computer market, creating a rather appealing opportunity for global IT vendors. The expected technology market expenditure in 2016 is 501 Million USD for Hardware and 205 Million for software sector (BMI Research, 2016). According to the 2014 Global Retail Development Index, Kuwait is among the top emerging markets for global retail expansion along with 3 other GCC countries (ATKearney, 2014).

The population of the region is relatively young as the median age of the region is less than (25) in comparison to other parts of the world, Europe (38) USA (35) and (44) in Japan, this young population will be more likely open to embrace the Internet and adopt new technologies and digital services (IORMA, 2013).

Furthermore, the young generation in the country is highly technology driven as they make 63% of the overall Internet users (Deloitte, 2014). The Kuwaiti market is also expected to gain a huge increase in the services sector over the next five years with CAGR of 3.9% to 407 million USD with the most of this increase coming from the cloud computing adoption and IT outsourcing (BMI Research, 2016).
However, a study published by suggests that the IT expenditure of SME in the Middle East is between 5-10 percent making a significant gap with the global market ICT spending in terms of technology expenditure (Deloitte, 2014).

2.7 Contextualizing the proposed research

In the context of this research, Kuwait as country and the SMEs adoption level data is very limited along with the IT expenditure rates. As mentioned earlier, the region has huge gap when comes to the percentage of IT spending for the local SMEs when compared to other parts of the world. Deloitte’s research argues that the average global SME spends around 20,000 USD investment on IT resources, however when it comes to the Middle East these numbers are not even been anywhere near that as the average SME spends between 5-10% of the annual budget on IT resources. On the other hand, the study argues that the Internet penetration between SME’s in the region is only 15%, a very small percentage in comparison to other parts of the world like the USA 40% and France 60% (Deloitte, 2014).
As mentioned in the first section of this document Kuwait as a country has a high GDP of a little over 43,000 (World Bank Group, 2015), however, the country is considered as an emerging market status despite its high income (Julian Marr, 2010), making it a rather interesting option for the technology adoption studies, furthermore, Internet penetration is high in comparison to other parts of the region and the country is technology oriented as the average user has more than one device connected to the internet (Julian Marr, 2010). With an average peak Internet speed of 36.4 Mbps, Kuwait is among the top 20 worldwide. The nation's broadband connection was double the global average (Milian, 2014), Hence, providing a suitable environment for the cloud hosting.

Kuwait is one of the most technologically advanced markets in the Gulf region, and the growth of the Internet subscribers is growing, however, the prices are still comparably high due to the lack of competition (Deloitte, 2014). Recently the government chose to adopt an initiative to enhance the broadband access with a gigabit passive optical network (GPON) to replace the existing cooper access wires and enhance the communications infrastructure with the assistance of tech giant Alcatel (Deloitte, 2014).

Recently, a number of the local companies started taking some initiatives towards embracing the cloud-based services and enhancing the local Internet offering, with lots of acquisitions and mergers among local ISP as in the recent case of, Ooredoo Kuwait (telecom operator) announced full acquisition over Kuwait largest ISP FASTteleco (Ooredoo Kuwait, 2016), also last year Batelco (regional ISP) announced buying 90 per cent share of quality net (local ISP) to enhance the service (Batelcogroup, 2014), to enhance the services and market offerings. In 2015 Kuwait largest telecom operator Zain announced successful implementation of office 365 in their business and launched the service for free for the corporate customers (Zain Kw, 2015).

There are still many obstacles that encounter the cloud adoption process in the Middle East and in this context the Kuwaiti market. Despite all the positive signs,
suitable environment and industry predictions, the growth and maturity of the market still lags behind the global numbers. SMEs are always the early adopters of high-tech, yet, the progress is slower than it should be.

Factors like data security, privacy, vendor lock-in, the ever-standing issue of the legacy systems migration and control over convenience (Avram, 2014) are slowing the adoption rates.

The cloud migration decision process has to be addressed and by SMEs from all aspects (Pauliesther, 2015), starting with the strategic direction and building towards the cultural awareness, organizational business needs, cost, values, and tradeoffs (KPMG global, 2011).

The purpose of this research is to uncover the reasons behind having the Middle East still cloud cautious in 2016 and in this context Kuwait.
Chapter 3 Methodology
3.1 Methodology introduction

This section provides the methodological approach followed by the Author provide answers for the proposed research question and objective. As mentioned in the previous section cloud computing is no longer just a trend or hype in the business world. The methodology followed for this research will help create a better understanding in uncovering the reasons behind having the Middle East lagging behind the adoption of this technology.

By investigating the attributes related to the adoption obstacles and cloud fear enablers, providing answers for the proposed research question and ultimately draw a conclusion based on the findings supported by recommendations for adoption of cloud computing for SME in the Middle east, along with suggesting recommendations for future research and how it could be extended, as it will not be possible to cover the geographical region as a whole due to the nature of this dissertation and the limited time factor.

The objectives of a research are the evidence of the researcher’s sense of reasoning and direction,” developing the research objectives from the research question to give clear, specific statements of what the researcher wishes to accomplish, will establish the research focus” (Saunders, 2012). The Aim of any research is to provide a contribution to the current knowledge base in the academic world, various sets of attributes influence the decision making process that a researcher chooses for a particular study. Factors like the researcher’s belief, the nature of the problem at hand for the research, the availability of literature on the topic, status of scientific research and theories (Jonker, 2009). The methodology is a theoretical perspective in the social world and “ a way of thinking about social reality” (Jonker, 2009). It defines the overall approaches & perspectives intended in the research process as a whole and concerned with the following issues (Collins, 2009):

- Why you collect Certain Data
- What data you collected
- Where have you collected it from (data source)
- How did you collect the data
- How did you analyze the data
3.2 Research Design

The research design simply refers to the attributes of the data collection, measurement and analyses that will assist the researcher to answer their research questions and meet the research objectives (University of Wisconsin, 2010). Research design is the “general plan that the author will use for answering the chosen research question” (Saunders, 2012). It clearly highlights the objectives of the research topic and specifies the resources needed for the data collection process along with the proposed approaches for collection methods. Furthermore, highlights the ethical factors of the research that might arise during the study and how to maintain a certain level of trust with the data subjects. Ultimately, it is the proof that the researcher have went through all aspects of the academic work related to the proposed topic (Saunders, 2012).

3.2.1 Research Philosophy- Interpretivism

In his book Saunders argues that the research philosophy you adopt is mainly about the assumptions of the way the researcher views the world. Which will drive the strategy and the methods of choice as part of that strategy (Saunders, 2012). In this context Saunders argues that it is extremely important that a researcher goes through each of the research philosophies to identify the one of which would provide a better choice for the research (Saunders, 2012). It is important to know that the research has to be “not only philosophically informed, but also how well the researcher is able to reflect and defend his choices in relation to the alternatives that they could have used justifying the philosophy of choice” (Saunders, 2012).
As shown in the figure above, the research philosophy which the author will be using **Interpretivism**. The Author argues that this would be the most suitable approach to the research since the social world of business is extremely complex and the suggested theories and frameworks are not always the right answer depending on the nature of business and the all the other internal and external factors that will be identified through this study.

The business world is not a physical or applied science, or what Saunders refers to as “definite laws” (Saunders, 2012). It could be argued that the main value provided by Interpretivism is that helps understand the differences of research subjects as key players “Social Actors” thus integration the human interest in the research (Saunders, 2012). This helps the researcher address the different attributes of the human role as social actor as it emphasizes the difference in conduction a research between humans and machines, as a
key player in the adoption and decision making process in terms of reality being socially constructed by the human role (Saunders, 2012).

The Cloud computing technology like any other modern technology is a rather changing environment with a new piece introduced to the puzzle everyday. As mentioned in chapter one of this dissertation, the Middle East is a unique area with special characteristics over other parts of the world, the only way to uncover these factors is by having the interpretation of a professional practitioners in the targeted market, given the fact that the literature and secondary data availability for neither the Middle East as region, nor Kuwait as an emerging market is limited.

Most of the research data refer to the Middle East and Africa as the same region, however, this is correct to some extent, but it is not exactly accurate. The region has the GCC area, which is an extremely wealthy region with a high GDP despite the fact that it stands of the verge of emerging market status, Saudi Arabia, Kuwait, Iraq, UAE and Qatar are among the global top 20 oil producing countries and world’s wealthiest nations (OPEC, 2014), giving these countries a bigger potential for the market growth and expansion.

Moreover, the Internet penetration and reliability in Kuwait is high and the average user has multiple devices connected to the Internet, yet the numbers of cloud users is still not living up to the expectations. This is true when it comes to the SMEs market (PWC Middle East, 2015), as only (1%) of SMEs surveyed in the GCC use cloud services (Deloitte, 2014). All of these factors make the Interpretivism the most suited approach for the study as it helps understand the human participation factor of what kind of problem they are presented with and how they are dealing with it in a socially constructed nature of reality.

Furthermore, using this philosophy is usually associated with high level of validity due to the fact that the data in such studies tend to be honest and trusted (Saunders, 2012), however, using this philosophy has some challenges which will be addressed in the research and methodology limitations sections.
3.2.2 Research Approach- Inductive

There are two different approaches that could be used for a research shown in the research onion:

**Deductive**: testing of theory normally used for natural sciences in involves testing of a developed hypothesis “where laws present the basis of explanation” (Saunders, 2012). For the purposes of this research it is not possible to develop a hypothesis based on theory due to the lack of literature that was mentioned above.

**Inductive**: developing or forming a theory, by conducting analysis on a certain problem (Saunders, 2012), this approach will help understand what is causing the problem through a set interviews with research subjects as an example to provide a grasp on the problem observed, the result would be a formulated theory, “Inductive approach will follow data rather than vice versa as with deduction” (Saunders, 2012). By making broad generalizations from specific observation (Thomas, 2006), the approach also known as “bottom up approach” and normally follows into four different stages (observation of problem, identify patterns of the problem, formulate an initial theory, come up with conclusion and theories) (Robson, 2002).

In the context of this research the author has decided to choose the inductive approach due to the fact that deduction methodology is strict and does not allow for alternative explanations as it is tied around the choice of theory and proposed hypothesis.

On the other hand, a study using the inductive approach is more applicable when working with the context of the place of an event or a problem, and in this case the adoption of SMEs for cloud computing in Kuwait “ as the data collection needed is very specific to a certain type of people in a specific market (industry professionals) (Saunders, 2012).

Starting with the broad observation of the problem as Cisco global index states that only 16% of the Internet consumers in the Middle East use cloud data (Cisco Global Index,
2014), and the fact that Deloitte survey in 2014 on the GCC region found that the adoption level of cloud services is only 1% among SME’s (Deloitte, 2014), towards finding out the specific reasons that makes the businesses adoption of the service slower in the market specially when compared to global market levels.

The main reason of using the inductive approach is that the researched place of interest lacks the secondary data and the type of research is new to that particular place as using a deductive approach would limit the findings in one direction as the main aim of this research is to uncover reasons that were not seen before that are impacting the process of adoption.

3.2.3 Research Strategy- Survey

In his book “Research Methods for Business Students” Mark Saunders highlights seven different types of research strategies (experiments, surveys, case study, action research, ground theory, ethnography, archival research) (Saunders, 2012). Due to the nature of this proposal, it will not be possible to cover all of them and the differences, however, for the purposes of this research the author will be using surveys as a research strategy through semi-structured interviews with the research subjects. This method will allow the researcher to gather the needed information and keeping the options opened for further exploration of points not anticipated before, moreover, the type of information needed for this research requires a certain type of knowledge that is only with industry experts and companies decision makers inside the SME’s in Kuwait (CIO’s, CTO’s, infrastructure managers, and implementation managers).

The design of the interview questions and the sequence is extremely crucial for the quality of data gathering (Blaikie, 2009), the proper forming and sequence of information will help organize the thoughts of the research subjects and lead the interviews to be more productive, the learning curve in this process will be gradual as the more interviews conducted the more it helps the researcher steering the sessions.
Research choice- Mono Method qualitative research

The choices of any research are usually driven by the nature of the research and the research question itself. Moreover, it is impacted by the objectives that are intended out of the conducted study, time and resources available for the research (Monsen, 2003). The researcher will be using a Mono Method qualitative analysis, as it would provide a more valuable output in this context, since it will not be required to use any statistical methods or numerical analysis. It could be argued that the usage of mixed methods would provide a wider research throw analyzing both SME’s and consumer behaviors, however, due to the nature of the research, time and cost constraints it will not be possible, a single qualitative data collection method with detailed analysis, this method proposed to be used in complex situations where the needed information can’t be answered with simple a yes or no questions (Robson, 2002), which makes it most suitable way in the context of cloud adoption as the answers are among specific people through semi structured interviews.

The usage of qualitative analysis provides a great value in terms of being independent of the sample size, as it provides reliable results from smaller research subjects, however, remains the fact that the research conducted using qualitative analysis can neither be replicated nor peer reviewed (Robson, 2002).

Since the Author had a previous long working experience working experience is the market of Kuwait it would provide a leverage in terms of access to data subjects and information for the needed research subjects and interviews, some email invitations already sent for the subjects and some have already agreed to participate.

Figure 17 Research Choices (Saunders, 2012)
Time Horizons – Cross Sectional:

The nature of this research is a cross sectional study on the adoption problems and obstacles for SME in the Middle East, more specifically Kuwait market. The author will be exploring particular problems in the technology sector for SMEs. This study is what Sounders refers to as “snap-shot of behavior of our time” (Saunders, 2012). Saunders argues that most of the academic studies are indeed Cross Sectional, a study that examines a specific situation or encounter at a certain period of time (Saunders, 2012), which is certainly the case in dissertation due to the time constraint factor involved as the window of time allowed here is around 10 weeks including forming of interview questions, conducting the interviews, categorizing data, and analyzing finding to actual submittal, keeping in mind that this process is iterative and lots of work will have to be revisited again to optimize the results.

3.2.4 Sampling - Selecting Respondents

Researchers use several types of methods for sampling in their studies, for this research the Author decided on using Non-probability ‘Purposive’ sampling, this would be more applicable for this type of research topic as the sample size used is relatively small “four respondents” research subjects. Saunders argues that this method “provide(s) you with an information-rich case study in which you explore your research question” (Saunders, 2012).

The sampling technique of choice is Homogenous over the Probability sampling as the probability is more suitable for quantitative analysis, where researcher will be focusing on a group of SME industry professionals in the Kuwaiti market like (CTO’s, CIO’s, Technical managers, and infrastructure managers), to ensure that the gathered data are up to date and market specific.

The selection criteria is based on the number of years of experience in the local SME market, and proven history of technology implementations. Furthermore, the research is aimed for in depth studying a particular group for analysis to investigate a certain
phenomenon, making this method the most suitable for the approach. The main reason of selection this approach is that the level of knowledge required for this research is very specific to the local market and its surroundings, making it only available with experienced practitioners, to find the most suitable data subject the author had to go through a very careful selection process, starting with identifying potential candidates and reviewing their professional profiles, the initial list was 19 candidates, then filtering the candidates based on the needed criteria and level of experience and knowledge of the topic, the final short list had 6 respondents, but only four of them agreed to participate in the research for various reasons. The selected four respondents had solid market experience and three of them were decision makers in local technology service providers SMEs, who could provide more insights about their local SME customers and themselves:

<table>
<thead>
<tr>
<th>Name</th>
<th>Company</th>
<th>Current position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Khalid Daher</td>
<td>KDD</td>
<td>General Manager- MIS and Technology</td>
</tr>
<tr>
<td>Dr. Rami Alsahhar</td>
<td>Ooredoo</td>
<td>Technical consultant</td>
</tr>
<tr>
<td>Sinisa Markinov</td>
<td>Prozone</td>
<td>General Manager</td>
</tr>
<tr>
<td>Dr. Bilal Natour</td>
<td>ATC</td>
<td>General Manager – Founder</td>
</tr>
</tbody>
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Table 3 Data Subjects Information

3.3 Data Collection Instruments

3.3.1 Primary data

The proposed primary data collection method is through semi-structured in-depth interviews with industry professionals in SME companies. The researcher will conduct a face-to-face (approximately one hour) interviews, depending on the progress and information. The main benefit of this approach is that the researcher gets to directly interact
with the research subjects to help removing barriers and provide a certain level of trust and confidentiality assurance “if needed” providing a deeper exploration of themes, this will help uncover the main obstacles and reasons of the cloud adoption delays and fears.

The concept of a semi-structured interview is to provide a sequence of themes to be covered over the interview as well as a list of suggested questions to help direct the argument. However, those questions will provide a certain level of flexibility in terms of sequence and content to help dig deeper in the argument for better discoveries, as the conversation might point to something that was never anticipated earlier (Saunders, 2012). At this point of time the actual contents of the questions and interviews are not completed, however the interviews shall start with a screening question about if the SME are using cloud services (yes/no) and why. On the other hand, there will be identification of the reason of using/ not using cloud computing services. As mentioned earlier the usage of the open questioning will allow for further exploration of the interviewee opinions into unanticipated areas for the adoption issues rationale. The interviews must be designed and prepared to avoid some of the shortcomings of using the semi-structured approach, as Saunders mentions that there will always be the risk of (data reliability, forms of bias, validity and generalizability) (Saunders, 2012).

The suggested amount of interviews is (4-6) depending on the access to the research subjects, as most of the targeted subjects are IT professionals and the access is not always guaranteed. Furthermore, some might not feel comfortable talking about the internal issues or exposing company data for any purpose worrying about conflict of interest or internal confidentiality, the author already contacted some subjects and received their initial acceptance to participate.

3.3.2 Secondary data

In addition to the primary data, as mentioned in the literature review section supporting material of secondary data will be gathered through the research from various sources, this including:
3.4 Data Analysis – qualitative exploratory

As stated above, the researcher chose to use the qualitative analysis approach due to the fact that the quantitative approach is not suitable for this type of research, the initial thought was to use a mixed method approach to provide end to end view on the subject, however the approach was ruled out due to the time constraints. After conducting the face-to-face interviews and recording the on an interview data log, the author data analysis choice will be through utilizing Robert K. Yin five-phased cycle for qualitative research cycle (Yin, 2015), refer to the figure below for details.

Figure 18 Data analysis process (YIN, 2015)
Phase 1 Compiling:

All the information gathered from the interviews will be recorded and logged into an interview log database as Yin suggests (Yin, 2015), after that data will be assigned into different categories to help identify recurring themes, labels and codes.

Phase 2 Disassembling:

All categories and interviews structured data will be broken into smaller manageable pieces, new categories/labels might be added at this stage depending on the outputs of the interviews data analysis hence the two way arrow in Yin figure above as this is an ongoing activity for creating themes/labels/codes (Yin, 2015).

Phase 3 Reassembling:

In this phase the researcher look for resemblance in the data using selective labeling/coding to help organize the data that were used earlier, this process is called “arraying” and might be repeated more than once, hence the two arrows on the figure (Yin, 2015).

Phase 4 Interpreting:

In this phase the researcher will use the new identified data for the creating the base for the data analysis, this will help identifying even more detailed trends and find the relationship between the identified categories and labeled material of the conducted interviews with the industry professionals to help formulate the theory (Yin, 2015).

Phase 5 Concluding:

The last phase is where the researcher formulates a research conclusion based on the formulated theory in the previous phase; in the context of this research will be the theory of the adoption problems by SMEs in the Kuwaiti market.
3.5 Research Ethics

The ethical concerns are part of any academic research that a researcher will encounter during his work, it is referred to as doing the appropriate behavior “code of ethics” by protecting the right of the research subjects or anyone affected by it (Saunders, 2012), in the business field research there are two different types of ethical views (deontological and teleological) for the purpose of this research the author decides on choose the deontological view which clearly states that “the ends served can never justify the use of a research that is unethical” (Saunders, 2012).

3.5.1 Code of ethics

Code of ethics points obtained from the social research association report (Association, Social Research, 2003) and UCD research ethics code (UCD, 2010):

- Using credible academic sources
- Confidentiality and privacy of survey subject must be respected "obligation to society"
- Documenting Results and Storing Primary Data
- Integrity in submitting research proposals and managing research projects
- Pursuing and maintaining objectivity
- Maintaining confidentiality of records
- The uses and purposes of the research will be known for subjects
- Openness to avoid conflict of interest
- Acknowledging the role of collaborators
3.6 Limitations of Methodology

For any research conducted there will always be a set of limitations that encounters the researcher during his period of work, for the context of this research the author anticipated some of the potential issues that might encounter during the research experience.

Given the fact that the decided approach of research is qualitative, it means that the research cannot be replicated nor peer reviewed (Robson, 2002), moreover the fact that the sample size covers only a small portion of the market (4) companies. The findings of the research might not be “equally applicable to all other organizations” (Saunders, 2012). One of the main issues of this type of research is the limited number of previously available academic work, the availability of literature on the topic is limited and most of the data as mentioned in the introductory section refers to the Middle East and Africa as one region of business MENA, which is not correct from economic, social and cultural point of view.

On the other hand, the research primary data relate to only one part of the puzzle (Kuwait SME market). This research needs to be extended to cover the GCC region and other parts of the Middle East countries, and then compare the findings for further analysis. This was a particular concern of the author, however, given the fact that not much research was done previously about the region, the time constraints of the dissertation work, and the lack of funds as doing this research across countries will require time and cost consuming work. However, the research is indented to set the base towards further exploration work towards building the complete picture. Other factors that might limit the research findings is the availability of research subjects and their willingness to cooperate for the purposes of the research as some might consider this confidential data, however the subjects confidentiality will be maintained as mentioned in the ethics section.

Other factors considered

- The clarity of the questions and content flow sequence
- Relevance of the question to help address the researched area
- Level of cooperation by the research subjects and confidentiality of information
The flexibility allowed in the questions to help maintain open ended discussions
Chapter 4 Data Analysis
4.1 Presentation of the Interviews and the subjects

This Chapter is about the primary data of the research and illustration of the applied research method findings in descriptive detailed way to answer the proposed research question in the first chapter of this dissertation.

The interview subject were carefully selected from local market professionals and practitioners across various SME organizations in Kuwait, the selection criteria was based on the level of participation in the decision making process inside the company and the years of experience in the local market, along with technology awareness levels.

The First interview was with Mr. Khaled Daher a general manager, MIS and technology in the Kuwait Danish company K.D.D, an SME family business company who has been in the Kuwaiti market for more than 20 years, the company is recently expanding its operations in new countries and are considering the cloud based model to help them manage the new operation, Mr. Daher has little over 20 years in local market and holds a masters level degree in computer science and mathematics from university of Bordeaux in France.

The second interview was with Mr. Rami Al Sahhar an enterprise solution architect and consultant at GBM a local SME and technology pioneer in the Kuwaiti market, Mr. Rami has 17 years of solid experience in the ICT market of Kuwait and has worked over the years with various number of SMEs in the region as solutions expert or employee, the subject has a PHD in computer engineering from George Washington University along with an MBA in telecommunications.

The third interview was with Mr. Sinisa Markinov, The subject has a long working experience in the IT field (Infrastructure, Networking and services sectors), and currently holding a General Manager and projects head in Prozone Middle East, an SME company and technology development pioneer that operates in the local market,
the company runs their operations in two countries, Kuwait and Novi Sad- Serbia, since they operate in both European and the Middle-Eastern market it gives them the edge of knowing the key differences in both business environments. Since 2002 Prozone is providing the local market in Kuwait with innovative IT solutions (assets management, content management, DMS, and mobile apps). Mr. Markinov has a degree in computer engineering and science from the university of Novi Sad and has more than 30 years of professional experience with 10 of them in the local market of Kuwait.

The fourth interview was with Dr. Bilal Natour the General manager of ATCC (Advanced Technologies Company) in Kuwait, a local SME in the IT implementation and solution architecture business, the company specializes in low voltage implementations security systems, access control, monitoring and tracking systems. Dr. Bilal is an entrepreneur and technology enthusiast with more than 20 years of experience across various sectors in the Middle East And Europe, as founder and investor of different companies between Kuwait and France. The subject has a PHD in digital signals processing from France and has been and long proven record in the field of technology.

4.2 Data Analysis findings

In his book “Doing Research” Garry Thomas argues that the primary data gathered is nothing but just raw data unless they are analyzed properly and intelligently, only by that time it will become supported by evidence (Thomas, 2011), data comes in two different formats, either in the form of numbers or words, having said that this research is qualitative previously, hence this research has more to do with words (Thomas, 2011). The data will be coded by identifying themes and categories for further analysis in the next chapter (Thomas, 2013).

As mentioned in the Methodology section, the collected data was compiled to
create an internal “database” setting the foundation for the analysis, however given the fact that method applied was semi-structured, the results needed to be fitted into categories and labels to help identify themes and common structures. Open coding was used to disassemble the data of the interviews. In his book Saldana argues "most often a word or short phrase that symbolically assigns a summative, salient, essence-capturing, and/or evocative attribute for a portion of language-based or visual data" (Saldana, 2009).

By using selective data coding, the third phase of the analysis was done manually to find the resemblance of the findings, by identifying the recurrence of the words and the frequency of use, this helps formulate the emerging themes. The next phase as per the Yin’s 5-phase cycle is interpreting the findings (Yin, 2015), as per Eisengardt “the key to a good cross-case comparison is counteracting information processing biases by looking at the data in many divergent ways ... for example selecting categories or dimensions and then to look for within-group similarities coupled with intergroup differences" (Eisenhardt, 1989), the formulated theory will be as a result of the themes identification of the interviews data.

The last and fifth phase will be concluding, finding a conclusion based on the identified observations and supported by the identified evidence. It is aimed for this research to identify the obstacles surrounding the cloud computing technology adoption in Kuwait, and it is hoped that this work will set a base for further future academic work that would help clear the ambiguity around the Middle East region and the GCC market. The end result should allow the reader to reach new levels of understanding of the problem proposed in new ways that are beyond the literature itself, " if theory talks only to theory, the collective research exercise runs the danger of becoming entirely self-referential and out-of-touch with reality, of coming to be considered irrelevant " (Bergh, 2009).

All four interviews data were documented and transcribed as per the proposed research methods in the previous chapter, to help identify themes and trends of the data
collected and highlight the similarities and differentiating factors between the respondents.

4.3 Themes

This section is about the themes and sub-themes identified throughout the primary data collection process using the approach mentioned in the previous section. The author identified three main themes out of the data collected during the intervenes:

1- Cloud Fear enablers
2- Infrastructure issues
3- Positive signs towards the cloud

Figure 19 Emerging themes breakdown
4.3.1 Fear Of the Cloud

Not surprisingly all the respondents where almost at the same stage when it came to the cloud adoption levels, the best way to describe their cloud adoption level at this point of time is what respondent R1 called it “taking baby steps towards the cloud”, three out of the four interview subjects where just starting with cloud-based service models, three of the four respondents were using cloud based email services (IBM, Microsoft, Google), the fourth respondent R4 was using third party hosting (email and website) and satisfied with the level and quality of service provided by the local hosting service with a local ISP.

During the data gathering process, the author identified two recurring sub-themes of the cloud fear (Genuine, imaginary).

4.3.1.1 Genuine Fear enablers

Security and data privacy:

When it comes to cloud computing security and privacy issues are neither a secret nor something that can be overlooked in the market, when asked about the reasons of the slow adoption rates, all respondents almost had the same concerns when it came to data security and privacy. Respondent R1 stated that, despite all the promising indicators in the cloud pilot phase and the successful implementation of a cloud based model “I couldn’t stress enough on the point of how much this initiative helped us launch our new operation in fast efficient way, however the security is still a big challenge for us here in the region”, respondent R2 extended the discussion stating that despite all the promises we hear from the big companies, we are still struck with massive amount of data on occasional basis, “to be honest its scary, Sony, Apple and others”. Respondents R3 and R4 and despite their experience in European market and the cloud adoption rates in the EU, R3 argued that as a software development company all their competitive advantage is in the source codes they write, along with their customers’ private data “we still don’t feel safe to leave our codes on the cloud as we
don’t have a proper local law to protect our security and customers privacy, making our customers insist on us working onsite”, same story goes for respondent R4, “things are still a bit vague at the moment and we definitely see a potential, but the fear is not going away anytime soon specially in terms of security and business continuity”, R4 suggested that the security factor on both levels the service provider and the Internet Service Provider are things that makes them fear the cloud movement at this point of time.

Lack of data protection laws

All of the four interview subjects suggested that the lack of governmental direction and local laws made them debate the cloud for a long time now, Respondents R1, and R2, suggested that the even though the numbers do not lie on terms of cloud growth globally, however the Middle East region is completely different in the way they handle business in the region, and in the characteristics of SMEs, the lack of governmental direction towards data protection laws is a major factor that made them fear the cloud, R1 argues that “the data exchange laws and privacy laws are not being considered by the government, making it harder on the company to take the initiative”, Furthermore, he said “I remember when I worked in with a French company before, such laws where actually enforced on a local level, even the data sharing was under their supervision, however that is not the case here but for a while now we have been hearing about new legislations coming as vendors like Microsoft and Oracle are in direct contact with the local authorities to help formulate the legislation that would cover the GCC”, R2 stated that “there is no one law that all the cloud vendors has to work with, the governmental support and involvement level is very limited” and “There should also be proper direction from the region towards data protection, for example like the “Great Firewall of Wall” of China, to protect the region as a whole”, the same idea goes to the third respondent as R3 stated the there is a definite need for it “binding law that helps us ensure our business continuity and protects our identity, for example in the EU the region is protected by the data protection act of 2012 and there is even a new modified version in the works now, that is something that is clearly missing here”, the respondent
suggested that vendors take the lead in this role, “if it was possible for the service providers to come up with something like a shared law, given the lack of governmental law, this is something that could bring us to a new level of maturity in the region”. R4 thinks that the “balance will be achieved when we get the government buy-in to the cloud services as an environmental initiative to reduce the power consumption, and proper privacy policies and laws to help protect our data and business”

**Limited IT staff experience**

Three out of the four respondents highlighted the limited IT staff cloud experience due to the limited IT investment, lack of local experience and talent acquisitions in the local SME companies, R2 as a technology service provider company who provides the local and regional market with IT solutions thinks that the cloud adoption is still yet to come on a later stage “this may be a little down the road to consider due to financial constraints and lack of local experience and support”, “the lack of the experience and trust is something we have in this market”, as still at this point of time you still have customers who do not understand how would a system work without hosting the servers in there own data centers, R3 a technology company who operates in both Serbia and Kuwait, argues that the local market in Kuwait is still not mature enough and running 5 years behind the global market when comes to technology, “during my years of experience I have noticed that this was always the case with new technologies, companies, specially SMEs they don’t have the level of technology awareness to understand the new technologies, nor do they have enough amount of resources to do so”, respondent R4 extends the discussion towards the fact this kind of new market experience is very limited and very costly to acquire by SMEs as most of those IT experts prefer the bigger scale companies and require big pay check, “the lack of experience most of the small companies do not even have a proper IT department, as you know these kind of talents costs a lot to be acquired and they prefer bigger companies”, when asked about the their cloud adoption plans R4 responded “we will need to sit and create a roadmap for it, unfortunately we don’t have experience in the cloud nor the manpower to carry on the activity at the moment”.
Lack of awareness

Another factor that all respondents agreed on was the local level of awareness on the cloud capabilities and market offerings in the region, when asked about the cloud as a choice respondent R1 stated that “Personally if cloud was present and I was fully aware of the cloud capabilities at the time I would have never done the in premise approach as I would have saved us lots of cost and effort ” giving a clear clue about how limited the awareness level of the benefits of the cloud in the country at this point of time, R2 as a technology solutions company had the same reasoning about the cloud awareness level., “the level of awareness here as I told you in the beginning is very low, most of the SME companies here lack the IT knowledge and the understanding of the cloud-based model, to them it feels like you trying to pass the something intangible that might impact there core business”, R2 stated the it is the “fear of the unknown” that is impacting the cloud move in the region, R3 made a point that they the lack of awareness in the cloud is even costing them to lose business to more expensive and less reliable old fashioned methods, “couple of months ago we lost a massive deal with Zain (largest telecom operator in Kuwait), the reason was that Zain felt that the cloud-based model was neither safe, nor reliable enough for them to have the monitoring system installed, and this is just one of many other stories”. R4 also suggested that when comparing the local market to other parts of the world as most companies simply do not understand it, “the level of market education and awareness is very low in comparison to France for example, as I have seen both”, R4 who is also a technology services company suggests that this is something that they encounter on a daily basis on the local business routine, “we work with so many clients everyday, and I can confidently tell you that the main obstacle of cloud adoption here is the lack of awareness and trust in the intangibility of the cloud”, “as of now all what we see are slow steps towards following the new trends, without even proper knowledge or consideration of the implications, the level of market awareness is very limited”.

Lack of trust in cloud service providers

Despite all the promises and assurance offered by cloud service providers, the lack of trust in those big companies is still something that does not seem to be going away anytime soon, respondents R1, and R2 clearly stated that they are worried that their critical data might be exposed if moved to the cloud “have huge amount of critical data that we are worried to have it exposed in the cloud”, giving examples about all the known cases of cloud data leaks, like Sony, iCloud and others, “everyday you hear about those big data leaks within the big cloud service providers and to be honest its scary”, R2 and R3 argues that SMEs are unique and service providers needs to understand that to help overcome the fears of cloud “Cloud service providers still don’t understand how unique SMEs are and they try to get you with one solution for everyone, making things even harder on us to migrate to the cloud”, R3 also had the same concerns adding that service providers need to know that the way business is conducted varies from one part of the world to the others, and what fits the need of the clients in the US and EU is not necessary the way to go in the Middle East, “not to say what is right and what is wrong, but this region is simply different, and we can’t just modify all our processes to make it fit in the cloud, at least for now”, R4 suggested that even if the provider is committed to the SLAs this doesn’t take away the service provider trust problem, as an opposite to just marketing material and trends, “big companies know all the legal ways around the contract and that is something that worries us in case something occurs, another thing that worries me is that those contracts expiries on a yearly basis or so, what happens next if they decide to increase the prices, cut the service quality and so on”.

Lack of Trust in local Internet service providers

All four respondents seemed to have trust issues when it came to local internet service providers, despite the fact that research suggest that Kuwait has a great connection speeds (Milian, 2014), R1 said as SMEs they can never afford to risk their business with unreliable connection, “reliability of the Internet is a big deal in Kuwait”, R2 argues that connections is not at the best shape in Kuwait and having a backup
connection is something that is beyond their financial capabilities, “R2: having a backup connection like a WiMAX is not always an option for a small company”, R3 who operates his business in both Serbia and Kuwait said “we get better connections in our homes in Serbia over the business offerings here”, then stated that “we are worried if we talk our business into the cloud it will impact our customers support levels and lose our competitive advantage”, R4 who has been working in France previously said “reliability in the local ISP” and suggested that they are 5 years behind the global market in the EU.

However lately there have been serious market changes in the ISP business and the country is going through lots of mergers and acquisitions of companies due to the increasing competition and customer demands, R2 pointed that since Ooredoo acquired Fast Telco (Ooredoo Kuwait, 2016), and Batelco buying Quality Net and so many others, indicating a shift in the quality of service and might change the customers perception of the local ISPs and overall Internet reliability in the country.

Limited local representation of big companies

The lack of strong local representation of cloud vendors was one of the areas brought by the interview subject that was not anticipated before as a concern that is impacting the cloud adoption rates in the Kuwaiti market, surprisingly three out of the four respondents have mentioned it at some point throughout the interviews, R1 said that due to the weak representation of the cloud providers the maturity level in the country is very low and adding more burden on the companies to understand the technology, “we have actually addressed this concern when we where debating the cloud with oracle and we where promised that will enhance their presence in the region and increase the level of awareness in the market by providing trainings and awareness sessions”, R2 argues that as a technology solutions company they see that with their customers on regular basis, “the lack representation of big market players is making the companies debate the cloud”, furthermore, R2 suggested that Amazon as a global market leader of the cloud service has no local representation in the region, “amazon lacks any local or regional presentation in the Middle East, so where would my data be
located and under which data protection law are something that we should ask ourselves, the weak representation is making things more vague for companies to think of the cloud as a good option”, Respondent R4 made the same point talking about how small is the representation of those big companies, specially in the Kuwaiti market in comparison to other parts of the world or even in comparison to Dubai, “lack of the big players in the market like Amazon and Salesforce is something that you might consider here, even Oracle despite the fact that they are here but their representation is very small in comparison to Dubai, or even other parts of the world, even IBM they operate through partners not official representation office. Unfortunately, the market is not being ready yet”.

**Legacy systems**

Legacy systems are among the big issues that comes to mind when we talk about cloud migration, despite the fact that two of the four respondents did not have that issue in their company now, however, all four of them agreed that the legacy systems was a issue that they had at some point of time and they still deal with on regular basis with their clients, R1 says that the legacy systems issue was present in the company until just a short while ago and have took them long time to reach where they are today, “R1: this is actually common in most of the business, that certainly was the case here until just a while back”, respondent then says that if the cloud based model where strong and present at that point of time, it would have saved them huge amount of effort and investment, R2 said that this is very common issue that they have seen over the years both internally and for their customers, “R2: We have so many old systems here like our general ledger application, and CRM, and payroll HR which we have been thinking about changing for too long but still lacking will and management support to do so, some of those systems are even out of support and this is raising lots of alarms”, R3 argues that over the years people tend to develop a relationship with those old systems “R3: since it serves the need then we are covered”, the respondent then argues that over time the complexity of those old systems increasing making it a more of burden to change, R4 had the same insights saying that during his experience this issue was present with lots of companies “R4: Well that is certainly the case in so many
companies and we have seen that over the years with so many clients”, also suggest that the legacy systems are slowing down the adoption rates due to the forced software upgrades by the service provider,”R4: this is could also be something that scares companies of the cloud as they will be upgraded to the latest versions of software or regular basis”, “R3: here in Kuwait for example we are kind of pushed to use the same basic services that the SMEs get in the USA and Europe, and that is not the way it should be”,

Basic cloud offering for SMEs

Three out of the four respondents (R2, R3, R4) raised their concerns when it came to the available cloud offerings for SMEs, as small companies they basically will be using the most basic offering that there is regardless of the unique needs of SME companies, “R2: Cloud service providers still do not understand how unique SMEs are and they try to get you with one solution for everyone”, R3 had the exact same views about the level of service provided for SMEs, “R3: our main problem as SMEs is that we are always stuck with the basic offerings as everyone else, regardless of the nature of the operations we run”, respondent R4 as well suggested that if the service providers could see and understand this gap in the market offering, then I would make a huge impact in terms of the adoption rates, “R4: what scares us about the cloud is that since our operations are small we get the most basic offerings, if vendors understand that and help us streamline the business and tailor the solutions, I thing this would make a big difference”.

Management risk tolerance

The risk tolerance is something that has also came up during the interviews, respondent R1 made an excellent point that every time they try to get the management to lean forward towards the cloud-based model they get interrupted by a new data leak story or a cloud downtime news, “R1: have huge amount of critical data that we are worried to have it exposed in the cloud, on the other hand, whenever we manage to have our top management lean towards the cloud we get stopped by a global cloud
data breach”, R3 also suggested that the given the current market status the risk is still so much to tolerate for the business “R3: what if I have a cloud-based sales or CRM applications and they went down, the risk is just too high for us to take”, respondent R4 suggested that at this point of time and given the conditions of the market the risk will be to high to put run the full business on the cloud “R4: we are a bit of a small company, and having all my running business dependent on a third-party vendor and internet service provider is so much of a risk for us now”.

Hidden costs

The hidden costs are things that have made people debate the cloud in the global market for a while, not only in Kuwait but on a global level too (Symantec, 2013), R1 stated that they are currently in the process of evaluating the cost and benefits of the cloud, “R1: we are currently studying the economical factor of the cloud and weather the move would actually make it cheaper, hidden cost exploration”, respondent R2 was also in the middle of hidden cost exploration work before recommending the cloud, “R2: I am personally evaluating the benefits and cost of a cloud based workflow management system”, the interviewee R3 when asked about the guarantees needed from a cloud provider clearly stated “R3: no added hidden costs” as one of the requirements, respondent R4 had raised the same concern when I came to data migration from one cloud to the other or between different systems “R4: hidden costs of the migration”

Vendor Lock-in

Cloud service providers promise data portability and no lock-in, in October 2015 amazon started offering the “Snowball” for large data import/export (Amazon, 2015), however all respondents had raised concerns when it came to the vendor lock-in issues, both R2 and R4 suggested that the lock-in is still a great obstacle when comes to cloud adoption, “R2: vendor lock-in can have severe impacts of the business”, R4 added that there is always a catch in the portability as different providers use different systems, “if we had problems with SalesForce per say and we decided to move to Microsoft CRM
instead, the migration process the different data type, those are all questions that need to be answered”.

4.3.1.2 imaginary cloud fears

Throughout the data analysis process the author identified an emerging theme of imaginary cloud fears that are impacting the adoption process.

Control over convenience

The fear of losing control and ownership over the company computing resources is something that was highlighted several times during the interviews, despite the fact that this fear is not 100% genuine as there are lots of ways to overcome the control issues specially through PASS, and IAAS, however it still something was worrying the data subjects, when asked about the cloud models of interest R1 said “we still lack the trust in the full migration and we would like to keep our internal control”, R2 had the same concern stating that it is one of the main adoption obstacles they face with their customers, “R2: what makes it hard for companies to embrace the cloud is the lack of control over your computer infrastructure”, respondent R3 added that even it means additional extra cost for the traditional IT implementation they would prefer it over the cloud “even if it means a little extra cost, but the risk is minimal and the level of control is more”, R4 stated that fear of losing control over the cloud is even costing them to lose business when as some companies simple do not accept that, “R4: the mentality of the decision makers in the market is still reluctant to having any core or even important system implemented outside their local control”.

People reaction to change

Another Imaginary fear that was highlighted during the interview is the way internal resources accept and embrace change, this is true to some extent however you can never survive in competitive environment using old methods said R3 as they become a burden rather than being beneficial, R2 responded to that saying “after using a system for a long time you tend to get a little bit too comfortable with it, even with all
the shortcomings”, R4 stated that not all companies are technology experts and they are simply fear what they do not understand, “usually companies are afraid of big changes so they prefer something inside their comfort zone”

4.3.2 Infrastructure

The weak infrastructure in the country was a recurring theme during the data gathering process. Each and every one of the respondents mentioned it at some point during the interviews. R3 clearly stated that one of the main reasons of the delay in the cloud adoption is the is their lack of trust in the infrastructure in the country “we are still having infrastructure trust issues”, suggesting the weak infrastructure in the country is putting Kuwait 5 years behind the global market, providing a challenge for the cloud adoption.

4.3.2.1 Internet reliability

The Internet reliability is something that the interview subject brought so many times, despite the fact that market research suggested that Kuwait is among the world’s top 20 globally, all four respondents had raised lots of concerns and red flags when it comes to having their businesses dependent on unstable connections, R1 commented on the issue saying “we are a small company so we have to fully utilize our resources, our production line works 24/7 all year long and jeopardize our business”, R2 suggested that this is a common problem in the country and the cost of a backup link is a rather expensive option, “as you know we have suffered lots of times from local internet”, R3 argues the that they get a more reliable connection for home users in Serbia, over the business offerings here in Kuwait, “we do not trust the Internet reliability here, so for us here in Prozone we are worried if we talk our business into the cloud it will impact our customers support levels and lose our competitive advantage”, respondent R4 said that the risk is just too high now, based on the current conditions, “we lack the trust in the local ISP internet service reliability”
4.3.2.3 Internet Cable cuts

Anyone who has worked in the Kuwaiti market over the past few years will be familiar with the term “Internet Cable cut” (The Guardian, 2008), the country had suffered a substantial service interruptions over the past few years due to this problem (CNN, 2008), this have lead to a series of trust issues between users and local ISPs, and certainly impacted the cloud trust levels, R2 said “we have suffered lots of times from local internet due to cable cut in the sea”, the exact same response was given by R3, and R4 when asked about the reasons of choosing not use cloud service, “R3: How many times the country Internet was impacted with the cable cut in the sea”, “R4: everyone have suffered from the bad impacts of the cable cuts in the sea over the years”.

4.3.3.4 Lack of local cloud service providers

Lack of local vendors in Kuwait is a topic that surfaced during the interviews, as a general rule of thumb the subjects suggested that having their data hosted locally would increase the trust level in the cloud, respondent R2 said that not having any strong vendors is something that is impacting their adoption, “R2: We do not have strong local vendors to promote the value”, moreover, he added “when I asked about Microsoft azure data center locations I was told that the nearest site is in the Netherlands, which made me a bit reluctant and less of a enthusiastic about the idea”.R3 agued that having your data hosted in the same country or at least region would increase the trust level even if you are not the one hosting it “even if your not hosting the servers, at least the servers are in the same country, even in Ireland lots of data centers are present in Europe”.

4.3.3 Positive Signs

Some promising themes emerged during the interviews for the SMEs cloud adoption, despite all the fears and concerns raised, respondents indicated some change
in the attitude towards cloud-based service models, indicating some shift the mentality of SMEs in county about the potential future of the business.

4.3.3.1 Future of the cloud

When asked about the future of the cloud, all four respondents were certain about the future growth of the technology in the region, R1 suggested if the Infrastructure and reliability issues are sorted, they would boost their cloud adoption rates, “personally I do recommend the cloud movement over traditional IT”, R2 suggested that given the political issues in the region cloud will help companies secure their future in the region, “the Middle East as a region has lots of political turbulence and the cloud would help you keep you business moving no matter what”, R3 suggested that the cloud movement is going to be a classic business decision to help companies reduce their costs, the same way factories decided to take their production to china, he also believed that cloud technology will soon replace the old IT outsourcing method, “R3: sooner or later it will eliminate the classic IT outsourcing method”, the respondent suggested, R3 added “you can never hold back the IT sector with an old idea, the whole world is moving in one direction, how long can you resist that”, R4 suggested that the cloud move will become inevitable at some point “The whole market will change at some point and as SME we don't want to be left out and become outdated”.

4.3.3.2 Startups and the cloud

As mentioned earlier all four respondents are industry professionals with more than 15 years of experience in the ICT field and have worked with various technologies over the years, however, when asked about establishing a new startup, all four respondents mentioned that the cloud is the way to go, R1 said ” I would definitely choose the cloud to avoid the hassle of the overhead investment”, R2 had the same views saying “change is a part of life and for us SMEs and startups to compete we need to adapt to the new market conditions”, he added that the recent government support for startups and small business in helping creating more cloud based companies in the
country, “have you heard of E-Netpay service here in Kuwait or Zigi the online restaurant reservation service, or ITSI the online store, they are all startups that are cloud based”. R3 and R4 had more cautious approach stating that since the market is not yet ready but moving to that direction, they suggested starting with a Hybrid model and go for the full cloud based when the time is right, “It will ease the future transition” and help you be will prepared.

4.3.3.3 the need for cloud brokers

Another interesting aspect that came out thought the interviews was the cloud brokers issue in the county, as a general rule of thumb SMEs are running on a low budget that and cannot afford the cost of due diligence or a consultancy service, when asked about the need of the brokers all three respondents had positive responses given the lack of awareness about the cloud offerings in the country, R2 suggested that the cloud offerings are too complicated for the level of knowledge in most SME companies, “having someone who woul know all the various cloud offerings and tradeoffs and tell you exactly what your business need is actually great”, R3 said “companies, specially SMEs they don’t have the level of technology awareness to understand the new technologies, nor do they have enough amount of resources to do so, having a reliable experienced person who can tell what solution fits your needs perfectly, and why you should take this over the other is certainly a role that we are missing in this region”, respondent R4 said “absolutely yes, the most important thing is to have an experienced trusted sources who can elaborate and explain the benefits and disadvantages”, however, all four respondents raised some concerns about the brokers suggesting that they would prefer the role of an IT advisors who would actually help them chose the best option not only cloud solutions.
Chapter 5 Discussion
The aim of this chapter is to provide the link between the proposed research question, literature review and primary data findings. This research connects the dots between the literature and the respondents on the reasons that make SMEs in the Middle East as a region lag behind the global market in terms of cloud adoption rates, and taking Kuwait as a reference market by interviewing decision makers and local experts in the ICT field.

As per the proposed research question in chapter one of this dissertation, “Why is the Middle East Cloud cautious? - Study on the Kuwaiti SME market”. In the context of Kuwaiti market, the primary data findings matched the literature to an extent in some areas, as the main cloud fears triggers identified in comparison to other parts of the world, starting with the recurring issue of cloud security and privacy, quality of service, added costs, vendor lock-in (Avram, 2014), those areas where highlighted by all four respondents as the first things that crossed their minds when it came to taking their business on the cloud.

Also as suggested by the literature in chapter two of this dissertation, the lack of technical experience and knowledge in SME companies is one of the main cloud adoption barriers (Irwan Dahnil, 2014), this was confirmed by the respondents, R1, R2, R3, R4, respondent R4 clearly stated this issue adding on the topic "most of the small companies don't even have a proper IT department, as you know these kind of talents costs a lot to be acquired and they prefer bigger companies", R4 also added that the cloud movement decision requires huge effort in evaluating various models and impacts, however, “unfortunately we do not have experience in the cloud nor the manpower to carry on the activity at the moment”.

Moreover, the lack of management support towards the cloud adoption is a big challenge for the adoption process (Oluwasola, 2014). The research suggested that the management support is a crucial factor when it came to embracing new technologies (Nguyen, 2009), this was confirmed by the respondents, R1 argued that it took them so much effort and time to get the management to adapt to the idea of cloud-based
solution, due to the global cloud data leaks and service interruptions, “whenever we manage to have our top management lean towards the cloud we get stopped by a global cloud data breach (icloud, and others)”.

Also the residual issue of the old legacy systems that accumulated over the years (Avram, 2014), companies tend to develop a special bond with those systems as they learn to live with their shortcomings and sluggish performance. The problem was confirmed by all four respondents as the main obstacles to their cloud move, suggesting that not only this has been a problem in their own companies, but also R2, R3, and R4 as technology service providers, have highlighted this as a routine problem that they tend to face with their customers as sometime they have to keep both old and new software running in parallel for long period of time till they overcome the issue.

Another factor that was inline with the research literature, is the issue of limited control over a company computer resources (Avram, 2014), this problem connects to the lack of awareness of the cloud based models, as most of the subjects had very limited knowledge about the various cloud models benefits and usage, there is no one model that fits all and it all depends on the level of control needed (Microsoft, 2015), this mixture or imaginary cloud fear was raised by three respondents in the interviews.

On the other hand, some of the finding where unexpected in terms of literature available on the topic, starting with the fact that the literature argues that Kuwait Internet connection is among the region’s best and it ranks in global top 20, with an average Internet connection speed of 36.4 Mbps (Milian, 2014), however, when it came to the actual finding from the research, the local Internet reliability, level of trust in local ISPs and connection speed, have been mentioned as a never ending problem for the data subjects, all respondents have shared their concerns on the fact that they do not trust the local internet offering in the country along with the weak infrastructure in general.

The GCC over the years have suffered from many internet service interruptions due to various reasons mentioned in the findings chapter, the recurring case of the under sea cable cut (CNN, 2008), leading to series of trust issues and reliability
concerns, as in 2008 the region was impacted by the cable cut in four different times (Arabia News, 2008).

Furthermore, an interesting aspect that was brought by the respondents was the limited local representation of the big cloud service providers in the country and the region as whole, despite all the promising growth predictions and expected by the global cloud index and many other reports, as the region is expected to have the highest cloud traffic growth rates with (41 %) (Cisco, 2014). Three respondents have mentioned that the lack of local representation of the big companies is making them feel unsecured about having their data stored in a remote “unknown location”, this was raised as something that increases the level of uncertainty and trust in the cloud, as they would feel safer to have their data stored in local or at least regional remote location, respondent R2 stated that clearly “when I asked about Microsoft azure data center locations I was told that the nearest site is in the Netherlands, which made me a bit reluctant and less of a enthusiastic about the idea”.

Respondents said that not having a proper existence of the big cloud companies made them feel unsafe, companies like Amazon, IBM, Oracle, Cisco do not have physical offices in the country and usually operate through local partners and resellers, making SMEs reluctant on having business running through local agents who do not even have the right kind of experience, however, as mentioned previously there is some recent changes that are happening in the market, oracle announced back in January that they were doubling their work force in the Middle East market by adding 250 new cloud related roles, also they announced plans to build a new cloud data center in the region providing a local support for the reluctant customers who prefer having their data stored close to their geographical proximity (Forbes, 2016).

The lack of any local reputable cloud service provider led SMEs in Kuwait to slower adoption rates, as two of the respondents R2, R3 argued that they prefer having their data stored on a local or regional area, respondents suggested that there is a real market need to have a local cloud player operation from inside the country or the GCC
region, respondent R4 added that even in Europe when you have your data on the cloud at least you know it will on the same region or country as you are, like in the case of all the data centers located in both Germany and Ireland.

Another piece of the picture that was introduced by the respondents away from the literature was the fact that there was no data protection act serving Kuwait or the region, nor existed a government directions or enforced laws, that would help them have a level of assurance about going on the cloud. All four respondents argued that having this law would help them feel more safe towards the cloud, R2 had an idea about having a firewall that would cover the GCC area, similar to what China has implemented on the country level. This would be something that would change the views of the cloud and help the adoption levels, Respondents R1, R3 and R4 who have previous experience in the European market mentioned how different the laws are in the EU giving more freedom for companies to embrace the cloud and protecting their data security and privacy.

The need for cloud brokers is something that the country is certainly missing, as stated by the respondents, local SMEs do not have the right level of expertise, nor do they have the resources to help understand the various cloud offerings and models, they also lack the financial resources for an expensive consultancy firm, there is a real market need for experts “with proven records”, who can evaluate the business need and provide the right advise for SMEs, R3, R4 stated that “having a reliable experienced person who can tell what solution fits your needs perfectly, and why you should take this over the other is certainly a role that we are missing in this region”, “the most important thing is as I told you is to have an experienced trusted sources who can elaborate and explain the benefits and disadvantages of the cloud adoption models”.

The overall results are promising, despite all the identified fears and cloud obstacles, there appear to be a change in the mindsets of the local SMEs towards the cloud-based industry in the region. Cloud service providers need to understand and address these concerns to help companies overcome their fears and feel safe about their business, and help the service providers grow steadily in the region.
Chapter 6 Conclusion and Recommendations
6.1 Conclusion

Saunders argues that the main purpose of the conclusion chapter is to answer the proposed research question, and “meeting the research objective” or the suggested hypothesis (Saunders, 2012), this approach will be followed by the author in formulating his conclusion towards the end.

The aim of this research was to help identify and uncover the reasons behind having the Middle East region and more specifically Kuwait for the context of this study, running behind the global market in terms of cloud adoption rates and cloud business maturity in the local SME market.

The research findings suggests that despite all promising signs in existing literature and market predictions for the region's cloud computing future, the local SMEs in the market still did not overcome their fears in terms of the new technology implementation and adoption. SMEs are moving on a very slow pace towards the cloud as a result of the reasons identified in the previous chapters (the fear of data privacy, data security, the lack of data protection laws, lack of SMEs awareness about the benefits and offerings of the cloud based models, the limited IT staff experience, people reaction to change, the lack of control over the company commuting resources, The lack of trust in local service providers, the lack of representation of the big cloud vendors, management risk tolerance, Internet reliability, and the weak infrastructure).

Each and every one of the fears needs to be properly considered by both SMEs and cloud service providers planning their cloud future in the region. The fact that the local market is five years behind the global market in terms of technology awareness and readiness is a major factor that service providers has to consider when deciding to move in the country, also the level of awareness is extremely low among local companies about the benefits and value that cloud could provide over traditional methods, this have created a real market need for cloud brokers role or IT cloud
consultants, to help companies embrace the cloud based model and reduce the ambiguity around the new business model.

On the other hand, the weak infrastructure in the country and the local ISPs offerings are both red flags that need to be carefully considered. Getting these fears addressed correctly shall also extend to cover the imaginary fears of the cloud local SMEs are having, as creating a certain level or awareness among SMEs shall embrace the change to come from inside the organization and eliminate the “fear of the unknown” factor.

However, there are some positive signs and changes in the mindsets of the local SMEs towards embracing the cloud-based services, the data analysis showed good signs of attitude shift among local SMEs in the country towards the cloud adoption model.

When asked about starting a new startup company, all four respondents said that given the benefits the cloud offers over the traditional method, they would go for a cloud based model to help them avoid the upfront investment cost and draining their financial resources, as the market is heading more and more towards that direction, respondents argued that SMEs can never afford to compete with old technology, R1 said “Personally if it was a green field I would definitely choose the cloud to avoid the hassle of the overhead investment and enhance time to market”, R2 added “It is going to be the cloud, change is a part of life and for us SMEs and startups to compete we need to adapt to the new market conditions”, moreover, R3 added that the cloud move is heading towards being a classic business decision for SMEs, comparing it to factories running their production facilities in China to reduce costs, “IT sector is moving that way, and if you do not cope with the change, you will be out of business in no time, it is a very simple logic, can you tell me where are the guys who didn’t want to learn new programming language and they wanted to stick with COBOL, or for the developers who only believed in developing of desktop applications, where did they go? ”, R4 added “. The whole market will change at some point and as SMEs we do not want to be left out and become outdated.
However, the best way to describe this change would be as referred to by respondents “taking baby steps into the market”, as mentioned earlier, both R3 and R4 had more cautious approach arguing that despite the their choice of cloud-based model for the startup, they feel like the market is not yet ready for the move and suggested a hybrid cloud model that would be able to handle the failure of the cloud connection incase it happens, R3 added “I would argue that the hybrid solution is something that shall be seriously considered by startups, It will ease the future transition, and will give you some insight about the problems you might face in the future” R4 also suggested the same saying “Start with a hybrid solution that carries your non-core or critical systems on the cloud until the conditions are right for a full movement”, indicating a real chance in the way local SMEs perceive the cloud.

As mentioned earlier, there have been some promising movements in the market towards embracing the cloud recently, Zain (largest operator in the country) announced the adoption of Microsoft office 365 in their business and launched the service for free for corporate customers (Zain Kw, 2015), also as mentioned by respondent R2, the fact that the there have been recently a new government initiative to support the small business, the Local Authority of Youth and Sport (PAYS) have lead to more cloud adoption in the country, as companies like (E-Netpay, Zigi, ITSI) lack the financial and human resources to use the traditional method.

Furthermore, there is a serious market shift in the local Internet service providers business towards enhancing the country’s Internet services, due to the increasing demand and competition, recently the country have seen lots of mergers and acquisitions of big companies on local ISP to help cope with the increasing demand on Internet based services, back in march, Ooredoo Kuwait (telecom operator) announced full acquisition over Kuwait largest ISP FASTteleco (Ooredoo Kuwait, 2016), also last year Batelco (regional ISP) announced buying 90 per cent share of quality net (local ISP) to enhance the service (Batelcogroup, 2014), Furthermore, just recently Wimd (local Wimax provider) announced the merger with MADA (local ISP).
On the other hand back in 2014 telecom operators in the GCC announced a joint venture to start working on creating a high speed optical transport network with an initial capacity of 200 gigabits per second cable network for the region, with a total cost of 36 million USD to be shared across the participants (National Business, 2013). The project director said “Customers in the Middle East today have ever-increasing high-speed data needs, as it is becoming an integral part of today’s lifestyle. The announcement of Meets with like-minded visionary partners is a step towards realizing this need” (National Business, 2013), giving another positive sign toward more reliable connections.

Ultimately, it could be argued that the Middle East as a region and Kuwait in this context are still in huge doubt when it comes to the cloud computing technology adoption and implementation, the research argues that the cloud computing industry growth is still far from being mature, as the region lags behind the global market in terms of adoption rates, technology maturity and awareness, however, the recent market changes indicates more progress towards more technology oriented business environment among the local SMEs, specially among younger generation, moreover, the current economical shake in the oil prices and country financial status, have forced SMEs towards bigger expansion strategies and cost cutting plans, to help ensure profitability and secure future growth and earnings in new markets, indicating a promising future in the country towards higher cloud adoption rates and technological awareness, as the future of the local SMEs definitely stands in the cloud.

6.2 Research Limitations

Apart from the methodology limitations explained in the research methodology chapter, the main limitation to this study was the sample size. Due to the nature of this dissertation, time constraints and lack of funding, the author was not able to cover to larger sample size in the GCC, hence, highlighting the need for future research to cover a larger sample of organization sizes (large enterprise, SMEs, micro enterprises, and end users perception).
As mentioned in the methodology limitations section, the primary data produced and analyzed for this research covers a small part of the overall Middle East Region "Kuwait", hence, the need for further academic work for the GCC area and the region as a whole. However, this research is intended to set the base towards further exploration work and building a foundation towards forming the complete picture on the Middle East region.

6.3 Suggestions for future research

The lack of academic work and literature on the region was the main motivator for this research. There is a real market need towards further exploratory work that could cover other GCC countries and the Middle East. The author is aiming towards setting a base with this dissertation that could help uncover the ambiguity around the region and eventually differentiate the markets of the GCC and Middle East from other parts of the MENA region to help businesses address these unique characteristics.

This research could be extended to cover the GCC and other parts of the Middle East area by country from both companies and users perspectives using various methods, it also could be detailed further on the basis of demographical data to help predict the differences in the adoption levels across various populations and age groups, providing a more structured predictions and data for further analysis.

This research could be extended using quantitative data methods to help cover a larger sample of the population, by generating numerical data, it could be conducted from both companies and end users perspective, to help study the behavior over time using statistical methods comparisons.

Another aspect that this research could be extended to cover the cloud economics factor in the region (OPEX and CAPEX), and comparing the actual numbers between in-house and over the cloud hosting for companies, and cloud service providers, in terms of taxes, electricity, and data center implementations costs.
Self Reflection

Having spent most of my life in the Middle East, the overall experience was completely new to me, as being in touch with a new culture, lifestyle and business world. Taking this MBA course was one of the biggest decisions and main challenges that I had to do in my professional career, yet, here I am 18 months later I could honestly say it was one of the most exciting and successful decisions I have ever made in my adult life.

As an IT professional I always had my doubts and questions about my abilities to perform in the business world, I have always been good with numbers, algorithms and computers, yet as my career grew I found myself having to deal with new terms and processes that are not even remotely related to the IT world, this have put me in several situations where I’m in the middle of a meeting with top management and unable to understand most of their business discussion, due to my technical background.

After lots of consideration and consultation with my colleagues, I have decided to proceed with my education in a business related degree, and MBA was obviously the first choice, the main reason behind choosing Ireland and DBS was the fact that Ireland is one of the biggest IT hubs in Europe and the country have a very reputable education system, on the other hand I was seeking an IT related business degree, hence the choice of cloud computing stream, as the field have always interested me and was relatively new in my country.

I started this course with lots of uncertainties, trying to leave my comfort zone and open a new chapter in my career. Every single day provided a new experience to me during the past 18 months, the learning experience provided by DBS was a new challenge for myself, and throughout the course I was taught the actual meaning of finding the knowledge and the academic research style of studying, the actual learning experience is completely different from what I was used to before, most of the work was self driven, lots of research and reading and less classes, I also learned not to trust just
any sources of information specially when it comes to the Internet or old published data, as it was all academic based and recent.

As mentioned previously, the overall learning experience was new, it took me sometime to understand the academic research style of learning, starting with the structure, towards learning to provide evidence on every piece of information acquired, at first the referencing part of the research was very hard for me, however by time, I learned the importance of the various citation methods through library provided courses.

The course have taught me the value of commitment as my attendance rate was at 95% during the course, moreover, I have enhanced my time management capabilities and learned to work under extreme conditions, as at some point I had several papers and exams due in the same time, if someone would ask me if I could handle all that pressure before the course I would have defiantly said no, however, today I walk out confident about my abilities to work under pressure and utilize my time.

Another value that was acquired during this course is learning to work with teams with different backgrounds, which is one of the main reasons that made me decide on going for this MBA, I remember during the cloud development class, I had a team of four members, two of the team members had no experience in the field of IT as one was a banker and the other was a marketing guy, this particular experience taught me how to take the best out of everyone’s experience and use it for the benefit of the project, the end result was great and honestly I personally have learned a lot about how everyone can provide a great value based on their experience and honestly I never knew I was a good team player and I perform very well when working with teams.

Again As IT guy, I walked into this course having no previous knowledge about the business world, and to me anything that was not in the form of numbers I could not understand, however today, I have very good knowledge about various business sectors and processes, from marketing, to sales, to human resources, to finance, the learning curve in this course was great, due to the fact that the actual classes were
small, and you get to interact better with the lecturer, which provides a better learning outcome when compared to bigger classes.

Another fascinating factor was the fact that this was an international course, I got to interact with so many students from different parts of the world, with different ways of doing things, people from all over Europe, Middle East, Latin America and Asia, the interaction have changed the way I perceive the business world.

The dissertation exercise was a learning curve by it self, it all started in the first day with RM1 course, everything was new and vague at the time, but by time things got more clear and PJ have took us through the dissertation work step by step. The work was extremely tiring at some point specially when I was asked to create a proposal for the research methods about a subject I will be researching after a year, specially with the research methods and reasoning part as every choice must have a reason, however, when I started working on my actual dissertation this initial work made me avoid lots of delays as I was already familiar with the process of doing it.

Every single chapter of the research was a learning topic on its own, with the help and direction of my advisor I have managed to learn so much in such little time, from the literature review, teaching me on how to organize my thoughts and supporting material for the research, by building the overall picture starting with the broad area and moving towards the actual proposed problem and research question. The research methods section was very complex part of this dissertation work, choosing between various sets of methods that would help achieve the optimal results in with it the given time plan was a challenge by itself, however, with the directions of my supervisor and utilizing the library resources and previous dissertation work, I have managed to overcome this obstacle.

The next challenge was forming the interview questions and conducting the actual interviews, even the interviews process itself taught me a lot, the first interview was the hardest as I was not exactly sure on how to ask the questions and move the
discussion, however, it helped me shape my second interview, and the third and so on, it was amazing how much I got to learn during those interviews as by the time I reached my last one, I knew exactly what to ask and when and even what to expect as an answer.

The second most complex part after the research methods was the data analysis, the classification and consolidation of data and creating themes through very long interviews has an extremely hard task, however, by applying Robert K. Yin five-phased cycle for qualitative research cycle, I managed reduce the time and effort needed for this task.

Even this self reflection has a knowledge on its own, I have learn to evaluate, analyze and think about my own work and learning outcomes, writing such reflection report was impossible 18 months ago, but today everything seems possible, I will take this experience for the rest of my life in my career, as it have taught me to evaluate my own work and identify the deficiencies.

Ultimately, I could say this overall experience has changed me in so many ways. It made me understand my own strengths and weaknesses, today I know that the learning does not stop anywhere and no matter how much you grow in your career there is always something new that you could learn, today I can say I can talk business and understand the IT industry and the technical work, which is to anyone who work in the IT industry is an extremely important factor as the gap between the business and technical people is huge, and this MBA work has made me believe I will be fit for great development in my career.
References

Bibliography


Appendices

Interview Transcripts of respondent R1:

Aws (researcher and interviewer): Hi Khaled, in the beginning I want to thank you for your time today despite your busy schedule with the new operations launching in other countries and for accepting to participate in my research in cloud computing adoption obstacles in the Kuwaiti market, could you please introduce yourself

R1 (interviewee): most welcome, my name is Khaled Daher I have more than 32 years of experience in the IT field, I have masters in mathematics and computer science from the university of Bordeaux,

Aws: as you already know I am doing a masters research for Dublin business school about the adoption problems of cloud computing in the Kuwaiti market, and since the information about the market is very limited due to the lack of research I have decided to take the interview approach with market professionals like your self.

Aws: First question do you currently use any cloud services in you business environment?

R1: to be frank with you we just starting with approach in baby steps, as we where reluctant for a longtime to the usage of cloud computing and even now we are still not 100% certain about a fully integrated cloud based solution here at K.D.D, we are technology oriented company and we always believed in continuous improvements, hence, we are using lots of the latest technology applications such as the Oracle ERP business suite latest version, along with automation software and 3rd party software for preventive maintenance and inventory control Maximo, for a long time we have been debating the cloud with our management and our internal experts for various sets of reasons, we are a company in the production business and we have huge amount of critical data that we are worried to have it exposed in the cloud, on the other hand,
whenever we manage to have our top management lean towards the cloud we get stopped by a global cloud data breach (icloud, and others). Just recently we managed to get the management support for the implementation of office 365, Skype for business and SharePoint as a cloud-based services, along with a cloud-based monitoring system for the production that provides the dash boards, currently we are on the testing phase and not 100% live, but the signs are promising and we are getting lots of positive indicators from our management, we think that this step should provide us one step closer ahead of our fears and enhance our business performance for a full cloud based solution, for example we are currently in the process of expanding to market of Iran and will be launching there on cloud-based model as a proof of concept.

Aws: What are the reasons that made choose to decide to go/not go on the cloud? And are you planning to use or implement any cloud-based service in the near future?

R1: we decided to take the cloud as a pilot phase, or proof of concept initiative to help overcome the fear of the adoption and feel more comfortable about our data, since signs are positive on the office 365, so far more decisions are going that direction soon to embrace the adoption, moreover, we where on a rush to launch our business in Iran in the most cost effective way, flexible approach and in a short time period, as an on premise deployment model will take from 6-18 moths and we couldn’t wait that long, so we advised the management that the cloud solution would take less than a month.

Aws: Great, and what are the cloud services offering you are using or planning to use in the near future, and what are the reasons of choosing this model over the others?

R1: we are mostly interested in SAAS offering for now, to be more particular a full oracle business suite. Also if the trial proves worthy we will be planning to move all our old documents and historical data on SharePoint DMS, however, at this point we still lack the trust in the full migration and we would like to keep our internal control, as for now I don’t see anything else going to migrate and the movement will take time, we are
talking years not just months as the security and management trust in the could is still the ultimate obstacle.

Aws: Last year amazon data services announced 6bn USD of revenue from its cloud sector, would that make you feel better about the business?

R1: actually its not the amount of business outside the region, our market here is different and the data exchange laws and privacy laws are not being considered by the government, making it harder on the company to take the initiative

Aws: What are typical drivers and goals for Cloud adoption in general from your point of view ranked by importance?

R1: Good question, actually the main drivers are fast implementation and (Symantec, 2013) reduction, time to market, and flexibility which we personally observed during the office 365 deployment, we are investing so much capital to maintain our on premise IT solutions along with so many customizations that that are costing us huge amount of money which we could be investing in our core business, along with the elimination the time consuming, never ending effort of patch upgrades. This also can help us reduce out human resources requirements as part of our cost cutting initiative to increase the profitability.

Aws: What would make you consider implementing a cloud-based solution (SAAS, PAAS, IAAS)?

R1: recently, we have adopted a cost cutting strategy that will help us minimize the and increase the profitability; the main reason to use and embrace the cloud is to help us achieve this strategy, also the fast upgrades and implementations as sometimes it is all that make a difference in this type of business, as I told you we are currently in expansion phase and the cloud is something that will help us reach our goals in less time and effort, when we where launching Iran the traditional IT implementation would
have taken us 6-18 months, however with the cloud we were up and running in just one.

    Aws: What are your current views on the effectiveness of the cloud based model (pro/con)? And do you have any doubts about the effectiveness of the services?

    R1: unfortunately, our market experience here is very short and limited, so far we only have implemented the office 365 pilot, however the experience is very promising and personally I do recommend the cloud movement over traditional IT, I couldn’t stress enough on the point of how much this initiative helped us launch our new operation in fast efficient way, however the security is still a big challenge for us here in the region.

    Aws: That’s true but aside from security you said you were reluctant and still in doubt of the cloud, so how would you explain the reasons behind it like the impact of the recurring internet cable cut in the sea?

    R1: The reliability of the Internet is a big deal in Kuwait, we are a small company so we have to fully utilize our resources, our production line works 24/7 all year long, we can’t jeopardize our business or even afford to do that, moreover, as I told you previously our data privacy is extremely important factor of our success and competitive advantage, and we can’t afford to fully rely on the cloud based model, on the other hand, to be frank with you the cloud movement might expose our products licensing, this is not to say that we are hiding our product licenses but we sometimes share the licenses across multiple employees, specially in transitional periods, which might make the cloud more of a burden rather that help in this case, that’s we are currently studying the economical factor of the cloud and weather the move would actually make it cheaper “hidden cost exploration”, also the maturity of the market is very low this slowing down the adoption in comparison to other more advanced markets like Dubai in region, we have actually addressed this concern when we were debating the cloud with oracle and we where promised that will enhance their presence in the region and increase the level of awareness in the market by providing trainings and awareness
implementation and usage of cloud based service comes with some tradeoffs like any other technology out there despite all the positive outcomes like achieving business agility and cost savings and pay per use, at what point you think balance of the good and bad could be achieved?

R1: The balance is dependent on the company and business model itself, for us here at the K.D.D we think that the point of balance could be achieved through gradual movement (phased approach) we start with the small applications and move towards the more complex mission critical systems, moreover the company should maintain a certain level of security through well defined SLAs (Service Level Agreements) and NDA (Non Disclosure Agreements).

Aws: The role of cloud brokers has emerged in other parts of the world; a third-party individual or business that acts as an intermediary between the purchaser of a cloud computing service and the sellers of that service. In general, a broker is someone who acts as an intermediary between two or more parties during negotiations. Would it help you’re decision to have cloud brokers in the region to help your decision making process?

R1: Brokers in tend to have bad reputation whether it was real estate broker, insurance broker or IT system brokers, we prefer doing our homework and communicate directly with the vendor or a local or regional certified agent, as we did the case of the office 365 pilot.

Aws: What guarantees would you ask for from a cloud provider to make you consider the migration
R1: surly we will be requesting a certain SLA and KPIs to be put in place and as a second part of it an NDA to help us protect our business, in our case of the office 365 adoption we have signed with them a 10 page SLA, NDA agreement to help us protect our business and data portability.

Aws: these are fine as a standard operating procedure but for example what other factors would you consider on a regional level, things like data protection laws, locally enforced privacy policies?

R1: that's also a sure thing like I remember when I worked in with a French company before, such laws where actually enforced on a local level, even the data sharing was under their supervision, however that is not the case here but for a while now we have been hearing about new legislations coming as vendors like Microsoft and Oracle are in direct contact with the local authorities to help formulate the legislation that would cover the GCC.

Aws: Some would argue that the cloud movement is very complex with all the historical data and the legacy systems and in house software, would this be the case at your company?

R1: actually that is not the fact here in the K.D.D as just recently we have written off all these old servers and legacy systems, this was done gradually over the years like in the case of the inventory management system Maximo or the old system that we have incorporated with the Oracle various modules

Aws: that's actually great that you have managed to do that internally but as a professional in the market would you say that is a standing obstacle in the face of cloud movement,

R1: this is actually common in most of the business, that certainly was the case
here until just a while back, however we have started the initiative since 2001 to be where we are today, another problem that we faced is that the users of those old system where actually in fear of using anything that is new and took us lots of training and investment to overcome this obstacle, and we usually do it gradually where you use both of the systems for a period as a transitional phase. Personally if cloud was present and I was fully aware of the cloud capabilities at the time I would have never done the in premise approach as I would have saved us lots of cost and effort

Aws: This the Last question, if you where to open a new business (startup) how would you feel about starting on the cloud given all what was mentioned above?

R1: Personally if it was a green field I would definitely choose the cloud to avoid the hassle of the overhead investment, we have recently adopted expansion strategy and we are studying opening a new line of business in Dubai, and we are seriously considering the cloud as an option to enhance the time to market and avoid complications and in-house replication, as we are overcoming our fears slowly.

Aws: I think that was everything, many thanks for your time and cooperation in this study

R1: you are most welcome.
Interview Transcripts of respondent R2:

Aws (researcher and interviewer): Hi Rami, in the beginning I want to thank you for your time today despite your busy schedule, specially that I’m taking the time of your lunch break, and for accepting to participate in my research in cloud computing adoption obstacles in the Kuwaiti market, could you please introduce yourself

R2 (interviewee): most welcome, my name is Rami Alsahhar I have worked in the Kuwaiti market for over 17 years in the IT field, currently I am an industry solutions lead architect here at GBM Kuwait, we sell end to end advanced IT solutions for companies in Kuwait and the region and my role is to design and advice of the IT requirements of a business, I have PHD in computer engineering from George Washington university along with MBA in telecommunication.

Aws: as you already know im doing a masters research for Dublin business school about the adoption problems of cloud computing in the Kuwaiti market, and since the information about the market is very limited due to the lack of research I have decided to take the interview approach with market professionals like your self.

First question do you currently use any cloud services in you business environment?

R2: surely we have recently adopted a cloud based email service on IBM cloud offering IBM verse, part of IBM’s connection cloud S1, hosted on a high availability remote server that we don’t know where its located, we are also considering using Salesforce for the automation of our sales processes like the tendering process in another words we are using it as a kind of a CRM for financials, or moving to Oracle Netsuite cloud offering as a result of our expansion strategies across the region, also I am personally evaluation the benefits and cost of a cloud based workflow management
system, we are technology oriented company we have started small but have a vision of growth and expansion

Aws: What are the reasons that made choose to decide to go/not go on the cloud? And are you planning to use or implement any cloud-based service in the near future?

R2: As I told you earlier we are currently in the initial phases of cloud adoption, and we are studying various offerings and mapping them to our internal requirements and investment capabilities, like the cloud-based ERP system and SalesFource CRM and sales automation offering, however this is still under consideration and we are not certain if we will be able to reach a managerial decision on the adoption. Going back to the fist part of your question as I told you we are a technology oriented company who are seeking fast expansion and we are considering the cloud to help us achieve this in a shorter period if it proves worthy in our evaluation, the expansion will be very costly if we decide to go the old – traditional way.

Aws: perfect, and what are the cloud services offering you are using or planning to use in the near future, and what are the reasons of choosing this model over the others?

R2: As I told you at this stage we have only adopted the IBM verse email service, we have a long experience with IBM products and they have always served us well in our business, our new expansion strategy is forcing us to be going more towards the cloud-based solution offering and direction, as a general statement the market here is starting to shift more towards SAAS based models, specially among smaller companies due to lack of internal resources, IT support, capital investment, this doesn't eliminate the importance of other cloud based models,. Since we are a technology company we are also considering the PAAS for our in-house developed application environment, customized products and testing serves however this may be a little down the road to consider due to financial constraints and lack of local experience and support.
Aws: Last year Amazon Data Services announced 6bn USD of revenue from its cloud sector, would that make you feel better about the Cloud business?

R2: Actually I remember reading this before but this doesn’t mean it is the case in our region, for example Amazon lacks any local or regional presentation in the Middle East, so where would my data be located and under which data protection law are something that we should ask ourselves. On the other hand the level of awareness here as I told you in the beginning is very low, most of the SME companies here lack the IT knowledge and the understanding of the cloud-based model, to them it feels like you trying to pass the something intangible that might impact there core business, however with new generation being more technology oriented this is changing slowly.

Aws: What are typical drivers and goals for Cloud adoption in general from your point of view?

R2: well this actually varies across industries and specially since you are talking about SMEs it makes it even more complex as SMEs are unique by nature and there is no one solution fits all, however, generally speaking from my years of experience in the market it’s always about the costs efficiency as most of the SMEs lack the financial capital investment to start, along with easy implementation process, the cloud implementation is fast and clean, it saves you the headache so many application patch upgrades and time consuming patch upgrades that most of us here in the business have suffered from over the years, also the enhanced time to market which is everything when come to SMEs in a fast moving competitive market. Recently the government under the Public Authority of Youth and Sport is supporting lots of local business ideas by helping young entrepreneur in startups that have no IT experience making the cloud adoption the only option for them if they don’t want to drain their financial resources, however there is still fear of the unknown among companies, the lack of the experience and trust is something we have in this market, the level of awareness about the benefits of the a cloud based model is very low, as we don’t have strong local vendors to promote the value. You still have people here at this point of
time who ask you when you talk about the cloud so what is that and what happens when I lose my password, a normal SME here is not an IT guru, they are technically constrained.

Aws: For you here as GBM, as a strong local technology pioneer, what would make you consider implementing a cloud based solution (SAAS, PAAS, IAAS)

R2: I tell you what, back in 2009 I have published a small presentation and the cloud benefits and the value it brings to the table, lets first open it so I can show you, http://www.slideshare.net/SmartManQ8/saas-1597107, As an SME we are always trying to come up with news ways to help us focus on our business and reduce the costs as we lack the financial capital and resource capabilities, plus we are trying to expand our customer base in the market and reach out from new opportunities inside the region with a fast efficient business model and without having to cope with the hassle that comes with traditional IT hosting in-house, also we are a company that sells IT solutions and we want to have a showcase for our existing and potential customer base that we are capable of running latest cutting edge technologies and take the initiative in the market, this is the main reason that we are evaluating the Salesforce CRM and Netsuite, on the other hand as a company we have lots of in-house developed applications and as a future direction we are thinking to take our business a new level through creating a shared development environment on the cloud for testing and collaboration beyond just SAAS.

Aws: What are your current views on the effectiveness of the cloud based model (pro/con)? And do you have any doubts about the effectiveness of the services?

R2: this is a very good question actually, what makes it hard for companies to embrace the cloud is the lack of control over your computer infrastructure, you always hear that when it comes to the cloud, what do you mean there will be no local server! Moreover, the availability of servers, I know most of the vendors out there promise a 99.9 uptime yet we still see that there is an outage every once in a while, Amazon
themselves had a 5 hour outage in September, just imagine if you are processing your
data on the cloud and lose 5 hours in a business day and you miss the closure of a
tender or deadline, same thing happened with Google as well, personally for me I still
don’t see running a mission critical system 100% on the cloud is a safe option, when I
asked about Microsoft azure data center locations I was told that the nearest site is in
the Netherlands, which made me a bit reluctant and less of an enthusiastic about the
idea, as you know we have suffered lots of times from local internet due to cable cut in
the sea and having a backup connection like a WiMAX is not always an option for a
small company, but again everything comes with a cost and the world is moving
towards a cloud based models, as it takes lots of work off you ways, and provides you
with more business agility and efficient processes. As you know the Middle East as a
region has lots of political turbulence and the cloud would help you keep you business
moving no matter what, but again the level of awareness is very limited and the lack
representation of big market players is making the companies debate the cloud.

Aws: Implementation and usage of cloud based service comes with some tradeoffs
like any other technology out there despite all the positive outcomes like achieving
business agility and cost savings and pay per use, at what point you think balance of
the good and bad could be achieved?

R2: as a general statement I could say when the risk acceptably affordable, at this
point of time we understand that there is no one law that all the cloud vendors has to
work with, the governmental support and involvement level is very limited and the weak
representation of the global players are making things more vague for companies to
think of the cloud as a good option, not everyone of us is a data security expert, I
believe the point of balance will be achieved when we see government support for
companies which use cloud based services forcing service providers to adhere to
certain policies and when the cloud vendors help the companies to overcome the fear
and the ambiguity of the services and impacts ,

Aws: That’s, great but as I said earlier cloud comes with great values such as per
use and, elasticity, high availability and so on, and as you said the risk are also something that has not been eliminated, which point is it that you see yourself as GBM have found the balance?

R2: if I can run my business smoothly without interruptions and reduce my costs and increase my profitability without risking my personal data and critical information, with a legal law that protects my rights, then I wouldn’t doubt the cloud usage twice, also another factor that can help us reach the balance is the portability, the vendor lock-in can have severe impacts of the business.

Aws: The role of cloud brokers has emerged in other parts of the world: a third-party individual or business that acts as an intermediary between the purchaser of a cloud computing service and the sellers of that service. In general, a broker is someone who acts as an intermediary between two or more parties during negotiations. Would it help you’re decision to have cloud brokers in the region to help your decision making process?

R2: from my personal experience, people here don’t like to read and when you go drop 100 page privacy and security document on a company for a cloud –based service it will end up on someone’s desk for a long time before they “not read it”, having someone who would know all the various cloud offerings and tradeoffs and tell you exactly what your business need is actually great, however this is not the case here in Kuwait, at least not on a scale of SME businesses, companies like ourselves can’t ask for a consultancy service evaluation or due diligence to help us decide, we simply cant afford it on our scale of business. However, I would still require a proven record from that broker to be safe and know exactly what I’m getting into, I don’t want a broker signing me for a deal just for a bigger amount of cash for them. Personally I wish we had such trusted brokers in the market where they can help you bridge the gap of you knowledge on the current market offerings and your business need, specially that we don’t all speak the technical language and understand those big documents.
Aws: What guarantees would you ask for from a cloud provider to make you consider the migration

R2: the most important thing for us is that the vendor maintains our privacy and data security level, everyday you hear about those big data leaks within the big cloud service providers and to be honest its scary, Sony, Apple and others, that’s why a well defined NDA should be put in place to help us protect our business, also a clearly defined SLAs to ensure a certain level of support, unfortunately, when you have a small business you will always end up being stuck with the most basic cloud offering that there is, and you can’t negotiate those terms with the service providers. Cloud service providers still don’t understand how unique SMEs are and they try to get you with one solution for everyone, making things even harder on us to migrate to the cloud. There should be a proper direction from the region towards data protection, In the case of China they have a great firewall that serves the county, we should have something like that to help us increase the trust levels.

Aws: Some would argue that the cloud movement is very complex with all the historical data and the legacy systems and in house software, would this be the case at your company?

R2: indeed, this is a very common encounter here, most of us who have been in the business for a long time have loads of old legacy systems and historical data that we are afraid to even touch, usually also after using a system for a long time you tend to get a little bit too comfortable with it, even with all the shortcomings, we have so many old systems here like our general ledger application, and CRM, and payroll HR which we have been thinking about changing for too long but still lacking the confidence and support to do so, some of those systems are even out of support and this is raising lots of alarms for us, as a first step we are currently evaluating the cloning of those servers as it is to a cloud environment and start phased approach migration to new systems,
possibly Oracle based, however, as I said earlier we don’t have enough resources to do the proper capacity planning and plan the migration both financially and technically hence keeping this activity dragging for a long time now, if we manage to get the proper support for carrying this task from a service provider this would be great

Aws: This the Last question, if you where to open a new business (startup) how would you feel about starting on the cloud given all what was mentioned above?

R2: its going to be the cloud, change is a part of life and for us SMEs and startups to compete we need to adapt to the new market conditions, for startups the decision is easier, and helps them move faster into the market, I have seen some promising cloud-based startups of the past couple of months here Kuwait, specially among the new generation, have you heard of E-Netpay service here in Kuwait or Zigi the online restaurant reservation service, or ITSI the online store, they are all startups that are cloud based and moving steadily in the market.

Aws: that was all, many thanks for your time and cooperation in this study, and I wish all the best in your future business endeavors.

R2: you are most welcome.
Interview Transcripts of respondent R3:

Aws (researcher and interviewer): Good morning Mr. Sinisa, thank you for accepting to see me and participate in my research, would you mind introducing yourself please?

R3 (interviewee): most welcome, My name is Sinisa Markinov, I'm currently working as a General manager and projects lead in Prozone Middle-East we are a small business in the services industry, working between Europe and Middle East, we have two branches one is Serbia and the other here in Kuwait, we mostly work with IBM products like Maximo (Inventory management System), CRM implementations and others, I have around 30 years of experience in the IT field, and I've been in the Kuwait market for the past 10 of those, and I have a degree in computer engineering and science from the university of Novi Sad in Serbia.

Aws: I'm doing a masters level research for Dublin Business school in Ireland about cloud computing adoption problems in the region, and I choose Kuwaiti market as a reference as I have already worked here for the past seven years and observed the issue in various companies. However since there is not much research being done in on the region I decided to take the interview approach with market professionals such as you.

First question are you currently using cloud services in your business environment?

R3: As a matter of fact we do, we are currently using Gmail for Work solution for our email service, this is one thing that we actually observed recently, there is an increasing demand here in Kuwait for cloud based email service, lots of our clients are switching to cloud-based emails like office 365 or others. We are also currently evaluating the implementation of a new cloud CRM based on Microsoft dynamics, but that's still not confirmed, as we are still having infrastructure trust issues.
Aws: What are the reasons that made you choose to decide to go/not go on the cloud? And are you planning to use or implement any cloud-based service in the near future?

R3: To be honest with you, for us here in Prozone, there is still so much to consider before deciding to take our business on the cloud. Apart from the email services that I told you about, even the collaboration software that came with the Gmail for Work "Google Aps" we are not using, as it always clashes with the Microsoft office products. The main problem that made us our customers and us doubt the cloud is the weak infrastructure in the country. We are a software development company, and high availability and connection reliability are extremely important factors for our company. Furthermore, we still don’t feel safe to leave our codes on the cloud as we don’t have a proper local law to protect our security and customers’ privacy, making our customers insist on us working onsite. However, we are a technology services company, and if the whole world is moving in the cloud in 5 years and we still are not aware of the pros and cons, then this will make us lose our competitive advantages and eventually our customers and business.

Aws: but as far as the research concerns, Kuwait has good Internet connection and it ranks 20\textsuperscript{th} globally in terms of Internet speed.

R3: well, keep in mind that I’m someone who comes from Europe and we operate in both regions and as far as my personal experience I would argue that Kuwait is almost five years behind Europe in terms of Internet infrastructure, speed, and reliability. We get better connections in our homes in Serbia over the business offerings here. How many times the country Internet was impacted with the cable cut in the sea? As I told you we do not trust the Internet reliability here, so for us here in Prozone we are worried if we talk our business into the cloud it will impact our customers support levels and lose our competitive advantage.
Aws: that’s Great, and what are the cloud services offering you are using or planning to use in the near future, and what are the reasons of choosing this model over the others?

R3: As told you apart from the email itself we are not planning to use anything for the near future, at Prozone we are a services company, everything for us is about the availability, so to answer your question, what if I have a cloud-based sales or CRM application hosted overseas, and they went down, the risk is just too high for us to take, also we don’t have that much capital to invest in something that could be easily done manually like the sales processes and the tendering processes, at least for now. This might not be the case for all companies but for us here it certainly is, even if it means a little extra cost, but the risk is minimal and the level of control is more. However, we understand that the market is changing and you can’t afford not to be part of this change, so we are still evaluating the cloud options like what I mentioned previously the CRM online on Microsoft dynamics.

Aws: Last year amazon data services announced 6bn USD of revenue from its cloud sector, would that make you feel better about the Cloud business?

R3: well again it is not about the numbers, both regions are extremely different and years apart in terms of technology awareness, technology utilization and reliability, I could not emphasis enough on this point, the USA is completely different story as you know even if your not hosting the servers, at least the servers are in the same country, even in Ireland lots of data centers are present in Europe or Ireland as a tax paradise and the connection speeds there are among the top in the world, so its hard to compare the numbers between the two regions, the connection quality in any of those big data centers for Google, Microsoft, and Amazon is better than what we get in Kuwait as a country level.
Aws: Out of your years of experience in the market between Europe and Middle-East What are typical drivers and goals for Cloud adoption in general from your point of view?

R3: well in my opinion this is a classic business decision, the same way you ask why did so many factories start manufacturing in China instead of their country of origin, why did most of the companies move their development centers to India? It is always about the cost reduction, for sure there is more into it when you decide going to cloud, like availability, quality of service, internet speed, availability, data security, identity privacy, but on the other hand you eliminate the need for having computer administrators, hardware investments, expansive patch upgrades, storage, and all these things. In my opinion and as I have seen during the past few years, companies don’t want to invest in anymore in the IT resources, SMEs are always looking for ways to help them focus more on the core business and worry less about the supporting operations, specially when they don’t have the amount of money to invest in internal resources, the challenge becomes bigger to utilize what have and make more out of it, this have given the cloud the leverage to move on faster pace, in my previous company we had to pay to for 2000 Microsoft licenses for our business, imagine if cloud was an option at that time how different it would have been. I think cloud is taking over the classic outsourcing method and sooner or later it will eliminate the classic IT outsourcing method. Also in a way it is really helping big companies control licensing issues with piracy, so many companies all over the world buy less amount of user licenses than the ones they actually use.

Aws: For you here At Prozone, as a strong local technology pioneer, what would make you consider implementing a cloud based solution (SAAS, PAAS, IAAS)

R3: Currently for us we only used one service, however, as any other business we are on an ongoing mission for finding new ways to optimize our business and enhance our productivity, as I said earlier we are evaluating Microsoft’s CRM for a our next
move, also we thinking of adapting a cloud-based development environment to help us improve our output, but this is not in the near future, as a general concept I would argue that we are mainly interested in SAAS models that would provide our developers with shared repository and collaboration environment as we are constantly having troubles with version controls, and hardware testing environment investments.

Aws: What are your current views on the effectiveness of the cloud based model (pro/con)? And do you have any doubts about the effectiveness of the services?

R3: well, I will tell you one simple answer, you can never hold back the IT sector with an old idea, the whole world is moving in one direction, how long can you resist that, if the IT sector is moving that way, and if you don’t cope with the change, you will be out of business in no time, it’s very simple logic, can you tell me where are the guys who didn’t want to learn new programming language and they wanted to stick with COBOL, or for the developers who only believed in developing of desktop applications, where did they go ?, those things where great long time ago and served the world perfectly, but at some point change was due, if you miss the train you will miss the trip. The technology market has moved from mainframe, to PC, to computer networks, to web, to cloud. SMEs in particular are in constant need for that homework to be done, to reinvent their businesses in order to help them compete better in the market and survive, currently in Kuwait, we are not there yet for the cloud, but I could say this confidently, the future is on the cloud. Cloud-based software are getting better by day and if we could reach a stage where we can customize those out of the box software to cater to our business needs, then I could definitely see a future in there.

Aws: Implementation and usage of cloud based service comes with some tradeoffs like any other technology out there despite all the positive outcomes like achieving
business agility and cost savings and pay per use, at what point you think balance of the good and bad could be achieved?

R3: well, the field of technology is a continuous improved field, the point of balance per say something that can’t be easily defined, as we see everyday what might be good enough today will change in couple of mouths, it is just the nature of the industry. All those big industry service providers are not playing dice in the market and they are listening to the needs, business requirements and requests and try to generalize and streamline those request to make a solution that caters to the companies needs, however this is not always the right method. To answer your question I think the point of balance can be achieved with the cloud offerings manage to meet the expectations and uniqueness of the businesses and not just get SME stuck with the basic offerings that isn’t even enough to protect their data and business processes then this will make a bit of a big difference, for us here in Kuwait for example we are kind of pushed to use the same basic services that the SMEs get in the USA and Europe, and that is not the way it should be, those big cloud providers need to understand that the markets are not the same and the way we do business in this region is simply different, not to say what is right and what is wrong, but this region is simply different, and we cant just modify all our processes to make it fit in the cloud, at least for now. Also another value that the cloud could bring to ensure the balance, is that those big companies as I said have access to business all over the world and if they can go the extra mile and help us as SMEs reengineer our processes to reach optimum results, instead of us doing it on our own to fit into the cloud, then this would make another huge difference in the market. For many of those companies IT is not part of their core business and they simply don’t understand it or aware of the potential that can be achieved with the cloud.

Aws: The role of cloud brokers has emerged in other parts of the world: a third-party individual or business that acts as an intermediary between the purchaser of a cloud computing service and the sellers of that service. In general, a broker is
someone who acts as an intermediary between two or more parties during negotiations. Would it help you’re decision to have cloud brokers in the region to help your decision making process and reduce the gap between the IT and business that you have mentioned earlier?

R3: Certainly yes, during my years of experience I have noticed that this was always the case with new technologies, companies, specially SMEs they don’t have the level of technology awareness to understand the new technologies, nor do they have enough amount of resources to do so, having a reliable experienced person who can tell what solution fits your needs perfectly, and why you should take this over the other is certainly a role that we are missing in this region, but I would argue that that this role should not be only about the cloud, but also if my business needs 3rd party hosting or even in-house I would like this broker to tell me so instead or just telling me yes it cloud all the way, this would help SMEs and other companies reach new levels of optimization and increase the level of internal awareness of the potential of the new technology , perhaps I would rather calling them IT brokers, persons with proven track record, who not only would tell me I have to go to the cloud and I find myself paying for a service that is not 100% effective, they should check what we have as a need, what the possibilities, potential solutions and cost, then suggest a method, then I would feel safe doing business with them.

Aws: What guarantees would you ask for from a cloud provider to make you consider the migration

R3: Again, cloud services a bit of a complex offering, and there is no one solution that fits all, our main problem as SMEs is that we are always stuck with the basic offerings as everyone else, regardless of the nature of the operations we run, also not all guarantees are cloud service provider related, like in the case of the internet connection stability and availability, this is an ISP related task, furthermore, most of these big companies they promise you an always available environment and no down
time, however, we still can see that this is not the case, we often read about those down
times and service interruptions regardless of what they promise. Surly we will require
the main basic features, service uptime, data security, data privacy, no added hidden
costs, also another thing that is needed, on a governmental level and service provider
level, a binding law that helps us ensure our business continuity and protects our
identity, for example in the EU the region is protected by the data protection act of 2012
and there is even a new modified version in the works now, that is something that is
clearly missing here, and a big reason that makes us fear the cloud-based business, I
would say if it was possible for the service providers to come up with something like a
shared law, given the lack of governmental law, this is something that could bring us to
a new level of maturity in the region.

Aws: Some would argue that the cloud movement is very complex with all the
historical data and the legacy systems and in house software, would this be the case at
your company?

R3: well, I would say it is a problem, however not a main problem, usually you
develop a sort of a relationship with those systems that you become used to having
those old systems and you simple think it is good enough, as you actually know the in
and out of those legacy systems, in my opinion it all comes to about expense, yes it is
old but since it serves the need then we are covered, however as I mentioned earlier
change is part of the business and at some point no matter how much you delay the
move, this system will reach a point of being more of burden that it is a benefit, so the
way I look at this, it should never be an obstacle for cloud movement and if you say it is,
then you are probably doing something wrong. It is not just talking about cloud based
per say, this could mean a new in-house or co-hosted services. This is all dependent on
the business need based on the value added by the new solution and the future vision.

Aws: This the Last question, if you where to open a new business (startup) how
would you feel about starting on the cloud given all what was mentioned above?
R3: Again, this all comes to the same problem how much money you have and what is your business nature and need, however, given the ease of use and time to market that is provided by the cloud, we can’t overlook the services provided by those big cloud service providers, however, out of my market experience I would argue the most effective way is a hybrid cloud solution for the first couple of years, we know that the market is going all cloud direction, but I can’t use the technology of tomorrow today, as I said earlier Kuwait is not yet ready for full cloud movement, its quite risky to put all your business on the cloud now, but since someday you probably will, I would argue that the hybrid solution is something that shall be seriously considered by startups, It will ease the future transition, and will give you some insight about the problems you might face in the future so you would be better prepared.

Aws: that was all, many thanks for your time and cooperation in this study, and I wish all the best in your future business endeavors.

R3: you are most welcome it was certainly my pleasure
Interview Transcripts of respondent R4:

Aws (researcher and interviewer): Good morning Dr. Bilal, it is a great pleasure to see you again and thank you for accepting to participate in my research, would you mind introducing yourself please?

R4 (interviewee): That’s no problem at, My name is Dr. Bilal Natour General manager of ATCC (Advanced Technologies Company) in Kuwait, a local SME in the IT implementation and solution architecture business, the company specializes in low voltage implementations security systems, access control, monitoring and tracking systems. I am technology enthusiast with more than 20 years of experience in the local market of Kuwait; over the years I was the founder of various SME companies between Kuwait and France. I have doctorate in digital signals processing from France.

Aws: I’m doing a masters level research for Dublin Business school in Ireland about cloud computing adoption problems in the Middle East, and I choose the Kuwaiti market as a reference as I have already worked here for the past seven years and observed the issue in various companies. However since there is not much research being done in on the region I decided to take the interview approach with market professionals such as you to answer my research question.

First question are you currently using cloud services in your business environment?

R4: Actually we don’t, as of now most of our servers and services are 3rd party hosted in rented space at Zajil Kuwait in the free zone, like our website and email exchange servers. However, as I told you over the phone we recently made a partnership with a cloud based services companies (SAAS) to market their products in the market as we are sensing a potential towards that direction, even though it is still very limited. The first company is Euroscan, a remote monitoring cloud-based system for manufacturing and vehicle tracking systems and the second is Sensaphone, also for
monitoring solutions and remote alarms.

Aws: What are the reasons that made you choose not to go on the cloud? And are you planning to use or implement any cloud-based service in the near future?

R4: well, to be frank with you we don’t have anything in the pipeline for the near future in terms of cloud adoption, we are a bit of a small company, and having all my running business dependent on a third-party vendor and internet service provider is so much of a risk for us now, I know what you are thinking, what is the difference between the 3rd party hosting that we have with Zajil here in Kuwait and a cloud based service, but as a matter of fact at least here I know where my data is and if something shall happen to interrupt my business I can go to Zajil data center and figure something out to avoid jeopardizing my business.

Aws: but Dr. Bilal lots of the companies on a global scale trust the cloud-based models and they say that for example automating their sales processes with Salesforce or other solutions made them achieve more business agility and reduce costs.

R4: as true as this maybe, but its not the case here, at the moment we do not see that we ready for such move, as we lack the trust in the local ISP internet service reliability, and not sure about the cloud providers either, however, it is something we might consider on a later stage if it proves effective.

Aws: following up on that thought, what are the cloud services offering you are using or planning to use in the near future, and what are the reasons of choosing this model over the others?
R4: To be honest with you we have not really considered this in details until now, but as a technology services company we might need to start taking more serious steps towards the cloud on the future, most probably it would start with email service and evaluate the effectiveness of the service, the main reason for doing so would be to help embrace the cloud more to our customers and give them more trust in the move, also to prepare ourselves for any market shifts as we will be already familiar with the process itself and the implications. But this is still way down the road maybe a year or so, and will be mainly for SAAS models to help promote our cloud based solutions that we sell.

Aws: Last year amazon data services announced 6bn USD of revenue from its cloud sector, would that make you feel better about the Cloud business?

R4: the markets a different, the way we run businesses varies across the area of activity, fine things are working perfectly to some extent in Europe, but is it the case here, most of the companies here have no idea about the cloud services or the value it brings to the business, the level of market education and awareness is very low in comparison to France for example, as I have seen both. Things will change at some point, but as of now all what we see are slow steps towards following the new trends, without even proper knowledge or consideration of the implications, the level of market awareness is very limited, the lack of the big players in the market like Amazon and Salesforce is something that you might consider here, even Oracle despite the fact that they are here but their representation is very small in comparison to Dubai, or even other parts of the world, even IBM they operate through partners not official representation office. Unfortunately, the market is not being ready yet; I will give you an example, couple of months ago we lost a massive deal with Zain (largest telecom operator in Kuwait), the reason was that Zain felt that the cloud- based model was neither safe, nor reliable enough for them to have the monitoring system installed, and this is only one of many other stories, the mentality of the decision makers in the market
is still reluctant to having any core or even important system implemented outside their local control.

**Aws:** Out of your years of experience in the market between Europe and Middle-East, what are typical drivers and goals for Cloud adoption in general from your point of view?

**R4:** Well, I would argue that the main driver that will make companies go into the cloud is the proper awareness. We work with so many clients every day, and I can confidently tell you that the main obstacle of cloud adoption here is the lack of awareness and trust in the intangibility of the cloud. SMEs are not all technology experts and they simply fear the unknown, on the other hand, we are afraid of the tradeoffs in the adoption model, yes we read and hear everywhere that the cloud is cheaper, safer, more secured and faster, but we didn't see any working example or a proof of concept to make us feel better about it. I mean what if the vendor went out of business, what if my data got leaked, what if the service got interrupted, all these questions are factors that worry us and we cannot see any assurance, not just marketing material that tells me we are safe but more supported evidence. However, to answer your question from a broad perspective, factors that influence SMEs usually to go to the cloud are mainly cost-related, as small companies we usually lack the proper upfront capital investment to fulfill the business needs, also the lack of experience most of the small companies don't even have a proper IT department, as you know these kind of talents costs a lot to be acquired and they prefer bigger companies, furthermore, the enhanced time to market is something that usually helps embrace the cloud, you can launch and control a new branch or overseas operation in no time using a cloud-based model, elasticity is something that we as SME definitely need as well, why should I pay for something I will only use once a month during a couple of days peak period, just imagine how much it would save in the hardware costs, no hardware upgrades, no patch installations or maintenance.

**Aws:** For you here at ATC, as a strong local technology provider, what would
make you consider implementing a cloud based solution (SAAS, PAAS, IAAS)

R4: Again, as I told you in the beginning of this interview we still not using any cloud based services aside from us selling two solutions that are on the cloud to some of our customers, however lately, we are starting to consider putting more efforts into the cloud as a response to the market moving that direction and to help our clients and ourselves overcome the fears we have, as I said earlier we will most probably start small with something like and email service, then we will evaluate as we move, I would say that we will mostly be interested in SAAS models that will provide us with latest software technologies and services, without the headache of the hardware investment, maintenance and upgrades, perhaps things like CRM, or ERP would follow on a later stage, this is something that we will need to sit and create a roadmap for, unfortunately we don’t have experience in the cloud nor the manpower to carry on the activity at the moment. The whole market will change at some point and as SME we don’t want to be left out and become outdated.

Aws: What are your current views on the effectiveness of the cloud based model (pro/con)? And do you have any doubts about the effectiveness of the services?

R4: To be honest, here at ATC we don’t have so much experience on what cloud is capable of apart from the stuff I mentioned earlier, in general our experience and knowledge is very limited when it comes to the market offering due to lots of factors, specially the fact that we don’t have strong governmental direction or local representation of the big companies, however, I have lots of experience in the European market and I worked there for a long time, so if something is good enough in Europe it could only mean that its is serving the customers well and has lots of potential, since the market here is I would say about 5 years behind Europe, then this is something that is coming on a later stage due to lack of understanding of the value that it would bring to the business, I hear that some big companies are starting to improve their cloud division in the region, this would help change the formula and embrace the adoption
rates, something that us as services companies are actually hoping for to help us improve our business. As of now I can’t give a definite answer of a pro cloud or not, the market itself is not ready, we at ATC are definitely not as well, the cloud holds a lot of great potential in terms of the things we discussed earlier (cost savings, elasticity, pay per use, upgrades, high availability) yet, lets take the vendor issues first, what if the service quality was interrupted, as a small company we will not have any special treatment by the vendors, also what about the vendor lock-in and the hidden costs of the migration, if we had problems with SalesForce per say and we decided to move to Microsoft CRM instead, the migration process the different data type, those are all questions that need to be answered, how can we make sure that the vendor will remove our data after we migrate to another vendor, even with all the SLAs and NDAs signed, those big companies know exactly the way around the legal documents, on the other hand, there is the ISP factor, we are reliant on the ISP as much as the vendor in this case, and everyone have suffered from the bad impacts of the cable cuts in the sea over the years. Also things like the lack of control over the systems and local experience is still very poor, so yes things are still a bit vague at the moment and we definitely see a potential, but the fear is not going away anytime soon specially in terms of security and business continuity.

Aws: Implementation and usage of cloud based service comes with some tradeoffs like any other technology out there despite all the positive outcomes like achieving business agility and cost savings and pay per use, at what point you think balance of the good and bad could be achieved?

R4: This could actually be simply answered from what discussed earlier, when we are provided a service that is reliable, cost efficient and secured, only then the balance can be reached, I wouldn’t want my whole business getting paralyzed and the quality of service being poor to my customers, just to save some money, I believe the new market movement towards mobile operators purchasing ISPs will help enhance the country’s overall internet reliability and open a new page in cloud adoption rates, like the case of Ooredoo buying FastTelecom and Zain accruing QualityNet. Also a great point of
balance will be achieved when we get the government buy in to the cloud services as an environmental initiative to reduce the power consumption, and proper privacy policies and laws to help protect our data and business, we also need more experienced trained manpower available in the market, unfortunately some of the companies selling the cloud based solutions here are actually experimenting and learning as they go. Mostly I would argue that the balance is something that varies and changes from one company to the other, as SMEs we are usually different and what scares us about the cloud is that since our operations are small we get the most basic offerings, if vendors understand that and help us streamline the business and tailor the solutions, I thing this would make a big difference.

Aws: The role of cloud brokers has emerged in other parts of the world: a third-party individual or business that acts as an intermediary between the purchaser of a cloud computing service and the sellers of that service. In general, a broker is someone who acts as an intermediary between two or more parties during negotiations. Would it help you’re decision to have cloud brokers in the region to help your decision making process and reduce the gap between the IT and business that you have mentioned earlier?

R4: absolutely yes, the most important thing is as I told you is to have an experienced trusted sources who can elaborate and explain the benefits and disadvantages of the cloud adoption models and provided services, mostly small business don’t have enough resources and experience to do so, and carrying such activity will need lots of time consuming efforts and exploration which SMEs has no room for, however, I personally would prefer them being named as consultants, experts who would evaluate the business need and suggest the best options based on the available solutions, as you know brokers tend to have bad reputation and basically they get paid from service providers in this instance, so I would not want someone who would risk my whole business for better relationships with a cloud vendor, I would feel
more safe with a professional who has a proved record of experience and give me the right advise.

Aws: What guarantees would you ask for from a cloud provider to make you consider the migration

R4: Honestly since we haven’t implemented anything at the moment, I didn’t really give it lots of thoughts, however of the top of my head it would be the same basic requirements you ask for when you are implementing or hosting services internally, the high security, data privacy, service availability on both sides (ISP and service provider), a proper SLA and NDA agreements will be in order for sure to protect the business, however, as mentioned earlier those big companies know all the legal ways around the contract and that’s something that worries us in the case something occurs, another thing that worries me is that those contracts expiries on a yearly basis or so, what happens next if they decide to increase the prices, cut the service quality and so on, I believe I will be asking guarantees in terms of 100% smooth portability and migration with a proof of concept to be tested. Also being stuck between the ISP and the service provider is a real worry for me. For example I have a contract with telecom operator here they promised me a higher speed when I signed, but now I don’t get that speed and they tell me in the contact it says up to that certain speed, it is not guaranteed, you see where I am going with that, you can never be sure 100%, maybe that’s why the cloud broker sounds like a good idea to me.

Aws: Some would argue that the cloud movement is very complex with all the historical data and the legacy systems and in house software, would this be the case at your company?

R4: Well that is certainly the case in so many companies and we have seen that over the years with so many clients, however, for us here we did overcome that problem
a while ago and we do not have any old systems remaining in our premises. But as I
told you this is a big problem out of our experience at customer sites, you always get
those old annoying systems who people have developed a relationship with over the
years and they are happy with it no matter what, usually companies are afraid of big
changes so they prefer something in their comfort zone, I could not stress enough on
how many times we had to run both old and new systems for long periods time, just to
make sure the transition is achieved and people are happy with the results, this is could
also be something that scares companies of the cloud as they will be upgraded to the
latest versions of software or regular basis.

Aws: This the Last question, if you where to open a new business (startup) how
would you feel about starting on the cloud given all what was mentioned above?

R4: As a matter of fact I would, if it is a new business I would not want to risk
investing so much capital on the hardware, not to mention that the risk will be
acceptable on that way. In couple of years things will catch up for the cloud, so if you
are to start now why start with an old technology and might not be useful. However to
keep the risks at a minimum level and since the market conditions are not ready for a
full cloud based implementation, I would say to start with a hybrid solution that caries
your non-core or critical systems on the cloud until the conditions are right for a full
movement, the future of the region appears to be going that way, and no matter how
much we doubt it now, it will be changed in the near future, the high competition and the
fast pace movement is forcing companies that way, so why would we want to start late.

Aws: that was all, many thanks for your time and cooperation in this study, and I
wish all the best in your future business endeavors.

R4: you are most welcome it was certainly my pleasure
## Research Time plan

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