Cloud Computing and Small Businesses
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Introduction

Cloud computing is a technology that medium and large businesses are embracing as the new way of doing business. They are reducing hardware costs, software costs and IT costs by changing over to Cloud services, and it's just good business to do so. So with the majority of medium to large businesses making the transition to Cloud services, why is it that on average, only 30% of small businesses are using Cloud services (Comcast, 2014)? It has to be asked, if the medium to large businesses are changing significant portions of their business over to Cloud services, why are the small businesses not doing the same thing? If Cloud computing is such a great technology that reduces costs, improves security, and lets the business scale their services up or down as needed, why are small businesses continuing to do 'business as usual' and falling behind the rest of the business world?

In this paper, I plan on finding out how many local small businesses are using Cloud services, how many plan on using them in the next five years, and why those currently not using Cloud services have not changed over like their medium to large business competitors.

Research Questions

The key questions shaping this research are:

- What do small businesses stand to gain from embracing Cloud computing?

- Why have such a large percentage of small businesses not made the migration to Cloud computing?

- What Cloud services, if any, do small businesses plan on using within the next five years?

Background

Cloud computing involves distributed computing over a network where a program or application may run on many connected computers at the same time. It specifically refers to a computing hardware machine or group of computing hardware machines, commonly referred to as a server, connected through a communication network such as the Internet, an intranet, local area network, or wide area network. Any individual user who has permission to access the server can use the server's processing power to run an application, store data, or perform any other computing task. Therefore, instead of using a personal computer every-time to run the application, the individual can now run the application from anywhere in the world. The server provides the processing power to the application and the server is also connected to a network via internet or other connection platforms to be accessed from anywhere (Williams, 2010).

The term "the Cloud" is essentially a metaphor for the virtual computing. Companies have made the phrase "in the Cloud" even more popular as a way to refer to software, platforms and infrastructure that are sold as a service through the Internet. The provider has actual servers which host products and services from their remote location so the end-users don't have to. They can simply log on to the network without anything being installed. The major models of Cloud computing services are known as software-as-a-service, platform-as-a-service, and infrastructure-as-a-service. These Cloud services may be offered in a public, private or hybrid network. Google, Amazon, IBM, Oracle Cloud, Rackspace, Salesforce, Zoho, and Microsoft Azure are some of the biggest Cloud vendors.

Network-based services, which appear to be provided by real server hardware, and are in fact provided by virtual hardware simulated by software running on one or more real machines, are often called Cloud computing. Such virtual servers do not physically exist and therefore can be moved around and scaled up or down on the fly without negatively affecting the end user.

Significance of Cloud Computing

Cloud computing is a fairly disruptive phenomenon that could have the potential to make IT organizations more responsive to changes in the market. Cloud computing promises economic advantages, speed, agility, flexibility, infinite elasticity, and innovation (Murugesan, 2011). Cloud services have grown in popularity over the past couple of years with Cloud computing becoming the number one strategic trend (Wiens, 2014). Cloud computing, is a computing mode in which providers remotely deliver a variety of IT-enabled on-demand capabilities to consumers.

Workforce management solutions provided via the Cloud, provide web or mobile access to workforce management applications that help organizations significantly reduce their workforce costs. These applications can take advantage of cost efficiencies such as shared components and may also embrace the on-demand infrastructure of a Cloud to provide additional services when needed.

Methods of Research

Data on Cloud services, its benefits and risks, was obtained by individual research from technology journals such as IEEE Security & Privacy, I.T. Professional, and books written by experts on Cloud computing. Additional data will be obtained from websites specializing in Cloud services, interviews with professors in IT, interviews with IT techs currently using Cloud services, and surveys from local businesses on their current cloud service usage and planned Cloud service usage. I surveyed local businesses that included local restaurants, travel agencies, auto repair stores, local grocery stores, electronic stores, and furniture stores. The information from the surveys and interviews will be put into graphs to show how small businesses plan to use Cloud services, how they currently use Cloud services, or if they do not plan on changing their standard operating procedures by switching to Cloud services.

Results

Through my literature review and surveys with local businesses, I have found that 65% do not use Cloud services in any aspect. 82% of surveyed businesses had heard about some of the different Cloud services available, but as the results show, a large number are still unwilling to move their business into the virtual world for various reasons. Through the interviews, I have analyzed the results of the information provided from the small businesses and the following graph shows the percentage of these businesses using Cloud services and which services they use, have used, or plan on using in the next five years.

While 65% of those surveyed don't use cloud services in any form, Cloud services have still managed to make their way into the small business world. 43% of those businesses surveyed plan on expanding their business to the internet via E-commerce to help them sell their products and services. Web Hosting, which is leasing a domain name from a company and/or having another company maintain their website for them, is expected to increase by 37% with those surveyed in the next five years. This can easily be explained because designing and maintaining a website is not an easy task. Small businesses can let larger companies do this for them, save time, and increase sales with a well designed and maintained website by companies that specialize in this. From my interviews and research, I have found that

most small businesses plan on expanding into Cloud services in one aspect or another to try to increase their competitiveness and increase their profitability.
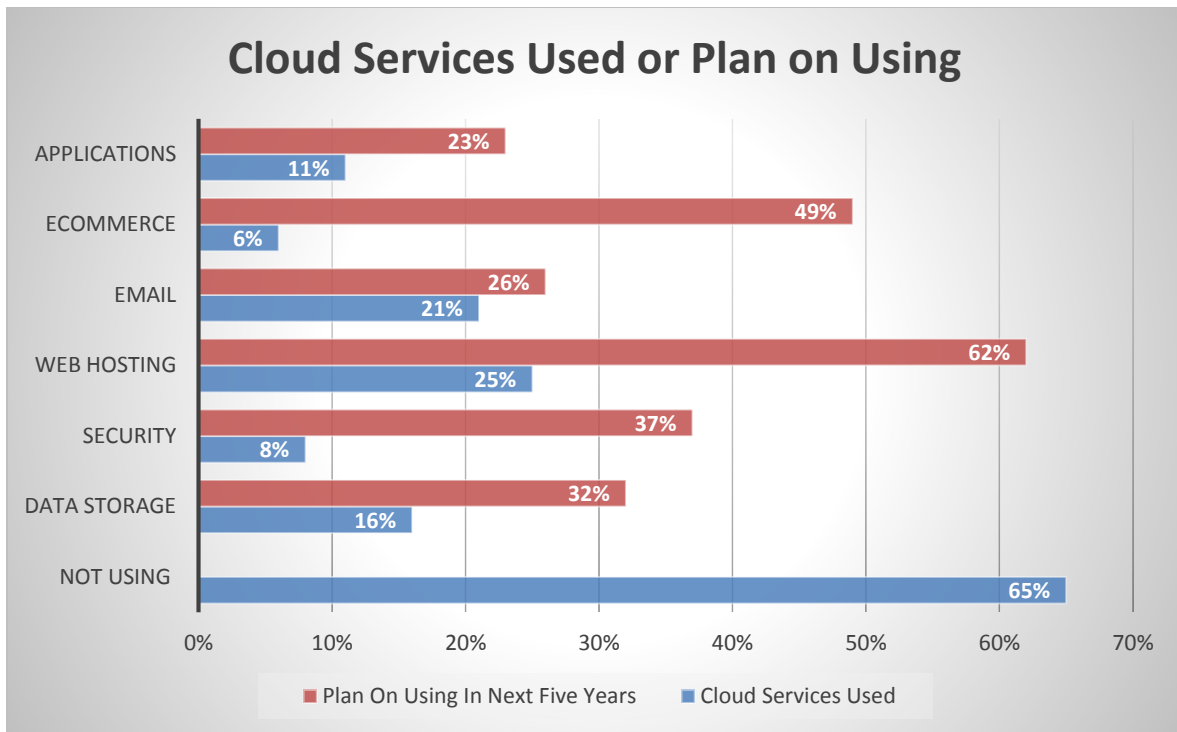
There are several different reasons why those that are using Cloud services started using them and also why those not currently using Cloud services would use them in the near future.

Before doing my research, I had expected that cost savings would be the primary reason behind small businesses moving to the Cloud, but as the graph shows, I was mistaken. 52% of businesses surveyed are more worried about being able to adapt with the times to keep their business current than saving a few dollars. Cost benefits was at 48%, which does show that cost is still a major factor when considering moving some of their business functions to Cloud services. 36% of those businesses surveyed would being willing to use Cloud services as a means of added security to their business, but even those who considered moving because of the added security did have reservations because of the recent security breaches that have happened to large companies. While these cases are high profile, they are in fact rare because of the level of security they have. Small businesses are more likely to fall victim to identity theft attempts than larger companies because the small businesses just doesn't have the resources to actively prevent attacks. Green technology and disaster recovery were 8% and 5% respectively, but still play a role. As the Green movement gains ground over the years, I would expect more businesses having this reason in mind. Disaster recovery was only 6% because most small businesses don't expect any kind of disaster to befall them. When asked if they could recover from a fire or small flood from broken pipes, only those 5% utilizing disaster recovery were certain they could reopen their business in less than 10 days or even reopen at all.

Conclusion

Every large corporation was, at one time, a small business. With the services that are available via the Cloud, every small business has the potential to be the next large corporation. Small businesses make up 57% of the country's private sector work force (Groth & Bhasin, 2011). With the majority of the workforce being employed by small businesses, it would be expected that these businesses would be trying to take advantage of any benefit they could to gain more business and increase profitability. In most cases, this is just not true. As this research has shown, 65% of the businesses surveyed do not currently use Cloud services of any kind. These businesses are falling behind their competitors that are adapting, and they are losing money that could be used to expand their business into other areas.

With such a large portion of small businesses not using Cloud services, I looked for a common reason. Through my surveys and interviews, I found that the vast majority of small business owners are middle aged or older with no business degrees and most had not heard of any Cloud services other than what their smart phone does. I believe it is a combination of just being out of touch with current technologies and not having the training and knowledge gained from a degree that is contributing to the disproptional amount of small businesses not using Cloud services. There are ways to counter this and bring more small businesses into the fold of this expanding technology. Free educational and training classes offered to small business owners by their peers that are business and technology experts would help to rectify this Cloud computing knowledge deficiency. Small businesses would then have the chance to embrace the new ways of doing business and help them achieve their growth potential.

Cloud Services Used or Plan on Using

APPLICATIONS
- Plan On Using In Next Five Years: 23%
- Cloud Services Used: 11%

ECOMMERCE
- Plan On Using In Next Five Years: 49%
- Cloud Services Used: 6%

EMAIL
- Plan On Using In Next Five Years: 26%
- Cloud Services Used: 21%

WEB HOSTING
- Plan On Using In Next Five Years: 62%
- Cloud Services Used: 25%

SECURITY
- Plan On Using In Next Five Years: 37%
- Cloud Services Used: 8%

DATA STORAGE
- Plan On Using In Next Five Years: 32%
- Cloud Services Used: 16%

NOT USING
- Cloud Services Used: 65%

Legend: ■ Plan On Using In Next Five Years ■ Cloud Services Used

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Reasons for Moving to Cloud Computing

ADDED SECURITY — 36%
BUSINESS ADAPTABILITY — 52%
DISASTER RECOVERY — 5%
GREEN TECHNOLOGY — 8%
COST BENEFIT — 48%

■ Reasons for Moving to Cloud Computing

0% 10% 20% 30% 40% 50% 60%