# **Evaluation of the Collaboration Productivity Suite Office 365 at Belize Water Services**

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## Abstract

Research has been conducted for various disciplines; each one significantly adding to the existing body of literature. This applied research being carried out has the same purpose and in addition it evaluates Microsoft Office 365 (also known as One Drive) success at Belize Water Services. It encompasses a theoretical foundation and tests the adaptation of the DeLone and McLean's IS success model. This model consists of seven dimensions, namely: information quality, system quality, service quality, complimentary technology quality, use, user satisfaction, perceived net benefits and cloud computing capabilities which as a result, allows you to have real time data. To assist in the evaluation of Office 365 success and net benefit, questionnaires were answered by 30 participants (all whom are employees of Belize Water Services and users of the system). This paper concludes by stating that the management information system was a success and also by discussing the limitations of the study, which should be addressed in future research.

### Keywords: Information system, Success Model, Microsoft Office 365, One Drive

# Introduction

Microsoft Office 365 (One Drive) is an integral information system at Belize Water Services. It is possibly one of the best known and easy to navigate, as it uses the familiar Office suite of products hosted within a Cloud environment that provides a more familiar interface for users, whilst allowing colleagues access to the software they know, no matter where they are based. Office 365 allows you to access your emails, calendar, and Office web apps, partake in instant messaging with colleagues and share files across the whole organization (Ashby, 2012). It is a Business Productivity Online Suite (BPOS) and is popular among many organizations.

Office 365 has significantly impacted the employees of Belize Water Services and has provided the company with a competitive advantage since this system allows work to be done more efficiently and effectively; thus allowing more time to attend to internal and external customer's needs. In addition to providing a competitive advantage, Office 365 has provided Belize Water Services with other perceived benefits. These include the reduction of risks, minimization of costs and the sharing of information. With this system, the company does not have to "back-up" information as these are saved directly to the

"Cloud". Moreover, it allows an entire team to work in one document simultaneously and provides automatic saving of the document!

This research will be very informative to the management team at Belize Water Services because it will provide actual data of how useful the system is. Moreover, it will underline feedback from the users point of view and will allude to how often the system is actually used thereby indicating if this system is being utilized at its full capacity and possibly indicating if the purchase was indeed a good investment.

## **Literature Review**

As a cloud-based service, Office 365 offers all the benefits you would expect from a hosted software suite. The pay-as-you-go model allows organizations to pay for only what they need at any given time by increasing and decreasing subscriptions on the fly. With highly automated maintenance, dynamic storage capabilities and deployment flexibility, local IT departments can spend less resources managing desktop software and focus their efforts on strategic initiatives. The largest impact of using the cloud-based Office 365 suite ¬will be visible to both, users and IT departments. Users will always have the latest features by performing upgrades behind the scenes without any interaction from local IT departments at no additional cost (The Verge. 2013)Microsoft Office 365 consists of five components that are aimed at increasing the productivity of the user base. These include the Office Professional Plus, SharePoint Online, Exchange Online, Web Apps, and Lync Online. While each of those components are all cloud-based through the web, they carry the same user-interface and familiarity with the existing Microsoft offerings for desktops. Additionally, content and documents can be transferred back and forth between the desktop applications and Office 365 applications seamlessly.

Moving to the Office 365 cloud comes with some key features and benefits. Namely, your organization gets to continue to use the software you have been using for years, but you now get to shift the burden onto Microsoft. In addition to shifting the burden to Microsoft, there are some other key benefits (CIO, 2013).

#### **GENERATE GREATER PRODUCTIVITY WITH OFFICE 365**

Productivity is a great word that management-consultant types love to use. In the real world though, productivity can be summed up in a simple question: Can you do my job easier or not? Microsoft has invested heavily and spent a tremendous amount of time trying to make the user and administrator experiences of Office 365 as easy and simple as possible.

The idea is that increasing simplicity yields greater productivity. Whether it is an administrator setting up a new employee or a business analyst writing policy and procedure documents in Word. When the technology gets out of the way and you can focus on your job, you become more productive (Seattle Times, 2013)

#### ACCESS FROM ANYWHERE WITH OFFICE 365

Accessing your enterprise software over the Internet has some big advantages. For o e, all you need is your computer — desktop, laptop, tablet, or phone — and an Internet connection or phone coverage. Because the software is running in a Microsoft data center, you simply connect to the Internet to access the software.

Another benefit of accessing centrally located data is that you always have a single source of the truth. If you make a change to a document from your tablet at home and then your colleague views the file from their phone, she will see the most up-to-date document. Gone are the days of e-mailing Excel documents between machines with long file names. Security can be as strict or as lenient as desired. For example, you may want everyone in the organization to be able to see a company policy document but only want a select group of individuals to edit the document. In addition, SharePoint takes care of all the versioning and even lets you check out a document to edit so that nobody else can edit it at the same time (Tansley, C., Newell, S., & Williams, H.2001).

## **OFFICE 365 PROVIDES IT CONTROL AND EFFICIENCY**

IT personnel like to know exactly what everyone is doing with their systems at all times. If something goes wrong, then it is probably due to user error. Your systems do what they are supposed to do. Microsoft has gone out of its way to create an unprecedented level of control for administrators. But that is not all. Not only do administrators have control over the environment, but it is also actually designed to be simple in nature and intuitive.

Research model Hypothesis and Methodology

This research project tested the overall management information system Office 365 at the Belize Water Services. In order to analyze the success of this information System (IS), the researchers studied the IS success model of DeLone and McLean 1992, which is a very popular model in the field of IS success. The study was designed to test the effectiveness of the IS and evaluate how the system has improved productivity and assist the company to achieve its organizational goals. DeLone and McLean and devised a model of interrelationships between six success variable categories which focused on: information quality, system quality, service quality, usage intentions, user satisfaction and overall system benefits (DeLone & McLean, 2003) along with the two other additional models complementary technology and computer self-efficacy.

Furthermore, the researchers attempted to analyze the IS success in developing countries, however on drawback of developing countries is poor internet connection. Globally, Belize is considered as a developing country however, they lack the harmonizing human capital and skills needed in order to entirely achieve IS success. Many organizations within Belize have invested considerably in information systems and programs that will build the company, but unfortunately these systems have failed to provide ideal success due to the country's insufficient human skill sets needed to operate the system. The study also attempted to extend the DeLone and McLean model regarding IS Success to the developing world of technology.

The research model presented in figure 1 is an extension of the traditional model use to measure IS success in developing countries.



Figure 1 illustrates the six constructs of the DeLone and Mclean model inclusive of the additional construct, Complementary Technology Quality and computer self-efficacy used to validate this research study.

The hypothesized relationship between Office 365 system success variables are based on the theoretical and empirical work reported by DeLone and McLean (2003). As they suggest, the success model needs further development and validation before it could serve as a basis for the selection of appropriate IS measures. Accordingly, the study hypothesized the following twelve hypotheses tested:

Hypothesis:

- H1. Complementary technology quality will positively impact user satisfaction.
- H2. Complementary technology quality will positively impact system use.
- H3. Computer self-efficacy will positively impact system use.
- H4. System quality will positively impact user satisfaction.
- H5. Service quality will positively impact user satisfaction.
- H6. Information quality will positively impact user satisfaction.
- H7. Use will positively impact user satisfaction.
- H8. Information quality will positively impact use.
- H9. System quality will positively impact use.

H10. Service quality will positively impact use.

H11. User satisfaction will positively impact perceived net benefit.

H12.Use will positively impact perceived net benefit.

## **Construct measurement**

In order to ensure validity of scales, measuring instruments from previously verified instruments were used in this research for the quantitative data collection. The information quality construct was measured by a six -item scale from Bailey and Person (1983), with modifications to fit the specific context of Office 365. Bailey and Pearson's instrument is widely accepted, has been tested for reliability and validity by several researchers, and has become a standard instrument in the IS field. A four –item scale was adopted and refined from instruments used by Alshibly (2011) were used to measure the system quality construct.

Service quality construct was measured using a five-item scale was adopted and refined from instruments used by Chang et al (2009). Use was measured by a four-item measure adapted from previous studies (Balaban et al., 2013; Rai et al., 2002). Computer self-efficacy was measured using a six-item scaled adopted and refined from instruments used by Compeau, D. R., & Higgins, C. A. (1995) and complementary technology quality was measuring using a four-item measured scaled adopted from Teece, D. J. (1988). In this research, we consider satisfaction as an evaluative judgment regarding a specific Office 365 experience and the affective attitude of the employee who interact directly with the system. This construct was measured with a four-item scale from Seddon and Yip (1992). The Office 365 perceived benefits defined as an achievement of a firm's objectives. This was operationalized by a six-item scale adopted from (Alshibly, 2011; Tansley et al, 2001). All the items were measured using a 5- point Likert Scale with anchors ranging from strongly agree (5) to strongly disagree (1).

Table 1 presents the research constructs and related survey items used for measurement of each of these constructs.

Table 1 Measurement of Questionnaire		
Construct	Survey questions	Source
Information quality	IQ1: Office 365 provides information that is exactly what I	Bailey and
	need.	Person
	IQ2: Office 365 provides information I need at the right time.	(1983)
	IQ3: Office 365 provides information that is relevant to my job.	
	IQ4: Office 365 provides sufficient information.	
	IQ5: Office 365 provides information that is easy to understand.	

	IQ6: Office 365 provides up-to-	
Sustan Quality	date Information.	Alabibly (2011)
System Quality	SQ1: Office 365 is easy to use.	Alshibly, (2011)
	SQ2: Office 365 is user-friendly.	
	SQ3: Office 365 provides high-	
	speed information access.	
	SQ4: Office 365 provides	
	interactive features between	
Complementer Technology	users and system.	Taaaa D. I. (1099)
Complementary Technology Quality	CTQ1: The software on the device (desktop computer, laptop and	Teece, D. J. (1988)
	mobile device) used to access	
	Office 365 is adequate.	
	CTQ2: The device hardware	
	(desktop computer, laptop and	
	mobile device) used to access	
	Office 365 is adequate.	
	CTQ3: The speed of the internet	
	connection used to access Office	
	365 at the	
	Belize Water Services is	
	Belize Water Services is adequate.	
	1	
	CTQ4: The reliability of the	
	internet connection used to access Office 365 at the Belize	
	Water Services is adequate.	
Computer Self-Efficacy Measure	CSE1: I could complete the job	Compeau, D. R., & Higgins, C. A.
	using Office 365 if there was no one around to tell me what to do.	(1995)
	one around to ten me what to do.	
	CSE2: I could complete the job	
	using Office 365 if I have never	
	used a system like it before.	
	CSE3: I could complete the job	
	using Office 365 if I had seen	
	someone else using it before	
	trying it myself.	
	CSE4: I could complete the job	
	using the Office 365 if I could call	
	someone for help if I got stuck.	
	CSE5: I could complete the job	
	using Office 365 if someone else	
	had helped me get started.	

	<ul> <li>CSE6: I could complete the job using Office 365 if l had a lot of time to complete the job for which the Office 365 was provided.</li> <li>CSE7. I could complete the job using Office 365 If I had just the built-in help facility for assistance.</li> <li>CSE8. I could complete the job using Office 365 If I had just the built-in help facility for assistance.</li> <li>CSE9. I could complete the job using Office 365 if there was someone there to teach me how to use it.</li> <li>CSE10. I could complete the job using Office 365 If I had used similar information systems before this one to do the same job.</li> </ul>	
Service Quality	<ul> <li>SQ1. The support staff keeps the Office 365 up-to- date.</li> <li>SQ2: When users have a problem, Office 365 support staff show a sincere interest in solving it.</li> <li>SQ3: Office 365 support staff respond promptly when users have a problem.</li> <li>SQ4: Office 365 support staff tell users exactly when services will be performed.</li> </ul>	Chang et al., (2009)
User Satisfaction	<ul> <li>US1. Most of the users bring a positive attitude or evaluation towards Office 365's function.</li> <li>US2. I think that the perceived utility about the Office 365 is high.</li> <li>US3. Office 365 has met my expectations.</li> <li>US4. I am satisfied with Office 365.</li> </ul>	Seddon and Yip (1992)

Use	U1: I use Office 356 frequently.	Balaban et
	U2: I depend on Office 365.	al., (2013)
	U3: I was able to complete my task using Office 365 even if there was no one around to assist.	Rai et al.,
		(2002).
	U4: I have the necessary knowledge to use Office 365	
Perceived Net Benefits	NB1: Office 365 helps me to improve work effectiveness.	Alshibly, (2011); Tansley
	NB2: Office 365 helps the organization to minimize costs (i.e. printing)	et al, (2001)
	NB3: Office 365 helps me to achieve my work objective.	
	NB4: Using Office 365 at work enhances my productivity.	
	NB5. Overall, using Office 365 enhances my work efficiency.	

Sampling and data collection

The data for this study were collected from a sample of employees as well as supervisors at the Belize Water Services. The method of the research sampling is "purposive sampling" which gives the researchers to use their own judgment to select suitable people for the sample. A total of 30 questionnaires were handed out to various employees within the office and we received all 30 questionnaire filled out.

Table 2. Characteristics of respondents			
Characteristics	Number	Percentage	
Gender:			
Male	19	63.3%	
Female	11	36.7%	
Age:			
Less than 20	0	0%	
20-25	2	6.67%	
26-30	12	40%	
Older than 30 years	16	53.3%	
Years of computer experience:			
None	0	0%	
1	0	0%	
2	0	0%	
3	0	0%	

0	0%
1	3.33%
0	0%
1	3.33%
1	3.33%
0	0%
27	90%
2	6.67%
5	16.67%
	16.67%
3	10%
1	3.33%
3	10%
0	0%
3	10%
0	0%
8	26.67%
	1         0         1         1         0         27         2         5         5         3         0         3         0         3         0         3         0

Table 2 illustrates the characteristics of the respondents

Data Analysis and Results

The data was gathered from 30 employees working at the Belize Water Services (BWS). Due to the small amount of surveys gathered we were not able to do hypothesis testing, so we are using the applied research methodology. We will be displaying 8 histograms and 1 additional histogram displaying the average.



The histogram on the left is a representation of employees' responses on Information Quality on the Office 365 system. As we can see, there was most individuals that ranged in the 3 - 4 and the 4 - 5 scales. Note: there were no individual that strongly disagreed.

The histogram on the left is a representation of employees' responses on System Quality on the Office 365 system. The chart concluded by having most of the individuals in the 3 - 4 and 4 - 5 scales. There was only 1 individual that ranged between the 2 - 3. Note: there were no individual that disagreed nor strongly disagreed.

The histogram on the left is a representation of employees'

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responses on Complementary Technology Quality on the Office 365 system. Results shows us that every individual are between the 2-5 ranges with the highest amount being in the 4-5. This makes the results higher than neutral. Note: there were no individual that disagreed nor strongly disagreed.



disagreed nor strongly disagreed.

The histogram on the left is a representation of employees' responses on User Satisfaction on the Office 365 system. The results of this chart show us that users were greatly satisfied with Office 365. There was 19 persons that were ranged in the 4 - 5, which were more than half of the surveys collected, and the remainders were ranged between 2 - 4. Note: There were no individual that disagreed nor strongly disagreed.





The histogram on the left is a representation of employees' responses on Use on the Office 365 system. The chart concludes by showing us that the company depends heavily on the system due that most of the employees are range in the 4 - 5 categories. Note: there were no

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individual that disagreed nor strongly disagreed.



The histogram on the left is a representation of employees' responses on Perceived Net Benefits on the Office 365 system. The chart shows us that the system has brought significant use and benefit by getting tasks completed efficiently and effectively. Most employees have been ranged at the 3 - 5 range which is above neutral. Note: there were no individual that disagreed nor strongly disagreed.

The histogram on the left is a representation of employees' average responses on the Office 365 system.

As shown in the chart above, we can see that every construct is above neutral which represents a positive result for the company. The two lowest constructs are Computer Self-Efficacy with an average of 3.786 and Information Quality with an average of 3.788. Although we can see the construct of Use having an average of 4.058, the company should provide more training and workshops to be more familiar with the system. Thus,

increasing CSE and providing a more effective and positive results. The highest construct, being Use and Perceived Net Benefits with an average of 4.058 and 4.066 respectively, shows us that the company rely on the system as it has been a huge impact on employees on completing their daily tasks more efficiently.

U

NB

# Discussion

**Response Average** 

5.0000000

4.0000000

3.0000000

2 0000000

1.0000000

0 0000000

10

SO

сто

CSE

SV

Constructs

US

This research has addressed the concern of evaluating the information system success of Office 365. For this purpose, an Office 365 success measurement model was developed based on the DeLone and McLean (2003) updated IS success model, which captures the multidimensional success nature of Office 365. The results show that information quality, system quality, service quality, complementary technology quality, computer self-efficacy, use, user satisfaction, and perceived net benefit are valid measures of Office 365 IS success. The hypothesized relationships between the eight success variables were significantly supported.

The study provides several important implications for Office 365 IS success research and management. According to the proposed model, perceived net benefit is considered to be a closer measure of Office 365 success than the other seven success measures. Perceived net benefit should develop if the formation of perceived quality, system use, and user satisfaction is appropriately managed. Thus, management attention might more fruitfully focus on the development of these psychological and behavioral processes.

In order to increase user perceived net benefit, the Belize Water Services need develop Office 365 with better information quality, system quality, and service quality, which, in turn, will influence user system usage behavior and satisfaction evaluation, and the corresponding perceived net benefit. In this model, system use was found to have a strong direct effect on perceived net benefit, indicating the importance of system use in executing duties and increasing perceived net benefit. Indicating that increased use will yield more benefits, without considering the nature of this use, is insufficient (DeLone & McLean, 2003), as system use is a necessary condition of yielding benefits at the Belize Water Services as it is a requirement to use the system.

The findings clearly indicate that the total effects of information quality on use, user satisfaction, and perceived net benefit are substantially greater than those of complementary technology quality and service quality. That is, in the context of the Belize Water Service, beliefs about complementary technology quality have a more dominant influence on use, user satisfaction, and perceived net benefit than beliefs about system quality and service quality. Essential the Belize Water Service need better hardware and faster and reliable internet access.

With the advent and development of Office 365 measuring multiple Office 365 IS success variables continues to be important. This model provides a rich portrayal of the dynamics surrounding quality measures, satisfaction evaluation, usage, and user-perceived net benefits. The results show that Belize Water Service staffs perceive the benefit of an Office 365 system because they have used it and felt satisfied with its information, system quality, and service quality. While system usage and user satisfaction are commonly acknowledged as useful proxy measures of system success (Doll & Torkzadeh, 1988, 1998; Ives et al., 1983), this study suggests that user-perceived net benefit can be considered as the variable closer in meaning to success than system usage and user satisfaction. This research also confirms that the use, user satisfaction, and perceived net benefit are complementary yet distinct constructs, and that use is partially mediated through user satisfaction in its influence on the perceived net benefit of Office 365 information system.

#### Limitations

Conducting a research requires time, attention and devotion. If there is absence of either of these, you will be sure to have some level of setbacks or limitations. Our research had its share of limitation (although carried out by capable group members who radiated enormous levels of teamwork). The first and most obvious of these was our unit of analysis; specifically, the employees of Belize Water Services who participated in the survey process. We issued a total of 30 questionnaires to the employees (Belize City Branch only). However, this company has a combination of approximately 230 employees across the country at different branches. So, the samples gathered only represent those who participated and not the entire population. Additionally, three-fourths of our group is made up of full time students and one-fourth represents a full time worker. Therefore, our time and coordination had to be shuffled and adjusted significantly for the successful completion of our research.

#### Conclusion

As previously mentioned, Belize Water Services uses Microsoft Office 365 which is known as one of the best information system that's provides many products which each having unique features such as access to emails, Office web application, sharing documents and much more. It is also very user friendly and it can be managed anywhere at any point of time making it one of the top information system that is used worldwide. This research was based on Delone and Mclean IS success model consisting of six constructs, which were Information Quality, System Quality, Service Quality, User Satisfaction, Use, and Perceived Net Benefits. Two other more were added, which were, Complementary Technology Quality and Computer Self-Efficacy, to assist on the research conducted as it revealed interesting and vital results. In the process of evaluating BWS employees' responses, all eight constructs have resulted moderately successful being above neutral by a descent score. The highest score was 4.066% which pertained to both

Complementary Technology Quality and Perceived Net Benefits and the lowest score being Computer Self-Efficacy Measure with a score of 3.786%. Results have shown us that 'Use' is the third highest constructs with approximately 4.058%, representing that the company use and is dependent on Microsoft Office 365 on a day to day basis. However, by having Computer Self-Efficacy as the lowest still being slightly above neutral, it shows us that the employees are satisfied to work with the system but it's not enough due that it is still lower than User Satisfaction construct with an approximate percentage of 3.916%. The company should offer computer training and workshops to further the employee's knowledge on how to operate the information system. By implementing those, it will also increase the perceived net benefit and will further the company success. If the company continues to operate the same, there is no doubt that the company will continue being successful. But to be more effective, the company should consider the facts to increase Computer Self-Efficacy and User Satisfaction that work together to get better results on Perceived Net Benefits. To finalize, any organization that decides to implement a new information system, must keep in mind that it should meet satisfaction with the individuals that will be operating the system to remain successful.

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